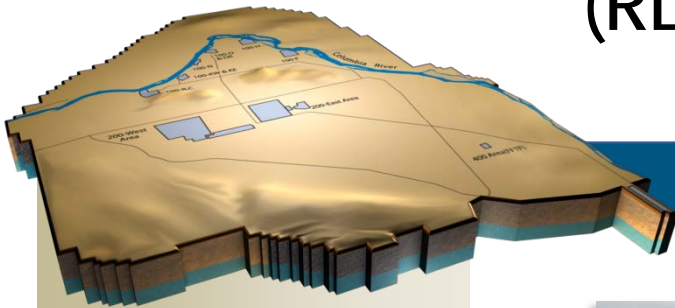


# Section D

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



### Monthly Performance Report

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February 2011  
CHPRC-2011-02, Rev. 0  
Contract DE-AC06-08RL14788  
Deliverable C.3.1.3.1 - 1



**Construction of the Bio-Process Building for the 200 West Groundwater Treatment Facility continues.**

## 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 February is summarized in the table below.

Activity	February		Cumulative	
	Planned	Completed	Planned	Completed
Well Drilling (# of wells) -303	1	5	279	273
Well Decommissioning (# of wells) -280	13	4	199	192
100 DX P&T – Construction/Startup (percent)	-	-	100	100
200 West P&T – Final Design ( percent)	-	-	100	100
200 West P&T – Construction ( percent)	5	3	53	52
200 West P&T – Testing/Startup ( percent)	-14*	-7*	47	53

\*Implementation of BCR-PRC-11-020R0 moved ATP/OTP scope out of the “200 West P&T – Testing/Startup (percent)” BCWS. This is cause for negative planned value and BCWP.

### Base

Base work includes the pump-and-treat operations, Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) remedial processes, and documentation for the River Corridor and Central Plateau. Sampling and groundwater treatment completed in February includes the following:

- 94 well locations were sampled with a total of 328 samples being collected
- 159 aquifer tube samples collected from 62 tubes at 40 locations
- 17.03M gallons groundwater treated by ZP-1 treatment facility
- 18.2M gallons groundwater treated by KX treatment facility
- 8.06M gallons groundwater treated by KW treatment facility
- 8.48M gallons groundwater treated by KR-4 treatment facility
- 8.44M gallons groundwater treated by HR-3 treatment facility
- 1.10M gallons groundwater treated by DR-5 treatment facility
- 20.51M gallons groundwater treated by DX treatment facility
- 81.8M gallons of groundwater treated total

## EMS Objectives and Target Status

Objective#	Objective	Target	Due Date	Status
<b>11-EMS-SGWR-OB1-T1</b>	Take actions necessary to protect the Columbia River by 2012	Treat 500,000,000 gallons of 100 Area (D, H & K Area) groundwater	9/30/11	On schedule
		Review and tally total number of gallons treated	Monthly	Treated 351.7 M gal FY11 through 2/28/11
<b>10-EMS-SGWR-OB2-T1</b>	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	Complete (3/19/10)
		Start construction of GW extraction buildings	3/30/10	Complete (3/19/10)
		Complete treatment facility construction	12/31/11	On schedule
<b>10-EMS-SGWR-OB4-T1</b>	Reduce Project Waste Generation	Track & quantify project cost savings from on-going waste reduction initiatives	1/31/11	Closed (2/10/11)
		Track, quantify & report on drill cuttings RTed in lieu of disposal at ERDF	30 days after CY Qtr-end	Complete
		Track, quantify & report on use of ERDF boxes in lieu 55-gallon drums	30 days after CY Qtr-end	Complete
		Track, quantity & report on purgewater generation avoidance	30 days after CY Qtr-end	Complete

## TARGET ZERO PERFORMANCE

	CM Quantity	Rolling 12 Month	Comment
Days Away, Restricted or Transferred	0	3	N/A
Total Recordable Injuries	1	9	2/12/11- Employee was placing steel tubing on his shoulder to transport the heavy material, and after several trips felt a sharp pain in back. 21727
First Aid Cases	6	112	2/9/11- Employee rolled angle on rock while walking. 21721 2/10/11 – Employee felt pain in right foot from repeat motion. 21760 2/12/11- Employee felt pain down left side after exerting additional force to turn a water valve off. 21728 2/18/11- Employee was exiting manlift when foot slipped on loose gravel causing pain in his lower back. 21761 2/23/11- Case description not specified. 21781 2/24/11- Employee tripped over a chain hanging between two concrete blocks. His right palm was scraped upon landing on the gravel. 21769
Near-Misses	0	2	N/A

## KEY ACCOMPLISHMENTS

### ARRA - GW CAPITAL ASSET

Drilling	February		Cumulative	
	Planned	Completed	Planned	Completed
M-24 -5 wells	0	0	5	5
200-ZP-1 West P&T Expansion -17 wells	0	0	17	17
Drilling Total	0	0	22	22

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

- 200 West Area Groundwater Treatment Facility –Roofing completed on all buildings and sheeting complete on five buildings; (areas in two buildings intentionally left open for equipment placement) (seventh building is S-SX which is base funded). Crews have completed containment slab on grade at all seven buildings. Mechanical, electrical, instrumentation and process rough in has been initiated at all six buildings. Government furnished equipment is maintaining delivery schedule with all on schedule for arrival by end of March 2011.
- 200E Unsecured Core Complex – EPC 1 and EPC 2– Final walkdowns performed, building turnovers completed

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

- 100-HX Groundwater Treatment Facility – High-density polyethylene (HDPE) pipe installation is 73 percent complete. All eight ion exchange trains have been placed in the Process Building.

All influent filter housings have been installed in the Process Building. Installation of steel sleeves for HDPE pipe entry into the effluent pipe vault in the Process Building is complete. Epoxy coating of Transfer Building floor is complete. New power service installation to the Process Building is in progress.

### **ARRA - GW OPERATIONS**

#### **Well Drilling and Decommissioning – ARRA**

	February		Cumulative	
	Planned	Completed	Planned	Completed
KR-4 Remedial Investigation/Feasibility Study (RI/FS) – 13 wells	1	2	13	10
100-NR-2 Barrier Emplacement – 171 wells	0	0	171	171
100-HR-3 H Area RPO – 40 wells	0	0	40	37
100-HR-3 D Area RPO – 30 wells	0	0	30	30
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 – 10 wells	0	2	10	8
100-FR-3 – 3 wells	0	0	3	3
300 FF-5 RI/FS – 11 wells	2	1	9	11
Drilling Total	3	5	279	273
Decommissioning Total	13	4	199	192

Per a baseline change request, a number of wells installed were transferred to base funding, changing the number of total wells installed with Recovery Act funds.

### **BASE - GW OPERATIONS**

#### **Environmental Strategic Planning:**

Reached agreement with the agencies through the Senior Executive Council (SEC) workgroups:

- Concluded SEC workgroups on establishing Groundwater and Ecological Preliminary Remediation Goals. Prepared presentation and justification for biointrusion issue that was elevated to the SEC and discussed at the meeting.

#### **Integration Management:**

- Prepared presentation on the status and path forward of River Corridor Remedial investigation/feasibility study (RI/FS) decision documents for RL to present to EPA
- Completed a full-day workshop with RL on the approach being taken to complete the Feasibility Study process for River Corridor RI/FS documents
- Resolved database compatibility issues with the release of the Sample Analysis Request application for groundwater sampling

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

- Finalized technical input to the Central Plateau bioassay study design document Sampling Analysis Plan (SAP)
- Confirmed Waste Sampling and Characterization Facility (WSCF) results for Hanford soil background levels with receipt of duplicate sample results from Lionville Lab. Worked with WSCF on a smaller dilution and longer time procedure to reduce Minimum Detection Limits for target analytes.

#### **River Corridor**

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

- Drilling and sampling of well C8244 (replacement well for C7787) continued with the borehole

being advanced to 221.5 feet below ground surface (ft bgs).

- Drilling and sampling of the last of six RI/FS wells, C7785, was completed with the borehole advanced to a total depth of 153.5 ft bgs. Well construction of this well was initiated and continued through the end of the month.

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

- Revised Authorized Limit Application for the resin regeneration approved modifying existing authorization limits (AL) for offsite regeneration of ion exchange resin from the 100 Area pump-and-treat facilities. Revised authorized limits allow for shipment of resin totes exceeding existing AL for C-14.
- Completed construction walk down of well 199-K-152 modifications to convert to an extraction well for connection to the KX Pump-and-Treat Facility
- RI/FS drilling and sampling for the thirteen RI wells completed

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

- The third round of spatial-and-temporal groundwater well sampling was completed with all of the 26 wells now sampled.
- The revision to the NR-1/2 OU Interim Action Remedial Design/Remedial Action (RD/RA) Work Plan continued. A decisional draft review of the document was completed by RL, and the resulting comments were incorporated into Draft A for the regulatory review (and for meeting TPA Milestone M-015-60, due March 29, 2010).
- All Ecology comments were closed on the 100-N RI/FS Work Plan Addendum and comment resolution is complete.
- Preparations continued for RI/FS well drilling and sampling activities as now approved in the Rev. 0 100-N RI/FS SAP. Site preparations were initiated and the well-drilling contract was awarded.
- Planning and preparations resumed for initiating the saturated well injections as approved in the Rev. 0 Apatite Barrier Expansion Design Optimization Study.

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

- The new DX Pump-and-Treat System continued operating and commenced operations test procedure activities.
- Efforts began to realign the DR-5 wells on to the DX Pump-and-Treat System
- RI/FS well drilling and sampling continued with thirteen of fifteen wells completed.
- RI/FS borehole drilling and sampling was completed on all ten boreholes.
- RI/FS test pit installations continued with four of five test pits completed.
- The Internal Draft Review of RI/FS Report, chapters 8-10, was completed.

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

- RI/FS drilling and sampling continued with fifteen of sixteen wells completed.

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

- Analysis is complete on the samples collected from temporary aquifer sampling tubes installed in the base of the 600-127 waste site excavation. Based on the analytical results, no further sampling needs were identified and the tubes were decommissioned.
- Three RI/FS characterization boreholes required by the 100-F and IU Work Plan Addendum and SAP were drilled and sampled. Two of the boreholes were completed as temporary wells to allow for the collection of more representative groundwater samples. The third borehole was decommissioned.

- Sampling of pore water from the bottom of the Columbia River at 20 locations along the 100-F shoreline was completed, and laboratory analysis of those samples was initiated.

### **Central Plateau**

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

- Completed 40% design package for the 200-BP-5 Treatability Test extraction system

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

- Ecology comments on the Draft A RI Report were received February 23, 2011.

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

- The S-SX transfer building was erected and enclosed with the exception of one section to allow access for the transfer tank.
- The SAP for S-SX extraction and monitoring wells was approved.

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

- Ten of fourteen groundwater extraction wells are online pumping water at 398 gpm. Extraction well #5, #7, and #10 are offline due to low flow or low water levels.
- Final activated carbon, uranium and Tc-99 resin testing reports have been issued.
- Fifteen extraction and five injection wells have been installed at this time.
- The development of simulator based training is ongoing as is updated computer modeling which utilizes the latest depth-discrete groundwater data.

### **Regulatory Decision and Integration**

#### **Outer Area - Base**

- Submitted Decisional Draft 200-CW-1, 200-CW-3 and 200-OA-1 Work Plan for RL review
- Submitted Ecological Sampling and Analysis Plan for RL review
- Submitted Decisional Draft 200-CW-1, 200-CW-3 and 200-OA-1 Sampling and Analysis Plan for RL review

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

- Completed the fifth agency scoping meeting on development of the conceptual site models and introducing the approach for the waste site Data Quality Objective process
- Completed incorporation of comments from regulators on the Uranium Sequestration Field Test Plan and SAP
- The Desiccation Test progressed with the arrival of the desiccation front having reached the first set (three) of monitoring wells. All responses to date indicate the process is working as anticipated.

## MAJOR ISSUES

**Issue** – There are several examples of extended comment review on CERCLA documents; the most significant being 200-PO-1 RI Report and 100-N RI/FS Work Plan Addendum and SAP. The issues on these documents are different, the 100-N review period has extended over seven months, and after each review, additional comments are received. Delay in the approval of the 100-N addendum has exceeded 220 days (past six months after providing the Draft A version of the document in December 2009). With the 200-PO-1, the report was delivered June 2010 but formal comments were not received until February 23, 2011.

**Corrective Actions** – Timelines and back-up information on these two specific documents have been prepared and provided to RL.

**Status** – CHPRC continues to work with the parties involved to facilitate timely comment resolution; however, schedule variance and cost impacts are evident on both projects.

**Issue** - The 200W Pump-and-Treat Project is currently forecasting a variance at completion of \$24M. The primary drivers for the increased forecast are:

- Effect of final design/Issued for Construction (IFC) Issuance: Construction contract and Long Lead Equipment procurement contracts were issued prior to completion of final design. Contractors/vendors have submitted claims for changes resulting from IFC release and these are reflected in the project estimate at completion (EAC).
- Construction Award Delay: 28-day delay experienced issuing notice to proceed has produced a ripple effect to subsequent construction activities. To mitigate this delay, overtime and additional work shifts have been employed at an increased cost. Additional costs will be expended to buy-back the construction schedule and improve the critical path schedule activities and maintain required KPP and Tri-Party Agreement milestone delivery dates.
- Sludge Stabilization (Lime): Originally base lined using an allowance based on planning-level design and assumptions. The estimate has been updated during each stage of design with the current EAC reflecting final design.

**Corrective Actions** - The project is working within RL-30 and with the RL Federal Project Director to mitigate the impact on funding due to the increase in the forecast of this project. Actions include:

- Project has a dedicated team managing contractor claims. Claims are reviewed and negotiated with the contractors for a fair and equitable disposition.
- Transfer of ARRA contingent scope, Startup and Testing support for Acceptance Test Procedure (ATP) and Operational Testing Plan and the Uranium Train Design, to BASE funded scope.
- Value management actions are identifying scope that can be deferred or deleted to reduce cost where appropriate.
- Working within CHPRC to identify and realize other funding options.
- The project continues to work with the DOE-RL team for options to resolve the funding issue.

**Status** – The project worked within RL-0030 and with the DOE-RL FPD to mitigate the impact of the increase in the forecast of this project. In addition, contingent scope was identified to be moved to offset in the KPP commitments.

A BCR was implemented in February and the EACs for ARRA Subprojects RL0030.R1.1 and RL0030.R1.2 were reduced to the subprojects' Total Project Costs. This was accomplished by making approved ARRA to BASE scope reassignments. This is the last report of this issue.

**Issue** – During routine groundwater sampling activities, an NCO sampler received a low voltage shock while operating a dedicated electrical well pump. The subsequent investigation determined that the



network of monitoring wells having dedicated electrical pumps did not meet the National Electrical Code (NEC) standard for grounding all exposed non-current carrying metallic parts that could become energized. Sampling activities using dedicated electrical pumps were suspended. However, sampling with non-electrical pumps and portable electrical pumps is continuing.

**Corrective Action** – The available pneumatic pumps deployed to the field are being redeployed to most efficiently support near-term sampling needs. Additional pneumatic pumps will be purchased to expand the network of non-electric pumps as appropriate. Wells requiring electrical pumps to support sampling activities will be properly grounded per NEC requirements.

**Status** – Grounding design for well heads has been completed. Plant forces work review for bonding work is in preparation. Redeployment of pneumatic systems is underway. Vendor quotes for additional pneumatic pumps have been received and procurement is in process.

## 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.	●	↔	No significant issues.
<b>SGW-050: Regulatory Strategy for Decision Docs</b>	Continue to support RL in strategy negotiations with Agencies.	●	↔	CPCS and Mod 95 Proposal and BCR are being evaluated and developed.
<b>SGW-069: 100-HR-3 ISRM Barrier Amendment - Hexavalent Chromium Continues to Move Through Barrier</b>	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. Four wells will be used to supplement the barrier and capture down-gradient chromium. DX system is on line with extraction wells down gradient of the ISRM barrier.
<b>SGW-080: 100-BC-5 Pump and Treat Required</b>	This risk is accepted as written and will be monitored throughout work execution.	●	↔	Additional characterization is being conducted through the installation of RI/FS wells (underway), aquifer tubes (completed) and additional river-upwelling sampling (completed) 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. The possibility of conducting a Non-Time Critical Removal Action (EE/CA) is currently on hold as directed by RL. The EE/CA is being shelved as a Draft A without regulatory review (as currently directed by RL and pending further direction from RL) and the associated Action Memo (AM) is being shelved as a decisional draft. RL recently revised Contract Mod 101 - Change Order 129 requesting CHPRC submit a proposal for developing the EE/CA to a Draft A and the AM to a decisional draft with no additional work to be conducted. This revised change proposal and the associated estimate will be developed for submittal. The need for a pump and treat system as part of the final ROD will be evaluated as part of the RI/FS process.
<b>SGW-081: 100-FR-3 Pump and Treat Required</b>	This risk is accepted as written and will be monitored throughout work execution.	●	↔	Additional characterization has been conducted through the installation of RI/FS wells (completed) and additional river-upwelling sampling (completed) to further define the extent and concentration of chrome in the plume in order to determine if an active remedial measure is required. The preliminary results from the porewater sampling indicate that the Cr(VI) levels in the river porewater are below the AWQS of 10 ppb. Currently, remediation is not planned in the baseline for the OU. The possibility of conducting a Non-Time Critical Removal Action (EE/CA) is currently on hold as directed by RL. The EE/CA is being shelved as a Draft A without regulatory review (as currently directed by RL and pending further direction from RL) and the associated Action Memo (AM) is being shelved as a decisional draft. RL recently revised Contract Mod 101 - Change Order 129 requesting CHPRC submit a proposal for developing the EE/CA to a Draft A and the AM to a decisional draft with no additional work to be conducted. This revised change proposal and the associated estimate will be developed for submittal. The need for a pump and treat system as part of the final ROD will be evaluated as part of the RI/FS process, but based on the recent porewater sampling results, this may not be necessary for FR-3.
<b>SGW-003: Central Plateau Well Drilling Demands</b>	Adjust drilling schedules; cross-train workforce; evaluate sample parameters.	●	↔	No significant issues.
<b>SGW-003A: Central Plateau Drilling - 200W P&amp;T</b>	Utilize rotary drilling and cable-tool; work closely to resolve subcontractor issues and manage schedule.	●	↔	Drilling, construction and development has been completed on the first 20 wells. The next 8 (4 with option of 4 more wells) contract has been awarded to a new subcontractor to Hanford with mobilization expected early March, so therefore the assessment will remain yellow until a performance record is established.

## 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-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. Field activities are almost complete, and work is progressing on the RI/FS 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. Construct HX P&T system.	●	↔	HR-3 early utilization has been cancelled due to the HX project schedule. Replacement of the HR-3 system by HX will significantly increase system capacity.
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 conducting pre-job briefings. No further mitigation is warranted. Risk is accepted.	●	↔	No issues or incidents this month.
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.	●	↔	DX project was turned over to operations on 12/17/2010. HX design has been modified to include transfer building and an eighth train.
SGW-031A: P&T Design Changes - 200 West	Identify required design changes early in the process to minimize schedule impact. Work closely with the client and regulators to minimize impact to schedule. Incorporate design changes quickly to minimize cost impacts and avoid rework. Supplement Eng/QA/QC support and contracts for special inspection so as to finalize engineering requirements.	●	↔	The change due to the final issuance of the "issued for construction" drawings continues to be monitored, implementing cost saving actions as appropriate.
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.	●	↔	No issues at this time.
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 additional implementation and optimization under a now approved design optimization study (DOS). The actual infiltration/ tracer tests have been conducted in the field. This tracer testing was completed and demonstrated very low infiltration rates (less than 0.8 cm/hr). The ability of this method to treat the soil evenly is in question. The field data has been compiled and presented in a draft PNNL letter report. This report is near finalization. It is likely that the infiltration gallery work will be cancelled and the jet injection technology will be pursued to treat the upper vadose zone (as currently proposed in a Draft A revision to the NR-2 RD/RA Work Plan for Interim Action set to be submitted to the regulators in March).

## 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	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. Project is already exploring options to accelerate schedule more so than what was delivered in general contractor's proposal.	●	↔	BIO: Initiate GFE equipment placement 2/28. BIO Pad: All major process equipment placed by 2/28. RAD: All GFE inside building 2/22/11. Progress is consistent but delays associated with the issuance of IFC are already being experienced. Project is utilizing additional resources and working overtime to mitigate this risk. The concern is reviewed daily with the General Contractor to recover critical path work activities.
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 for the pump and treat system. The bioremediation TTP has been postponed until FY13, since the TTP is a post-ROD design test, and new data is not yet required to make remedial decisions in support of the FS.
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 vendors to expedite schedule.	●	↔	Project is conducting meetings to address RCIs twice per week. Vendor meetings occur weekly. 3D modeling employed to minimize probability of mis-configuration. Long lead equipment is arriving on-site and a plan is in-place for all remaining LLE. All GFE will be delivered by July 2011.
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	8.8	5.1	5.0	(3.7)	-42.0	0.1	2.6
ARRA RI-0030.R1.2 GW Operations	(0.2)	2.1	0.1	2.3	1,067.4	2.0	93.5
<b>ARRA Total</b>	<b>8.6</b>	<b>7.2</b>	<b>5.1</b>	<b>(1.4)</b>	<b>-16.2</b>	<b>2.1</b>	<b>29.0</b>
<b>Base</b>	<b>3.8</b>	<b>12.5</b>	<b>16.8</b>	<b>8.7</b>	<b>229.4</b>	<b>(4.2)</b>	<b>-33.8</b>
<b>Total</b>	<b>12.4</b>	<b>19.7</b>	<b>21.9</b>	<b>7.3</b>	<b>59.0</b>	<b>(2.1)</b>	<b>-10.9</b>

Numbers are rounded to the nearest \$0.1M.

### ARRA

#### CM Schedule Performance: (-\$1.4M/-16.2%)

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

#### **ARRA RL-0030.R1.1 GW Capital Assets (-\$3.7M)**

##### 200-ZP-1 OU (-\$3.7M)

The negative SV is primarily due to two factors:

1) Implementation of BCR-PRC-11-020R0 ("Align FY 2011 PMB Scope to Revised RL Priorities") caused a current month point adjustment. Specifically, procurement scope associated with the sludge stabilization/lime system was moved from ARRA to Base. This movement caused a retraction in the ARRA BCWP that was previously performed. This negative BCWP plus no BCWS for the month resulted in the negative current period SV.

2) Delay of resin delivery for pump-and-treat operations. Due to limited storage capability, the decision has been made to delay delivery of resin until September 2011. The resin is not a project-specific item; it can be procured at any time without risk to construction completion target dates.

#### **ARRA RL-0030.R1.2 GW Operations (+\$2.3M)**

##### Drilling (+\$1.5M)

Implementation of BCR-PRC-11-020R0 caused a current month positive point adjustment resulting in the positive schedule variance for the month. In accordance with the FY11 re-alignment authorization certain agreed-to ARRA work scope was switched to Base work scope. This has resulted in no overall impact to project completion dates.

##### 200-ZP-1 OU (+\$0.5M)

Positive schedule variance is due to implementation of BCR-PRC-11-020R0. In accordance with the FY11 re-alignment authorization certain agreed to ARRA work scope was switched to Base work scope. This change will have no impact to overall project completion date.

##### S&GW Construction Complex Project (+\$0.3M)

The positive variance reflects the recovery of the schedule delays from previous periods. Work was performed for activities planned in prior months.

**CM Cost Performance: (+\$2.1M/+29.0%)**

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

**ARRA RL-0030.R1.1 GW Capital Asset (+\$0.1M)**Drilling (+\$0.3M)

Negotiations are underway for final contract costs for ZP-1 well drilling, due to changing field conditions. Closeout cost was not received in February as planned. The final cost will be adjusted when negotiations are complete.

**ARRA RL-0030-R.1.2 GW Operations (+\$2.0M)**200-ZP-1 OU (-\$.0.5M)

Negative cost variance is due to additional resources required for QA/QC and safety work scope. Project management is evaluating the existing work scope as provided at the issuance of final design and determining corrective actions and overall impact to the 200W Area Pump-and-Treat Project completion EAC.

PBS RL-30 UBS, G&A, and DD (+\$2.1M)

The positive cost variance is discussed in Appendix C.

**Base****CM Schedule Performance (+\$8.7M/+229.4%)**

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

Drilling (+\$1.4M)

Implementation of BCR-PRC-11-020R0 caused a current month positive point adjustment resulting in the positive schedule variance for the month. Due to funding priorities numerous drilling campaigns have been deferred from FY2011 to the out-years.

100 KR-4 Operable Unit (-\$1.2M)

Implementation of BCR-PRC-11-020R0 caused a current month negative point adjustment resulting in the negative schedule variance for the month. TPA Milestone M-015-66-T01 and supporting work was replanned. Basis for the change was receipt of TPA Change Number M-15-10-06 "Modification of Hanford Federal Facility Agreement and Consent Order (HFFACO) M-015-66-T01 Target Date". Also due to funding priorities, some resin implementation work and the remaining KW bioremediation work were deferred from FY11 to the out-years.

100 NR-2 Operable Unit (+\$0.4M)

Implementation of BCR-PRC-11-020R0 caused a current month positive point adjustment resulting in the positive schedule variance for the month. CERCLA implementation work was replanned to take place later in the fiscal year. Data evaluation and RI/FS report presentation work was replanned to support the receipt of sampling and analysis plan for the 100-NR-1 and 100-NR-2 operable units RI/FS (based upon DOE/RL-2009-42, Revision 0) which was approved and released Dec 26, 2010.

200-UP-1 Operable Unit (-\$0.3M)

The negative schedule variance is largely associated with the subcontractor under performing on construction of S-SX extraction building and associated site piping. The building steel needed to be deconstructed and repainted. Additional rework was also required for both tank and pipe specifications/submittals. S-SX construction is expected to recover and complete in June.

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

Procurement of the sludge stabilization system is proceeding ahead of schedule. Progress in February

was scheduled to occur in the March/April timeframe.

#### 300-FF-5 Operable Unit (+\$1.3M)

Implementation of BCR-PRC-11-020R0 caused a current month positive point adjustment resulting in the positive schedule variance for the month. Due to funding priorities infiltration testing and alternative emplacement scope were re-planned in FY2012.

#### Regulatory Decision/Closure (+\$2.2M)

Implementation of BCR-PRC-11-020R0 caused a current month positive point adjustment resulting in the positive schedule variance for the month. Several activities were replanned due to funding/prioritization issues resolution (Feasibility study, 200 West Decision Documents, 200 East Decision Documents).

#### **CM Cost Performance (-\$4.2M/-33.8%)**

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

#### Integration and Assessments (-\$0.5M)

Implementation of BCR-PRC-11-020R0 caused a current month negative point adjustment resulting in the negative cost variance for the month. Due to funding priorities work scope was deferred or eliminated in this account.

#### Drilling (-\$0.9M)

As per direction of the ARRA to Base work scope re-alignment, a number of cost transfers were completed in February moving previous ARRA cost to Base cost and resulting in a current month negative cost variance. Cost corrections included wells in KR-4, NR-2, 100 Area Bioremediation, HR-3, BC-5, and decommissioning of non-tank farm wells.

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

The negative cost variance for the month is due to the additional cost associated with sampling and to support the investigation and resolution of the Stop Work associated with using permanently installed submersible pumps on groundwater monitoring wells. Part of the overrun is expected to be offset by a passback from MSA for laboratory analysis services provided fiscal year to date.

#### 100 KR-4 Operable Unit (-\$0.5M)

The negative cost variance is due to:

1. Increased use of resources to expedite remedial investigation sampling and accompanying RI/FS report efforts;
2. More labor required than expected to perform the O&M Level of Effort activities; and
3. Extended troubleshooting of the KR-4 PLC after system upgrades.

Overruns in KR-4 are not recoverable this fiscal year within the KR-4 OU and will be funds managed.

#### 100 HR-3 Operable Unit (-\$0.6M)

Primary drivers for the current month negative cost variance are as follows:

- 1) Additional time being spent on internal CERCLA (RI/FS) document development that will be recovered in completed Draft A document
- 2) Continued operation of DR-5 Pump-and-Treat due to delays in starting operations of DX
- 3) Cost correction for HX design authority that was previously incorrectly charged to DX
- 4) Increased engineering support to meet monthly deliverables for HX

Construction project overruns evaluated and managed to stay within project funding guidance.

#### PBS RL-30 UBS, G&A, and DD (-\$1.1M)

The 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>	106.3	103.3	106.7	(3.0)	-2.8	(3.4)	-3.3	164.8	178.4	(13.6)
<b>ARRA RL-0030.R1.2 GW Operations</b>	<u>65.4</u>	<u>65.6</u>	<u>60.2</u>	<u>0.2</u>	0.3	<u>5.4</u>	8.3	<u>76.4</u>	<u>79.9</u>	<u>(3.5)</u>
<b>ARRA Total</b>	<b>171.7</b>	<b>168.9</b>	<b>166.8</b>	<b>(2.8)</b>	<b>-1.6</b>	<b>2.1</b>	<b>1.2</b>	<b>241.2</b>	<b>258.3</b>	<b>(17.1)</b>
<b>Base</b>	<u>314.1</u>	<u>315.7</u>	<u>319.1</u>	<u>1.6</u>	0.5	<u>(3.4)</u>	-1.1	<u>1,274.2</u>	<u>1,227.0</u>	<u>47.2</u>
<b>Total</b>	<b>485.8</b>	<b>484.6</b>	<b>485.9</b>	<b>(1.2)</b>	<b>-0.2</b>	<b>(1.3)</b>	<b>-0.3</b>	<b>1,515.5</b>	<b>1,485.3</b>	<b>30.1</b>

Numbers are rounded to the nearest \$0.1M.

### ARRA

#### CTD Schedule Performance: (-\$2.8M/-1.6%)

All Variances are within Thresholds.

#### ARRA RL-0030.R1.1 GW Capital Asset (-\$3.0M)

All Variances are within Thresholds.

#### ARRA RL-0030.R1.2 GW Operations (+\$0.2M)

All Variances are within Thresholds.

#### CTD ARRA Cost Performance: (+\$2.1M/+1.2%)

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

#### ARRA RL-0030.R1.1 GW Capital Asset (-\$3.4M)

All Variances are within Thresholds.

#### ARRA RL-0030.R1.2 GW Operations (+\$5.4M)

##### Drilling (+\$3.1M)

Efficiencies and savings obtained in drilling for 100-NR-2, 100-HR-3, and 200-BP-5 wells. Cost efficiencies have been obtained through an aggressive drilling schedule with savings in support personnel, faster drilling methods, and shallower drilling depths for HR-3 wells than originally planned. Well decommissionings have also been completed for less than planned.

##### 200-ZP-1 Operable Unit (-\$0.8M)

Negative cost variance is due to additional resources required for QA/QC and safety work scope. Project management is evaluating the existing work scope as provided at the issuance of final design and determining corrective actions and overall impact to the 200W Area Pump-and-Treat Project completion EAC.

##### Regulatory Decision and 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), and borehole drilling and landfill characterization (competitive subcontracting of drilling support and efficient field support).

##### PBS RL-30 UBS, G&A, and DD (+\$2.2M)

The positive cost variance is discussed in Appendix C.



**Base****CTD Schedule Performance (+\$1.6M/+0.5%)**

All Variances are within Thresholds.

**CTD Cost Performance (-\$3.4M/-1.1%)**

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

**Drilling (-\$1.4M)**

As per direction of the ARRA to Base work scope re-alignment, a number of cost transfers were completed in February moving previous ARRA cost to Base cost and resulting in a current month and CTD negative cost variance. Cost corrections included wells in KR-4, NR-2, 100 Area Bioremediation, HR-3, BC-5, and decommissioning of non-tank farm wells.

**100-NR-2 OU (+\$1.8M)**

Chemical treatment and maintenance scope, jet grouting pilot test work, RI/FS Work Plan and Interim Proposed Plan Reporting were performed more efficiently than planned leading to the positive cost variance.

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

Major contributors to the variance are as follows:

- 1) Interim Operations reflects significant progress and cost underruns achieved to date for 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

**200 PW-1 OU (+\$0.8M)**

Labor and subcontract cost for general operations and minor modifications support is less than planned. In addition, efficiencies and savings experienced with the Soil Vapor Extraction (SVE) system testing prior to March 1, 2010 and the completed removal of two SVE units.

**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 and FY2010. 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	FY2011		
	Projected Funding	Spending Forecast	Spend Variance
<b>ARRA</b>	157.6	151.6	6.0
<b>Base</b>	170.0	168.5	1.5

Numbers are rounded to the nearest \$0.1M.

### Funds/Variance Analysis

Funding includes FY2010 carryover and FY2011 new Budget Authority. The variances reflect an approved realignment of ARRA and Base work scope that was implemented in February.

### Critical Path Schedule

Critical path analysis can be provided upon request.

### Estimate at Completion (EAC)

ARRA – The projected variance at completion is negative 7.1 percent. A BCR will be implemented that will incorporate the 100% design and adjust the baseline to be more in line with the EAC.

Base – The small projected variance at completion of positive 3.7 percent is spread among several operational areas and is not considered significant.

### Baseline Change Requests

BCR-PRC-11-020R0, Align FY11 PMB Scope to RL Priorities

BCRA-PRC-11-023R0, General Administrative & FOC Changes for February 2011

FY2011 Management Reserve (Funded):

ARRA = \$2.967M

Base = \$0.0M

Management reserve funding for both ARRA and Base was used in February to adjust overall funding requirements as a result of BCR-PRC-11-020R0.

See management reserve table in the CHPRC Overview.

## MILESTONE STATUS

The Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) 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-015-60	Submit NR-1/2 Operable Unit RD/RA Work Plan	TPA	3/29/11		3/28/11	On Schedule
M-024-58D	Initiate Discussions of Well Commitments	TPA	6/1/11		6/1/11	On Schedule
M-091-40L-030	Submit January to March 2nd Quarter FY-11 Burial Ground Sample Results	TPA	6/15/11		5/30/11	On Schedule
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
M-015-82B	Initiate 200-BP-5 Aquifer Tests Within 6 months of TTP Approval	TPA	7/20/11		4/30/11	On Schedule. TTP approved
M-024-62-T01	Conclude Discussions of Well Commitments	TPA	8/1/11		8/1/11	On Schedule
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-015-66-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	9/21/11		9/13/11	On Schedule
M-015-70-T01	Submit Feasibility Study Report and Proposed Plan for 100-HR-1/2/3 and 100-DR-1/2 OUs	TPA	11/24/11		9/15/11	On Schedule
M-015-68-T01	Submit CERCLA RI/FS Report and Proposed Plan for the 100-BC-1, 100-	TPA	11/30/11		11/30/11	On Schedule

Number	Title	Type	Due Date	Actual Date	Forecast Date	Status/ Comment
	BC-2 and 100-BC-5 Operable Units for groundwater and soil.					
M-091-40L-032	PMM Submittal Jul-Sep 4th Qtr FY11 Burial Ground Sample Results	TPA	12/15/11		11/30/11	On Schedule
M-015-64-T01	Submit RI/FS Report and PP for 100-FR-1/2/3 and 100-IU-2/6	TPA	12/17/11		12/9/11	On Schedule
M-015-62-T01	Submit FS/PP for 100-NR-1/2 OUs Including GW and Soil	TPA	12/31/11			Day for day slip applies due to delayed Ecology review. Review still underway, length of slip is TBD.
M-015-72-T01	Submit RI/FS Report and PP for 300-FF-2/5 OUs for GW and Soil	TPA	12/31/11		12/31/11	On Schedule
M-015-91A	Submit RI/FS Work Plan for the 200-WA-1 OU to EPA	TPA	12/31/11		12/31/11	On Schedule
M-015-93A	Submit Rev'd RFI/CMS & RI/FS Work Plan for SW-2 to Ecology	TPA	12/31/11		12/31/11	On Schedule
M-016-111C	Expand P&T System at 100-HR-3 OU to 800 gpm Capacity	TPA	12/31/11		12/15/11	On Schedule
M-016-120	GW Treatment System <50 gpm for Tc-99 Plume at S/SX Tank Farm	TPA	12/31/11		12/31/11	On Schedule
M-016-122	Begin Phase 1 Operation of 200W Pump-and-Treat System	TPA	12/31/11		12/31/11	On Schedule
M-091-40L-033	Submit Oct-Dec 1 <sup>st</sup> Quarter Burial Ground Sample Results	TPA	3/15/12		2/28/12	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.