Richland - Hanford Site - Central Plateau Soil and Groundwater Remediation Project Operating Plan

BACKGROUND

ARRA Project: Richland - Hanford Site – Central Plateau Soil and

Groundwater Remediation

TAFS: 89-09/10-0253

Project Identification Code: 2002141

Recovery Act Bill Reference: PL 111-5, Title IV – Energy and Water

Development, Defense Environmental Cleanup

(H.R. 1-26)

Project Cost: \$272,414,000

Budget Authority: STARS Fund Code: 06049, FD0220 **Program Office:** Environmental Management (EM)

Recovery Program Plan: EM - Defense

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LEADS

Implementation: Richland – Hanford Site

Breakthrough: NA **Laboratory:** NA

I. SUMMARY & OBJECTIVES

Summary:

The Central Plateau Soil and Groundwater remediation project includes scope to implement groundwater remedies for the River Corridor and Central Plateau and decommissioning of the groundwater wells. The required funding from the American Recovery and Reinvestment Act (ARRA) supports the mission of DOE and Office of Environmental Management (EM) by providing resources to complete installation of these groundwater remedies and decommissioning activities. ARRA funding provides the ability to accelerate the completion of this work by up to five years; from 2016 to 2011. Project work will accelerate the drilling and installation of new groundwater remediation systems/facilities in the 200 West and 100 D Areas. Implementing this ARRA scope supports footprint reduction activities of the Central Plateau and River Corridor and is considered a component of the final remedy for groundwater operable units located in the 100 and 200 areas including 200-UP-1, 200-ZP-1, 100-HR-3, and

100-KR-4. Additionally, it will accelerate decommissioning of wells by approximately 5 years. The ARRA scope of the Central Plateau Soil and Groundwater Remediation project is divided into both clean-up capital asset and operations component activities.

RL-0030.R1.1 (Clean-up Capital Asset: Groundwater Pump and Treat Remedies):

RL-0030.R1.1 is the clean-up capital asset component which includes two major activities: 1) Design, well drilling (22 wells including 5 TPA M-24 groundwater monitoring wells) and construction/testing of the 200 West Groundwater Pump and Treatment major system components which provides the capability to remediate contaminated groundwater in the 200 West Area of the Central Plateau; and 2) Construction of the 100DX groundwater Pump and Treat facility which is key to meeting the goal to contain chromium at Hanford.

RL-0030.R1.2 (Operations):

RL-0030.R1.2 is the operations component which includes: 1) Installation of 243 wells and/or boreholes along the river and in the Central Plateau, 2) Decommissioning 280 old wells and boreholes and 3) Soil and Groundwater Construction and Maintenance Facility complex to support the increase in construction, operations and maintenance of the Hanford Site's Pump and Treat systems.

This project supports the following DOE and EM Strategic Goals and Themes:

- DOE Strategic Plan Theme 4 –Environmental Responsibility Protecting the environment by providing a responsible resolution to the environmental legacy of nuclear weapons production.
- DOE Strategic Plan Theme 5 Management Excellence Enabling the Department's mission through sound management and business practices.
- EM Recovery Goals Soil and groundwater remediation and reduction of environmental threats to areas surrounding the sites.

The original purpose and scope of the existing contract will not change with the addition of the ARRA funding. The overall goal is to accomplish the mission of DOE-RL by eliminating environmental threats to the Columbia River and reducing the overall footprint of the Hanford Site through remediation of soil and groundwater.

De-inventory and Demolition Projects:

N/A

Work Scope Changes:

The original scope for this project has not changed since its inception. However, per direction of DOE EM, the project was split to clearly delineate the clean-up capital asset and operations components of the project.

Buy Back Work Scope:

Because the focus on the Hanford Site is to apply performance-based contracting and project management methodologies while implementing techniques that maximize performance efficiencies through innovation and scope completion, the possibility exists that remaining project funds will be available at or before project completion. These remaining funds may be a result of cost savings due to efficiencies or Management Reserve (MR) and Contingency unused due to unrealized risk with planned ARRA work. These remaining funds will further help DOE realize the accelerated cleanup of the Hanford site and support the Hanford ARRA mission of creating jobs, reducing the footprint and realizing lifecycle cost savings. Subsequently, forecast planning has occurred to identify a list of existing 2011-2012 work scope candidates (with Rough Order of Magnitude (ROM) estimates) that may be accelerated with potential remaining funds.

Based on the potential availability of funds from unused management reserve and contingency funds and from cost efficiencies in executing the planned projects, the following additional candidate projects have been identified should funding become available.

Central Plateau Soil and Groundwater	ROM Estimate
Soil and GW Activity	
200 West P&T Startup/Ramp-up activities.	\$13M
River Corridor CERCLA Final Decision Documentation	\$16M
River Corridor Modification and Expansion of Groundwater P&T systems	\$20M
River Corridor Pump and Treat Operations and Maintenance	\$ 5M
Central Plateau Modification and Expansion of Groundwater P&T systems	\$15M

Note: This list contains forecasting information. Work will only occur if remaining funds are realized and may only occur for part of the list or a portion of a single Buy Back list item.

Public Benefits:

Public benefits resulting from ARRA funding range from job creation, to cost savings over the life-cycle of the EM program, to enhanced environmental protection due to the

cleanup and closure of the Hanford sites from the former nuclear weapons complex. High-risk facilities will be deactivated and demolished.

ARRA funding will be used by Hanford contractors to accelerate cleanup of the former weapons complex and nuclear research facilities. The site contractors and subcontractors will employ workers to perform the additional soil and groundwater remediation, decontamination and decommissioning, and waste processing activities. The additional jobs are expected to extend through the entire period of ARRA activities in EM.

To counteract the unemployment in Washington State and bolster the local economy, numerous on-site jobs will be created and/or retained at Hanford by implementing this project. Types of jobs created or retained will include well drillers, soil excavation personnel, construction and demolition personnel, waste processors and handlers, railroad train crews, waste truck drivers, construction laborers, engineers, heavy equipment operators, field technicians, and administrative support workers. The large number of workers trained by completing this project would be available for future missions. Personnel brought in for this initiative could also provide a critical source of employees to support completion of the EM mission at the site necessitated by the current aging Hanford workforce and attrition associated with the expanding nuclear industry. Surrounding area businesses will also experience job creation benefits from this work scope initiative. Additional benefits of off-site jobs will likely be created in the surrounding communities due to the influx of new workers.

Recovery Act Project Impacts:

Hanford has demonstrated success in solid radioactive waste disposition, soil and groundwater remediation, and facility decontamination and decommissioning. Hanford will effectively spend the ARRA funding because these cleanup activities are associated with:

- Proven technologies—on-the-shelf plans and projects ready to be implemented
- Regulatory infrastructure in place—established regulatory framework with regulator and community support
- Acquisition structure in place—flexible contract vehicles allow quick expansion of environmental cleanup workforces
- Project Management structure in place—ability to track and measure performance.

Investment in this project will contribute to the prevention of groundwater contaminants from migrating to the Columbia River. This scope contributes in preventing further groundwater degradation, restoring groundwater to beneficial use and enabling reuse of EM infrastructure for other energy missions, other industrial, commercial, recreational and/or community uses. This project will provide a ROM life-cycle savings of approximately \$192M. There is an expectation that project risks will be reduced by implementing regulatory strategies in the near term which is not included in this subproject's estimated Life-Cycle cost savings.

II. COST & SCHEDULE-

Budget:

Tables below include the high level spend plan from April 2009 through September 2011 (expenditures) and obligation of ARRA funds, from April 2009 through September 2010.

Table 1: Budget Implementation Monthly Obligations (actual obligations to contractors for Apr 2009 through Feb 2010 and projected obligations to contractors for Mar 2010 through Sept 2010) (\$M)

The Project funding is subject to re-apportionment and will be finalized by 9/30/2010; the Project Operating Plan will then be reissued with an obligations table.

Table 2: Budget Implementation Actual and Planned Monthly Expenditures (actual accumulative cost from Apr 2009 thru Apr 2010 and projected costs for Mar 2010 through Sept 2011 and then, if applicable, projected quarterly expenditures in FY2012) (\$M)

The Project funding is subject to re-apportionment and will be finalized by 9/30/2010; the Project Operating Plan will then be reissued with a costs table.

Funds Returned and Offsetting Collections:

N/A

Table 3: Funds Returned and Offsetting Collections (\$M)

	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Indirect Costs:

This work will be performed by facility management contractors utilizing an approved indirect rate structure. All Hanford contractor indirect rates are subject to an annual audit review by the Defense Contract Audit Agency (DCAA) and require final approval by the Contracting Officer.

The Plateau Remediation Contract (PRC) has a General and Administrative (G&A) rate of 15.6%. G&A functions include Finance, Human Resources, Legal, Internal Audit, Procurement, Information technology, organizational administration, dosimeter and usage based services supporting overhead activities. Because G&A is distributed on a total cost base for the Plateau Remediation Contract (PRC), ARRA funds will also be assessed G&A. Since the ARRA funds represent a significant increase in contract funding it is likely the G&A rate will decrease in the out-years.

Changes to Baseline Budget:

Table 4: Changes to Baseline Budgets (\$M)

Not applicable

Milestones:

Milestone Date	Description
	ARRA milestones are under configuration management and are currently captured in DOE EM Integrated Planning, Accountability, and Budgeting System (IPABS) with monthly reporting of performance

Note: Targets and performance measures are provided in Table 6a.

NEPA Compliance:

N/A (The scope of work is being undertaken pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); separate NEPA reviews are not required. The NEPA Compliance Officer will monitor implementation and, as necessary, determine whether future NEPA review is required.)

Project Management:

In executing the RL-0030.R1.1 ARRA component, DOE-RL will implement the project management requirements of DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets*. DOE-RL will use the flexibility afforded by DOE O 413.3A and tailor its requirements to this project DOE-RL will also utilize Integrated Project Teams (IPTs) comprised of Federal and contractor professionals of diverse disciplines with specific knowledge, skills, and abilities necessary to support successful project execution. Project Directors, contracting officers, safety and quality, legal, and technical personnel also participate on IPTs. Utilizing DOE O 413.3A best practices, DOE-RL cost estimates and schedules were developed at high confidence levels. Risk, cost and schedules were stated at an 80% confidence level. Additionally, this project has an approved Project Execution Plan that is being used to manage the project.

Table 5: Delivery Schedule for Clean-up Capital Asset Projects

Program/OECM Milestone	Delivery (End) Date	Comments
Develop capital asset projects Integrated Project List	June 2009	N/A
Develop Parametric Performance	June 2009	N/A
Baseline (Individual Projects)	N/A	N/A
If < \$100 M Perform IPR, > \$100 M Perform EIR (Individual	N/A	N/A
Projects)		

Approve Contractor's Performance	July 2009	N/A
Baseline		
	July 2009	100DX P&T
Approve Start of Construction		
	November 2009	200 West P&T
Project Completion	September 2011	N/A

III. PERFORMANCE

The table below lists the Project Performance targets for RL-0030.R1.1 (Groundwater Pump and Treat Remedies) and RL-0030.R1.2 (Operations)

Table 6a: Project Performance Targets

	T				
ARRA Project Identification Code	2002141				
Linkage To S-1 Priorities	National Security and Legacy - Eliminate environmental threats to Columbia River, Remediation of waste sites, Decontamination and Decommissioning of legacy facilities, Reduce EM legacy footprint				
Linkage to Current Program Goal	EM Goals – Environmental responsibility to protect the environment				
ARRA Overall Performance Measure	By the end of Fiscal year 2011, complete construction of 100 DX facility in the River Corridor and complete construction of major system components for the 200 West groundwater pump and treat system in the Central Plateau as well as install a total of 265 Wells/Boreholes and decommission 280 Wells/Boreholes				
Groundwater Pump and Treat Remedies (RL-0030.R1.1)					
-	()				
Key Performance Parameter 1:	Construct 200 West Groundwater Pump and Treatment Major system components				
·	Construct 200 West Groundwater Pump and Treatment				
Key Performance Parameter 1:	Construct 200 West Groundwater Pump and Treatment Major system components Percent complete on 30% design milestone. Percent complete on design milestone Percent complete on construction of major system components/ process equipment installation/testing				
Key Performance Parameter 1: Associated Key Metrics:	Construct 200 West Groundwater Pump and Treatment Major system components Percent complete on 30% design milestone. Percent complete on design milestone Percent complete on construction of major system components/ process equipment installation/testing milestone. Install 22 wells (including 5 TPA M-24 groundwater monitoring wells) to establish the well network to support				

Associated Key Metrics:	 Percent complete on 30% design milestone Percent complete on design milestone Percent complete on construction completion milestone 					
Оре	rations (RL-0030.R1.2)					
Key Performance Parameter 1:	Install 243 wells and/or boreholes along the river and in the Central Plateau					
Associated Key Metrics:	Wells and boreholes completed (#)					
Key Performance Parameter 2:	Decommission 280 old wells and boreholes					
Associated Key Metrics:	Wells and boreholes decommissioned (#)					
	Quarterly Targets					
First Year Performance Target (2009)	Initiate procurement activities for Hanford Soil and Groundwater					
Q3 - Project-Level Quarterly Performance Milestone(s)	Issue notice to proceed					
Q4 - Project-Level Quarterly Performance Milestone(s)	 Complete Contract Modification for definitized ARRA work scope Initiate design for 200 West and 100DX pump and treat Mobilize, support, and initiate well installation Initiate Decommissioning of wells/boreholes 					
Second Year Performance Target (2010)	Achieve progress in well installation to support 100D Pump and Treat Implementation					
Q1 - Project-Level Quarterly Performance Milestone(s)	 Continue well installation Start construction of 100DX pump and treat facility Start 200 West pump and treat procurements Continue decommissioning of wells/boreholes 					
Q2 - Project-Level Quarterly Performance Milestone(s)	 Continue well installation Continue construction of 100DX pump and treat facility Continue 200 West pump and treat design and procurements Continue decommissioning of wells/boreholes 					
Q3 - Project-Level Quarterly Performance Milestone(s)	 Continue well installation Continue construction of 100DX pump and treat facility Continue 200 West pump and treat design and procurements Continue Decommissioning of wells/boreholes 					
Q4 - Project-Level Quarterly Performance Milestone(s)	 Continue well installation Continue construction of 100DX pump and treat facility Start construction of 200 West pump and treat major system components Continue decommissioning of wells/boreholes 					
Third Year Performance Target (2011)	Achieve construction completion for groundwater remedies					

	in the 100D and 200 West Areas					
Q1 - Project-Level Quarterly Performance	Continue well installation					
Milestone(s)	Continue construction of 100DX pump and treat facility					
	Continue construction of 200 West pump and treat major system components					
	Continue decommissioning of wells/boreholes					
Q2 - Project-Level Quarterly Performance	Continue well installation					
Milestone(s)	Continue construction of 100DX pump and treat facility					
	• Continue construction of 200 West pump and treat major system components					
	Continue decommissioning of wells/boreholes					
Q3 - Project-Level Quarterly Performance	Continue well installation					
Milestone(s)	Continue construction of 100 DX pump and treat facility					
	Continue construction of 200 West pump and treat major					
	system components					
	Continue decommissioning of wells/boreholes					
Q4 - Project-Level Quarterly Performance	Complete well installation					
Milestone(s)	• Construction completion of 100DX pump and treat facility					
	Construction of 200 West pump and treat major system					
	components complete					
	Decommissioning of wells/boreholes complete					

Table 6b. Groundwater Pump and Treat Remedies (RL-0030.R1.1) Detailed ARRA-Specific Project Performance Measures and Targets

	Pump and Treatment (RL-0030.R1.1)											
	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	Total
	2009	2009	2010	2010	2010	2010	2011	2011	2011	2011	2012	ARRA
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Target	Target
	Target	Target	Target	Target	Target	Target	Target	Target	Target	Target		
Construct 200 West Groundwater Pump and Treat Major system components	Configured records of planned ARRA time-phased metrics are currently captured in IPABS with monthly reporting of performance									Percent Complete		
Install wells to establish the well network to support 200 West Groundwater Pump and Treatment System	Configured records of planned ARRA time-phased metrics are currently captured in IPABS with monthly reporting of performance N/A 22 Wells									22 Wells		
100 D Area groundwater pump and treatment facility construction complete							sed metr erforman		urrently		N/A	Percent Complete

Table 6c. Well Completion and Borehole Remediation (RL-0030.R1.2) Detailed ARRA-Specific Project Performance Measures and Targets

	Operations (RL-0030.R1.2)											
Install wells and/or boreholes along the river and in the Central Plateau (plus the 22 from R1.1 equal 265)						FY 2010 Q4 Target ime-phasing of pe			FY 2011 Q3 Target urrently	FY 2011 Q4 Target	FY 2012 Target N/A	Total ARRA Target 243 Wells/B oreholes
Decommissi on old wells and boreholes	missi Configured records of planned ARRA time-phased metrics are currently captured in IPABS with monthly reporting of performance								N/A	280 Wells/B oreholes		

Note: PMM program goals are being accelerated through ARRA funding. The period of performance for the ARRA work is April 2009 through September 30, 2011. Contractors will continue to use approved processes and procedures to meet these requirements. Additionally, the contractor shall certify in each monthly report that the costs included in the report for ARRA work were incurred only to accomplish the ARRA work in accordance with the accelerated work scope. For Key Performance Parameter 1 (R1.1 refer to Table 6a), major system component construction for the 200 West Pump and Treat System includes the Radiological Treatment building, Bio-process building, 4 Transfer buildings, transfer piping, and major process equipment installation and component testing. For Key Performance Parameter 3 (R1.1), construction complete for the 100 D Area (DX) groundwater pump and treat facility includes the Process building, two transfer buildings, transfer piping, and the necessary tie-ins between those major components.

National Strategic Benefits:

This project provides for protection of the Columbia River and therefore has significant benefit to the Pacific Northwest. It does not directly provide national strategic benefit such as reduction of carbon emissions or oil consumption.

Table 7: National Strategic Benefits

Recovery Act National strategic goals	Benefits
Promote Energy Efficiency	N/A
Deploy Renewable Power	N/A
Modernize the Grid	N/A
Reduce Oil Consumption	N/A
Restore America's Scientific Leadership	N/A
Reduce Legacy Environmental Footprint	N/A

IV. MANAGEMENT

Secretarial-level Items:

Table 8: Secretary's Priorities

Secretary's Priorities	Project Impacts (Qualitative)	Project Impacts (Quantitative)
Science and Discovery	N/A	N/A
Clean, Secure Energy	N/A	N/A
Economic Prosperity	Create new jobs.Retain existing jobs.	• Support overall RL goal of 3900 jobs (See Note)
National Security and Legacy	 Eliminate environmental threats to Columbia River. Remediation of contaminated groundwater/soil Reduce operational footprint of Hanford Site 	 200 West pump and treat major system component construction complete. 100-DX Area groundwater pump and treatment facility construction complete. Decommissioning of 280 legacy wells/boreholes.
Climate Change	N/A	N/A

Note: Quantitative goal of 3900 jobs is subject to change based on EM and OMB guidance.

Collaboration and Coordination

Commercially-operated waste treatment/storage/disposal Facilities will be needed to support treatment of waste generated during the ARRA Project. Coordination with these interfaces already exists however will be enhanced throughout this project.

The DOE-RL Procurement Division will continue to work closely with DOE-EM and DOE-MA to insure timely business clearance approval for procurement actions that exceed local authority.

There are many external interfaces associated with the normal base program and ARRA project work and operations at Hanford. These include:

• National Labs Pacific Northwest National Laboratory

• **Regulatory** Environmental Protection Agency, Washington Department of Ecology, Department of Transportation, and Defense Nuclear Facilities Safety Board

• Community Hanford Advisory Board, Tribal Nations, Benton and

Franklin Counties, cities of Richland, Pasco and

Kennewick, Surrounding States, Oregon, and Idaho

• Industry Environmental Engineering/Remediation, Waste

Management, Construction, Cement, Container,

Transportation, Housing, Utilities, etc.

• Universities/Other Other RL Contractors, Labor Unions, Parent Companies,

Local Universities/Colleges

Federal Infrastructure Investments:

N/A

Line Management

In executing the clean-up capital asset (RL-0030.R1.1) component for this ARRA project, DOE-RL will implement the project management requirements of DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets*.

DOE-RL intends to use existing EM site systems and practices to effectively monitor and report on the ARRA Project activities, including:

- Fully implement the ARRA transparency and reporting requirements through modifications to the contract that will fund this ARRA Project.
- Continue using approved programs and procedures currently in place with Hanford contractors and their subs, applying project management principles to ARRA Project execution, including reviewing and validating EM project cost and schedule baselines consistent with DOE Order 413.3 and identifying project risks and strategies for managing them.
- Continue use of industry standard Earned Value Management System (EVMS) to compare actual project scope, cost, and schedule performance against planned performance as depicted in the baseline.
- Continue monitoring of the contractors' EVMS reports to ensure the ARRA Project is on track and, if not or if trends are in a negative direction, to develop and implement corrective actions.
- Hold monthly management reviews to provide updates on the ARRA Project to EM's senior-most executives.
- Secure support service contractors to provide support to federal staff in the areas of procurement, project controls, safety, and project support.
- Assign appropriately qualified staff to the ARRA Project to provide technical and programmatic oversight of the contractors performing the work and be the day-today governmental interface and manager for the project.
- Use an Integrated Project Team (IPT) of Federal and contractor staff with project knowledge and subject matter expertise essential to the successful planning and

execution of the project – including safety, risk management, engineering, quality assurance, contracts administration, and project controls.

• Develop detailed risk management plans for the ARRA Project to identify and mitigate risks, and assign roles and responsibilities for managing the risks.

Needs from Staff Offices:

1) Human Capital

DOE-RL will continue to use support service contractors to provide support to federal staff in the areas of procurement, project controls, safety and project support.

Note: DOE-RL has developed an integrated incremental staffing profile to support staff administering ARRA work. This staffing profile is wholly contained in Central Plateau D & D Project Operating Plan (2002140 Project RL-0040.R1.3)

Table 9: Information on Hiring Under the ARRA

# & Type of Positions (Title, Series and Grade)	Location (HQ or Field – w/location)	Federal or Contractor	Timeframe (1-6mos; 6+mos; other; specify date needed if possible)
N/A	N/A	N/A	N/A

2) Procurement

Though scope will be accelerated with the addition of ARRA funds, the original scope and purpose of the contract will not change. The purpose of this contract continues to be furnishing safe, compliant, cost-effective and energy-efficient services to further the DOE-RL mission.

This contract applies performance-based contracting approaches; expects the Contractor to implement techniques that maximize performance efficiencies, through innovation and scope completion, and minimize the description of how to accomplish the scope of work. The contractor is responsible for determining the specific methods and approaches for accomplishing the work scope in accordance with contract required environmental, safety and health (ES&H) requirements. The intent of the proposed contract modifications is to provide additional funding to meet the original contract funding profile and accelerate defined work that was contemplated in the contract period.

Table 10: Procurement Plans

Activity	Type	New/Exist (N/E)	Changes (E), Needs (N)	Status	Expected Complete	Issues (Y/N)
Plateau Remediation Contract - Environmental Remediation Work	Contract	Е	(E) Funding Modifications	Contract Mod A037 signed April 9, 2009; Contract Mod M047 and 087 December 2009	Completed	N