Richland - Hanford Site - Soil and Groundwater - River Corridor Closure Project Operating Plan

BACKGROUND

ARRA Project: Richland - Hanford Site – River Corridor Soil and

Groundwater ARRA Project

TAFS: 89-09/10-0253

Project Identification Code: 2002143

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

Development, Defense Environmental Cleanup

(H.R. 1-26)

Project Cost: \$76,754,000

Budget Authority: STARS Fund Code: 06049, FD0221 **Program Office:** Environmental Management (EM)

Recovery Program Plan: EM - Defense

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LEADS

Implementation: Richland – Hanford Site

Breakthrough: NA **Laboratory:** NA

I. <u>SUMMARY & OBJECTIVES</u>

Summary:

The River Corridor Soil and Groundwater project involves the 618-10 and 618-11 burial grounds which present a risk to the Columbia River and are located near the City of Richland. The project scope includes nonintrusive characterization of the Trenches, Vertical Piping Units (VPU) and caissons at 618-10 and 618-11 and the intrusive characterization of the 618-10 burial ground trenches containing radioactive and hazardous constituents. The project also initiates remediation of the 618-10 trenches. Both the remainder of the 618-10 trench and all VPU remediation and all 618-11 remediation will be completed post ARRA. The required funding from the American Recovery and Reinvestment Act (ARRA) supports the mission of DOE and the Office of Environmental Management (EM) by accelerating completion of existing cleanup goals, in many cases much earlier than originally planned. ARRA funding will provide the resources necessary to conduct the above described characterization activities and initiate

the remediation of hazards at the Burial Ground 618-10 Trench in accordance with the requirement under the Tri-Party Milestone (M-16-00B) having a compliance date of September 30, 2018. Remediation of the burial ground trench also supports the 300-FF-2 Record of Decision. This work will also reduce environmental threats to areas surrounding the sites, including the Columbia River and will produce a significant number of jobs both directly and indirectly.

RL-0041.R2 (618-10/11 Burial Grounds):

- Non Intrusive Characterization

The absence of formal waste disposal records and the risk of the unknown dictate a two phased approach to characterization. The first phase will concentrate on non-intrusive characterization activities. The term "non-intrusive" denotes that the trench contents will be characterized using methods which prevent the contents from being accessible to personnel or the environment. The Non-Intrusive Characterization (NIC) Project Implementation Plan was submitted and approved in 2008. The plan includes the Sampling and Analysis Plan (SAP), DOE/RL-2008-27 that establishes the non-intrusive sampling requirements to be performed without removing waste materials from the area. If work under the NIC Study determines that a confinement is not required for excavation in the trenches, then the project will proceed with on-site monitoring, conducting readiness reviews, and performing geophysical surveys of two trenches in order to characterize waste types and forms.

The work scope for the first phase also includes review and documentation for project start-up activities necessary for mobilization, VPU and trench radiological characterization, and VPU soil sampling. This effort will provide data and information needed for planning the next stage of activities.

- Intrusive Characterization

In the second phase, intrusive trench characterization activities will be conducted to provide additional information on the actual form, level of contamination, condition and retrievability of various waste types within the burial ground trenches. ARRA funding is being used to conduct the work necessary for an understanding of the quantity and condition of the material deposited in these burial grounds prior to remediation. The results of characterization efforts will be evaluated to establish the appropriate worker/environmental controls to safely proceed with future remediation activities.

- 618-10 Remediation

Remediation includes development of the Remediation Plan to provide the basis for remediation of the 618-10 Burial Ground trenches. The planning base for the Remediation Plan will require completion of the NIC and Intrusive

Characterization to fully define confinement and excavation/retrieval methodologies.

Beginning characterization work now accelerates the initiation of remediation of the 618-10 Burial Ground Trenches by approximately 5 years. The NIC, intrusive characterization and initiation of 618-10 remediation is scheduled for completion by the end of fiscal year 2011. The NIC of 618-11 is scheduled for completion by the end of fiscal year 2011 as well.

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 Reduce Legacy Environmental Footprint.

The original scope and purpose of the existing contract does 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 burial grounds.

De-inventory and Demolition Projects:

N/A

Work Scope Changes:

The original scope for this project has not changed since its inception. However, the original plan metrics to utilize number of trenches remediated as the Performance Measure for this project have changed. As a result of record reviews, field analysis and further project definitization, configuration of the waste in the burial ground is not conducive to reporting number of trenches remediated as a Performance Measure. In addition, there are many unknowns associated with this burial ground resulting in high risk of frequent stops and starts in excavation as drums, structural steel, large tanks and problem waste streams are uncovered and issues resolved. There is a high risk of discovery of unknown waste which may require movement to another dig location within a Zone. For these reasons the Performance Measure has been revised to reflect a KPP of Zone 1, Zone 2 & Zone 3 percent complete based on a volume (bank cubic meters – BCM) excavated. Remediation completed in Zone 1, 2, & 3 has been defined with target percent (and associated BCM volume) to be completed within each Zone. Zone completion will be computed on estimated total volume to be removed: Zone 1 is estimated to contain 13k BCM, Zone 2 is estimated to contain 19k BCM, Zone 3 is estimated to contain 42k BCM. At the completion of the Remediation Plan scheduled

December 2010 the Zone metrics will be updated based on characterization results. The revised KPPs are contained in Table 6a of this document.

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.

RCC Soil & Groundwater (618-10/11 Burial Grounds)	ROM Estimate
Continue remediation and perform treatment at 618-10 Burial Ground	\$10M

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. This will reduce the potential safety and health risks.

Recovery Act 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 hire 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 rate in Washington State of 9.2 percent 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, 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:

Investment in this project will aid in the reduction of the overall operational footprint of the Hanford Site through cleanup of contaminated areas adjacent to the Columbia River. Potential out-year savings include accelerating field remediation of this ARRA project originally scheduled to take place by 2018 to be completed during FY 2009-2011 providing a ROM savings of \$8M. This acceleration will enable reuse of EM infrastructure for other energy missions and/or community uses.

II. COST & SCHEDULE

Budget:

Tables below include the high level spend plan from April 2009 through September 2011 (expenditures) and obligation of Recovery 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 River Corridor Closure (RCC) contractor indirect rates and disclosure statement are being audited by the Defense Contract Audit Agency. Once the audits are completed final approval by the Contracting Officer is required.

Changes to Baseline Budget:

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

Not applicable

Milestones:

Milestones 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 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 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 Capital Asset Projects

Program/OECM Milestone	Delivery (End) Date	Comments
Develop capital asset projects	6/17/2009	N/A
Integrated Project List		
Develop Parametric Performance	7/24/2009	N/A
Baseline (Individual Projects)		
If < \$100 M Perform IPR, > \$100	N/A	N/A
M Perform EIR (Individual		
Projects)		
Approve Contractor's Performance	Phase I Oct 2009	N/A
Baseline	Phase II June 2010	
Approve Start of Construction	N/A	N/A
Project Completion	9/30/2011	N/A

III. PERFORMANCE

The table below lists the Project Performance targets for RL-0041.R2 618-10/11 Burial Grounds.

Table 6a: 618-10/11 Burial Grounds Project Performance Targets

ARRA Project Identification Code	2002143
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
Linkage to Current Program Goal (if applicable)	EM Goals – Environmental responsibility to protect the environment; remediate existing waste sites; and to D&D

	contaminated facilities no longer needed to carry on current EM mission.						
ARRA Overall Performance Measure	Complete characterization and initiate remediation of 618-10, and initiate characterization of 618-11 Burial Grounds by 2011 including excavation of Zone 1, 2 & 3, (32k bank cubic meters (BCM)) from 618-10 Burial Grounds. KPP listed below:						
618-10/11 Burial Ground Remediation (RL-0041.R2)							
Key Performance Parameter 1: Complete characterization and initiate remediation of 618-10 Burial Ground.							
Associated Key Metrics:	Complete 80% of Zone I (11k BCM), 80% of Zone 2 (15k BCM) & 15% of Zone 3 (6k BCM) of 618-10 burial ground (excavate 32k BCM's from the 618-10 burial ground trenches)						
	Quarterly Targets						
First Year Performance Target (2009)	Initiate procurement activities for River Corridor Soil and Groundwater						
Q3 - Project-Level Quarterly Performance Milestone(s)	 Issue notice to proceed Initial Change Request submitted. Award contract for 618-10 Non-Intrusive Characterization Initiate procurement activities for River Corridor Soil and Groundwater 						
Q4 - Project-Level Quarterly Performance Milestone(s)	Mobilize for 618-10 non-Intrusive Characterization						
Second Year Performance Target (2010)	Complete Characterization of River Corridor Soil and Groundwater (618-10 Trenches)						
Q1 - Project-Level Quarterly Performance Milestone(s)	 Develop 618-10 Trench Remediation Plan Initiate 618-10 Non Intrusive Characterization Trenches & VPUs 						
Q2 - Project-Level Quarterly Performance Milestone(s)	Continue 618-10 Non Intrusive Characterization Trenches & VPUs						
Q3 - Project-Level Quarterly Performance Milestone(s)	 Complete 618-10 Non Intrusive Characterization Trenches & VPUs Mobilize and initiate 618-10 Intrusive Characterization of burial ground 						
Q4 - Project-Level Quarterly Performance Milestone(s)	Complete 618-10 Trench Intrusive Characterization						
Third Year Performance Target (2011)	Complete Remediation Planning and initiate remediation of 618-10 Trenches						
Q1 - Project-Level Quarterly Performance Milestone(s)	Complete 618-10 Trench Remediation Plan & Update Zone Metrics						
Q2 - Project-Level Quarterly Performance Milestone(s)	Mobilize and set up for 618-10 Remediation						
Q3 - Project-Level Quarterly Performance Milestone(s)	 Initiate 618-10 Trench Remediation Complete 10,000 BCM excavation from 618-10 Zone 1, 2 & 3 						

Q4 - Project-Level Quarterly Performance	•	Continue 618-10 Trench Remediation
Milestone(s)	•	Complete 22,000 BCM excavation from 618-10 Zone 1, 2
		& 3 (32k BCM cumulative)

Table 6b. 618-10/11 Burial Ground Detailed ARRA-Specific Project Performance Measures and Targets

	Hanford – 1041 Soil and Groundwater (RL-0041.R2)											
	FY 2009 Q3	FY 2009 Q4	FY 2010 Q1	FY 2010 Q2	FY 2010 Q3	FY 2010 Q4	FY 2011 Q1	FY 2011 Q2	FY 2011 Q3	FY 2011 Q4	FY 2012 Target	Total ARRA Target
	Target	Target	Target	Target	Target	Target	Target	Target	Target	Target		
Excavate	Excavate Configured records of planned ARRA time-phased metrics are currently								N/A	32,k		
from 618- captured in IPABS with monthly reporting of performance									BCM			
10 Burial												
Grounds												

Note: PMM program goals are being accelerated through Recovery Act 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.

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
Reduce Greenhouse Gas Emissions	N/A

IV. MANAGEMENT

Secretarial-level Items:

Table 8: Secretary's Priorities

Secretary's Priorities	Project Impacts	Project Impacts
	(Qualitative)	(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 waste sites Decontamination and Decommissioning of legacy facilities 	Excavate 32k BCM's of waste from the 618-10 burial ground
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 and 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.

DOE-RL will continue to work with Energy Northwest (Public Utility operator of the Columbia Generating Station) on their license amendment pending with the U.S. Nuclear Regulatory Commission. The licensing amendment is related to their Emergency Plan.

There are many external interfaces associated with the normal base program and Recovery Act 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, Nevada, and Utah

• 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:

As with project management, DOE-RL line management will follow 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. This tailored approach will maintain the utility and value of clear project definition, configuration management and change control, and sound project controls, including earned value management.

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

- Fully implement all 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 River Corridor Closure 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)
River Corridor Closure Contract - Environmental	Contract	E	(E) Funding Modifications	Contract Mod A099, April 9 2009	Completed	N
Remediation Work				Contract Mod A105, April 30, 2009	Completed	N
				Contract Mod A126, July 23, 2009	Completed	N
				Contract Mod A139, Sept.3, 2009	Completed	N
				Contract Mod A142 September 2009	Completed	N
				Contract Mod A174, Feb, 22, 2010	Completed	N
				Contract Mod A182, Mar 25, 2010	Completed	N
				Contract Mod A185, April 19 2010;	Completed	N
				Contract Mod A192, April 27, 2010	Completed	N
				Contract Mod A205, May 26, 2010	Completed	N