

2. AMENDMENT/MODIFICATION NO. A158	3. EFFECTIVE DATE (M/D/Y) See Block 16C	4. REQUISITION/PURCHASE REQ. NO. N/A	5. PROJECT NO. (If applicable)
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6. ISSUED BY U.S. Department of Energy Office of River Protection P. O. Box 450, MS H6-60 Richland, WA 99352	7. ADMINISTERED BY (If other than Item 6)
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8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP code) CH2M HILL Hanford Group, Inc. P.O. Box 1500 Richland, WA. 99352	<input type="checkbox"/>	9A. AMENDMENT OF SOLICITATION NO.
	<input type="checkbox"/>	9B. DATED (SEE ITEM 11)
	<input checked="" type="checkbox"/>	10A. MODIFICATION OF CONTRACT/ ORDER NO. DE-AC27-99RL14047
	<input checked="" type="checkbox"/>	10B. DATED (SEE ITEM 13) September 30, 1999

CODE	FACILITY CODE	
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11. THIS ITEM APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE DATE AND HOUR SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and amendment and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
No Funding Adjustments

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS SET FORTH IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
<input type="checkbox"/>	
<input type="checkbox"/>	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO AUTHORITY OF FAR 43.103(b).
<input type="checkbox"/>	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO THE AUTHORITY OF:
<input checked="" type="checkbox"/>	D. OTHER (Specify type of modification and authority) FAR 52-243-2 – Changes – Cost Reimbursement (AUG 1987) Alternate II (APR 1984)

E. IMPORTANT: Contractor is not, is required to sign this document and return copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

- A. The purpose of this modification is to:
1. Amend Performance Based Incentives (PBIs) 1, 3, & 4; and
 2. Incorporate additional DOE Orders
- B. Description of Modification:

1. **PBI 1 Revision 3** is now identified as **PBI 1, Revision 4**.
 - a) Page 1 of 3. Performance fee available is changed **from \$8,900,000 to \$9,000,000**;

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) D.B. Cartmell, VP Business Services and CFO	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Cloette B. Reid, Contracting Officer
15B. CONTRACTOR/OFFEROR ORIGINAL SIGNED FOR _____ (Signature of person authorized to sign)	15C. DATE SIGNED 5/21/08
16B. UNITED STATES OF AMERICA ORIGINAL SIGNED BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED 5/21/08

- b) Page 1 of 3, ORP Assistant Manager is changed from T. Smith to **D. Noyes, Acting; Assistant Manager**
- c) Page 1 of 3, PBI 1.1.f is modified to replace the word “or” with “and” **and to increase the amount of fee from \$375,000 to \$475,000**, to read: Construct one borehole, perform sampling and borehole decommission, **and** complete 25 direct push samples by September 30, 2008. The Contractor shall earn **\$475,000** in incremental fee
- d) Page 2 of 3, PBI 1.4.e – delete tank AW-102 and replace with tank **AP-105**.
- e) **PBI 1 Completion Criteria, Revision 4**, pages 1 through 7, replaces PBI 1 Completion Criteria, Revision 3 in its entirety. Changes to the Completion Criteria are within 1.1.f (note the borehole sampling and decommissioning **and** 25 direct push samples) and 1.4.e. (note change in tank number and identifying tanks as ‘receiving’ tanks).

PBI 3 Revision 1 is now identified as **PBI 3, Revision 2**

- a) Page 1 of 4, due to a reduction in scope, the Performance Fee available and assigned to this **PBI is reduced by \$100,000. Change Performance Fee available from \$11,350,000 to \$11,250,000.**
- b) Page 1 of 4, ORP Assistant Manager is **changed from T. Smith to D. Noyes, Acting.**
- c) PBI 3.2.a, Page 2 of 4: Decrease amount of incremental fee earning **from \$3,000,000 to \$2,900,000. Delete Milestone No. 6, Complete Retrieval Data Report, for \$100,000.**
- d) PBI 3.3.b, Page 3 of 4: Change amount of acceleration fee from **\$3,900,000 to \$3,450,000. Delete Milestone No. 5, Completion of retrieval operations, \$450,000.**
- e) **PBI 3 Completion Criteria, Revision 2**, pages 1 through 9, **replaces PBI 3 Completion Criteria, Revision 1 in its entirety.** Changes to the Completion Criteria relate to the deleted work scope in PBI 3.2.a, Milestone 6 and PBI 3.3.b, Milestone 5.

PBI 4, Revision 0 is now identified as **PBI 4, Revision 1.**

PBI 4 and PBI 4 Completion Criteria are replaced in their entirety and now include Interim Pretreatment System Support of Bulk Vitrification and/or Waste Treatment Plant (WTP) Low Activity Waste (LAW).

- 2. The following DOE Notice and Orders are incorporated into the Contract:
 - a) **DOE Order 142.3, *Unclassified Foreign Visits and Assignments Program***. There is no cost, schedule or performance impact as a result of this action.
 - b) **DOE Order 430.1B, Change 1, CRD, *Real Property Asset Management***. There shall be no cost, schedule or performance impact as a result of this action.
- 3. These adjustments, through mutual agreement, indicate the Government is released from further accountability attributable to any and all charges under this contract for further equitable adjustments attributable to such facts or circumstances giving rise to the FY08 Spend Forecast to date.
- 4. Revised PBIs and the PBI Completion Criteria are attached.
- 5. All other terms and conditions of this contract remain the same.

PBI-1

Performance Based Incentive (PBI) Title: Improve Performance of Tank Farms Personnel, Equipment, and Procedures (infrastructure) for the Long Term ORP Mission.

Performance Fee available and assigned to this PBI: \$9,000,000

ORP Assistant Manager:	ORP POC:	CH2M Manager:	CH2M POC:
D. Noyes, Acting	D. Noyes		

Desired Endpoint/Outcome

The contractor is managerially and operationally in control of the Tank Farms and is meeting the mission performance expectations of the Department as stipulated within the contract. Operations are completed with increasing efficiency and effectiveness allowing more resources to be applied to mission critical work. The short and long term strategic planning and support activities are completed in a manner that incrementally improves mission performance.

Fee Payment Schedule

Upon completion of each fee bearing milestone set forth herein, Contractor will be paid incremental fee, in accordance with Contract Clause H.2, "Provisional and Incremental Payments of Fee."

The fee bearing milestones shall be completed by the delivery schedule date. If the delivery schedule date is not achieved the unearned fee will be reduced to the following amounts: 90% for first quarter, 80% for second quarter, 50% for third quarter, and entire amount for one year.

Fee Bearing Milestones

1. Vadose Zone and Surface Geophysical Exploration. Performance fee \$2,600,000.
 - a. Complete the near-surface vadose zone characterization utilizing the hydraulic hammer direct push technology for 35 direct push samples by September 30, 2007. The Contractor shall earn \$300,000 in incremental fee.
 - b. Complete the near-surface vadose zone characterization utilizing the hydraulic hammer direct push technology for 35 direct push samples by September 30, 2008. The Contractor shall earn \$300,000 in incremental fee.
 - c. Deploy Surface Geophysical Exploration in two of the following 4 tank farms TX, TY, U, and B (B Farm includes B, BX, and BY) by September 30, 2007. The Contractor shall earn \$375,000 in incremental fee.
 - d. Deploy Surface Geophysical Exploration in the remaining two tank farms not completed in 1.c above by September 30, 2008. The Contractor shall earn \$375,000 in incremental fee.
 - e. Construct surface barrier over T-106 tank and associate affected area or other area with ORP concurrence by September 30, 2007. The Contractor shall earn \$375,000 in incremental fee.
 - f. Construct one borehole, perform sampling and borehole decommission and complete 25 direct push samples by September 30, 2008. The Contractor shall earn \$475,000 in incremental fee.
 1. Construct one borehole, perform sampling and borehole decommission by September 30, 2008. The Contractor shall earn \$375,000 in incremental fee.

2. Complete the near-surface vadose zone characterization utilizing the hydraulic hammer direct push technology for direct push samples by September 30, 2008. The Contractor shall earn \$100,000 in incremental fee.
 - g. Complete the Phase I RCRA Field Investigation (RFI) Report. The fee is forfeited if the work is not completed on or before the HFFACO milestone due date of January 31, 2008. The contractor shall earn \$200,000 in incremental fee.
 - h. Complete a Phase II Master Work Plan that describes the proposed approach for the completion of corrective action to meet final closure requirements in the waste management areas as described in HFFACO, Appendix I, Single-Shell Tank System Waste Retrieval and Closure Process, Section 2.3, WMA Corrective Actions. The fee is forfeited if the work is not completed on or before the HFFACO milestone due date of September 30, 2008. The Contractor shall earn \$200,000 in incremental fee.
2. Complete Double-Shell Tank (DST) Integrity Testing. Performance Fee \$1,100,000.
 - a. Complete DST integrity testing including Ultrasonic testing (UT) and video examination of 4 DST. The fee is forfeited if the work is not completed on or before the HFFACO milestone due date. The Contractor shall earn \$600,000 in incremental fee.
 - b. Complete DST integrity testing including UT and video examination of 3 DST (in addition to the DST in 2.a) in support of continuing integrity testing of DSTs by September 30, 2008. The Contractor shall earn \$500,000 in incremental fee.
3. Tank Chemistry optimization in double-shell tanks AN-102 and AN-107. Performance Fee \$300,000.
 - a. Chemistry optimization AN-107 and implementation of revised chemistry limits by September 30, 2008. The Contractor shall earn \$200,000 in incremental fee.
 - b. Chemistry optimization AN-102 and closure of the existing Technical Safety Requirements recover plan by September 30, 2008. The Contractor shall earn \$100,000 in incremental fee.
4. DST volume reductions supporting SST retrieval utilizing 242-A Evaporator operations. Performance fee \$2,000,000.
 - a. A 242-A evaporator campaign that treats at least 650,000 gals as measured in the feed tank by September 30, 2007. The Contractor shall earn \$1,000,000 in incremental fee.
 - b. A 242-A evaporator campaign that treats at least 650,000 gals as measured in the feed tank by September 30, 2008. The Contractor shall earn \$1,000,000 in incremental fee.
 - c. A 242-A evaporator campaign that treats at least 650,000 gals as measured in the feed tank by September 30, 2008. The Contractor shall earn \$250,000 in acceleration fee.
 - d. A 242-A evaporator campaign that treats at least 650,000 gals as measured in the feed tank by September 30, 2008. The Contractor shall earn \$250,000 in acceleration fee.
 - e. Blend the high sulfate waste in AZ-102, with high sodium (Na) tank waste supernate in AP-105, AP-107, and AW-106. The Contractor shall earn \$350,000 in acceleration fee.
 - f. Remove pumpable liquids from Catch Tank S-302 in accordance with ORP approved liquid mitigation plan. The Contractor shall earn \$250,000 in acceleration fee.

5. Complete 242-A Evaporator and Double-Shell Tank Integrity Assessment. Performance fee \$3,000,000.
 - a. Complete the 242-A Evaporator integrity assessment field inspections in accordance with WAC 173-303-640 (2) and considering the recommendation of the 1998 242-A Interim Evaporator Tank System Integrity Assessment Report, HNF-2905, Rev, 0 by September 30, 2008. The Contractor shall earn \$750,000 in incremental fee.
 - b. Complete the field pressure testing of five (5) double-shell tank transfer lines encasements by September 30, 2008. The Contractor shall earn \$750,000 of incremental fee.
 - c. Complete 3 core samples and analysis in support to the Double-Shell Tank System chemistry control by September 30, 2007. The contractor shall earn \$500,000 of incremental fee.
 - d. Complete 3 core samples in support to the Double-Shell Tank System chemistry control by September 30, 2008. The contractor shall earn \$500,000 of incremental fee.
 - e. Complete 5 grab samples and analysis in support to the Double-Shell Tank System chemistry control by September 30, 2007. The contractor shall earn \$250,000 of incremental fee.
 - f. Complete 5 grab samples in support to the Double-Shell Tank System chemistry control by September 30, 2008. The contractor shall earn \$250,000 of incremental fee.

**PBI-1
Signature Block**

John C. Fulton, President
and Chief Executive Officer
CH2M HILL Hanford Group, Inc.

Date

Shirley J. Olinger, Manager
U.S. Department of Energy, Office of River Protection

Date

Completion Criteria

PBI-1 Improve Performance of Tank Farm Personnel, Equipment, and Procedures (Infrastructure) for the Long-Term ORP Mission

1. Vadose Zone and Surface Geophysical Exploration (SGE) Technology.
 - a. Complete the near-surface vadose zone characterization utilizing the hydraulic hammer direct push technology for 35 direct push samples.
 - Work scope/completion criteria: Complete the near-surface vadose zone characterization utilizing the hydraulic hammer/direct push technology as per work plans developed in coordination with the site wide ground water protection program and approved by ORP which shall include geophysical logging of direct push probes and obtaining shallow soil samples using direct push technology for geochemical analysis.
 - Completion document: Samples collected per work plan and report of analytical results submitted to the ORP.
 - b. Complete the near-surface vadose zone characterization utilizing the hydraulic hammer direct push technology for 35 direct push samples.
 - Work scope/completion criteria: Complete the near-surface vadose zone characterization utilizing the hydraulic hammer/direct push technology as per work plans developed in coordination with the site wide ground water protection program and approved by ORP which shall include geophysical logging of direct push probes and obtaining shallow soil samples using direct push technology for geochemical analysis.
 - Completion document: Samples collected per work plan and report of analytical results submitted to the ORP.
 - c. Deploy Surface Geophysical Exploration in two of the following tank farms TX, TY, U, and B (B Farm includes B, BX, and BY).
 - Work scope/completion criteria: Deploy SGE technology in selected farms. Develop and demonstrate performance of SGE technology in accordance with work plans integrated with the site wide ground water protection program and approved by ORP in coordination with the groundwater integration program for the selected Tank Farms. The work plans will produce an SGE performance assessment report detailing the capability of the technology to identify contamination sources, estimate of contamination volumes, depths, and inventories.
 - Completion document: An SGE performance assessment report submitted to ORP detailing the capability and results of the technology application to identify the contamination sources, volumes, and inventories for the selected tank farms.
 - d. Deploy Surface Geophysical Exploration in remaining two tank farms not completed in 1.c.
 - Work scope/completion criteria: Deploy SGE technology in selected farms. Develop and demonstrate performance of SGE technology in accordance with work plans integrated with the site wide ground water protection program and approved by ORP in coordination with the groundwater integration program for the remaining two Tank Farms. The work plans will

produce a SGE performance assessment report detailing the capability of the technology to identify contamination sources, estimate of contamination volumes, depths, and inventories.

- Completion document: An SGE performance assessment report submitted to ORP detailing the capability and results of the technology application to identify the contamination sources, volumes, and inventories for the remaining tank farms.
- e. Construct surface barrier over T-106 tank and associate affected area or other area with ORP concurrence.
- Work scope/completion criteria: Construct one surface barrier over single-shell tank T-106. The barrier shall be greater than 1 acre designed to control infiltration greater than 25 years with limited maintenance.
 - Completion document: Letter transmitting work package documenting completion of installation of a surface barrier that meets or exceeds the completion criteria.
- f. Construct one borehole, perform sampling and borehole decommission and complete 25 direct push samples.
1. Construct one borehole, perform sampling and borehole decommission by September 30, 2008.
 - Work scope/completion criteria: Construct one borehole, perform sampling and borehole decommission. The borehole shall be located as per the Integrated Approved Workplan with specifications for characterization and decommissioning similar to currently approved TPA workplans.
 - Completion document: Letter report documenting completion of construction of one borehole, sample chain of custody records, and borehole decommission.
 2. Complete the near-surface vadose zone characterization utilizing the hydraulic hammer direct push technology for direct push samples by September 30, 2008.
 - Work scope/completion criteria: Using direct push, complete the near-surface vadose zone characterization utilizing the hydraulic hammer/direct push technology as per work plans developed in coordination with the site wide ground water protection program and approved by ORP which shall include geophysical logging of direct push probes and obtaining shallow soil samples using direct push technology for geochemical analysis.
 - Completion document: Letter report documenting completion of direct push samples collected per work plan and report of analytical results submitted to the ORP.
- g. Complete the Phase I RCRA Field Investigation (RFI) Report.
- Work scope/completion criteria: The Phase 1 RCRA Field Investigation Report integrating the data gathering activities and evaluations for all single-shell tanks waste management areas. The identified data gaps, results of science and technology, deep vadose zone inventory, conceptualization and modeling must be consistent and integrated with the groundwater integration effort. The documents shall meet or exceed the RCRA requirements and HFFACO milestone M-045-55 by January 31, 2008. The fee is forfeited if the work is not completed on or before the HFFACO milestone due date.

- Completion document: The Phase 1 RCRA Field Investigation Report integrating the data gathering activities and evaluations for all single-shell tanks waste management areas.
- h. Complete a phase II master work plan that describes the proposed approach for the completion of corrective action to meet final closure requirements in the waste management areas as described in Hanford Federal Facility Agreement and Consent Order, Appendix I, Single-Shell Tank System Waste Retrieval and Closure Process, Section 2.3, WMA Corrective Actions.
- Work scope/completion criteria: The phase II master work plan that describes the proposed approach for the completion of corrective action to meet final closure requirements in the waste management areas as described in TPA Appendix I, Section 2.3. The documents shall meet or exceed the RCRA requirements and HFFACO change number M-45-06-03 by September 30, 2008. The fee is forfeited if the work is not completed on or before September 30, 2008.
 - Completion document: Submit a phase II master work plan to ORP for transmittal to the State of Washington Department of Ecology (Ecology) by September 30, 2008, to meet HFFACO Milestone M-48-48.
2. Complete Double-Shell Tank (DST) Integrity Testing.
- a. Complete DST integrity testing including Ultrasonic testing (UT) and video examination of 4 DST. The fee is forfeited if the work is not completed on or before the HFFACO milestone due date.
- Work scope/completion criteria: Complete and document DST Integrity Testing, including DST UT, and video examinations of four DSTs per the requirement of HFFACO Milestone M-48-15.
 - Completion document: Issue of Four (4) DST ultrasonic testing and video examination reports to the ORP for transmittal to the State of Washington Department of Ecology (Ecology) by September 30, 2007, to meet HFFACO Milestone M-48-15. (Two (2) DSTs of the six (6) UT reports required for M-48-15 will be completed in FY 2006.)
- b. Complete DST integrity testing including UT and video examination of 3 DST (in addition to the DST in 3.a) in support of continuing integrity testing of DSTs.
- Work scope/completion criteria: Complete DST Integrity Testing, including DST UT, and video examinations of three DSTs, per same technical requirement as those performed for M-48-15, in support of continuing integrity testing of DSTs.
 - Completion document: Issue three (3) DST Ultrasonic testing and video examination reports to the ORP.
3. Tank Chemistry optimization in double-shell tanks AN-102 and AN-107.
- a. Chemistry optimization AN-107 and implementation of revised chemistry limits.
- Work scope/completion criteria: Required activities include AN-107 corrosion probe turnover and monitoring, removal of corrosion coupons for forensic examination, if required, submittal of a tank waste chemistry safety basis amendment and the implementation of the safety basis amendment.
 - Completion document: Implementation of the safety basis amendment and completion of all actions of Tank 241-AN-107 Recovery Plan, Rev 0. Letter notifying ORP of completion.

- b. Chemistry optimization AN-102 and closure of the existing Technical Safety Requirements recover plan.
 - Work scope/completion criteria: Required activities include grab sampling, core sampling, and caustic additions, if required, associated with a technical safety requirement (TSR) recovery plan for low hydroxide in the waste solids; and implementation of revised waste chemistry limits.
 - Completion document: Letter report to ORP documenting completion of all required actions due prior to September 30, 2008 of Tank 241-AN-102 Recovery Plan, Rev 6 or latest revision as of September 30, 2007.

4. DST volume reductions supporting SST retrieval utilizing 242-A evaporator operations.
 - a. A 242-A evaporator campaign that treats at least 650,000 gals as measured in the feed tank.
 - Work scope/completion criteria: Operate the 242-A evaporator as a key component of the transfer and treatment system for tank farms to meet or exceed 650,000 gals of feed by volume as measured in the feed tank. The evaporator campaign will process the waste to the parameters determined by process engineering. The volume reduction will be determined by the process control plan (e.g., specific gravity goal and limits on the amount of waste removed from AW-102). This Evaporator campaign and that of 4.b shall be scheduled to ensure maintenance of sufficient proficiency of Tank Farm personnel operating the evaporator and to avoid the need for an Operational Readiness Review.
 - Completion document: Letter report documenting that the feed volume has been achieved and summarizing the volume reduction results.

 - b. A 242-A evaporator campaign that treats at least 650,000 gals as measured in the feed tank.
 - Work scope/completion criteria: Operate the 242-A evaporator as a key component of the transfer and treatment system for tank farms to meet or exceed 650,000 gals of feed by volume as measured in the feed tank. The evaporator campaign will process the waste to the parameters determined by process engineering. The volume reduction will be determined by the process control plan (e.g., specific gravity goal and limits on the amount of waste removed from AW-102). This Evaporator campaign and that of 4.b shall be scheduled to ensure maintenance of sufficient proficiency of Tank Farm personnel operating the evaporator and to avoid the need for an Operational Readiness Review.
 - Completion document: Letter report documenting that the feed volume has been achieved and summarizing the volume reduction results.

 - c. A 242-A evaporator campaign that treats at least 650,000 gals as measured in the feed tank by September 30, 2008. The Contractor shall earn \$200,000 in acceleration fee.
 - Work scope/completion criteria: Operate the 242-A evaporator as a key component of the transfer and treatment system for tank farms to meet or exceed 650,000 gals of feed by volume as measured in the feed tank. The evaporator campaign will process the waste to the parameters determined by process engineering. The volume reduction will be

- determined by the process control plan (e.g., specific gravity goal and limits on the amount of waste removed from AW-102). This Evaporator campaign and that of 4.b shall be scheduled to ensure maintenance of sufficient proficiency of Tank Farm personnel operating the evaporator and to avoid the need for an Operational Readiness Review.
- Completion document: Letter report documenting that the feed volume has been achieved and summarizing the volume reduction results.
- d. A 242-A evaporator campaign that treats at least 650,000 gals as measured in the feed tank by September 30, 2008. The Contractor shall earn \$200,000 in acceleration fee.
- Work scope/completion criteria: Operate the 242-A evaporator as a key component of the transfer and treatment system for tank farms to meet or exceed 650,000 gals of feed by volume as measured in the feed tank. The evaporator campaign will process the waste to the parameters determined by process engineering. The volume reduction will be determined by the process control plan (e.g., specific gravity goal and limits on the amount of waste removed from AW-102). This Evaporator campaign and that of 4.b shall be scheduled to ensure maintenance of sufficient proficiency of Tank Farm personnel operating the evaporator and to avoid the need for an Operational Readiness Review.
 - Completion document: Letter report documenting that the feed volume has been achieved and summarizing the volume reduction results.
- e. Blend the high sulfate waste in AZ-102, with high sodium (Na) tank waste supernate in AP-105, AP-107, and AW-106. The Contractor shall earn \$350,000 in acceleration fee.
- Work scope/completion criteria: The retrievable high sulfate waste within Tank 241-AZ-102 shall be distributed into the high sodium supernatant waste within Tanks 241-AP-107 and 241-AW-106 to achieve a sulfate (SO₄) to sodium (Na) ratio less than or equal to 0.048 mole SO₄ to mole Na. To provide operational flexibility, alternate high Na supernatant waste tanks may be considered for blending with Tank 241-AZ-102, but approval by the U.S. Department of Energy shall be obtained prior to transfer of the waste.
 - Completion document: The completion document shall contain an engineering evaluation of the waste composition in the affected receiving tanks, based upon the volumes transferred and Best Basis Inventory (BBI) compositions. The engineering evaluation shall demonstrate that the resulting waste compositions meet the success criteria. Additionally, the report shall contain, but shall not be limited to the following:
 - Pre and post tank volumetric measurements for Tank 241-AZ-102 and the receiving tanks.
 - BBI compositions prior to waste transfers for each tank.
 - Computed SO₄ to Na concentration ratio, post waste transfers, for each receiving tank.
- f. Remove pumpable liquids from Catch Tank 240-S-302 in accordance with the ORP approved liquid mitigation plan. The Contractor shall earn \$250,000 in acceleration fee.
- Work scope/completion criteria: The free liquid (up to 8,000 gallons) will be removed from 240-S-302 and transferred to a Hanford double-shell tank (DST). The free liquid will be removed consistent with the limits and capabilities of the selected liquid mitigation method. The liquid will be removed to at least one-inch from the solid surface (based on visual observation using in-tank camera). Additional liquid will be removed if possible considering the liquid mitigation system limits and capabilities.

- Completion document: Letter report documenting pumpable liquids removed from Catch Tank 240-S-302.
5. Complete 242-A Evaporator and Double-Shell Tank Integrity Assessment.
- a. Complete the 242-A Evaporator integrity assessment field inspections in accordance with WAC 173-303-640 (2) and considering the recommendation of the 1998 242-A Interim Evaporator Tank System Integrity Assessment Report, HNF-2905, Rev, 0.
- Work scope/completion criteria: Completion of field inspections as identified in the IQRPE inspection plan that is in accordance with WAC 173-303-640 (2) and the recommendation of the 1998 242-A Interim Evaporator Tank System Integrity Assessment Report, HNF-2905, Rev, 0.
 - Completion document: Issuance of integrity report documenting the results of field inspections required by the IQRPE plan.
- b. Complete the field pressure testing of five (5) double-shell tank transfer lines encasements.
- Work scope/completion criteria: Completion of field pressure testing of five (5) lines double-shell tank transfer line encasements to the criteria specified in the assessment inspection plan and inspection of associated Tank Farm Pits. The lines shall be SL-168, SL-166, SN-266, SN-268 and SL-162. The pit inspections should included valve pits AN-A, AN-B and pit AW-02A. The specific lines and pits may be modified with ORP concurrence.
 - Completion document: Completed work package(s) documenting the completion of the specified encasement pressure tests.
- c. Complete 3 core samples and analysis in support to the Double-Shell Tank System chemistry control by September 30, 2007.
- Work scope/completion criteria: Completion of 3 core samples and analysis. The specific core sampling activities, which do not directly support another incentivized activity, shall be documented in RPP-26781, "Tank Farm Contractor Process Sampling Requirements Through Fiscal Year 2007" or subsequent revision(s). The plan shall identify; the type of sample, the technical need for the sampling activity, the location of the samples, the sampling requirements, the analytical requirements, and the documentation requirements for the sampling activity.
 - Completion document: Completed analytical reports documenting the result of the sampling activity.
- d. Complete 3 core samples in support to the Double-Shell Tank System chemistry control by September 30, 2008.
- Work scope/completion criteria: Completion of 3 core samples. The specific core sampling activities, which do not directly support another incentivized activity, shall be documented in RPP-26781, "Tank Farm Contractor Process Sampling Requirements Through Fiscal Year 2007" or subsequent revision(s). The plan shall identify; the type of sample, the technical need for the sampling activity, the location of the samples, the sampling requirements, the analytical requirements, and the documentation requirements for the sampling activity.
 - Completion document: Completed chain of custody records documenting the delivery to the 222-S laboratory.

- e. Complete 5 grab samples and analysis in support to the Double-Shell Tank System chemistry control by September 30, 2007.
- Work scope/completion criteria: Completion of 5 grab samples and analysis. The specific grab sampling activities, which do not directly support another incentivized activity, shall be documented in RPP-26781, "Tank Farm Contractor Process Sampling Requirements Through Fiscal Year 2007" or subsequent revision(s). The plan shall identify; the type of sample, the technical need for the sampling activity, the location of the samples, the sampling requirements, the analytical requirements, and the documentation requirements for the sampling activity.
 - Completion document: Completed analytical reports documenting the result of the sampling activity.
- f. Complete 5 grab samples in support to the Double-Shell Tank System chemistry control by September 30, 2008.
- Work scope/completion criteria: Completion of 5 grab samples. The specific grab sampling activities, which do not directly support another incentivized activity, shall be documented in RPP-26781, "Tank Farm Contractor Process Sampling Requirements Through Fiscal Year 2007" or subsequent revision(s). The plan shall identify; the type of sample, the technical need for the sampling activity, the location of the samples, the sampling requirements, the analytical requirements, and the documentation requirements for the sampling activity.
 - Completion document: Completed chain of custody records documenting the delivery to the 222-S laboratory.

PBI-3**Performance Based Incentive (PBI) Title: Single-Shell Tank (SST) Waste Retrieval****Performance Fee available and assigned to this PBI: \$11,250,000**

ORP Assistant Manager:	ORP POC:	CH2M Manager:	CH2M POC:
D Noyes, Acting	D Noyes		

Desired Endpoint/Outcome

Complete interim retrieval activities that meet and/or exceed requirements established in the Hanford Federal Facility Agreement and Consent Order (HFFACO) or Tri-Party Agreement M-45 series milestones and Appendix I, Single-Shell Tank System Waste Retrieval and Closure Process. The Contractor is responsible for establishing the technical and regulatory pathway for tank farm retrieval (including National Environmental Policy Act, M-45 requirements, U.S. Department of Energy (DOE) Order 435.1, "Radioactive Waste Management," requirements, etc.). Additionally, the Contractor will develop and demonstrate the retrieval capability including the use of risk-informed approaches to properly align the retrieval, and closure approaches with the risk associated with the wastes in each tank.

Fee Payment Schedule

Upon completion of each fee bearing milestone set forth herein, Contractor will be paid incremental fee, in accordance with Contract Clause H.2, "Provisional and Incremental Payments of Fee."

The fee bearing milestones shall be completed by the delivery schedule date. If the delivery schedule date is not achieved the unearned fee will be reduced to the following amounts: 90% for first quarter, 80% for second quarter, 50% for third quarter, and entire amount for one year.

Fee Bearing Milestones

"Complete waste retrieval" shall mean completion to the goals of the HFFACO and submittal of the retrieval data report in accordance with Appendix I or with ORP concurrence, the appropriate Appendix H documentation.

1. Complete Waste Retrievals from the following SSTs that are in progress. Performance Fee: \$5,350,000
 - a. Complete waste retrieval of C-204 by September 30, 2007. The Contractor shall earn \$325,000 of incremental fee at the completion of retrieval.
 - b. Complete waste retrieval of C-103 by September 30, 2007. The Contractor shall earn \$25,000 of incremental fee at the completion of retrieval.
 - c. Complete waste retrieval of S-102 by September 30, 2008. The Contractor shall earn \$4,000,000 incremental fee at the following completion points. Completion of retrieval operations on or before March 31, 2007 (HFFACO milestone M-45-05A). The Contractor shall earn an additional \$500,000 in Acceleration Fee.

	Milestones	Incremental Fee
1	Completion of Construction and operational acceptance testing of a new retrieval technology or technique consistent with the approved Functions and Requirement or equivalent document.	\$750,000

2	Retrieval of 65% of the waste by volume	\$750,000
3	Retrieval of 80% of the waste by volume	\$850,000
4	Completion of retrieval operations	\$1,550,000
5	Complete Retrieval Data Report	\$100,000

- d. Complete waste retrieval of S-112 by September 30, 2008. The Contractor shall earn \$1,000,000 incremental fee at the completion of retrieval.

	Milestones	Incremental Fee
1	Completion of retrieval operations	\$900,000
2	Complete Retrieval Data Report	\$100,000

2. Complete Waste Retrievals from additional SSTs. Performance Fee: \$5,900,000

- a. Complete waste retrieval of next new start C-Farm SST, (C-108 or other C Farm SST with ORP concurrence) by September 30, 2008. The Contractor shall earn \$2,900,000 of incremental fee at the following completion points.

	Milestones	Incremental Fee
1	Completion of Construction and operational acceptance testing consistent with the approved Tank Waste Retrieval Work Plan.	\$500,000
2	Retrieval of 25% of the waste by volume	\$500,000
3	Retrieval of 50% of the waste by volume	\$500,000
4	Retrieval of 75% of the waste by volume	\$500,000
5	Completion of retrieval operations	\$900,000

- b. Complete waste retrieval of next new start C-Farm SST after 2.a. (C-109 or other C Farm SST with ORP concurrence) by September 30, 2008. The Contractor shall earn \$3,000,000 of incremental fee at the following completion points.

	Milestones	Incremental Fee
1	Completion of Construction and operational acceptance testing consistent with the approved Tank Waste Retrieval Work Plan	\$500,000
2	Retrieval of 25% of the waste by volume	\$500,000
3	Retrieval of 50% of the waste by volume	\$500,000
4	Retrieval of 75% of the waste by volume	\$500,000
5	Completion of retrieval operations	\$900,000
6	Complete Retrieval Data Report	\$100,000

- c. Completion of retrieval operations and demonstration that the TPA volume goal has been achieved for new start retrievals identified in milestones 2.a, and/or 2.b utilizing HFFACO approved Data Quality Objectives. The Contractor shall earn an additional \$500,000 in Acceleration Fee for each retrieval (2.a and/or 2.b).

3. Complete Waste Retrievals from additional SSTs.

- a. Complete waste retrieval of new start C-Farm SST after 2.a and 2.b. (C-110 or other C Farm SST categorized as an assumed leaker with ORP concurrence) by September 30, 2008. The retrieval technology/technique shall be designed for use in a 100 series SST which has assumed to leaked. The Contractor shall earn \$3,000,000 acceleration fee at the following completion points.

	Milestones	Acceleration Fee
1	Completion of Construction and operational acceptance testing consistent with the approved Tank Waste Retrieval Work Plan	\$1,000,000
2	Retrieval of 25% of the waste by volume	\$1,500,000
3	Retrieval of 50% of the waste by volume	\$500,000

- b. Complete waste retrieval of new start C-Farm SST after 2.a and 2.b. (C-104 or other C Farm SST with ORP concurrence) by September 30, 2008. The Contractor shall earn \$3,450,000 acceleration fee at the following completion points.

	Milestones	Acceleration Fee
1	Completion of Construction and operational acceptance testing consistent with the approved Tank Waste Retrieval Work Plan.	\$1,000,000
2	Retrieval of 25% of the waste by volume.	\$1,500,000
3	Retrieval of 50% of the waste by volume	\$500,000
4	Retrieval of 75% of the waste by volume	\$450,000

Government Furnished Services/Items (GFS/I)

Provide DOE review/approval of HFFACO deliverables within 15 working days of receipt, except as specified below.

The Office of River Protection (ORP) will respond to all other Contractor submittals (e.g., Authorization Basis, Safety Analysis Reports, Baseline Change Requests) required to complete this activity within 15 working days provided the submittals are complete and ORP is provided with reasonable notice of the intent to submit.

If Critical Decision process is required, then action will be taken by the ORP decision authority within 15 working days of submittal. If the decision authority is at DOE Headquarters then action will be taken by the DOE Headquarters decision authority within 30 working days of submittal.

Definitions

"GFS/I" are those work elements that the DOE commits to perform to support the completion of this PBI. If DOE cannot provide GFS/I as described herein, then it shall be treated as a change in accordance with Contract Clause I.64, Federal Acquisition Regulation 52.243-2, "Changes-Cost Reimbursement, Alt II."

The Retrieval Report, as defined in Tank Farm Procedure TFC-ENG-CHEM-P-47, Rev A-1, January 20, 2005, Single-Shell Tank Retrieval Completion Evaluation, will be submitted to the ORP at the completion of bulk retrieval operations documenting technical information upon which the decision to cease retrieval operations was based.

The Tank Waste Retrieval Work Plan shall be developed in accordance with the HFFACO Appendix I.

Tank Farm Procedure TFC-PRJ-PM-C-03, Project Tailoring Approach, will be utilized to determine project delivery and execution requirements.

Signature Block

John C. Fulton, President
and Chief Executive Officer,
CH2M HILL Hanford Group, Inc.

Date

Shirley J. Olinger, Manager
U.S. Department of Energy, Office of River Protection

Date

**Completion Criteria
PBI-3 Single-Shell Tank (SST) Retrieval**

1. Complete Waste Retrievals from the following SSTs that are in progress:

a. Complete waste retrieval of C-204.

- Work scope/completion criteria: "Complete waste retrieval" shall mean completion to the goals of the HFFACO for residuals and submittal of the Retrieval Data Report in accordance with Appendix I or the appropriate Appendix H documentation.
- Completion document: Submit the Retrieval Data Report for 241-C-204 documenting the completion of retrieval operations. With ORP concurrence, an Appendix H exception request may be issued in lieu of a Retrieval Data Report in accordance with HFFACO Appendix I. If the limits of waste retrieval technology capability is reached; the volume goal have not been achieved; and it is determined, with ORP concurrence, that the Appendix H documentation is not appropriate, the submittal of the Retrieval Report shall be the completion criteria of "complete waste retrieval".

b. Complete waste retrieval of C-103.

- Work scope/completion criteria: "Complete waste retrieval" shall mean completion to the goals of the HFFACO for residuals and submittal of the Retrieval Data Report in accordance with Appendix I or the appropriate Appendix H documentation. If the limits of waste retrieval technology capability is reached; the volume goal have not been achieved; and it is determined, with ORP concurrence, that the Appendix H documentation is not appropriate, the submittal of the Retrieval Report shall be the completion criteria of "complete waste retrieval".
- Completion document: The 241-C-103 Retrieval Data Report, Appendix H exception, or Retrieval Report as identified in the completion criteria.

c. Complete waste retrieval of S-102. The tank contains approximately 211,000 gallons of the initial 465,000 gallons of a mixture of Salt and Sludge materials. New retrieval technology/technique for use in this SST as needed to complete the retrieval. New technology/technique will be developed, implemented into the appropriate regulatory documentations, constructed, and retrieval completed.

Milestones
<p>1. Completion of Construction and operational acceptance testing of a new retrieval technology or technique consistent with an approved Functions and Requirements or equivalent document.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Complete waste retrieval system construction and turnover to operations. Operations related OTP will be completed and OTRs will be approved by the Contractor. The Construction Completion Documents, Section IIb, "Completion of Exceptions," will be completed and approved by the Contractor, including Operations. References: 1) S-102 Initial Waste Retrieval Functions and Requirements 2) Construction Completion and Turnover, TFC-PRJ-CM-C-08, Rev B, issued May 8, 2006.

<ul style="list-style-type: none"> • Completion Document: Contractor approved, including Operations, Construction Completion Document through Section IIb, "Completion of Exceptions" for the above listed work.
<p>2. Retrieval of 65% of the waste by volume.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 65% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations. • Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 65% of the initial waste volume.
<p>3. Retrieval of 80% of the waste by volume.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 80% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations. • Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 80% of the initial waste volume.
<p>4. Completion of retrieval operations.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Complete waste retrieval to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones for residues. If the limit of the waste retrieval technology is reached and the M-45-00 residual volume goal has not been achieved, then implementation of additional retrieval technologies <u>is within the scope</u>. • Completion document: Retrieval Report documenting the completion of retrieval operations.
<p>5. Complete Retrieval Data Report.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: The limit of the waste retrieval technology is reached and the M-45-00 residual volume goal has been achieved. Perform residual characterization and volumetric measurements and prepare a Retrieval Date Report in accordance with HFFACO, Appendix I. • Completion document: Retrieval Data Report in accordance with HFFACO, Appendix I. <p>(Note: With ORP concurrence, an Appendix H exception may be issued in lieu of a Retrieval Data Report. In this case, fee allowed for the Retrieval Data Report would be provided for the Appendix H exception. This incentive is forfeited if the volume goal is not achieved and ORP does not concur with proceeding with an Appendix H exception.)</p>

Completion of retrieval operations on or before March 31, 2007 (HFFACO milestone M-45-05A).

- Work scope/completion criteria: Complete waste retrieval on or before March 31, 2007 to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones for residues and demonstration of the limit of the waste retrieval technology. If the limit of the waste retrieval technology is reached and the M-45-00 residual volume goal has not been achieved, then implementation of additional retrieval technologies is within the scope.
 - Completion document: Retrieval Report documenting the completion of retrieval operations.
- d. Complete waste retrieval of S-112. The tank contains approximately 5,000 gallons of the initial 655,000 gallons of a mixture of Salt and Sludge materials. New retrieval technology/technique for use in this SST are needed to complete the retrieval. New technology/technique will be developed, implemented into the appropriate regulatory documentations, constructed, and retrieval completed.

Milestones
<p>1. Completion of retrieval operations.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Complete waste retrieval to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones for residues. If the limit of the waste retrieval technology is reached and the M-45-00 residual volume goal has not been achieved, then implementation of additional retrieval technologies <u>is within the scope</u>. • Completion document: Retrieval Report documenting the completion of retrieval operations.
<p>2. Complete Retrieval Data Report.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: The limit of the waste retrieval technology is reached and the M-45-00 residual volume goal has been achieved. Perform residual characterization and volumetric measurements and prepare a Retrieval Data Report in accordance with HFFACO, Appendix I. • Completion document: Retrieval Data Report in accordance with HFFACO, Appendix I. <p>(Note: With ORP concurrence, an Appendix H exception may be issued in lieu of a Retrieval Data Report. In this case, fee allowed for the Retrieval Data Report would be provided for the Appendix H exception. This incentive is forfeited if the volume goal is not achieved and ORP does not concur with proceeding with an Appendix H exception.)</p>

2. Complete Waste Retrievals from additional SSTs

a.

Milestones
<p>1. Completion of Construction and operational acceptance testing of the waste retrieval system approved Tank Waste Retrieval Work Plan.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Complete waste retrieval system construction and turnover to operations. Operations related OTP will be completed and OTRs will be approved by the Contractor. The Construction Completion Documents, Section IIb,

<p>“Completion of Exceptions,” will be completed and approved by the Contractor, including Operations. References: 1) Tank Waste Retrieval Work Plan 2) Construction Completion and Turnover, TFC-PRJ-CM-C-08, Rev B, issued May 8, 2006.</p> <ul style="list-style-type: none"> • Completion Document: Contractor approved, including Operations, Construction Completion Document through Section IIb, “Completion of Exceptions” for the above listed work.
<p>2. Retrieval of 25% of the waste by volume.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 25% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations. • Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 25% of the initial waste volume.
<p>3. Retrieval of 50% of the waste by volume.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 50% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations. • Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 50% of the initial waste volume.
<p>4. Retrieval of 75% of the waste by volume.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 75% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations. • Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 75% of the initial waste volume.
<p>5. Completion of retrieval operations.</p> <ul style="list-style-type: none"> • Work scope/completion criteria: Complete waste retrieval to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones for residues and demonstration of the limit of the waste retrieval technology. If the limit of the waste retrieval technology is reached and the M-45-00 residual volume goal has not been achieved, then implementation of additional retrieval technologies is beyond the scope of this incentive.

- Completion document: Retrieval Report documenting the completion of retrieval operations.

b.

1. Completion of Construction and operational acceptance testing of the waste retrieval system approved Tank Waste Retrieval Work Plan.

- Work scope/completion criteria: Complete waste retrieval system construction and turnover to operations. Operations related OTP will be completed and OTRs will be approved by the Contractor. The Construction Completion Documents, Section IIb, "Completion of Exceptions," will be completed and approved by the Contractor, including Operations. References: 1) Tank Waste Retrieval Work Plan 2) Construction Completion and Turnover, TFC-PRJ-CM-C-08, Rev B, issued May 8, 2006.
- Completion Document: Contractor approved, including Operations, Construction Completion Document through Section IIb, "Completion of Exceptions" for the above listed work.

2. Retrieval of 25% of the waste by volume.

- Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 25% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations.
- Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 25% of the initial waste volume.

3. Retrieval of 50% of the waste by volume.

- Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 50% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations.
- Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 50% of the initial waste volume.

4. Retrieval of 75% of the waste by volume.

- Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 75% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations.

<ul style="list-style-type: none"> Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 75% of the initial waste volume.
<p>5. Completion of retrieval operations.</p> <ul style="list-style-type: none"> Work scope/completion criteria: Complete waste retrieval to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones for residues and demonstration of the limit of the waste retrieval technology. If the limit of the waste retrieval technology is reached and the M-45-00 residual volume goal has not been achieved, then implementation of additional retrieval technologies is beyond the scope of this incentive. Completion document: Retrieval Report documenting the completion of retrieval operations.
<p>6. Complete Retrieval Data Report.</p> <ul style="list-style-type: none"> Work scope/completion criteria: The limit of the waste retrieval technology is reached and the M-45-00 residual volume goal has been achieved. Perform residual characterization and volumetric measurements and prepare a Retrieval Data Report in accordance with HFFACO, Appendix I. Completion document: Retrieval Data Report in accordance with HFFACO, Appendix I. <p>(Note: With ORP concurrence, an Appendix H exception may be issued in lieu of a Retrieval Data Report. In this case, fee allowed for the Retrieval Data Report would be provided for the Appendix H exception. This incentive is forfeited if the volume goal is not achieved and ORP does not concur with proceeding with an Appendix H exception.)</p>

- c. Completion of retrieval operations and demonstration that the TPA volume goal has been achieved for new start retrievals identified in milestones 2.a and/or 2.b utilizing HFFACO approved Data Quality Objectives.
 - Work scope/completion criteria: Complete waste retrieval to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones for residues (specifically including the 360 cubic feet volume goal) and demonstration of the limit of the waste retrieval technology. The residual volume shall be determined using the HFFACO approved methodology. Physical samples shall be taken in accordance with the HFFACO sampling methodology, but the sample's analytical report and Retrieval Data Report are not within the work scope.
 - Completion document: Retrieval Report for 2.a and/or 2.b documenting the completion of retrieval operations meeting limit of technology and HFFACO volume goal, as measured by specified methodology. The Retrieval Report shall document the physical sampling of the residuals

3. Initiate Waste Retrievals from additional SSTs.

a.

Milestones
1. Completion of Construction and operational acceptance testing of the waste retrieval system

approved Tank Waste Retrieval Work Plan.

- Work scope/completion criteria: Complete waste retrieval system construction and turnover to operations. Operations related OTP will be completed and OTRs will be approved by the Contractor. The Construction Completion Documents, Section IIb, "Completion of Exceptions," will be completed and approved by the Contractor, including Operations. References: 1) Tank Waste Retrieval Work Plan 2) Construction Completion and Turnover, TFC-PRJ-CM-C-08, Rev B, issued May 8, 2006.
- Completion Document: Contractor approved, including Operations, Construction Completion Document through Section IIb, "Completion of Exceptions" for the above listed work.

2. Retrieval of 25% of the waste by volume.

- Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 25% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations.
- Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 25% of the initial waste volume.

3. Retrieval of 50% of the waste by volume.

- Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 50% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations.
- Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 50% of the initial waste volume.

b.

1. Completion of Construction and operational acceptance testing of the waste retrieval system approved Tank Waste Retrieval Work Plan.

- Work scope/completion criteria: Complete waste retrieval system construction and turnover to operations. Operations related OTP will be completed and OTRs will be approved by the Contractor. The Construction Completion Documents, Section IIb, "Completion of Exceptions," will be completed and approved by the Contractor, including Operations. References: 1) Tank Waste Retrieval Work Plan 2) Construction Completion and Turnover, TFC-PRJ-CM-C-08, Rev B, issued May 8, 2006.
- Completion Document: Contractor approved, including Operations, Construction Completion Document through Section IIb, "Completion of Exceptions" for the above

listed work.
<p>2. Retrieval of 25% of the waste by volume.</p> <ul style="list-style-type: none">• Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 25% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations.• Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 25% of the initial waste volume.
<p>3. Retrieval of 50% of the waste by volume.</p> <ul style="list-style-type: none">• Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 50% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations.• Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 50% of the initial waste volume.
<p>4. Retrieval of 75% of the waste by volume.</p> <ul style="list-style-type: none">• Work scope/completion criteria: Perform waste retrieval activities to meet and/or exceed performance requirements in the HFFACO M-45-00 series milestones and the Tank Waste Retrieval Work Plan. The retrieval of 75% of initial SST waste by volume shall be based on an initial volume determined from the latest BBI information or a pre-retrieval volume determination if completed. The retrieved volume will be an estimate based on material balance calculations.• Completion document: The submittal of material balance data and engineering calculations summary information demonstrating retrieval of 75% of the initial waste volume.

PBI-4

Performance Based Incentive (PBI) Title: Demonstration Bulk-Vitrification System (DBVS) and Interim Pretreatment System Support of Bulk Vitrification and/or Waste Treatment Plant (WTP) Low Activity Waste (LAW)

Performance Fee available and assigned to this PBI: \$1,500,000

Additional Performance Fee in not available and assigned unless activated by written direction from ORP. If activated Performance Based Incentive (PBI): up to \$2,150,000

ORP Assistant Manager:	ORP POC:	CH2M Manager:	CH2M POC:
D Noyes, Acting	D Noyes		

Desired Endpoint/Outcome

The objective of this PBI is to continue the DBVS Research and Development Project to fully investigate the Bulk Vitrification technology application to effectively treat tank waste such that:

1. A net savings is achieved relative to the U.S. Department of Energy (DOE) established costs of treating the wastes via vitrification in the WTP,
2. All retrieved tank waste completes treatment via a combination of supplemental non-WTP treatment and treatment in the WTP,
3. Wastes with high sulfate, chromate, or other chemical constituents that limit overall waste loading in glass are preferentially treated outside the WTP resulting in higher net WTP throughputs and efficiencies, and
4. Mission analysis, technology maturation, and preconceptual activities have been completed for an Interim Pretreatment System (IPS) supportive of Bulk Vitrification and/or WTP LAW such that it is feasible to produce a complete IPS Conceptual Design within FY 2009.

Fee Payment Schedule

Upon completion of each fee bearing milestone set forth herein Contractor will be paid incremental fee, in accordance with Contract Clause H.2, "Provisional and Incremental Payments of Fee."

Fee Bearing Milestones

1. Complete DBVS full scale dryer testing activities as a risk reduction measure prior to DBVS construction. The Contractor shall earn \$1,500,000 of incremental fee upon completion DBVS full scale dryer testing.
2. **Demonstrate DBVS Tank Waste Immobilization Technology.** Performance Fee: \$2,150,000. (The Performance Fee in not available unless activated by written direction from ORP.)
 - a. Achieve readiness to initiate construction. The Contractor shall earn \$500,000 of incremental fee upon completion of readiness to initiate construction. (The Performance Fee in not available unless activated by written direction from ORP.)
 - b. Complete Best & Brightest review and corrective action report. The contractor shall earn \$400,000 of incremental fee upon completion of corrective action report. (The Performance fee in not available unless activated by written direction from ORP.)

- c. Complete DBVS Construction and perform testing for Area 31, Clean Soil and Glass Formers. The contractor shall earn \$500,000 of incremental fee upon completion of construction. (The Performance fee in not available unless activated by written direction from ORP.)
 - d. Complete DBVS Construction and perform testing for Area 35, ICV Box Building. The contractor shall earn \$250,000 of incremental fee upon completion of construction. (The Performance fee in not available unless activated by written direction from ORP.)
 - e. Complete DBVS Construction and perform testing for Area 37, Secondary Waste System. The contractor shall earn \$500,000 of incremental fee upon completion of construction. (The Performance fee in not available unless activated by written direction from ORP.)
3. Complete preconceptual design activities for the Interim Pretreatment System (IPS) as described below.
- a. Mission Analysis: Submit the specific mission analysis products that comprise the Mission Analysis Report by September 30, 2008, which will represent completion of the mission analysis activities. The Mission Analysis Report will be completed and submitted in FY 2009. The Contractor shall earn \$150,000 of acceleration fee.
 - b. Technology Maturation: Implement limited testing and development to support the technology selection. Prepare by September 30, 2008, a technology maturation plan to bring the selected pretreatment technologies for solid-liquid separation and Cesium removal to a technical readiness level of 6. The Contractor shall earn \$100,000 of acceleration fee.
 - c. Conceptual Design Support: Conduct investigations and analyses that will be incorporated into a conceptual design plan for the IPS by September 30, 2008. The Contractor shall earn \$200,000 of acceleration fee.

Government Furnished Services/Items (GFS/I)

Provide DOE review/approval of Hanford Federal Facility Agreement and Consent Order or Tri-Party Agreement deliverables within 15 working days of receipt, except as specified below.

ORP will respond to all other Contractor submittals (e.g., Authorization Basis, Safety Analysis Reports, Baseline Change Requests) required to complete this activity within 15 working days provided the submittals are complete and ORP is provided with reasonable notice of the intent to submit.

Definitions

"GFS/I" are those work elements that the DOE commits to perform to support the completion of this PBI. If DOE cannot provide GFS/I as described herein, then it shall be treated as a change in accordance with Contract Clause I.64, Federal Acquisition Regulation 52.243-2, "Changes-Cost Reimbursement, Alt II."

Signature Block

J. C. Fulton, President
and Chief Executive Officer,
CH2M HILL Hanford Group, Inc.

Date

Shirley J. Olinger, Manager
U.S. Department of Energy, Office of River Protection

Date

Completion Criteria**PBI-4 Demonstration Bulk-Vitrification System (DBVS) and Interim Pretreatment System Support of Bulk Vitrification and/or Waste Treatment Plant (WTP) Low Activity Waste (LAW)**1. **Dryer System Performance Test and Integrated Dryer System and Melter Test**

- Work scope/completion criteria: Completion of the testing listed below and the documentation of the results
 - An integrated Dryer System and Melter test shall be conducted. This test shall include full scale Dryer System performance testing and integrated Dryer and Melter testing in accordance with ORP approved Integrated Dryer Test Plan.
 - The Dryer system performance testing shall be conducted using Tank 241-S-109 waste simulant and glass forming agents. If this testing is successful in producing a consistent dried waste form which meets the performance requirements of the requirement of the Integrated Dryer Test Plan then the integrated dryer and melter test shall be performed.
 - The integrated Dryer System and Melter test shall:
 - Develop and evaluate the process controls necessary for the two systems to operate together,
 - Determine if the integrated system can produce a glass product which meets the glass performance requirements,
 - Evaluate the design changes resulting from the side wall joint leaking problem observed in Test 38C, and
 - Evaluate the performance of the prototypical feed in the production of molten ionic salts and leakage of molten ionic salts through the refractory which occurred in Test 38C.
 - For the integrated test, the Dryer System and the ICV box shall be physically located at the AMEC Horn Rapids Test Facility. The test shall be conducted using Tank 241-S-109 waste simulant and glass forming agents. The dried waste product shall be mechanically transported from the dryer to the ICV box. The waste product shall be vitrified in the ICV box. The results shall be documented in a test report prepared in accordance with the test plan
- Completion document: A final report(s) shall be produced for both test in accordance with the approved test plan.

2. **Demonstrate DBVS Tank Waste Immobilization Technology.**

a. Achieve readiness to initiate construction.

- Work scope/completion criteria: Complete demonstration facility final design and submit CD-3 "Approval Start of Construction" Package to ORP for acceptance review.
- Completion document: CD-3 "Approval Start of Construction" package to ORP for acceptance review (See attached Table 2, "DBVS CD-3 Acceptance Criteria Deliverable – DOE O 413.3A").

- b. Completion of the DBVS Best and Brightest Review and addressing all finding and observations to support the approval to start construction.
 - Work scope/completion criteria: Completion of the corrective action report for the Best and Brightest Review.
 - Completion document: Best and Brightest Review report and corrective action report.
 - c. Complete DBVS Construction and perform testing for Area 31, Clean Soil and Glass Formers.
 - Work scope/completion criteria: Complete physical construction of Area 31, Clean Soil and Glass Formers of the Demonstration Bulk-Vitrification System including Construction Acceptance Testing. The Construction Completion Documents, Section Ib, "Completion of Exceptions," will be completed and approved by the Contractor. References: 1) Demonstration Bulk Vitrification Subsystems Specifications, RPP-17403. 2) Construction Completion and Turnover, TFC-PRJ-CM-C-08, Rev B, issued May 8, 2006.
 - Completion document: Contractor approved Construction Completion Document through Section Ib, "Completion of Exceptions" for the above listed work.
 - d. Complete DBVS Construction and perform testing for Area 35, ICV Box Building.
 - Work scope/completion criteria: Complete physical construction of Area 35, ICV Box Building of the Demonstration Bulk-Vitrification System including Construction Acceptance Testing. The Construction Completion Documents, Section Ib, "Completion of Exceptions," will be completed and approved by the Contractor. References: 1) Demonstration Bulk Vitrification Subsystems Specifications, RPP-17403. 2) Construction Completion and Turnover, TFC-PRJ-CM-C-08, Rev B, issued May 8, 2006.
 - Completion document: Contractor approved Construction Completion Document through Section Ib, "Completion of Exceptions" for the above listed work.
 - e. Complete DBVS Construction and perform testing for Area 37, Secondary Waste System.
 - Work scope/completion criteria: Complete physical construction of Area 37, Secondary Waste System of the Demonstration Bulk-Vitrification System including Construction Acceptance Testing. The Construction Completion Documents, Section Ib, "Completion of Exceptions," will be completed and approved by the Contractor. References: 1) Demonstration Bulk Vitrification Subsystems Specifications, RPP-17403. 2) Construction Completion and Turnover, TFC-PRJ-CM-C-08, Rev B, issued May 8, 2006.
 - Completion document: Contractor approved Construction Completion Document through Section Ib, "Completion of Exceptions" for the above listed work.
3. Complete preconceptual design activities for the Interim Pretreatment System (IPS) as described below.
 - a. Mission Analysis: Submit the specific mission analysis products that comprise the Mission Analysis Report by September 30, 2008, which will represent completion of the mission analysis activities. The Mission Analysis Report will be completed and submitted in FY 2009.
 - Workscope/completion criteria:

1. Prepare Feed Selection Report including the following: Description of the criteria used to select feed sources; list of feed source tanks sufficient to provide waste streams containing a total of 5000 MT Na to the IPS in the first five years of operation; description of any processing, blending, or other modifications required to qualify feed sources; list of tanks that can provide contingency feed, i.e. feed meeting the same qualifications and that will supply waste beyond the 5000 MT Na already identified; and develop a feed protection system to be implemented in fiscal year 2009.
 2. Prepare Site preliminary determination of location as documented in the Mission Scoping Report.
 3. Prepare Technology Selection Report including the following: Comparison of the three Cesium removal technologies and the two solid-liquid separation technologies considering the following selection factors: safety, permitting, technical readiness, process stability and controllability, cost, and risk, with particular attention to schedule risk; and Identification of the preferred Cesium removal technology, and the preferred solid-liquid separation technology.
 4. Prepare Comparative Cost Projection that includes estimates of construction and operating cost assuming a 20-year system life for the selected technologies.
 5. Prepare Secondary Waste Management Strategy report that includes a description of the recommended management approach for each waste stream leaving the combined IPS-WTP LAW system and specifies the safe and compliant disposal strategy to be used for hazardous constituents. This document will include system wide preliminary material balances for I-129, Tc-99, and mercury.
 6. Prepare a Process Flowsheet based on the preferred pretreatment alternative described in Technical Selection Report, providing numerical values and confidence intervals for energy and material balance through each main component, arrangement of equipment, the stream connections, stream flow-rates and compositions.
- Completion document: Issue above documents, incorporating Independent Review Panel comments and identifying any outstanding actions, with the U.S. Department of Energy (DOE) concurrence to the ORP.
- b. Technology Maturation: Implement limited testing and development to support the technology selection. Prepare by September 30, 2008, a technology maturation plan to bring the selected pretreatment technologies for solid-liquid separation and Cesium removal to a technical readiness level of 6.
- Workscope/completion criteria: List key activities required for the selected Cesium removal and solid-liquid separation technologies to bring them to TRL 6: work plan and schedule showing time and dependence relationships for the above activities; qualitative analysis of schedule risks in technology maturation activities and their potential impact on IPS progression to CD-2; list of resources required to complete the technology maturation activities; and cost estimate for each activity.
 - Completion document: Submit a Technology Maturation Plan that compiles and summarizes the results of above-listed activities, incorporating comments by the Independent Review Panel and identifying any outstanding actions, with DOE concurrence to the ORP.
- c. Conceptual Design Support: Conduct investigations and analyses that will be incorporated into a conceptual design plan for the IPS by September 30, 2008.
- Workscope/completion criteria: Perform a Siting Study and Geophysical Survey for the location selected for IPS construction, including justification for the choice of site, cultural impact analysis, preliminary determination of seismic design load values affecting major system components. Prepare a Safety Design Strategy in compliance with draft STD-1189,

including a plan for establishing an IPS Safety-in-Design Integration Team. Prepare a Functions and Requirements document that defines the functional, performance, interface, and design requirements for the Interim Pretreatment System, developed according to the Contractor procedure TFC-ENG-DESIGN-C-01, REV B-3 Development of System and Subsystem Specifications. Prepare a draft Interface Control Document that defines and documents external interfaces with the Waste Treatment Plant, including waste feed requirements, in accordance with TFC-BSCM-CP_CPR-C-17. Compile a list of prequalified Architect/Engineering firms, with description of criteria used. Prepare a draft Project Definition Rating Index Applicability Matrix according to the DOE Office of Environmental Management Project Definition Rating Index (EM PDRI) manual. Prepare an acquisition plan describing the methodology for procuring subcontracted goods and services for the IPS project. Prepare a Preliminary permitting plan describing the National Environmental Policy Act of 1969 (NEPA) compliance strategy for IPS and NEPA requirements for conceptual design. Prepare a Conceptual Design plan for completing remaining activities required to reach CD-1 as described in DOE Order 413.3A, including description of scope and schedule, associated costs, and a risk management list.

- Completion Document: Submit a Conceptual Design Plan including a summary of documents listed above to ORP.

DBVS CD-3 Acceptance Criteria Deliverables - DOE O 413.3A Table 2	
Requirement	Deliverable
1. Complete and review Final Design or determine that the design is sufficiently mature to start procurement or construction.	Final design package
For Information Technology projects, the Final Design review is a review of the final System Description Document.	Not applicable
2. Update all CD-2 project documentation and required approvals to reflect any changes resulting from final Design, including the Project Execution Plan, Performance Baseline, Project Data Sheet, etc.	Updated estimate, schedule, and PEP (RPP-17807)
Perform an External Independent Review for Construction or Execution Readiness. An External Independent Review is performed by the Office of Engineering and Construction Management on all Major System Projects to verify execution readiness. A similar Independent Project Review must be performed by the appropriate Program Secretarial Office for Non-Major System Projects unless justification is provided and a waiver is granted by the Acquisition Executive.	ORP activity
3. Prepare the Preliminary Documented Safety Analysis Report based on the Preliminary Safety Design Report for Hazard Category 1, 2, and 3 nuclear facilities.	Final PDSA
4. Update the Hazard Analysis Report and obtain DOE approval (field level).	RPP-19143, <i>DBVS Hazard Categorization Report</i>
Update the Preliminary Security Vulnerability Assessment Report.	Covered by site assessment – available for review by appropriately cleared personnel
Update the Cyber Security Plan for Information Technology projects.	Not applicable
Prepare a Safety Evaluation Report based on review of the Preliminary Documented Safety Analysis for Hazard Category 1, 2, and 3 nuclear facilities.	ORP activity
5. Prepare a Construction Project Safety and Health Plan** and obtain DOE approval (field level).	Provide contract onsite work provisions that require subcontractor to perform work in compliance with CH2M HILL approved safety procedures, or submit within thirty (30) working days after subcontract award and annually thereafter to the CH2M HILL authorized procurement representative a subcontractor Safety Management System Plan (System) that is, at a minimum, equivalent to CH2M HILL's safety procedures for CH2M HILL approval.
Incorporate Final Sustainable Environmental Stewardship-High Performance Sustainable Building provisions into the Final Design and the External Independent Review.	Not applicable
6. Update the Quality Assurance Program for construction, field design changes, and procurement activities.	TFC-PLN-02, <i>Quality Assurance Program Description</i>