

ENGINEERING CHANGE NOTICE	1. ECN 164704 <hr/> Proj. ECN
Page 1 of <u>2</u>	

2. ECN Category (mark one)		Supplemental <input type="checkbox"/>	Change ECN <input type="checkbox"/>	Supersedure <input type="checkbox"/>
Cancel/Void <input type="checkbox"/>		Direct Revision <input checked="" type="checkbox"/>	Temporary <input type="checkbox"/>	Discovery <input type="checkbox"/>
3. Originator's Name, Organization, MSIN, and Telephone No. E. J. Millikin, Environmental Engineering Remedial Action Section, H4-55, 6-2499			4. Date 2/29/92	
5. Project Title/No./Work Order No. 618-11 Burial Ground Expedited Response Action Proposal		6. Bldg./Sys./Fac. No.		7. Impact Level 4
8. Document Number Affected (include rev. and sheet no.) WHC-SD-EN-PD-003, Rev. 0		9. Related ECN No(s).		10. Related PO No.
11a. Modification Work <input type="checkbox"/> Yes (fill out Blk. 11b) <input checked="" type="checkbox"/> No (NA Blks. 11b, 11c, 11d)	11b. Work Package Doc. No.	11c. Complete Installation Work 4/9/9 <i>Emily J. Millikin</i> Cog. Engineer Signature & Date		11d. Complete Restoration (Temp. ECN only) Cog. Engineer Signature & Date

12. Description of Change
 Editorial changes were made to the document. In addition to changes to the text, the cost estimate and schedule were revised to reflect additional review and procurement time.



APPROVED FOR PUBLIC RELEASE

V. Burkland 3/23/92

13a. Justification (mark one)		Criteria Change <input checked="" type="checkbox"/>	Environmental <input type="checkbox"/>	Facilitate Const. <input type="checkbox"/>
Design Error/Omission <input type="checkbox"/>		Design Improvement <input type="checkbox"/>	As-Found <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>

13b. Justification Details
 To improve the text of the document and to more realistically reflect the project cost and schedule.

14. Distribution (include name, MSIN, and no. of copies)			RELEASE STAMP
W. L. Johnson	H4-55	1	OFFICIAL RELEASE BY WHC DATE APR 16 1992 <i>Sta. 21</i>
E. J. Millikin	H4-55	1	
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H. D. Downey	L4-92	1	
EDMC (2)	H4-22	2	
IRA	H4-17	1	

ENGINEERING CHANGE NOTICE

15. Design Verification Required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	16. Cost Impact <table style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">ENGINEERING</td> <td style="width: 50%; text-align: center;">CONSTRUCTION</td> </tr> <tr> <td>Additional <input type="checkbox"/> \$</td> <td>Additional <input type="checkbox"/> \$</td> </tr> <tr> <td>Savings <input type="checkbox"/> \$</td> <td>Savings <input type="checkbox"/> \$</td> </tr> </table>	ENGINEERING	CONSTRUCTION	Additional <input type="checkbox"/> \$	Additional <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$	17. Schedule Impact (days) Improvement <input type="checkbox"/> Delay <input type="checkbox"/>
ENGINEERING	CONSTRUCTION							
Additional <input type="checkbox"/> \$	Additional <input type="checkbox"/> \$							
Savings <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$							

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD <input type="checkbox"/>	Seismic/Stress Analysis <input type="checkbox"/>	Tank Calibration Manual <input type="checkbox"/>
Functional Design Criteria <input type="checkbox"/>	Stress/Design Report <input type="checkbox"/>	Health Physics Procedure <input type="checkbox"/>
Operating Specification <input type="checkbox"/>	Interface Control Drawing <input type="checkbox"/>	Spares Multiple Unit Listing <input type="checkbox"/>
Criticality Specification <input type="checkbox"/>	Calibration Procedure <input type="checkbox"/>	Test Procedures/Specification <input type="checkbox"/>
Conceptual Design Report <input type="checkbox"/>	Installation Procedure <input type="checkbox"/>	Component Index <input type="checkbox"/>
Equipment Spec. <input type="checkbox"/>	Maintenance Procedure <input type="checkbox"/>	ASME Coded Item <input type="checkbox"/>
Const. Spec. <input type="checkbox"/>	Engineering Procedure <input type="checkbox"/>	Human Factor Consideration <input type="checkbox"/>
Procurement Spec. <input type="checkbox"/>	Operating Instruction <input type="checkbox"/>	Computer Software <input type="checkbox"/>
Vendor Information <input type="checkbox"/>	Operating Procedure <input type="checkbox"/>	Electric Circuit Schedule <input type="checkbox"/>
OM Manual <input type="checkbox"/>	Operational Safety Requirement <input type="checkbox"/>	ICRS Procedure <input type="checkbox"/>
FSAR/SAR <input type="checkbox"/>	IEFD Drawing <input type="checkbox"/>	Process Control Manual/Plan <input type="checkbox"/>
Safety Equipment List <input type="checkbox"/>	Cell Arrangement Drawing <input type="checkbox"/>	Process Flow Chart <input type="checkbox"/>
Radiation Work Permit <input type="checkbox"/>	Essential Material Specification <input type="checkbox"/>	Purchase Requisition <input type="checkbox"/>
Environmental Impact Statement <input type="checkbox"/>	Fac. Proc. Samp. Schedule <input type="checkbox"/>	<input type="checkbox"/>
Environmental Report <input type="checkbox"/>	Inspection Plan <input type="checkbox"/>	<input type="checkbox"/>
Environmental Permit <input type="checkbox"/>	Inventory Adjustment Request <input type="checkbox"/>	<input type="checkbox"/>

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number/Revision
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20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog./Project Engineer <i>E.J. Billikin</i>	4/10/92	PE	
Cog./Project Engr. Mgr. <i>W. L. Johnson</i>	4/10/92	QA	
QA		Safety	
Safety		Design	
Security		Other	
Proj. Prog./Dept. Mgr.			
Def. React. Div.			
Chem. Proc. Div.			
Def. Wst. Mgmt. Div.			
Adv. React. Dev. Div.		DEPARTMENT OF ENERGY	
Proj. Dept.			
Environ. Div.		ADDITIONAL	
IRM Dept.			
Facility Rep. (Ops.)			
Other			

INFORMATION RELEASE REQUEST

References:
WHC-CM-3-4

COMPLETE FOR ALL TYPES OF RELEASE

Purpose		New ID Number WHC-SD-EN-PD-003, Rev. 1	
<input type="checkbox"/> Speech or Presentation <input type="checkbox"/> Full Paper (Check only one suffix) <input type="checkbox"/> Summary <input type="checkbox"/> Abstract <input type="checkbox"/> Visual Aid <input type="checkbox"/> Speakers Bureau <input type="checkbox"/> Poster Session <input type="checkbox"/> Videotape	<input type="checkbox"/> Reference <input checked="" type="checkbox"/> Technical Report <input type="checkbox"/> Thesis or Dissertation <input type="checkbox"/> Manual <input type="checkbox"/> Brochure/Flier <input type="checkbox"/> Software/Database <input type="checkbox"/> Controlled Database <input type="checkbox"/> Other	Existing ID Number (include revision, volume, etc.) WHC-SD-EN-PD-003, Rev. 0	
		If previously cleared, list ID number	
		Date Release Required As Soon As Possible	

Title 618-11 Burial Ground Expedited Response Action Proposal		Unclassified Category UC-	Impact Level 4
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COMPLETE FOR SPEECH OR PRESENTATION

Title of Journal N/A		Group or Society Sponsoring	
Date(s) of Conference or Meeting	City/State	Will proceedings be published?	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Will material be handed out?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Title of Conference or Meeting			

CHECKLIST FOR SIGNATORIES

Review Required per WHC-CM-3-4	Yes	No	Reviewer		
			Name (printed)	Signature	Date
Classification/Uncontrolled	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Nuclear Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Patent - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>SW Berglin</i>	<i>[Signature]</i>	<i>3/13/92</i>
Legal - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>B.D. Williamson</i>	<i>[Signature]</i>	<i>3/16/92</i>
Applied Technology/Export Controlled Information or International Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
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Publication Services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>D.E. SMITH</i>	<i>[Signature]</i>	<i>3/23/92</i>
Other Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
References Available to Intended Audience	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>E.J. MILLIKIN</i>	<i>[Signature]</i>	<i>3/9/92</i>
Transmit to DOE-HQ/Office of Scientific and Technical Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

Information conforms to all applicable requirements. The above information is certified to be correct.

Author/Requestor (Printed/Signature) E. J. Millikin <i>Emily J. Millikin</i>	Date 2/6/92
Responsible Manager (Printed/Signature) W. L. Johnson <i>W.L. Johnson</i>	Date 2/19/92
Intended Audience	

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP Stamp is required before release. Release is contingent upon resolution of mandatory comments.
Date Received 3/11/92

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SUPPORTING DOCUMENT

1. Total Pages 38³ 13¹³ 4/14/92

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5. Key Words Non-time critical, planning proposal	6. Author Name: E. J. Millikin <i>E. J. Millikin</i> Signature Organization/Charge Code 81225/PK117
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7. Abstract

This document proposes a non-time-critical expedited response action be performed for the 618-11 Burial Ground.

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W. Burkland 3/23/92

Millikin, E. J., 1992, *618-11 Burial Ground Expedited Response Action Proposal*, WHC-SD-EN-PD-003, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

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10. RELEASE STAMP

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DATE APR 16 1992

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9. Impact Level 4

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1.0 INTRODUCTION

1.1 PURPOSE

This document provides information on the proposed expedited response action (ERA) for the 618-11 Burial Ground. The information is presented to the U.S. Environmental Protection Agency (EPA) and the State of Washington Department of Ecology (Ecology) to provide a general understanding of the proposed project, which will lead to a decision regarding the continuance of this ERA process.

If the ERA process is continued, a comprehensive ERA proposal will be prepared as a primary document per the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) (Ecology et al. 1989). This will allow for public involvement and regulatory approval of the ERA prior to actual implementation of the proposed response action.

1.2 BACKGROUND

On October 18, 1990, an Agreement in Principle between the U.S. Department of Energy (DOE), EPA, and Ecology was signed (Attachment A). This agreement stated that where possible ERAs should be pursued to accelerate remediation of the Hanford Site. In FY 91, ERA were conducted for the 618-9 Burial Grounds, 300 Area process trenches, and the 200 West Area carbon tetrachloride disposal sites. It has been proposed that the 618-11 Burial Grounds be considered for an ERA due to (1) the high levels of radioactivity associated with the burial grounds, (2) the potential for contamination of the underlying vadose zone and groundwater with radionuclides, and (3) its proximity to Site workers, visitors, and the city of Richland. Figure 1 depicts the location of the 618-11 Burial Ground on the Hanford Site.

2.0 SITE DESCRIPTION

Throughout Hanford Site history and before legislation regarding disposal of chemical products, laboratory waste was typically disposed of in trenches and cribs. This waste consisted of low-level laboratory wastes (e.g. gloves, contaminated instruments, etc.) and various high-level and transuranic waste resulting from research and development processes. Data concerning the specific nature and constituents of the waste was often unavailable due to the nature of the records keeping system associated with the work done at Hanford prior to the 1970's. The 618-11 Burial Grounds, also known as the Wye Burial Grounds, is one site for which the above conditions apply.

The 618-11 Burial Ground is located in the 300-IU-1 Operable Unit. The site dimensions are 1,000 by 375 ft. To date, data concerning the 618-11 Burial Grounds indicate that the site consists of three burial trenches (50 by 900 ft), 54 pipe storage units (22-in. diameter by 15 ft depth), and two storage caissons (8-ft diameter by 10 ft depth). Figure 2 depicts the waste disposal units in the burial ground. The pipe storage units consist of five 55-gal drums welded together end to end and buried vertically. The storage caissons are buried 15 ft below grade and are connected to the surface by an offset 3-ft-diameter pipe connected to a dome cap.

Figure 1. 618-11 Burial Grounds on the Hanford Site.

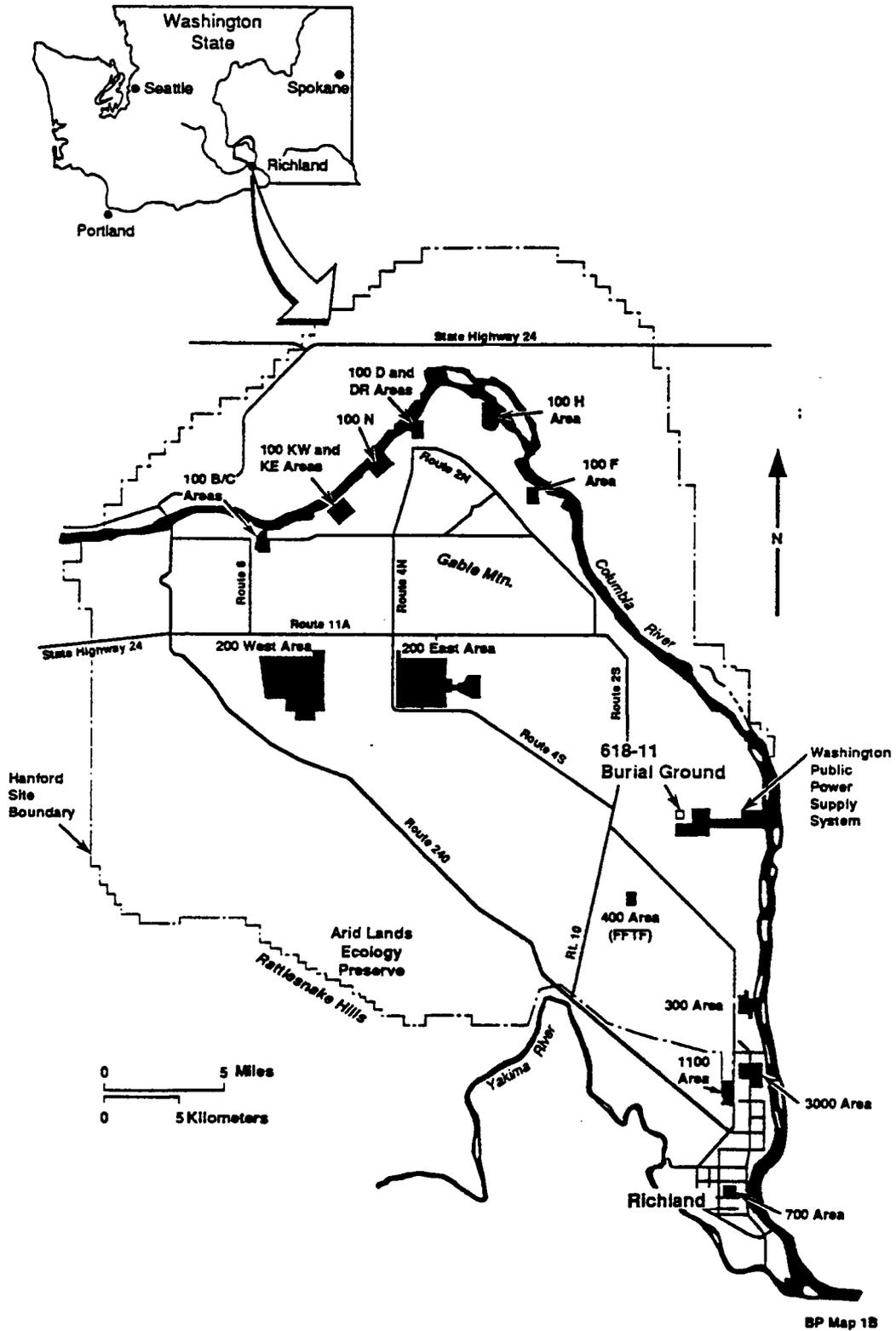
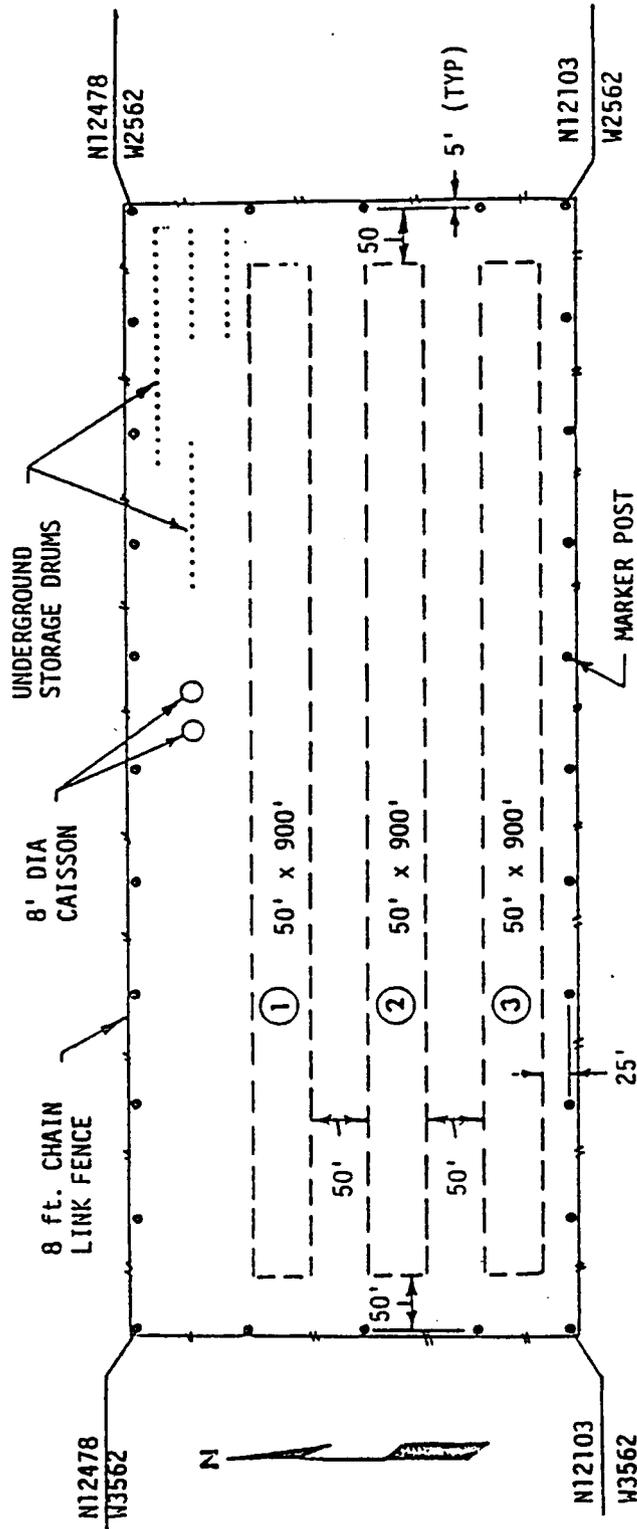


Figure 2. Waste Disposal Units in 618-11 Burial Grounds.



The site was active from March 1962 through December 1967. The trenches contain boxes or drums of miscellaneous waste, such as rubber gloves, wipes, and equipment. Some high activity waste may have been buried in concreted drums within the trenches. The caissons contain cardboard cartons and metal cans containing high activity waste. The vertical pipe storage units contain metal cans of high activity wastes enclosed in concrete within the pipes. Oral interviews with personnel employed in the 300 Area during the 1960's have indicated that some of the metal cans did rupture when being deposited in the pipe storage units. Data indicate that waste was received from the 308, 325, and the 327 buildings in the 300 Area. It has been estimated that approximately 1 kg of plutonium is in the burial grounds. The estimated beta activity in 1982 was 2,000 Ci, the estimated transuranic activity was 96 Ci. Depth to groundwater is 50 ft. There are no groundwater monitoring wells located near the burial ground that would provide an indication of groundwater contamination.

3.0 BENEFIT OF ERA

The recent increase in public awareness of activities that influence the environment has drawn considerable attention to the Hanford Site. Many of the concerns expressed by the public concerning the Hanford Site address the issue of offsite exposure of contaminants. Since the trenches and storage units in the 618-11 Burial Grounds may represent a potential exposure situation, completion of the ERA effort would further reduce these concerns.

Removal of wastes from the area in question will prevent the possible migration of radionuclides through the vadose zone to the groundwater. Currently, there is insufficient information available to determine whether the waste has contaminated surrounding soil and groundwater. In addition, implementation of this project will demonstrate in situ characterization of radionuclides in transuranic waste and removal technologies for high activity waste.

It is proposed that the ERA be conducted in three phases that will eventually end with the stabilization of the site. The first phase will be the preliminary investigation of the burial ground. The purpose of Phase I is to gather information about the 618-11 Burial Grounds which could have a significant bearing on development of the ERA proposal. The development of the ERA proposal would be the second phase of the ERA.

The result of the ERA proposal will be the determination of the preferred action to be implemented as the third phase of the ERA. The final phase of the ERA (Phase III, Project Implementation) will involve equipment design and construction, excavation, transportation of wastes to the disposal site, sampling and analysis, and finally project closeout.

4.0 ERA CONCEPT

4.1 GOAL

The goal of the ERA is to remove the waste from the trenches and to remove the pipe storage units and caissons. Contaminated soils will also be removed and designated as the appropriate waste (low-level or mixed). The remaining area will then be stabilized. The overall result is to remove the potential threat to the vadose zone and underlying groundwater, thus preventing the possible migration of contaminants.

4.2 MEASURE OF SUCCESS

Success of the ERA will be measured in terms of removal of waste and subsequent storage and/or treatment of low-level radioactively contaminated soil. Implementation of the action at the burial ground would result in the immediate reduction in the quantity of available contaminants that may cause continued contamination of the vadose zone and potentially the groundwater. The ERA will lead to a reduction in potential dose to the environment and the public. In addition, implementation of the ERA will demonstrate in situ characterization of radionuclides in transuranic waste and removal technologies for high activity waste.

4.3 ADVANTAGES AND DISADVANTAGES OF IMPLEMENTING AN ERA

Advantages of implementing the proposal include removal of high-activity, low-level radioactive waste from a burial ground located in close proximity to the Washington Public Power Supply System #2 and demonstrating innovative technologies. Disadvantages to implementation of the proposal include the potentially high costs associated with disposing of the excavated waste, the lack of available storage that may be required, and the potential technical and safety issues associated with the excavation activities.

4.4 ERA IMPLEMENTATION

The process for implementing an ERA at the 618-11 Burial Grounds would follow the format outlined in the Tri-Party Agreement, and the Hanford Site Past-Practice Investigation Strategy (DOE-RL 1991, Draft, October 1990). The ERA is considered to be non-time critical because there is no indication that the contamination has spread to areas that could immediately be dangerous to human health and the environment. A planning period of at least 6 mo will occur prior to initiation of the activity. Implementation of a non-time critical ERA requires an engineering evaluation/cost assessment (EE/CA) to be conducted and submitted to the lead regulatory agency (EPA). The EE/CA will be contained in an ERA Proposal which will provide the additional details necessary for implementing the alternative chosen in the EE/CA. The outline of the ERA implementation work flow is briefly described below.

4.4.1 ERA Project Plan

Initially, a brief ERA project plan will be prepared that outlines how each phase of the ERA is implemented. The project plan identifies each of the remediation alternatives (that will be considered by the EE/CA) and the site evaluation tasks necessary to evaluate the alternatives. Attachment B contains an outline of a typical project plan. This plan is considered to be a secondary document as defined in the Tri-Party Agreement.

4.4.2 Site Evaluation

The principle purpose of the site evaluation is the determination of possible waste constituents and the determination if waste leachate has penetrated the underlying soil. Prior to excavation, all possible information regarding the site will be reviewed. In addition, data are used to assess worker health and safety. Activities that are proposed to be performed in support of Phase I of the ERA include, but are not limited to, historical research, ground-penetrating radar, in situ characterization of the caissons and pipe storage units, and test pits in the low level waste trenches.

4.4.3 ERA Proposal and ERA Action Memorandum

The ERA proposal includes an analysis of the various remediation alternatives. The EE/CA provides refinement and specification of the alternatives, followed by a detailed analysis based on: (1) public health, welfare and environmental impacts, (2) technical feasibility, (3) institutional considerations, and (4) cost. Attachment C provides an annotated outline for the ERA proposal. Excavation and subsequent storage of the waste is the alternative which is the basis for planning purposes.

The EE/CA report is documented in the ERA proposal, and undergoes a concurrent DOE, EPA, and Ecology review. The public will also review the document. As specified in the Tri-Party Agreement, the EPA will ultimately be responsible for selecting a remediation alternative for implementation by issuing an ERA Action Memorandum.

4.4.4 Design and Implementation

Following approval of the ERA proposal, the chosen alternative will be designed and implemented.

4.4.5 Reporting

There will be a need to prepare and provide periodic status reports concerning the progress of the ERA for distribution to the concerned parties. On completion of the ERA, a final report assessing and evaluating the ERA will be prepared for distribution.

4.5 ERA SELECTION WORKSHEET

An ERA selection worksheet has been completed for the project and provided in Attachment D.

4.6 COST AND SCHEDULE SUMMARY

The preliminary schedule and estimated cost for the ERA are provided in Attachments E and F, respectively. It should be noted that due to the size of the burial ground and the suspected levels of contamination, costs associated with disposal of the waste were not included in the preliminary cost estimate.

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ATTACHMENT A
AGREEMENT IN PRINCIPLE



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

March 4, 1992

Mr. Steven H. Wisness
 Hanford Project Manager
 U.S. Department of Energy
 P.O. Box, 550 AS-19
 Richland, WA 99352

Re: Expedited Responses Action Planning Proposals and Implementation

Dear Mr. Wisness:

On January 22, 1992, a meeting was held to discuss the selection of new Expedited Response Actions (ERA). The Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) assumed the task of identifying candidate sites for planning proposal preparation, and identification of lead regulatory agency.

The primary reasons to perform ERAs are to minimize or eliminate the potential for release of hazardous substances and/or radionuclides in the environment and to initiate actions consistent with anticipated remedy selections. The final remedy selection would be made after completion of a Remedial Investigation/Feasibility Study (RI/FS) or a RCRA Facility Investigation/Corrective Measures Study (RFI/CMS).

On December 12, 1991, a meeting was held to discuss selection of new ERAs. In this meeting, the U.S. Department of Energy (DOE) and Westinghouse Hanford Company (WHC) provided EPA and Ecology with a list of twenty-two (22) candidate sites. In addition, DOE and WHC were seeking approval to proceed with EE/CA preparation for the 300 Area Burial Grounds. Based on this meeting and a continuing dialogue between Ecology, EPA, DOE, and WHC, four (4) sites from the candidate list have been selected for planning proposal preparation. In addition, we request DOE submit planning proposals for two additional sites that were drafted previously for DOE, but as yet have not been submitted to Ecology and EPA.

Ecology and EPA prefer to delay initiation of an ERA on the 300 Area Burial Grounds. With the use of test pits in both the liquid disposal sites and the burial grounds, it appears the schedule for completion of RI/FS activities in 300-FF-1 may be accelerated. In addition, treatability tests planned for this year may identify appropriate means for remediating contaminated sediments from the liquid disposal sites as well as the burial grounds. Early completion of these investigations could result in a final Record of Decision for the 300-FF-1 Operable Unit earlier than projected. Ecology and EPA prefer

Mr. Steve H. Wisness
 March 4, 1992
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this course of action because it would potentially eliminate the need to handle waste from the burial grounds twice (once as part of the ERA and again as part of the final remedy).

Ecology and EPA have selected the following four sites for planning proposal preparations:

Sodium Dichromate Barrel Disposal Landfill in 100-IU-4 Operable Unit

The sodium dichromate barrel disposal site in the 100-IU-4 Operable Unit was selected in part due because this is the only facility located within the 100-IU-4 Operable Unit. Also, early remedial action at this operable unit may abate the potential of more extensive environmental degradation. Any ground water contamination from the sodium dichromate barrel site would be addressed as part of the 100-HR-3 Operable Unit. Removal of drums and contaminated sediments from this site may completely remediate the 100-IU-4 Operable Unit or may result in a no further action record of decision. This ERA would be designated as an Ecology lead site due to its location within the 100-HR-3 ground water operable unit for which Ecology is also the lead regulatory agency. An ERA at the sodium dichromate barrel disposal site should not require extensive planning or characterization prior to initiation and therefore field work should begin in fiscal year 1992.

U.S. Bureau of Reclamation 2,4-D Burial Site in 100-IU-3 Operable Unit

The U.S. Bureau of Reclamation 2,4-D burial site in the 100-IU-3 Operable Unit was also selected in part because it is the only documented hazardous waste disposal area located north of the Columbia River on the Hanford Site. In addition, this site is one of the few waste sites where DOE does not control access. Removal of drums and contaminated sediments from this site could eliminate the primary source of hazardous waste from this part of the Hanford Site and enhance public safety. The north slope area of the Hanford Site has been of particular interest to Ecology due to public access and the existing lease agreement between DOE and the Washington State Department of Fish and Wildlife. Ecology would be designated lead regulatory agency for both this ERA and the 100-IU-3 Operable Unit.

White Bluffs Pickling Acid Crib in 100-IU-5 Operable Unit

The White Bluffs pickling acid crib in the 100-IU-5 Operable Unit represents a significant source of acidic metal waste solution. This waste was generated from the final cleaning of reactor cooling pipes prior to installation in Hanford's eight single-pass reactors. These liquid disposal sites are located approximately one mile west of the 100-F Area near the old White Bluffs town site. Again, this site represents the primary source of contamination within the 100-IU-5 Operable Unit and a removal action at this facility will likely limit

Mr. Steve H. Wisness
March 4, 1992
Page 3

the need for and extensive investigation through an RI/FS. Since little is known about the extent of contamination associated with the White Bluffs pickling acid crib, some degree of characterization will likely be required as part of an ERA at this site. Due to its location upgradient of 100-F Area, EPA would be designated as lead regulatory agency for both this ERA and the 100-IU-5 Operable Unit.

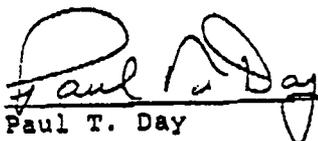
100-IU-1 River Rail Wash Pit and 600 Area Army Munitions Burial Site

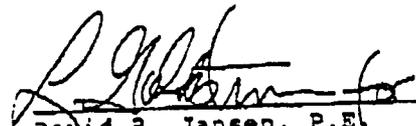
The 100-IU-1 operable unit contains two units. The riverland railroad car wash pit was decontaminated in 1963, and subsequently released from radiation zone status. Site records indicate that all items were removed from the munitions burial site in 1986. These sites are both located west of Highway 240 and lack the access controls present at nearly all other past practice sites at Hanford. EPA will be lead agency for this ERA and the 100-IU-1 Operable Unit. This presents the potential opportunity to reach a decision to take no further action at an operable unit after performing a confirmatory investigation. We expect that the entire investigation could be done as part of the ERA. If that is the case, the ERA would be followed by administrative steps to reach a final ROD.

Planning proposals for two additional sites are already drafted, but not released. These are for the 100 Area river outfall pipes and the 618-11 burial ground. These planning proposals should be transmitted to Ecology and EPA without delay. The regulatory lead agency will be identified for these proposals in the notice to proceed with EE/CA preparation.

Should you have any questions about the selection of candidate sites for planning proposal preparation or implementation, please contact either Steve Cross of Ecology (206) 459-6675 or Doug Sherwood of EPA (509) 376-9529.

Sincerely,


Paul T. Day
Hanford Project Manager
EPA Region 10


David B. Jansen, P.E.
Hanford Project Manager
Washington State
Department of Ecology

cc: T. Veneziano, WHC

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ATTACHMENT B
PROJECT PLAN OUTLINE

CONTENTS

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- 1 Data Management Plan
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ATTACHMENT C
ANNOTATED ERA PROPOSAL OUTLINE

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1.0 INTRODUCTION

The introduction defines the purpose and scope of the ERA proposal. The discussion includes the various reasons and requirements for performing the ERA. The relationship between the ERA and the ongoing remedial investigation/feasibility study activities will also be described.

2.0 SITE DESCRIPTION

This section provides a brief description of the site being considered for an ERA. A summary of the information that is pertinent to the selection of the preferred alternative is included.

3.0 SITE EVALUATION ACTIVITIES

This section describes the activities conducted for characterization of the site. Information gathered during those activities are also included, evaluated, and summarized.

4.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

This section identifies applicable or relevant and appropriate requirements to be considered in the engineering evaluation/cost analysis.

5.0 IDENTIFICATION OF RESPONSE TECHNOLOGIES

Response technologies that could achieve the objectives of the ERA are evaluated. A summary of the evaluation process is provided.

6.0 ANALYSIS OF RESPONSE ACTION ALTERNATIVES

Various response action alternatives are assembled and evaluated. Those alternatives warranting further evaluation are summarized.

7.0 ENGINEERING EVALUATION/COST ANALYSIS

Each criterion to be used to evaluate the ERA alternatives summarized in Chapter 6 is identified in this section. The method of scoring the alternatives against these criteria is also explained. The alternatives are first screened against the two following criteria: (1) timeliness, and (2) protection of the environment and public health. Those alternatives that meet the screening criteria are further evaluated against the following criteria: (1) reliability/technical feasibility; (2) administrative/managerial feasibility, and (3) reasonable cost.

8.0 IMPLEMENTATION OF PREFERRED ERA ALTERNATIVE

This section provides a discussion detailing the implementation of the preferred ERA alternative chosen in Chapter 7. All procedures that will be used or that need development will be identified. All permits, such as excavation permits and Hazardous Waste Operators Permits, will also be mentioned. Health and safety, waste management, waste minimization, and environmental monitoring will be discussed.

9.0 PROJECT MANAGEMENT PLAN

Each of the organizations that will participate in the implementation of the ERA and their roles is identified in this section. A flow chart showing the management structure, a detailed schedule for implementation, and cost estimates for implementing the ERA activity are provided.

ATTACHMENT D
ERA SELECTION WORKSHEET

SELECTION WORKSHEET

Project Name: 618-11 Burial Ground

Project Description: The project would consist of removing high activity, low-level radioactive waste from the burial ground.

ERA Category: Time Critical Non-Time Critical

Evaluation Checklist

Time Critical ERAs:

Actual Exposure/Release Yes No

Imminent Exposure/Release Yes No

Rationale:

Non-Time Critical ERAs:

1. Potential Exposure: Yes No

Rationale: Due to the location of the burial ground, potentially contaminated groundwater could migrate to the Columbia River.

2. Potential Increased Degradation: Yes No

Rationale: Through various discussions with personnel working in the 300 Area at the time the burial grounds were operating, it has been indicated that bottoms do not exist for the caisson and pipe disposal units. If that is the case, the potential exists for any liquid waste that may have been buried to migrate.

3. Implementability: Yes No

Rationale: Due to the potential high radioactive levels of the waste that may have been buried in the burial ground, implementation of the project exists. A major issue with implementation of the project is maintaining occupational exposure to radiation as low as reasonably achievable (ALARA). If the technology exists for conducting the ERA using remote equipment, implementation of the project is possible.

4. Short-Term Effectiveness: Yes No

Rationale: Since implementation of this project would result in permanent removal of the waste from the burial ground the project would be effective in the short-term.

5. Reduction of Toxicity, Volume, Migration: Yes No

Rationale: Implementation of this project would eliminate toxicological and migratory hazards.

6. Cost Effectiveness: Yes No

Rationale: In determining cost effectiveness of the proposal, several factors must be considered. Removal of the waste from the burial ground today would decrease the migration of any contamination. However, due to the high activity of the waste, it would have to be stored temporarily until the technology is available to reduce radioactivity levels. Should implementation of the proposal be postponed until appropriate technology is available, the potential for contamination to migrate increases.

7. Long-Term Effectiveness: Yes No

Rationale: Implementation of this project would result in permanent elimination of any human health and environmental hazards that currently exist at the burial ground.

8. Consistent with Final Remedy: Yes No

Rationale: Removal of the radioactive waste is consistent with final remediation of the 300-IU-1 Operable Unit.

9. Compliance with ARARs: Yes No

Rationale: Since the project would result in permanent removal of the radioactive waste, it would strive to be consistent with final ARARs for the operable unit.

10. Information for RI/FS or Remedial Design: Yes No

Rationale: The project would provide additional information for use in future radioactive and remotely designed remediation projects.

11. Demonstrate Technologies: Yes No

Rationale: Implementation of the project would support future use of remote equipment in remediation activities and in situ characterization of radionuclides in transuranic wastes.

12. Community Acceptance: Yes No

Rationale: Positive acceptance of this project by the community is anticipated due to the current location and radioactivity levels at the burial ground.

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ATTACHMENT E

618-11 BURIAL GROUNDS ERA
COST ESTIMATE

The attached cost estimate for the proposed ERA is preliminary and should be considered rough order-of-magnitude. Due to the size of the burial ground and the suspected levels of contamination, costs associated with disposal of the waste were not included in the cost estimate. The basis for many of the costs was primarily from costs associated with the 316-5 Process Trenches and the 618-9 Burial Ground ERA. Costs associated with design of the equipment was based on best professional judgement. A 30% contingency cost factor was included in the estimate. A definitive cost estimate will be provided in the ERA proposal for the selected remediation alternative. Assumptions used for developing the cost estimate include the following:

- trenches contain low level radioactive (possible mixed) waste
- caissons and pipe storage units contain high-activity/transuranic waste
- in situ characterization work will be funded by the Office of Technology Development
- waste removed from burial ground
- high level waste can be temporarily stored in canyon building on the Hanford Site.

PROPOSAL COST ESTIMATE

Project Management **\$1,160,080**

Project Manager	0.10 FTE/yr. @ 5.9y	=	59,000
Project Engineer	1.0 FTE/yr. @ 5.9y	=	590,000
Clerk/Typist	0.10 FTE/yr. @ 5.9y	=	59,000
Quality Assurance	0.125 FTE/yr. @ 5.9y	=	73,750
Health/Safety	0.125 FTE/yr. @ 2.5y	=	23,250
Community Relation	0.125 FTE/yr. @ 5.9y	=	73,750
Facility Safety	1.0 FTE/yr. @ 2.5y	=	250,000
Other Permits	0.125 FTE/yr. @ 2.0y	=	<u>25,000</u>
	Subtotal		1,162,750

Phase I Preliminary Investigation **\$ 470,000**

Extensive Historical Research	1.0 FTE @ 3 mo	\$ 25,000
Geophysical Surveys	3.0 FTE @ 3 mo	75,000
Landfill Test Pits	11.0 FTE @ 3 mo	275,000
Characterization Demonstration for Caissons and Pipe Storage Units	4.0 FTE @ 3 mo	<u>100,000</u>
	Subtotal	475,000

Phase II ERA Proposal **\$ 70,000**

Development and Issuance of Proposal	1.0 FTE @ 8.0 mo	66,667
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Phase III Project Implementation **\$12,210,000**

A. Radioactive Containment Equipment Design/Construct

Containment for Pipe Storage Units	\$5,500,000
Containment for Caissons	1,100,000
Remote Cutters for Caissons	<u>50,000</u>
Subtotal	6,650,000

B. Excavation Characterization of Radioactive Waste
and Disposal Site

Pipe Units	20 FTE @ 6 mo	\$1,000,000
Caissons	20 FTE @ 3 mo	500,000
Burial Trenches	15 FTE @ 12 mo	1,500,000
Characterization of site and waste	\$7,500/sample @ 60 samples	<u>450,000</u>
Subtotal		3,450,000

PROPOSAL COST ESTIMATE (Cont)

C.	Transportation		\$1,000,000
D.	Project Closeout Development and Issuance of Final Report	1.0 FTE @ 7 mo	58,300
	Stabilize Site	3.0 FTE @ 2 mo	<u>50,000</u>
		Subtotal	108,333
E.	Waste Storage at Canyon Building		\$1,000,000

Total Project Cost Approximately \$18,100,000

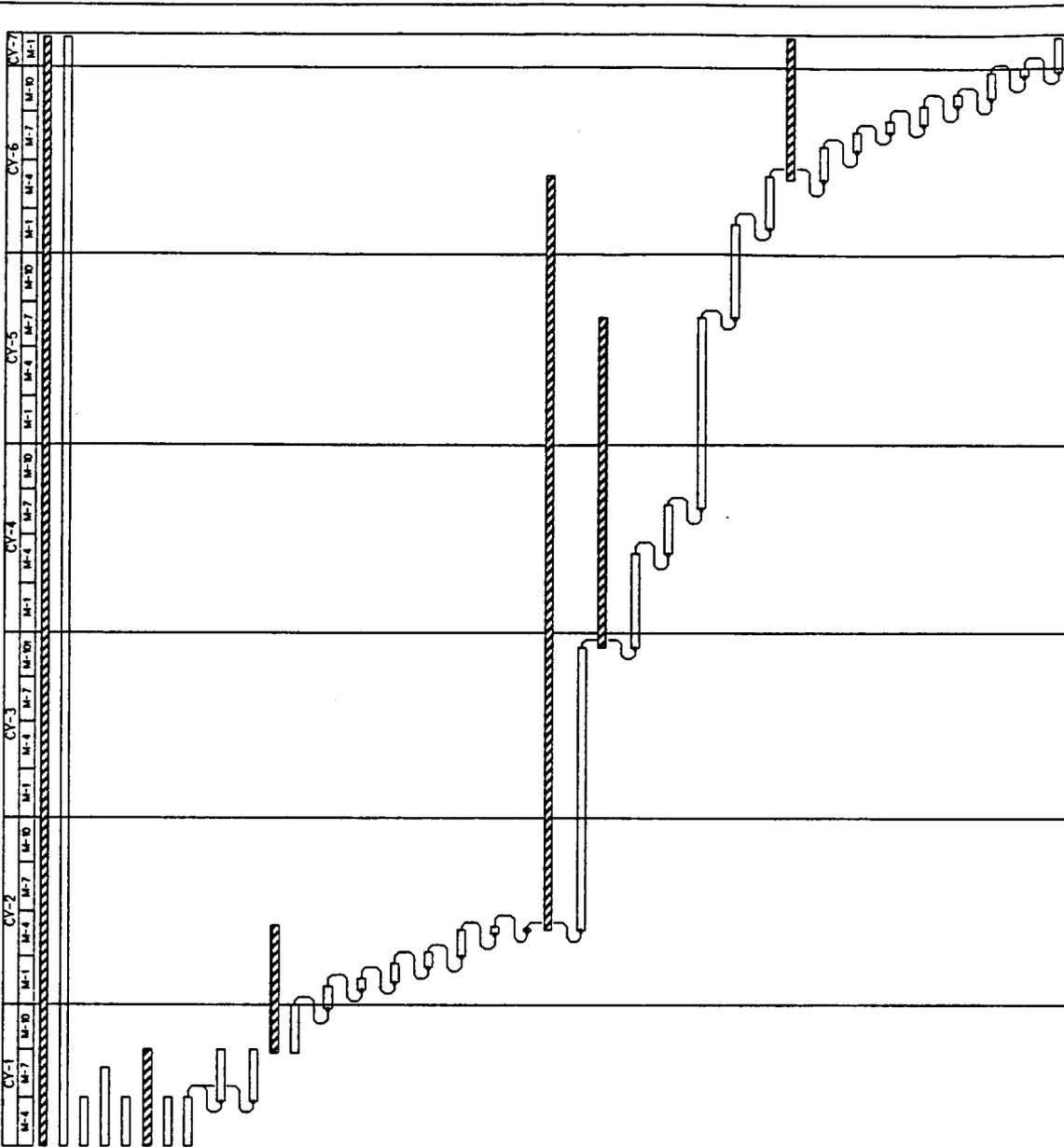
1 FTE/yr. = \$100,000

ATTACHMENT F

ERA SCHEDULE

The attached schedule for the proposed ERA is preliminary. Additional data about site conditions and health and safety requirements are required to produce an accurate schedule. A final schedule will be provided in the ERA proposal.

618-11 BURIAL GROUND



618-11 BURIAL GROUND PROJECT MANAGEMENT

- OVERALL PROJECT DOCUMENTATION
- PROJECT PLAN
- SAFETY DOCUMENTATION
- NEPA DOCUMENTATION
- PHASE I-SITE CHARACTERIZATION**
- HISTORICAL RESEARCH
- GEOPHYSICAL SURVEY(S)
- LANDFILL TEST PITS
- CAISSONS AND PIPE STORAGE UNIT CHARACTERIZATION
- PHASE II-ERA PROPOSAL PREPARATION**
- DOE REVIEW
- REVISE PROPOSAL
- ECOLOGIVEPA REVIEW
- REVISE PROPOSAL
- PUBLIC REVIEW
- REVISE PROPOSAL
- ISSUE PROPOSAL
- PHASE III-ERA IMPLEMENTATION**
- DESIGN OF SECONDARY WASTE CONTAINERS
- EXCAVATION AND SEGREGATION OF WASTE
- PIPE UNITS
- CAISSONS
- BURIAL TRENCHES
- CHARACTERIZATION OF WASTE AND SITE
- TRANSPORTATION OF WASTE
- PHASE IV-PROJECT CLOSEOUT**
- PREPARE PROJECT COMPLETION DOCUMENT
- DOE REVIEW
- REVISE PROPOSAL
- ECOLOGIVEPA REVIEW
- REVISE DOCUMENT AFTER ECOLOGIVEPA REVIEW
- PUBLIC REVIEW
- REVISE AND ISSUE PROPOSAL
- STABILIZE SITE

Project: 618-11 BURIAL GROUND	EMK/TA-1	Date: 2 Mar 97	14-66
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