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Hanford Tanks Initiative (HTI) Work Breakdown Structure (WBS) dictionary.

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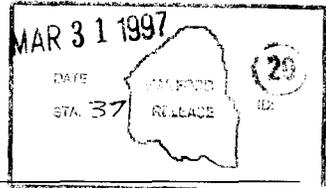
Key Words: WBS

Abstract: This dictionary lists the scope, deliverables, and interfaces for the various work elements of the Hanford Tanks Initiative. Cost detail is included for information only.

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Hanford Tanks Initiative

WBS Dictionary

March 1997

Prepared by
Lockheed Martin Hanford Corporation

HANFORD TANKS INITIATIVE SUMMARY WBS

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HTI WBS Dictionary Section 1.1

Section 1.1

Project Management

1.1.1

Project Management

1.1.1.1

Project Management

Budget	FY 1997 - \$552,846
	FY 1998 - \$448,506
	FY 1999 - \$349,368
	<u>FY 2000 - \$210,461</u>
Total	\$1,551,181

Task Manager: Bill Root

Scope: This is a level of effort task covering PHMC support to provide overall policy, policy coordination and broad planning to implement the HTI technical and programmatic objectives. The project manager will ensure the integration of activities and ensure financial and personnel resources are consistent with the mission and objectives. Cost and schedule decisions will be consistent with responsibilities delegated to the project manager. The project manager will have final accountability for the success of the HTI project. This task also provides for the project manager to accomplish all project reporting, interfacing with stakeholders, Indian Tribes and regulators.

Period of Performance: October 1996 through September 2000.

Deliverables/Milestones: Monthly performance reporting to meeting PTS and SMS reporting requirements. Special briefing as requested.

1) Issue update of HTI Project Plan ***8/1/97***

Interfaces: 1) Maintain interface with DOE-RL, PHMC management and stakeholders, Indian Tribes and regulators, keeping all apprised of project progress and any emerging issues

2) Provide day-to-day direction for all project activities

1.1.1.2 Project Controls

Budget	FY 1997 - \$226,881
	FY 1998 - \$232,996
	FY 1999 - \$233,542
	<u>FY 2000 - \$235,654</u>
	Total \$929,073

Task Manager: Bill Root

Scope: Provide the financial and cost analysis and planning and scheduling support as requested by the project manager. As a minimum this function will maintain records of the project schedule and cost baseline, and provide all project tracking information to meet reporting requirements.

Period of Performance: October 1996 through September 2000.

Deliverables/Milestones: Provide the financial and schedule data to support monthly performance reporting to meeting PTS and SMS reporting requirements. Provide technical assistance to the project manager and team leaders as requested to assist them in managing their individual responsibilities.

- Interfaces:
- 1) Project manager and team leads on a day-to-day basis a necessary
 - 2) Project staff to ensure accuracy of input for maintaining and periodically updating/tracking project cost and schedule data.

1.1.1.3 Contracts

Budget	FY 1997 - \$ 73,521
	FY 1998 - \$386,519
	FY 1999 - \$395,698
	<u>FY 2000 - \$406,198</u>
	Total \$1,261,936

Task Manager: Bill Root

Scope: This is a task to allow the PHMC project manager to contract for unique/ one of a kind services to support the project for short duration's. Support will range from technical to strategic assistance; specific scope of work will be identified in the procurement documents.

Period of Performance: October 1996 through September 2000.

Deliverables/Milestones: This is a level of effort task - individual deliverables will be identified for each contract issued.

Interfaces: 1) TBD

1.1.1.4 HTI Decision Analysis
Budget FY 1997 - \$160,953
Total \$160,953

Task Manager: Bill Root

Scope: This task allows the PHMC Project Manager to contract for consulting services for decision analysis services on an as needed basis.

Period of Performance: November 1996 through September 1997.

Deliverables/Milestones: TBD

Interfaces: 1) With tasks under 1.2.1, 1.3.1, 1.3.2, 1.3.3 and 1.3.4.

1.1.1.5 HTI Test Facility
Budget FY 1997 - \$110,632
Total \$110,632

Task Manager: Bill Root

Scope: Formulate the functions and requirements for a full scale, non-radioactive test bed to demonstrate the operability of retrieval systems. Conduct the necessary negotiations to obtain such a test bed from industrial companies, including the requirement the test bed be available on a schedule to meet on-site cold testing needs for the vendors competing for heel retrieval from 106-C.

Period of Performance: November 1996 through September 1997.

Deliverables/Milestones:

- 1) An engineering document describing the test bed functions and requirements, including conceptual studies necessary to support the functions and concept definition. 9/30/97

Interfaces: 1) Functions and requirement must be consistent with 1.5.1

<u>1.1.1.6</u>	<u>PMP for 106-C Retrieval</u>
Budget	<u>FY 1997 - \$76,424</u>
	Total \$76,424

Task Manager: Larry McDaniel

Scope: Develop and provide, by May 30, 1997, a complete Project Management Plan (PMP) for all phases (including in-tank, out-of-tank and site upgrades) of retrieving the heel from tank 106-C. As a minimum the PMP will define roles, responsibilities and authorities for project participants, schedules and cost estimates for completing all activities, description of project controls and authority for exercising those controls, delineate the method of performance, the process for annual updates and inclusion the TWRS and HTI MYPP, and a WBS dictionary for the current fiscal year and will establish project level requirements for all phases of the 106-C heel retrieval.

Period of Performance: April 1997 through May 1997.

Deliverable/Milestones: An approved (by both Larry and Bill Root) PMP that addressed all items listed in the scope. The PMP will be compatible with the most recent guidance provided by PHMC.

- Interfaces:
- 1) With project W-320, to provide a realistic baseline for when W-320 will be completed and an accurate status of all on-site equipment that may be needed to support the HTI.
 - 2) With the Technology Demonstration and TFA retrieval activities to ensure results of these programs are incorporated into the project schedule and planning.

Deliverable/Milestones:

- | | | |
|----|--|----------------|
| 1) | Issue HTI Test Implementation Plan (draft) | ***11/08/97*** |
| 2) | Submit Test & Plan to DNFSB (final) | 02/07/97 |

1.1.2.2 Develop and Maintain Interface Control Diagrams

Budget	FY 1997 - \$ 57,650
	FY 1998 - \$123,807
	FY 1999 - \$126,123
	<u>FY 2000 - \$128,960</u>
Total	\$436,540

Task Manager: Steve Schaus

Scope: Draft an interface control process description and develop ICD for the Waste Retrieval System/Balance of system interface

Period of Performance: October 1996 through September 2000

<u>Deliverables/Milestones:</u>	Interface control process description	03/15/97
	ICD for WRS/BOS interface	08/15/97

1.1.2.3 Develop and Maintain Functions & Control Requirements Database

Budget	FY 1997 - \$184,257
	FY 1998 - \$123,807
	FY 1999 - \$126,123
	<u>FY 2000 - \$128,960</u>
Total	\$563,147

Task Manager: Steve Schaus

Scope: Support development of Waste Retrieval System and Balance of System specification for HTI Draft SEMP and configuration Management Plan for HTI

Deliverables/Milestones:

Draft Specifications	03/31/97
Final Specifications	07/31/97
Configuration Management Plan	02/28/97
HTI SEMP	05/31/97

Period of Performance: October 1996 through September 2000

Deliverables/Milestones: TBD

Total 1.1.2 Systems Engineering - \$1,123,938

HTI WBS Dictionary Section 1.2

Section 1.2

Closure Process Criteria Development

1.2.1 Retrieval Performance Objectives

1.2.1.1 Stakeholder Involvement

Budget	FY 1997 - \$122,709
	FY 1998 - \$ 84,478
	<u>FY 1999 - \$ 86,541</u>
Total	\$293,728

Task Manager: John Bloom

Scope: This is a level of effort task covering development of stakeholder involvement strategy, coordination of stakeholder, Indian Tribes and regulator activities for HTI and provision of feedback and project status information to stakeholders, Indian Tribes and regulators. This covers HTI's interactions with, as a minimum, the Hanford Advisory Board (HAB), Community Leaders Network (CLN), Site Technology Coordination Group (STCG), and Indian Nations. Stakeholder involvement specifically focused on development of retrieval performance evaluation criteria via one-on-one meetings, workshops, and DQO processes are covered under activity 1.3.3.2 and 1.3.3.3.

Period of Performance: October 1996 through September 1999.

Deliverables/Milestones: This is a level of effort task, but semi-annual (as a minimum) workshops are envisioned during the first two years.

- 1) Issue comprehensive stakeholder involvement plan ***3/1/97***

- Interfaces:
- 1) Provide technical data, values and requirements to 1.3.3.2 & 1.3.3.3
 - 2) Provide technical data, values and requirements to 1.2.1.2

1.2.1.2 Permitting Plan

Budget	FY 1999 - \$589,389
	<u>FY 2000 - \$601,930</u>
Total	\$1,191,319

Task Manager: Ed Fredenburg

Scope: This is a product oriented task to provide the Air Permit modifications and the Tank Closure Plan per WAC 173-303-610) to identify the process and path to closure of tank 104-AX. The technical basis for closure will be identified, defined and refined in 1.3 and key stakeholder, Indian Tribe and regulator values that must be addressed will be defined in 1.2.1.1. This effort requires an ongoing, if not continuous, interface with the Department of Ecology permit writer to ensure all elements important to the Department of Ecology are adequately addressed. Additional details will be developed during annual updates for planning for out years activities.

Period of Performance: October 1998 through September 2000.

Deliverables/Milestones: The Air Permit Modifications and Closure Plan shall be submitted to the Department of Ecology no later than September 30, 1999.

- Interfaces:
- 1) Stakeholder, Indian Tribes and regulator data, input and values from 1.2.1.1, with periodic feedback on issues and progress reported to stakeholders via 1.3.3.2 and 1.3.3.3.
 - 2) Technical data for closure analysis from 1.3 and 1.4.3 and technical requirements transmitted to 1.3 and 1.4.3
 - 3) Residual waste volume and characteristics from 1.4.1 and technical requirements transmitted to 1.4.1

<u>1.2.1.3</u>	<u>Ecology Approval of 104-AX Closure Plan</u>
Budget	<u>FY 2000 - \$60,243</u>
	Total \$60,243

Task Manager: Ed Fredenburg

Scope: This is a level of effort task to address and resolve issues and deficiencies identified during the Closure Plan review by the Department of Ecology. Additional details will be developed during annual updates for planning for out years activities.

Period of Performance: October 1999 through September 2000.

Deliverables/Milestones: This is a level of effort task.

Scope: Based on the requirements and criteria defined in 1.2.2.1, develop a petition to the NRC to declare the residual wastes in 104-AX as incidental. Additional scope requirements will be added when task 1.2.2.1 is complete and additional details will be developed during annual updates for planning for out years activities..

Period of Performance: October 1997 through September 1998

Deliverables/Milestones:

- Interfaces:
- 1) With 1.3.3.2 and 1.3.3.3 to define requirements and 1.4.1 to provide technical data.
 - 2) With 1.3.3.3 and 1.3.3.4 in long term modeling results are necessary to support submission of the petition.

Total 1.2.2 NRC Criteria - \$97,848

HTI WBS Dictionary Section 1.3

Section 1.3 SST Closure Assessment

1.3.1 Vadose Zone Assessment

<u>1.3.1.1</u>	<u>Develop Source Term for Model</u>
Budget	<u>FY 1997 - \$148,332</u>
	Total \$148,332

Task Manager: Ed Fredenburg

Scope: This is a level of effort task covering PHMC support to the development of two models (vadose zone transport and aquifer transport) to provide long term performance assessment and sensitivity analysis for potential scenarios for closed tanks. This effort provides for acquiring the necessary computer hard and soft ware to support the independent effort being conducted by Jacobs Engineering (task 1.3.3.2). Effort will focus on using best available site data and assumptions on stratigraphy, hydraulic properties, inventories, solubility, sorption, and other transport properties as input to development of a vadose zone contaminant transport model under task 1.3.3.2. Clarification - this task is focused on development and checkout of the initial model. Subsequent updating the model and/or model output when tank volume and characteristics and plume data become available is covered in tasks 1.3.1.3, 1.3.1.4 and 1.3.3.4.

Period of Performance: October 1996 through September 1997.

Deliverables/Milestones: Deliverables and milestones for this task are included in deliverables and milestones for the long-term risk assessment element of task 1.3.3.2.

- Interfaces:
- 1) Provide technical data and requirements to 1.3.3.2
 - 2) Technical data relative to soils and hydraulic characteristics will be shared with the alternatives study - 1.3.2

<u>1.3.1.2</u>	<u>AX Farm Plume Characterization</u>
Budget	<u>FY 1997 - \$15,540</u>
	Total \$15,540

Task Manager: Ed Fredenburg

Scope: The original scope was to drill a RCRA well for soils/vadose zone characterization. Cost sharing/leveraging plans did not come to fruition and the well was canceled. The funding level represents the sunk cost at the time of cancellation

Period of Performance: October 1996 through December 1996.

Deliverables/Milestones: This is a level of effort task that was canceled.

Interfaces: 1) N/A

1.3.1.3 Update Vadose Zone Transport Analysis with Tank Data

Budget	<u>FY 1998 - \$366,813</u>
Total	\$366,813

Task Manager: Ed Fredenburg

Scope: This is a level of effort task covering PHMC support to update the analysis performed in FY 1997 in tasks 1.3.1.1 and 1.3.3.2 incorporating quantity and characteristic data received from LDUA and crawler deployments in 104-AX. Additional details will be developed during annual updates for planning for FY 1998 activities.

Period of Performance: October 1997 through September 1998.

Deliverables/Milestones: .

- Interfaces:
- 1) Provide technical data and requirements to 1.3.3.3
 - 2) Receive additional input from stakeholders, Indian Tribes and regulators from 1.3.3.2 and 1.3.3.3 and provide stakeholder, Indian Tribe and regulator input on progress and emerging issues
 - 3) Provide data and results to 1.2.2.2 to support the petition to NRC as required.

1.3.1.4 Update Vadose Zone Transport Analysis with Plume Data

Budget	<u>FY 2000 - \$375,522</u>
Total	\$375,522

Task Manager: Ed Fredenburg

Scope: This is a level of effort task covering PHMC support to update the analysis performed in FY 1997 and FY 1998 in tasks 1.3.1.1/1.3.1.3 and 1.3.3.2/1.3.3.3 incorporating quantity and characteristic data received from 1.4.3. Additional details will be developed during annual updates for planning for out years activities.

Period of Performance: October 1999 through August 2000.

Deliverables/Milestones: This is a level of effort task to support resolution of any issues associated with the Department of Ecology review of the Closure Plan.

Interfaces: 1) Support to task 1.2.1.3 as requested

Total 1.3.1 Vadose Zone Models \$906,207

1.3.2 Alternatives Study

1.3.2.1 Engineering Data

Budget	<u>FY 1997 - \$627,624</u>
Total	<u>\$627,624</u>

Task Manager: Ed Fredenburg

Scope: This is a product oriented task to support the PHMC to gather and/or develop engineering data packages describing tank closure alternatives, including estimated costs and manpower utilization, worker exposure, drawings and sketches of closure states, flow diagrams and any other relevant information required for analysis. The engineering data packages shall be provide to 1.3.3.2 as they are developed and approved.

Period of Performance: October 1996 through September 1997.

Deliverables/Milestones: All engineering packages shall be completed, approved and transmitted to Jacobs Engineering no later than September 30, 1997.

Interfaces: 1) Provide technical data to 1.3.3.2
2) The data packages may also be required to support discussions an/or submittals to the NRC

- 3) Provides technical input to 1.3.2.2 on an ongoing basis

1.3.2.2 Prepare Draft Structural Analysis for Closed Tank

Budget	<u>FY 1997 - \$114,084</u>
Total	\$114,084

Task Manager: Ed Fredenburg

Scope: This is a product oriented task to support the PHMC to perform the structural analysis to define mechanical property requirements for tank fill materials to prevent excessive dome deflection and differential settlement that could degrade surface barrier performance. This task includes structural model development and analysis.

Period of Performance: October 1996 through September 1997.

Deliverables/Milestones: Summarize results of analysis in interim report by end of FY 97. Final conclusions and recommendations will be included in deliverables for 1.3.2.3.

- 1) Issue draft structural analysis report for closed tank ***9/30/97*****

Interfaces: 1) Provide technical data and requirements to 1.3.3.2 and 1.3.2.3

1.3.2.3 Soil Settlement Analysis for Closed Tank

Budget	<u>FY 1998 - \$224,895</u>
Total	\$224,895

Task Manager: Ed Fredenburg

Scope: This is a level of effort task to support the PHMC to analyze the long term effects of barrier pressure on stabilized tank and tank farm configurations. Special attention shall be given to the potential for differential settlement mechanisms that might result in partial failure of the protective barrier. Additional details will be developed during annual updates for planning for out years activities.

Period of Performance: October 1997 through September 1998.

Deliverables/Milestones: Complete analysis and submit recommendations on tank stabilization materials and soil settlement no later than September 30, 1998.

Interfaces: 1) Provide technical data and requirements to 1.3.3.3, 1.2.1.2 and 1.2.2.2

Total 1.3.2 Alternatives Study - \$966,603

1.3.3 Closure Basis

1.3.3.1 Support Risk Assessment

Budget FY 1997 - \$106,449
Total \$106,449

Task Manager: Ed Fredenburg

Scope: This is a level of effort task to support the PHMC in the technical management and assessment of results of the contract for developing retrieval performance objectives.

Period of Performance: October 1996 through September 1997.

Deliverables/Milestones: Provision of overall planning, coordination, oversight and product review for development of retrieval performance evaluation criteria for AX farm, including:

- 1) Issue statement of work and change request for Jacobs Engineering for development of retrieval performance evaluation criteria under 1.3.3.2 by 1/10/97.
- 2) Review and approve of contract deliverables under 1.3.3.2 by 9/30/97

Interfaces: 1) Provide technical data and scope requirements to 1.3.3.2/3

2) Provide technical data to support 1.2.2.2

1.3.3.2 Develop Retrieval Performance Objectives

Budget FY 1997 - \$1,167,467
Total \$1,167,467

Task Manager: Ed Fredenburg

Scope: This is a product oriented task that will provide initial analyses and activities supporting development of retrieval performance evaluation criteria for AX tank farm. This task includes: (1) developing an approach for evaluation tradeoffs between health-based performance measures; (2) evaluating human health impacts to workers and the public for postulated retrieval/closure alternatives; (3) assessing long-term risk through transport of contaminants; (4) assessing regulatory compliance for postulated retrieval/closure alternatives; (5) stakeholder, Indian Tribe and regulator involvement activities supporting development of retrieval performance criteria; and (6) specifying data needed for in-tank and site characterization activities supporting risk assessment for development of retrieval performance evaluation criteria.

Period of Performance: October 1996 through September 1997.

Deliverables/Milestones: Prepare draft report in interim results of human health and safety risk study, and long term risk study to be used as a basis for screening retrieval and tank closure alternatives by 9/30/97. Specify data needed from in-tank and site characterization activities based on results of preliminary risk assessment, input from stakeholder, Indian Tribe and regulator involvement, and input from the separate PHMC task on data quality objectives to implement the memorandum of understanding between DOE and Ecology, by the end of July 1997

- 1) Issue Draft Evaluation of Closure Criteria, per the scope described above ***9/30/97****

- Interfaces:**
- 1) Specify characterization data needed for 1.4.1 and 1.3.6
 - 2) Contaminant transport models and interim analysis to 1.3.3.3

<u>1.3.3.3</u>	<u>Closure Risk Assessment</u>
Budget	<u>FY 1998 - \$1,009,625</u>
	Total \$1,009,625

Task Manager: Ed Fredenburg

Scope: This is a product oriented task that will provide final analysis results with conclusions and recommendations for optimizing retrieval and closure for AX tank farm, based on retrieval performance evaluation criteria developed under this task. This task includes: 1) identifying non-viable retrieval and closure alternatives for AX tank farm; 2) developing graphical relationships between human health and safety risk and parameters affected by retrieval and closure, 3) summarizing short-term and long-term cumulative human health impacts to workers and the public for postulated retrieval/closure alternatives;

4) stakeholder, Indian Tribe and regulator involvement activities supporting development of retrieval performance evaluation criteria; and 5) provision of final conclusion and recommendations for retrieval performance evaluation criteria for AX tank farm.

Period of Performance: October 1997 through September 1998.

Deliverables/Milestones: Prepare draft report with conclusions and recommendations on non-viable retrieval and closure alternative combinations by 11/30/97. Prepare final report with conclusions and recommendations on retrieval performance evaluation criteria.

- Interfaces:
- 1) Provide vadose zone and ground water models to 1.3.3.4
 - 2) Provide technical data to support 1.2.2.2
 - 3) Stakeholder, Indian Tribe and regulator input, contaminant transport models and interim analysis results from 1.3.3.2

1.3.3.4 Update Aquifer Transport/Risk Assessment with plume Data

Budget	<u>FY 2000 - \$454,330</u>
Total	\$454,330

Task Manager: Ed Fredenburg

Scope: This is a level of effort task to support the PHMC in updating the performance risk models developed in 1.3.3.3 and 1.3.3.4 to complete and document the risk assessment for tank closure and to resolve any issues developed during the Department of Ecology review of the Closure Plan. Additional details will be developed during annual updates for planning for out years activities.

Period of Performance: October 1999 through September 2000.

Deliverables/Milestones: Issue final Risk Assessment no later than September 30, 2000.

- Interfaces:
- 1) Provide technical data and support to 1.2.1.3 as required

Total 1.3.3 Closure Basis - \$2,737,871

1.3.4 Vadose Zone Characterization Safety Analysis

1.3.4.1 Engineering Data

Budget	<u>FY 1998 - \$104,631</u>
Total	\$104,631

Task Manager: John Bloom

Scope: This is a level of effort task for the PHMC to develop the safety analysis for deployment and utilization of the cone penetrometer for characterization of the vadose zone in and around the AX Tank farm. Additional details will be developed during annual updates for planning for out years activities.

Period of Performance: October 1997 through September 1998.

Deliverables/Milestones: Approved safety analysis and authorization basis for cone penetrometer deployment to characterize the vadose zone in and around the AX Tank farm.

Interfaces: 1) Receive technical data and requirements from 1.4.3.2/3/4

1.3.4.2 Safety Documentation

Budget	<u>FY 1999 - \$423,721</u>
Total	\$423,721

Task Manager: John Bloom

Scope: This is a level of effort task for the PHMC to develop the safety documentation for interim stabilization of tank 104-AX. Currently on hold pending input from stakeholders and results from the performance assessment. Additional details will be developed during annual updates for planning for out years activities.

Period of Performance: October 1998 through March 1999.

Deliverables/Milestones: Currently on hold pending input from stakeholders and results from the performance assessment.

Interfaces: 1) Receive technical data and requirements from 1.3.3.2/3 and 1.3.2.2/3 , 1.3.2 and 1.2.2.1/2

<u>1.3.4.3</u>	<u>Safety Analysis</u>	
	Budget	<u>FY 1999 - \$553,489</u>
	Total	\$553,489

Task Manager: John Bloom

Scope: This is a level of effort task for the PHMC to develop the safety documentation for interim stabilization of tank 104-AX. Currently on hold pending input from stakeholders and results from the performance assessment. Additional details will be developed during annual updates for planning for out years activities.

Period of Performance: April 1999 through September 1999.

Deliverables/Milestones: Currently on hold pending input from stakeholders and results from the performance assessment.

- Interfaces:
- 1) Receive safety documentation from 1.3.4.2
 - 2) Receive technical data and requirements from 1.3.3.2/3 and 1.3.2.2/3 and 1.3.2 and 1.2.2.1/2

Total 1.3.4 Safety Documentation 104-AX - \$1,081,841

comments. Additional details will be developed during annual updates for planning for out years activities.

Period of Performance: October 1996 through September 1999.

Deliverable/Milestones: A peer reviewed report documenting the technical basis for sampling Tanks 104-AX.

- Interfaces:
- 1) 1.4.1.3/4 to establish the overall basis and protocols for sampling plan review and acceptance
 - 2) 1.3.6.3 to assure correct analytical protocols
 - 3) With STCG and HAB to ensure dialogue with regulators and stakeholders

1.3.6.2 Sampling and Analysis Plan for 104-AX

Budget FY 1997 - \$29,918
Total - \$29,918

Task Manager: J. G. Kristofzski

Scope: Based on agreements with Ecology staff and stakeholders on the key analytes and waste volume and location estimates, existing and updates provided during the first deployment of the LDUA, develop a statistically relevant technical basis for residual waste characterization in Tank 104-AX. Utilizing the aforementioned technical basis, develop the most economical in tank residual waste sampling plan. This will require considerable coordination with Tasks 1.4.1.3 and 1.4.1.4 to ensure the functions and requirements for the sampling equipment are understood and meet the needs and requirements of the sampling plan. As a minimum the plan will define: where samples are to be taken; instructions for transport to the laboratory; instruction to the laboratory on how to prepare samples; analytes to be analyzed; and quality control requirements. Submit the plan for peer review and incorporate/dispose all comments.

Period of Performance: February 1997 through June 1997

Deliverables/Milestones:

- 1) A peer review sampling and analysis plan per the scope defined above to be presented to Ecology and Hanford stakeholders, Indian Tribes and regulators. 6/30/97

- Interfaces:**
- 1) Work with laboratory staff (1.3.6.3) to incorporate appropriate information on analytical procedures.
 - 2) Coordinate with technical staff (Tasks 1.4.1.3/4) to ensure the functions and requirements for the sampling equipment support the requirements of the sampling and analysis plan
 - 3) Coordinate with staff at SRS and ORNL to determine how they are handling similar tasks and share information about approach and effects of regulatory vehicles

<u>1.3.6.3</u>	<u>Sampling and Analysis of 104-AX Residual Wastes</u>
Budget	FY 1998 - \$586,821
	Total - \$586,821

Task Manager: J. G. Kristofzski

Scope: Perform the required analysis of key radionuclides and chemical target analytes, using approved and accepted procedures on waste samples from 104-AX. Prepare tank characterization report using information from sample analysis and volume estimates.

Period of Performance: October 1997 through September 1998

Deliverables/Milestones: Analytical results for all samples as specified. Analysis documentation shall contain all appropriate quality assurance and control information (including PARRC factors) to permit third party verification and validation of the results. Reporting formats shall be agreed to prior to initiating analysis of the samples. Specific sample handling and transport requirements for maintenance of quality and chain of custody, including any requirement for field and travel blanks will be specified and provided to Task 1.4.1.3/4. Prepare final tank characterization report for 104-AX. Interpret analysis results and provide notification to data users. Additional details will be developed during annual updates for planning for out years activities. The report will be available 9/30/98.

- Interfaces:**
- 1) Assist in the development of the technical basis documents in Task 1.3.6.1 and ensure the laboratory capabilities are sufficient to meet all identified requirements.
 - 2) Define and document the sample handling and transport requirements and provide them to Tasks 1.4.1.3/4
 - 3) Assist in the design review of the crawler (task 1.4.1.4) to ensure crawler equipment does not result in inadvertent sample contamination

- 4) Incorporate 104-AX waste volume estimates from 1.4.1.1.

Total 1.3.6 Waste Volume/Inventory Assessment - \$819,511

HTI WBS Dictionary Section 1.4

Section 1.4

Technology Acquisition

1.4.1 AX-104 Residual Waste Volume/Inventory Assessment

1.4.1.1 Document Estimate of AX-104 Waste Volume

Budget	FY 1997 - \$436,949
	<u>FY 1998 - \$48,899</u>
Total	\$485,848

Task Manager: C. E. Jenkins

Scope: Provide the technical and engineering expertise to: 1) Identify and/or develop easy-to-use, low-cost visual based methods and technologies for estimating residual waste volumes; 2) interface with Light Duty Utility Arm (LDUA) deployment staff to ensure most effective measuring tools are deployed, 3) initiate special stand-alone activities, such as measuring radiation fields at the riser; 4) using photographic and other data available, including data from the initial LDUA deployment, identify recommended sampling locations within the tank to characterize waste constituents; 5) Provide a peer reviewed report updating the 104-AX waste volume and characteristics, including all data and calculations to support the estimate and 6) manage communications with the stakeholders, Indian Tribes and regulators so they are fully informed of progress and results.

Scope Clarification: The results of waste volume and characteristics estimates are expected to be iterative, as accuracy requirement have not been defined by preliminary results of the Performance Assessment (1.3.3.4). This will necessitate an ongoing interface with staff working on the Performance Assessment and refinement of estimates in FY 1998.

Period of Performance: October 1996 through September 1998.

Deliverables/Milestones:

- 1) An interim peer reviewed report documenting the estimated total waste volume remaining in tank AX-104. ****9/30/97***
- 2) A final peer reviewed report, incorporating LDUA and Crawler results to define the total volume of the waste remaining in tank 104-AX. 6/30/97

- Interfaces:
- 1) Provide technical data and requirements to 1.4.1.2 - 1.4.1.4;
 - 2) Utilize data from both LDUA and the crawler deployments to provide final estimates of the waste volume and characteristics in 104-AX
 - 3) Work with Performance Assessment staff to establish 104-AX characterization requirements and limits of accuracy

1.4.1.2 LDUA Phase 1 Deployment

Budget FY 1997 - \$259,718

Task Manager: G. A. Barnes

Scope: Utilizing existing equipment, obtain as much close up stereo video and photographic data as possible of the AX-104 waste, tank wall, air lift circulators and other in-tank hardware. A primary objective will be to locate areas where the tank bottom can be seen, and/or the distance between the tank bottom and waste surface can be determined. If opportunities arise, other physical characteristics of the waste will be determined. This effort will require qualification of the LDUA for deployment in flammable gas tanks, including all engineering analysis and safety documentation. The scope includes all engineering, management and operations actions necessary to deploy the LDUA as soon as possible. After completing the in-tank examination, the LDUA shall be returned to a state of readiness to support a second LDUA deployment in late 1997. Any "make or buy" decisions will be biased toward the buy decision, and will require specific written authorization from the HTI project manager for site contractors to design and/or build equipment.

Period of Performance: October 1997 through April 1997

Deliverables/Milestones:

- 1) Complete LDUA Deployment to assess volume of residual waste volume. *** 2/28/97***

- Interfaces:
- 1) Work with PNNL LDUA staff (TTP RL36WT53) and TWRS to qualify the LDUA for flammable gas tanks
 - 2) Receive and dispose technical input and requirements from 1.4.1.1 regarding visually based methods and technologies for measuring the 104-AX waste volume

- 3) Share experience and lessons learned with 1.4.1.3

1.4.1.3 LDUA Phase 2 Deployment

Budget	FY 1997 - <u>\$664,822</u>
	Total \$664,822

Task Manager: G. A. Barnes

Scope: Manage the development of characterization and sampling equipment to support a second LDUA deployment in FY 1997. The characterization equipment shall include as a minimum, a calibrated probe to measure physical properties of the waste, a probe to measure the distance between the top surface of the waste and the tank bottom, a probe to measure the ratio of gamma emitting isotopes and a sampler for obtaining samples from identified locations within the tank. This effort will require qualification of the LDUA sampling and characterization devices for deployment in flammable gas tanks, including all engineering analysis and safety documentation. The scope includes all engineering, management and operations actions necessary to deploy the LDUA prior to the end of FY 1997. After completing the in-tank examination, the LDUA shall be returned to a state of readiness to support other tank deployments. Any "make or buy" decisions will be biased toward the buy decision, and will require specific written authorization from the HTI project manager for site contractors to design and/or build equipment.

Period of Performance: October 1996 through September 1997

Deliverables/Milestones: The following is listing of the major milestones for this task:

- 1) Develop Calibrated Probe - 6/10/97
- 2) Develop Gamma Probe - 7/21/97
- 3) Develop sampler - 7/31/97
- 4) Complete in-tank deployment - 9/30/97

- Interfaces:
- 1) Receive and dispose technical input and requirements from 1.4.1.1 regarding methods sampling residual wastes in 104-AX
 - 2) Receive and utilize lessons learned from 1.4.1.2 on LDUA deployment and operation
 - 3) Receive and dispose technical requirements on sampling accuracy from PA Task (1.3.3.4) and 1.4.1.1

<u>1.4.1.4 Crawler Procurement and Deployment</u>	
Budget	FY 1997 - \$636,324
	<u>FY 1998 - \$373,009</u>
	Total \$1,009,333

Task Manager: G. Nick Boechler

Scope: Manage the acquisition and deployment of a crawler vehicle designed and equipped to obtain additional close up video of tank and waste features, take waste samples from designated locations, take gamma spectrographic measurements of tank and wastes at designated locations and take depth measurements to confirm waste depth and tank bottom location. Sampling devices to accomplish the mission goals may require development and/or adaptation. However, any "make or buy" decisions regarding sampling and tool acquisition will be biased toward the buy decision, and will require specific written authorization from the HTI project manager for site contractors to design and/or build equipment. The system will be designed to function in Class 2 and 3 tanks, which requires flammable gas controls. The specification will also be written such that options such as having the vendor perform the service at the tank will be considered. If the authorization basis changes and flammable gas controls can be eliminated, the contract will be modified appropriately and controls removed.

Period of Performance: October 1996 to June 1998

Deliverables/Milestones: The following is listing of the major milestones for this task:

- | | | |
|----|---|----------------|
| 1) | Issue RFP for crawler vehicle | ***3/31/97**** |
| 2) | Complete crawler fabrication | 9/29/97 |
| 3) | Complete Hanford operational acceptance testing | 3/19/98 |
| 4) | Deploy crawler in 104-AX | 4/30/98 |

- Interfaces:
- 1) Receive and dispose technical input/requirements from 1.4.1.1 and Task 1.3.6 regarding methods sampling residual wastes in 104-AX
 - 2) Receive and utilize lessons learned from 1.4.1.2 & 1.4.1.3 on LDUA deployment and operation
 - 3) Receive and dispose technical requirements on sampling accuracy from PA Task (1.3.3.4) , 1.4.1.1 and Analytical Task (1.3.6.3)
 - 4) Ensure coordination with Task #1.3.6 on sample handling, packing and transportation requirements.

Total 1.4.1 104-AX Residual Waste Volume - \$2,419,721

1.4.2 Alternate Retrieval Technology Demonstrations

1.4.2.1 Specification/Vendor Interface
 Budget FY 1997 - \$658,841
 Total \$658,841

Task Manager: J. A Yount

Scope: Provide the technical and administrative services to issue and manage four contracts with commercial vendors potentially capable of providing at tank retrieval services for a wide spectrum of Hanford SST wastes. The scope of work and contracts shall build upon and enhance the data and information obtained in the contracts sponsored by EM-30 in the ACTR program. A significant portion of this effort shall be directed towards identifying and resolving technical and safety issues that might prevent application of the selected technologies to retrieval of Hanford SST wastes. This effort will include, but not be limited to: technical and safety review of vendor retrieval systems and application approaches, vendor needs and considerations associated with the tanks interface and the site infrastructure, workshops designed to resolve application issues, review of vendor test plans and draft performance reports and approval of final vendor reports.

Further details regarding the evaluation criteria are included in Requisition W-A15120-SH, dated November 26, 1996.

Period of Performance: October 1996 through September 1997.

Deliverable/Milestones: The following is a list of key milestones for this task:

- | | | |
|----|---|---------------|
| 1) | Issuance of draft RFP for vendor review and comment | 11/19/96 |
| 2) | Issue RFP | 11/26/96 |
| 3) | Award contracts | ***1/20/97*** |
| 4) | Review and comment on vendor test plans | 3/10/97 |
| 5) | Review and comment on vendors deployment plans | 3/10/97 |
| 6) | Conduct safety workshop to resolve vendor issues | 3/30/97 |
| 7) | Review and comment on vendor test reports | 5/20/97 |
| 8) | Issue final vendor performance reports | 8/1/97 |

- Interfaces:
- 1) With contracts issued and managed by ACTR program to ensure data builds on information previously generated
 - 2) With TFA to ensure compatibility with RPD&E efforts
 - 3) With PHMC safety organizations to identify and resolve safety issues that might prevent deployment of vendors technology
 - 4) With selected vendors to ensure timely completion of work so data are available to support the GFI package (1.4.2.6)
 - 5) Provide vendor data to 1.5.1.1, Project Design Concept, as this may assist in defining tank interface and site infrastructure interfaces.

<u>1.4.2.2</u>	<u>Vendor Performance (4 Contracts)</u>	
thru	Budget	<u>FY 1997 - \$2,211,932</u>
<u>1.4.2.5</u>	Total	\$2,211,932

Task Manager: J. A Yount

Scope: Four contracts shall be issued to commercial vendors (or teams of vendors) to reduce the cost and risk of retrieving waste from Hanford SSTs by demonstrating commercially available retrieval technologies in proof of principle tests and by defining and resolving deployment issues that could prevent application of these technologies in Hanford tanks. All commercial services shall be performed in accordance with the SOW and contract issued by PHMC (the detailed SOW is available on the Hanford Home Page and will not be repeated here).

Period of Performance: January 1997 through July 1997.

Deliverable/Milestones: The following is a list of key milestones for this task:

- | | | |
|----|--|--------------|
| 1) | Contracts awarded | **1/20/97*** |
| 2) | Vendor system concepts, deployment issues and test plans | 2/20/97 |
| 3) | Vendor participation in on-site safety workshop | 3/30/97 |
| 4) | Completion of vendor testing | 5/1/97 |
| 5) | Draft Vendor test reports | 5/17/97 |
| 6) | Final Vendor test/application assessment reports | 7/15/97 |

Interfaces: 1) 1.4.2.6 to ensure timely incorporation of test information

- 2) 1.4.2.1 to ensure identification and resolution of potential safety issues associated with deployment and operations

1.4.2.6 Prepare Government Furnished Information (GFI) Package

Budget	<u>FY 1997 - \$37,806</u>
Total	\$37,806

Task Manager: J. A Yount

Scope: The Government Furnished Information (GFI) package shall be designed to provide potential vendors and user organizations at Hanford and other DOE tank sites a comprehensive composite of tank waste retrieval testing and field performance results at all DOE sites, plus any commercial experience that is relevant. The scope shall include key trade studies and chemical and physical information and/or data sets relevant to tank waste characteristics at Hanford. Similar information may be included for tank wastes at other sites if it is judged relevant to the vendors. Electronic information is the preferred choice for presenting and conveying the data in the GFI, providing the electronic data are available to the public, e.g. such as available on a home page accessible outside the Hanford Intranet. The initial preparation of the GFI will be accomplished via the Retrieval Analysis Tool effort with TFA TTP RL36WT51. This effort will focus on those activities necessary to complete the GFI package

Period of Performance: June 1997 through July 1997.

Deliverable/Milestones:

- 1) Issue GFI package. ***7/21/97***

Interfaces:

- 1) TWRS Retrieval Program and Characterization Program, as much valuable data may be in old reports and trade studies
- 2) TFA to assist in coordinating obtaining relevant information from other DOE tank sites.
- 3) Activities in TTP RL36WT51, with appropriate emphasis on efforts to develop a retrieval analysis tool/data base.
- 4) Provide vendor data to 1.5.1.1, Project Design Concept, 1.5.1.2 Trade Studies and 1.5.1.3 Retrieval Specification Preparation as these data may assist in defining tank interface and site infrastructure interfaces.

<u>1.4.2.7</u>	<u>Test & Evaluation Summary Report</u>	
	Budget	<u>FY 1997 - \$37,806</u>
	Total	\$37,806

Task Manager: J. A Yount

Scope: Provide a summary level report of the alternative retrieval testing performed by the four vendors, with emphasis on data, results and techniques likely to be informative to vendors considering participation in the 106-C heel retrieval project. Provide references to technical details in the individual vendors reports. The report shall provide a framework for relating the vendors and technologies selected to specific technical needs at Hanford, so those reviewing the report will understand the context of vendor selection and relevance of the data.

Period of Performance: July 1997 through August 1997.

Deliverable/Milestones:

1) Issue summary report. ***7/26/97*****

- Interfaces:
- 1) Ensure rapid distribution of the report to user organizations at other tank sites
 - 2) Coordinate efforts with 1.4.2.6, so the data are provided in or appropriately referenced in the GFI report/data package
 - 3) Coordinate data with key representatives of the RPD&E TTP and incorporate data into the Retrieval Analysis Tool.
 - 4) Provide a timely copy to the teams on 1.5.1.1 - 1.5.1.3.

Total 1.4.2 Alternate Retrieval Technologies Demo. - \$2,946,385

1.4.3 Tank Farm Plume Contaminant Development & Deployment

<u>1.4.3.1</u>	<u>Evaluate/Select Plume Characterization Technology</u>	
	Budget	<u>FY 1997 - \$136,208</u>
	Total	\$136,208

Task Manager: Al Noonan

Scope: Review characterization needs identified during the development of near and far field computer models and correlate them with currently available commercial technologies, recent developments by the Corps of Engineers (COE) and sensor activities in the CMST Cross Cut Focus Area. Assuming capabilities that match the needs are identified in the COE and CMST, establish working agreement and/or memorandums of agreement to obtain services, equipment and sensors for measurement of subsurface contaminants.

Period of Performance: February 1997 through September 1997.

Deliverable/Milestones:

- 1) Summary report, as described in the scope above. 9/30/97
- 2) Executed Contract with COE for sensor package and sampler development. ***9/30/97***

- Interfaces:
- 1) Obtain listing and understanding of needs from Performance Assessment activities in 1.3.3
 - 2) CMST and COE to understand current programs and capabilities

<u>1.4.3.2</u>	<u>Pre-Deployment Demonstrations</u>
Budget	FY 1997 - \$597,623
	<u>FY 1998 - \$260,077</u>
	Total \$857,700

Task Manager: Al Noonan

Scope: The scope is to accelerate the development engineering and fabrication of a multi-sensor probe and two discrete soil sampler probes to be deployed using cone penetrometer (CP) techniques at Hanford site to assess the residual waste inventory (i.e., volume concentration) of waste constituents that are known or suspected to have leaked into the tank backfill and/or vadose zone.

Period of Performance: March 1997 through September 1998.

Deliverable/Milestones: Tasks to be completed include completion of the initial development/deployment team planning meeting; completion of the design, fabrication, calibration, and initial testing of a single multi-sensor detection probe; and completion of the

design, fabrication, and testing of two discrete soil sampler probes. In addition, the field plan (i.e., sampling strategy, safety and radiological issues etc.) will be initiated.

Interfaces: 1) TBD

1.4.3.3 AX Farm Deployments

Budget	<u>FY 1998 - \$301,009</u>
Total	\$301,009

Task Manager: TBD

Scope: Currently on hold, pending additional coordination with the Corps of Engineers and CMST Cross Cut Focus Area

Period of Performance: October 1998 through July 1999.

Deliverable/Milestones: Currently on hold, pending additional coordination with the Corps of Engineers and CMST Cross Cut Focus Area

Interfaces: 1) Currently on hold, pending additional coordination with the Corps of Engineers and CMST Cross Cut Focus Area

1.4.3.4 Site Characterization Data

FY 1998 - \$43,200

Budget FY 1999 - \$467,623

Total \$510,823

Task Manager: TBD

Scope: Currently on hold, pending additional coordination with Performance Assessment efforts.

Period of Performance: October 1998 through July 1999.

Deliverable/Milestones: Currently on hold, pending additional coordination with Performance Assessment efforts.

Interfaces: 1) Currently on hold, pending additional coordination with Performance Assessment efforts.

Total 1.4.3 Tank Farm Plume Contaminant Technology Development & Demonstrations - \$1,805,740

HTI WBS Dictionary Section 1.5

Section 1.5

SST Retrieval

1.5.1 Retrieval & Equipment Services (Out of Tank)

1.5.1.1 Project Design Concept

Budget	<u>FY 1997 - \$512,053</u>
Total	\$512,053

Task Manager: Tom May

Scope: The Project Design Concept will provide the technical baseline for the retrieval demonstration in tank C-106. The project team will coordinate with: 1) Project W-320 to assist in defining the likely state of tank C-106 after sluicing; 2) the alternative retrieval technologies team to obtain input and insight as to the range of systems that might be utilized in retrieving the hard heel from tank C-106; and 3) the team preparing the specification to ensure assumptions, conditions and requirements are compatible. The result will be a technical report establishing the initial system design, process flow diagrams, general arrangements, and preliminary operations and maintenance description. The report will also include a clear description of system limitations, casualty events, responses, and preliminary estimates of cost and schedule for site upgrades and likely operational costs to support at-tanks operations. The project design concept team will identify areas of uncertainty/choice that are candidates for trade studies. The trade studies conducted in Task 1.5.1.2 will be authorized by the project design concept team.

Period of Performance: October 1996 through May 1997

Deliverable/Milestones:

- 1) Issue Project Design Concept, prepared in accordance with PHMC standards, policies and procedures. ***5/30/97****

Interfaces: 1) With Alternate Retrieval Technology 1.4.2.1 - 1.4.1.6 to understand the spectrum of commercial retrieval technologies that might be encountered.

- 2) Provide authorization and technical direction to Trade Studies 1.5.1.2 and ensure key results from trade studies are processed through the PHMC approval/release procedures.
- 3) Maintain an active working interface with task 1.5.1.3, retrieval specification preparation.
- 4) Safety interface - details to be developed as new safety program emerges.

<u>1.5.1.2</u>	<u>Trade Studies Analysis</u>	
	Budget	<u>FY 1997 - \$392,009</u>
	Total	\$392,009

Task Manager: Larry McDaniel

Scope: Prepare special and/or trade studies as required by task 1.5.1.1 to support the Project Design Concept; some studies might be initiated at the request of the team preparing the retrieval specification (with concurrence from the Project Design Concept team). Studies will be prepared so they are releasable data that may be used by vendors, either in bid preparation or vendor project activities ranging from design through at-tank operation. A key activity and requirement will be to process all relevant data through approval and release processes, up to and including DNFSB acceptance, so the project technical baseline is firmly established.

Period of Performance: October 1996 through September 1997

Deliverable/Milestones: Approved, releasable to the public trade studies, as authorized by task 1.5.1.1. As indicated in the scope statement, a key activity and requirement will be to process all key data through approval processes, up to and including DNFSB acceptance, so the project technical baseline is firmly established. All trade studies affecting the procurement date must be approved and releasable by 9/30/97 to meet the date for support of award of the specification.

- Interfaces:
- 1) 1.4.2.1 - 1.4.2.6 to understand the range of likely commercial retrieval technologies that might be applied to tank C-106
 - 2) 1.5.1.1 to receive authorization to proceed with specific studies
 - 3) 1.5.1.3 to keep the specification preparation team informed about key technical data and limiting conditions.

<u>1.5.1.3</u>	<u>Retrieval Equipment Procurement Specification</u>
Budget	<u>FY 1997 - \$316,838</u>
	Total \$316,838

Task Manager: D. Ramsower

Scope: Provide the technical and administrative support services to prepare a performance based specification for commercial retrieval services to remove the residual waste from tank C-106. This includes all key support categories, such as QA, ES&H, and operations - both for specification preparation and independent review and approval of the specification. The preferred approach is to issue the draft specification for comment from industry, allowing at least two weeks for receipt and disposition of comments. Vendor workshops will be help at the teams discretion.

Period of Performance: April 1997 through July 1997

Deliverable/Milestones:

- 1) Issue PHMC performance based specification for services to retrieve residual wastes from tank C-106. ***7/30/97 ****

- Interfaces:
- 1) 1.5.4.1 for data on residual volume and characteristics.
 - 2) 1.5.1.1 for input on the Project Design Concept, including data on all limitations and constraints
 - 3) 1.4.2.1 - 1.4.2.6 for input on vendor equipment requirements that may affect preparation of the specification
 - 4) 1.5.6.1-1.5.6.3 for input on safety envelop that is currently analyzed and approved.

<u>1.5.1.4</u>	<u>Bid and Award C-106 Retrieval</u>
Budget	FY 1997 - \$45,345
	<u>FY 1998 - \$79,354</u>
	Total \$124,699

Task Manager: Dave Ramsower

Scope: Provide the technical and administrative services to bid and award the contract for retrieval of the heel from tank C-106. This task includes funding for the source selection

board as well as procurement support, and pre-bid conferences and site visits as necessary. The procurement shall be a multiple award, competitively bid contract for industry at-tank services.

Period of Performance: August 1997 through January 1998

Deliverable/Milestones: The following is a listing of the key milestones:

- | | | |
|----|------------------------------|---------|
| 1) | RFP sent to vendor | 8/8/97 |
| 2) | Best and final proposals due | 12/5/97 |
| 3) | Contract(s) award | 1/2/98 |

Interfaces: 1) 1.5.1.3 procurement support during specification preparation

1.5.1.5 Vendor #1 Contract Performance

Budget	FY 1998 - \$2,158,721
	<u>FY 1999 - \$2,034,905</u>
Total	\$4,193,626

Task Manager: Larry McDaniel

Scope: Design, fabricate and cold test (in the vendors facility) the integrated system for retrieving residual wastes from tank C-106.

Period of Performance: January 1998 through November 1998

Deliverable/Milestones: The following is a listing of key milestones:

- | | | |
|----|---|----------|
| 1) | Retrieval system design complete | 3/16/98 |
| 2) | Retrieval system fabrication complete | 7/6/98 |
| 3) | Functional and qualification testing complete | 10/1/98 |
| 4) | Final performance report issued | 11/25/98 |

Interfaces: 1) TBD, will be updated when 1.5.1.1 - 1.5.1.3 are complete

1.5.1.6 Vendor #2 Contract Performance

Budget	FY 1998 - \$2,156,459
	<u>FY 1999 - \$2,034,905</u>
Total	\$4,191,364

Task Manager: Larry McDaniel

Scope: Design, fabricate and cold test (in the vendors facility) the integrated system for retrieving residual wastes from tank C-106.

Period of Performance: January 1998 through November 1998

Deliverable/Milestones: The following is a listing of key milestones:

- | | | |
|----|---|----------|
| 1) | Retrieval system design complete | 3/16/98 |
| 2) | Retrieval system fabrication complete | 7/6/98 |
| 3) | Functional and qualification testing complete | 10/1/98 |
| 4) | Final performance report issued | 11/25/98 |

Interfaces: 1) TBD will be updated when 1.5.1.1 - 1.5.1.3 are complete

<u>1.5.1.7</u>	<u>Vendor #3</u>	
	Budget	<u>FY 2000 - \$8,852,959</u>
	Total	\$8,852,959

Task Manager: Larry McDaniel

Scope: Currently on Hold

Period of Performance: October 1999 through September 2000

Deliverable/Milestones: Currently on Hold

Interfaces: 1) Currently on Hold

Total 1.5.1 Retrieval & Equipment Services - Out-of Tank - \$18,583,548

1.5.2 Site Upgrades

<u>1.5.2.1</u>	<u>Design</u>	
	Budget	<u>FY 1999 - \$1,238,432</u>
	Total	\$1,238,432

Task Manager: Larry McDaniel

Scope: Design the infrastructure needed to support the retrieval system to be provided by industry. This will include activities such as, riser modifications, pit cleanout, additional utilities, HVAC modification and intank equipment removal/disposal. Additional details will be available when activities 1.4.2.1 - 1.4.2.6, and 1.5.1.1 and 1.5.1.3 are complete. The scope will be updated at that time.

Period of Performance: January 1998 through May 1998

Deliverable/Milestones: Complete design May 29, 1998

- Interfaces:
- 1) Likely vendor configurations from 1.4.2.1 - 1.4.2.6
 - 2) Vendor/site requirements definition from 1.5.1.3 .
 - 3) Likely vendor configurations from 1.5.1.5 and 1.5.1.6
 - 4) In tank conditions from 1.5.4.1
 - 5) 1.5.6.1-1.5.6.3 for input on safety envelop that is currently analyzed and approved.

1.5.2.2

Construction

Budget	FY 1998 - \$4,033,365
	<u>FY 1999 - \$1,582,190</u>
Total	\$5,615,555

Task Manager: TBD

Scope: Construct the infrastructure needed to support the retrieval system to be provided by industry, per the design supplied in 1.5.2.1. This will include activities such as, riser modifications, pit cleanout, additional utilities, HVAC modification and intank equipment removal/disposal. Additional details will be available when activities 1.5.1.3 and 1.5.2.1 are complete. The scope will be updated at that time.

Period of Performance: June 1999 through November 1998

Deliverable/Milestones: Complete Construction November 13, 1998

- Interfaces:
- 1) Fabrication requirements and details from 1.5.2.1

- 2) Vendor/site requirements definition from 1.5.1.3 .
- 3) In tank conditions from 1.5.4.1
- 4) 1.5.6.1-1.5.6.3 for input on safety envelop that is currently analyzed and approved.

1.5.2.3

Vendor 1 Installation

Budget	<u>FY 1999 - \$1,935,842</u>
Total	\$1,935,842

Task Manager: TBD

Scope: Install vendor supplied retrieval system per the requirements developed in 1.5.1.5/6 and the design supplied in 1.5.2.1. Additional details will be available when activities 1.5.1.5/6 and 1.5.2.1 are complete. The scope will be updated at that time.

Period of Performance: June 1999 through November 1998

Deliverable/Milestones: TBD

- Interfaces:
- 1) Installation requirements and details from 1.5.1.5/6
 - 2) Vendor/site requirements definition from 1.5.1.3 .
 - 3) In tank conditions from 1.5.4.1
 - 4) 1.5.6.1-1.5.6.3 for input on safety envelop that is currently analyzed and approved.

1.5.2.4

Vendor 1 ATP/OTP/ORR

Budget	<u>FY 1999 - \$2,049,186</u>
Total	\$2,049,186

Task Manager: TBD

Scope: Conduct ATP/OTP/ORR as required on vendor supplied retrieval system per the requirements developed in 1.5.1.5/6 and the configuration established in 1.5.2.3. Additional details will be available when activities 1.5.1.5/6 and 1.5.2.1 - 1.5.2.3 are complete. The scope will be updated at that time.

Period of Performance: February 1999 through May 1999

Deliverable/Milestones: TBD

- Interfaces:
- 1) Fabrication requirements and details from 1.5.2.1
 - 2) Vendor/site requirements definition from 1.5.1.3 .
 - 3) An tank conditions/configuration from 1.5.2.3
 - 4) 1.5.6.1-1.5.6.3 for input on safety envelop that is currently analyzed and approved.

Total 1.5.2 Site Upgrades - \$10,839,015

1.5.3 Retrieval & Equipment Services - In Tank

1.5.3.1 Vendor #1 Performs Retrieval

Budget	<u>FY 1999 - \$1,792,777</u>
Total	\$1,792,777

Task Manager: TBD

Scope: Currently on Hold pending additional input from 1.5.1.3 - 1.5.1.6

Period of Performance: May 1999 through August 1999

Deliverable/Milestones: Currently on Hold pending additional input from 1.5.1.3 - 1.5.1.6

- Interfaces:
- 1) Currently on Hold pending additional input from 1.5.1.3 - 1.5.1.6 and 1.5.5 and 1.5.6

1.5.3.2 Vendor #1 Demobilizes Retrieval System

Budget	<u>FY 1999 - \$527,250</u>
Total	\$527,250

Task Manager: TBD

Scope: Currently on Hold pending additional input from 1.5.1.3 - 1.5.1.6

Period of Performance: August 1999 through September 1999

Deliverable/Milestones: Currently on Hold pending additional input from 1.5.1.3 - 1.5.1.6

Interfaces: 1) Currently on Hold pending additional input from 1.5.1.3 - 1.5.1.6 and 1.5.5 and 1.5.6 and completion of 1.5.3.1

1.5.3.3 Ready Tank for Closure

	FY 1999 - \$ 64,833
Budget	<u>FY 2000 - \$203,760</u>
Total	\$268,593

Task Manager: TBD

Scope: Currently on Hold as a planning package

Period of Performance: October 1999 through December 1999

Deliverable/Milestones: Currently on Hold as a planning package

Interfaces: 1) Currently on Hold as a planning package

<u>Total 1.5.3</u>	<u>Retrieval and Equipment Services - In Tank</u>	-	<u>\$2,588,620</u>
<u>1.5.4</u>	<u>C-106 Residual Waste Volume Assessment</u>		

1.5.4.1 Post W320 Sluicing Volume/Inventory Assessment

Budget	<u>FY 1998 - \$71,795</u>
Total	\$71,795

Task Manager: Al Noonan

Scope: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Period of Performance: May 1998 through July 1998.

Deliverable/Milestones: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Interfaces: 1) Currently on Hold as a planning package, pending further assessment of W-320 Schedule

1.5.4.2 Post Commercial Retrieval Volume/Inventory Assessment
Budget FY 1999 - \$263,602
FY 2000 - \$316,973
Total \$580,575

Task Manager: Al Noonan

Scope: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Period of Performance: March 1999 through June 2000.

Deliverable/Milestones: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Interfaces: 1) Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Total 1.5.4 C-106 Residual Waste Volume Assessment - \$652,370

1.5.5 106-C Regulatory Requirements

1.5.5.1 Permit Plan
Budget FY 1997 - \$12,617
Total \$12,617

Task Manager: John Bloom

Scope: Provide a Permit Plan with a preliminary estimate of required regulatory actions and combine efforts with 1.2.1.2 to provide an integrated project plan.

Period of Performance: October 1996 through March 1997.

Deliverable/Milestones:

1) Issue HTI Project Permit Plan

3/31/97

Interfaces: 1) 1.5.1.1 to provide engineering information on the scope of the 106-C heel retrieval project

1.5.5.2 Stakeholder Involvement

Budget	FY 1998 - \$24,307
	FY 1999 - \$25,190
	<u>FY 2000 - \$25,805</u>
Total	\$75,302

Task Manager: TBD

Scope: Currently on Hold as a planning package, pending further assessment of W-320 Schedule, except those activities necessary to complete the Stakeholder Plan.

Period of Performance: March 1997 through June 2000.

Deliverable/Milestones: Currently on Hold as a planning package, pending further assessment of W-320 Schedule, expect those activities necessary to develop and issue the stakeholder plan.

Interfaces: 1) Coordinate with 1.2.1.1 to issue comprehensive stakeholder plan

1.5.5.3 C-2 Analysis

Budget	<u>FY 1997 - \$23,031</u>
Total	\$23,031

Task Manager: TBD

Scope: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Period of Performance: March 1997 through June 2000.

Deliverable/Milestones: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Interfaces: 1) Currently on Hold as a planning package, pending further assessment of W-320 Schedule

1.5.5.4 Air Permit Modifications/RCRA Evaluation

Budget	FY 1998 - \$48,750
Total	\$48,750

Task Manager: TBD

Scope: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Period of Performance: March 1999 through June 2000.

Deliverable/Milestones: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Interfaces: 1) Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Total 1.5.5 106-C Regulatory Compliance - \$159,700

1.5.6 106-C Safety Documentation

1.5.6.1 Baseline Documentation

Budget	FY 1997 - \$80,559
	FY 1997 - \$118,431
Total	\$198,990

Task Manager: John Bloom

Scope: Provide baseline safety documentation, which lays out the sequential approach for modify the tank farm safety analysis to allow vendor operation of vendor supplied equipment for retrieval of the hard heel remaining in 106-C after sluicing.

Period of Performance: October 1996 through March 1997.

Deliverable/Milestones: Baseline Safety Document issued as approved March 31, 1997

Interfaces: 1) 1.5.1.1 to provide engineering information on the scope of the 106-C heel retrieval project

2) Project W-320 to provide a spectrum of "lessons learned".

1.5.6.2 USQ Evaluation
Budget FY 1997 - \$46,800
Total \$46,800

Task Manager: John Bloom

Scope: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Period of Performance: April 1997 through June 1997.

Deliverable/Milestones: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Interfaces: 1) Currently on Hold as a planning package, pending further assessment of W-320 Schedule

1.5.6.3 Accident Analysis
Budget FY 1997 - \$171,190
FY 1998 - \$199,154
Total \$370,344

Task Manager: John Bloom

Scope: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Period of Performance: June 1997 through December 1997.

Deliverable/Milestones: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Interfaces: 1) Currently on Hold as a planning package, pending further assessment of W-320 Schedule

<u>1.5.6.4</u>	<u>Controls Definition</u>	
	Budget	<u>FY 1998 - \$122,210</u>
		Total \$122,210

Task Manager: John Bloom

Scope: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Period of Performance: December 1997 through February 1998.

Deliverable/Milestones: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Interfaces: 1) Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Total 1.5.6 106-C Safety Documentation - \$738,344

1.5.7 Auxiliary Components Processes

<u>1.5.7.1</u>	<u>Slurry Monitor</u>	
	Budget	FT 1997 - \$126,118
		<u>FY 1998 - \$445,028</u>
		Total \$571,146

Task Manager: TBD

Scope: Coordinate with ORNL and others working on slurry monitor and the W-320 project to determine needs and capabilities of available commercial equipment and equipment in the mature section of the development pipeline to select an adequate array to support project W-320 in determining the potential for inserting an on/in line slurry monitor to meet project needs. After meeting the needs or project W-320, continue necessary assessment of development testing to assist commercial vendors that might utilize such equipment for heel removal from tank 106-C.

Period of Performance: February 1998 through May 1998.

Deliverable/Milestones:

- 1) Issue criteria for transport of slurry from 106-C and 102-AY and recommend on-line slurry monitoring instrumentation for 106-C. *****9/30/97*****

Interfaces: 1) Establish and maintain a working interface with Project W-320 so the assessment of currently available slurry monitors will meet the W-320 Schedule.

1.5.7.2 Sludge & Saltcake Retrieval Compatibility
Budget FY 1998 - \$581,182
FY 1999 - \$594,983
Total \$1,176,165

Task Manager: TBD

Scope: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Period of Performance: October 1997 through September 1999.

Deliverable/Milestones: Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Interfaces: 1) Currently on Hold as a planning package, pending further assessment of W-320 Schedule

Total 1.5.7 Auxiliary Components Process - \$1,747,311

INTEROFFICE MEMO

LOCKHEED MARTIN 

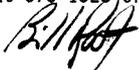
From: Hanford Tanks Initiative
Phone: 373-1328 H6-12
Date: March 31, 1997
Subject: HANFORD TANKS INITIATIVE WORK BREAKDOWN STRUCTURE DICTIONARY,
REVISION 0

To: D. L. Becker H6-12
E. G. Berglin H5-61
J. W. Bloom H6-12
C. L. Elmore H6-12
E. A. Fredenburg H6-12
P. W. Gibbons H6-12
D. B. Hagmann H5-61
G. L. Harvey K6-51
J. J. Huston H5-61
T. H. May H5-61
L. B. McDaniel H6-12
K. E. McKinney H6-12
A. F. Noonan K9-91
E. M. Northrop H6-12
T. E. Rainey S7-12
D. C. Ramsower H5-61
P. S. Schaus H6-12
J. A. Yount K5-22

cc: D. J. Ashley S7-40
V. Fitzpatrick K8-50
J. P. Hanson K8-50
D. J. Washenfelder S7-40
C. D. West S7-53
RWR:KEM File/LB

The purpose of this memo is to document the issuance of the Hanford Tanks Initiative (HTI) Work Breakdown Structure (WBS) dictionary, Revision 0 (HNF-SD-HTI-PLN-001) as a controlled document. As a controlled document, any changes to the WBS dictionary must go through the HTI Project Office,

If you have any questions or require further information please contact me at 373-1328 or Mr. Kris McKinney at 376-4431.


R. W. Root
Manager

phd

Attachment

DISTRIBUTION SHEET

To Distribution	From Remote Sensing and Sampling Equipment Engineering	Page 1 of 1 Date 3/31/97
Project Title/Work Order Hanford Tanks Initiative (HTI) Work Breakdown Structure (WBS) Dictionary, HNF-SD-HTI-PLN-001, Rev. 0/D26A1		EDT No. 617620 ECN No. N/A

Name	MSIN	Text With All Attach.	Memo Only	Attach./ Appendix Only	EDT/ECN Only
D. J. Ashley	S7-40	X			
D. L. Becker	H6-12	X			
E. J. Berglin	H5-61	X			
J. W. Bloom	H6-12	X			
C. L. Elmore	H6-12	X			
V. Fitzpatrick	K8-50	X			
E. A. Fredenburg	H6-12	X			
P. W. Gibbons	H6-12	X			
D. B. Hagmann	H5-61	X			
J. P. Hanson	K8-50	X			
G. L. Harvey	K6-51	X			
J. J. Huston	H5-61	X			
T. H. May	H5-61	X			
L. B. McDaniel	H6-12	X			
K. E. McKinney	H6-12	X			
A. F. Noonan	K9-91	X			
E. M. Northrop	H6-12	X			
T. E. Rainey	S7-12	X			
D. C. Ramsower	H5-61	X			
P. S. Schaus	H6-12	X			
D. J. Washenfelder	S7-40	X			
C. D. West	S7-53	X			
J. A. Yount	K5-22	X			
Central Files (Orig + 1)	A3-88	X			
HTI Project Files (2)	H6-08	X			
RWR:KEM File/LB	H6-12		X		