

Meeting Minutes Transmittal/Approval  
Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units  
450 Hills Street, Richland, Washington  
June 24, 1992

FROM/APPROVAL: Eric D. Goller Date 7-29-92  
Eric D. Goller, 100 Area Unit Manager, RL (A5-19)

APPROVAL: Darci Teel Date 7-29-92  
Darci Teel, 100 Aggregate Area Unit Manager, WA Department of Ecology

APPROVAL: Dennis Faulk Date 7-29-92  
Dennis Faulk, 100 Aggregate Area Unit Manager, EPA (B5-01)

Meeting Minutes are attached. Minutes are comprised of the following:

- Attachment #1 - Meeting Summary
- Attachment #2 - Agenda
- Attachment #3 - Attendance
- Attachment #4 - Action Item Status List
- Attachment #5 - Status of 100 Area Wide Activities Schedule
- Attachment #6 - Change Control Form 13
- Attachment #7 - 100-HR-1 Tasks, June 1992
- Attachment #8 - Change Control Form 17
- Attachment #9 - 100-HR-3 Activities
- Attachment #10 - Change Control Form 15
- Attachment #11 - Change Control Form 16
- Attachment #12 - 100-DR-1 Operable Unit Activities
- Attachment #13 - Change Control Form 18
- Attachment #14 - Change Control Form 19
- Attachment #15 - Change Control Form 20
- Attachment #16 - Change Control Form 21
- Attachment #17 - Change Control Form 22
- Attachment #18 - Change Control Form 23
- Attachment #19 - 100-BC-1 Source Operable Unit Work Summary
- Attachment #20 - 100-BC-5 Operable Unit Schedule
- Attachment #21 - 100-BC-5 and 100-KR-4 Drilling Status
- Attachment #22 - 100-KR-4 Operable Unit Schedule
- Attachment #23 - N-Area Surface Radiation Survey
- Attachment #24 - N-Area Soil Gas Survey
- Attachment #25 - Agreement Activity Notification for 100-FR-1



Prepared by: Suzanne Clarke Date: 7/29/92  
Suzanne Clarke, Kay Kimmel, GSSC (A4-35)

Concurrence by: Bob Henckel Date: 7/29/92  
Bob Henckel, WHC Coordinator (H4-55)

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**Attachment #1  
Meeting and Summary of Commitments and Agreements**

**Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units  
June 24, 1992**

1. **SIGNING OF THE MAY 100 AREA UNIT MANAGER'S MEETING MINUTES** - Minutes were reviewed and approved with no changes.
2. **ACTION ITEM UPDATE: (See Attachment 4 for status (before June meeting), items listed below for the update to Attachment 4 made during the June meeting):**

- IHR3.28      Closed (6/24/92).
- IHR3.29      Closed (6/24/92). 3 parts 1) approved by Benton County Shoreline Management 2) Dept. of Fisheries wanted NEPA document for wetlands 3) USACE approval pending.
- IHR3.32      Open (6/24/92). NEPA wetlands approval pending. USACE approval: resolution uncertain.
- IAAMS.1      Closed (6/24/92).
- IAAMS.2      Closed (6/24/92).
- IAAMS.3      Closed (6/24/92), letter from RL and presentation today.
- IAAMS.4      Closed (6/24/92).
- IAAMS.5      Open. Confirm that letter went out.
- IAAMS.7      How does WHC get their data for shipping? Action: Karl Pool
- IAAMS.8      Closed (6/24/92), presented in April.
- IAAMS.9      Open. Related to the N Areas Issues Papers.
- IAAMS.10     Closed (6/24/92).

3. **NEW ACTION ITEMS (INITIATED JUNE 24, 1992):**

- IAAMS.13     Contact appropriate parties to develop a checklist of all Eric Goller requirements (both training and health and safety) necessary for personnel to gain access to radiation exclusion zones.

4. **INFORMAL AGREEMENTS:**

- Impose an interim milestone in the 100-BC-1 schedule to submit validated data to the regulators by October 9, 1992.

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- Insert in the 100-BC-5 schedule, an interim milestone, to submit validated data to the regulators by the end of December 1992 with a footnote that the scope is to submit all data up to and including the first round of groundwater data.
- Insert a footnote to the 100-BC-5 schedule (not as an interim milestone) that data will be submitted to the regulators 141 days after completing the second round of groundwater sample collection (or words to this effect).

5. **100 AREA ACTIVITIES:** See Attachment #5 for the schedule.

- As a result of the June 22, 1992 meeting on additional spring sampling, EPA and Ecology announced that they would be issuing letters to RL defining their respective positions concerning further spring sampling for M-30-01.
- Signed Change Control Form 13 on Milestone M-30-03 was distributed (Attachment #6).

6. **FIELD ACTIVITIES:**

- 100-HR-1 field activities are noted in Attachment #7. Change Control Form 17 (DOW) was distributed for review (Attachment #8).
- 100-HR-3 field activities are noted in Attachment #9. Change Control Forms 15 (Groundwater Monitoring Network) and 16 (Physical Sampling Meeting Minutes) were signed at the meeting (Attachments #10 and #11).
- 100-DR-1 field activities are noted in Attachment #12. Signed Change Control Forms 18 through 22 were distributed (see Attachments #13 - #17). Change Control Form 23 was distributed for review (Attachment #18).
- 100-BC-1 field activities are noted in Attachment #19. Awaiting response back on test pit data to determine the extent of contamination outside of the basin.
- 100-BC-5 field activities are noted in Attachments #20 and #21.
- 100-KR-4 field activities are noted in Attachments #21 and #22.
- N-Area Surface Radiation Survey reported as one-third complete (see Attachment #23).
- N-Area Soil Gas Survey is noted in Attachment #24. Activity to begin this month.
- Agreement Activity Notification for a non-intrusive test pit at 100-FR-1 was distributed (see Attachment #25).

7. **WORK PLANS** - Work Plans for HR-1, HR-3 and DR-1 will be provided to the regulators on June 29, 1992. Public review will also begin on that date.

8. **GAS ANALYSIS IN 100 AREA** - Rick McCain (WHC) presented the most recent understanding concerning the origin of explosive gas encountered during monitoring well drilling. No satisfactory explanation has been determined at this point. Conversations with drillers indicate that this has been a long term phenomenon at Hanford. One possible explanation is that the gas appears to be hydrogen of natural origin. The gas may be

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evolved during bacterial reduction or by reaction with the steel casing of the well.

9. **SAMPLING EVENT PARTICIPATION NOTIFICATION** - WHC wanted advance notification of sampling in order to ensure resources available for regulator participation. Ecology is developing a sampling protocol to take their own samples. A copy will be provided to WHC for their information.

10. **SAMPLE TURN AROUND TIMES FOR 100 AREAS** - Karl Pool explained lab turn around times as they relate to the 100-BC-1 and 100-BC-5 Work Plans:

o All samples taken after June 1, 1992 will meet a 100 day turn around time.

o Samples that are backlogged at TMA (received by the lab by May 1, 1992) will be analyzed by the end of June 1992 and will be reported in July; Samples backlogged at Weston (received by the lab by March 31, 1992) will be analyzed and reported by the end of August 1992. Samples received after the backlog date and before June 1, 1992 will meet the 100 day turn around time.

o Some samples related to 100-BC-1&5 are considered to be in the backlog at each of the labs.

11. **N AREA ISSUE PAPER STATUS** - E. Goller ~~is unable~~ <sup>was</sup> ~~is~~ <sup>is currently unable</sup> (see) to obtain RL Operations concurrence on integration of N-reactor shutdown activities with past practice activities.

12. **INFORMATION ITEMS**

• All DOWs for OUs should be sent to Ecology in Kennewick, copies to go to Lacey only on HR-3, NR-1 & 2, and BC-1. DR-1 and HR-1 will be managed from Kennewick.

• During the discussion of the 100-BC-1 field activities, the general consensus was to schedule a General Topics technical briefing on the different radiation detection instruments in use in the field.

• Public comments were received on the KR-4 Work Plan. No change.

• Dennis Faulk (EPA) requested Mike Thompson present the Hanford Past Practice Strategy again, with specifics on how to apply it.

13. **REQUEST** - Eric Goller (RL) requested the distribution list for approved Work Plans from the regulators. Dennis Faulk (EPA) responded that in the absence of a distribution list, the current UMM distribution list may be used.

→ E. Goller is currently unable to resolve the issue of NR-1 and NR-2 OU **SCHEDULE DELAYS** (2 year delay of ~~schedule~~ <sup>submittal of IRM Proposed Plan</sup>). Resolution is dependent (see) on the N-Reactor shutdown schedule (operations function).

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## Attachment #3

100 Aggregate Area Unit Manager's Meeting  
 Official Attendance Record  
 June 24, 1992

Please print clearly and use black ink

PRINTED NAME	SIGNATURE	ORGANIZATION	O.U. ROLE	TELEPHONE
Suzanne Clarke	<i>Suzanne Clarke</i>	SWEC	GSSC	509-372-0630
Dib Goswami	<i>D. Goswami</i>	Ecology	Unit Mgr	509-546-1301
Dennis Faulk	<i>Dennis Faulk</i>	EPA	Unit Mgr	608-8631
Bob Henckel	<i>Bob Henckel</i>	WHC	100 Area	509 376-2091
Ward Stawitz	<i>Ward Stawitz</i>	USGS	EPA Support	(206) 593-6510
Paul Beaver	<i>Paul Beaver</i>	EPA	Unit Mgr	376-86605
Andree De Angeles	<i>Andree De Angeles</i>	PRC	EPA Support	206-624-2692
Chuck Cline	<i>Chuck Cline</i>	Ecology	D.U. Mgr	206 438-7554
Billie Mauss	<i>Billie Mauss</i>	Ecology	CERCLA Support	509-546-2993
PAMELA INNIS	<i>Pamela Innis</i>	EPA	C.U. MANAGER	509/376-4919
Brian Drost	<i>Brian Drost</i>	USGS	EPA support	206-543-6510
Alan D. Krug	<i>Alan D. Krug</i>	WHC	100 Area/Lead	509-376-5684
Jeff Ayres	<i>Jeff Ayres</i>	WHC	100-HR-1	509-376-3418
HA PARSON	<i>Ha Parson</i>	WHC	ESC-ONT	
KAY KIMMEL	<i>Kay Kimmel</i>	SWEC	GSSC	509-372-0610
Jim PATTERSON	<i>Jim Patterson</i>	WHC	ER Proposal-	509-376-0568
Karl N. Pool	<i>Karl N. Pool</i>	WHC	OSM	376-3137
MIKE STANKOVICH	<i>Mike Stankovich</i>	WHC	100 Area	509 376-2493
Rich McClain	<i>Rich McClain</i>	WHC	100 Area Field Screening	509 376-0777
Steve Weiss	<i>Steve Weiss</i>	WHC	River, Ecology, Central Passions 100 Area	509 376 1683
RICH MULLEN	<i>Rich Mullen</i>	PARAMETRIX	Ecology Support	206-453-3550
Jon Sprecher	<i>Jon Sprecher</i>	Beaman/Clarkwell	Ecology Support	(509) 244-7005
Larry Godbois	<i>Larry Godbois</i>	EPA	Unit Manager	509 376-9884

**Attachment #4  
Action Item Status List**

Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units  
June 24, 1992

ITEM NO.	ACTION	STATUS
1HR1.28	Determine when the topographic mapping will be available on HEIS, who is responsible for digitizing the mapping, and when it will be available. Action: Alan Krug (11/15/90)	Closed 6/24/92. Don't know when the data will be in HEIS.
1HR3.29	Provide regulators with information about the situation concerning the cooling-water discharge pipeline/vent pipes on the island opposite D reactor. Action: Jim Goodenough (11/15/90)	Closed 6/24/92. 3 parts: 1) approval from Benton County Shoreline Management 2) Dept. of Fisheries wanted NEPA document for wetlands 3) USACE approval pending.
1HR3.32	Regarding the removal of the vent pipes, WHC will: 1) Determine the need for an ACE permit; 2) obtain a letter from ACE that gives approval to begin work before the need for the permit is determined; and, 3) draft letters on the matter to the Natural Resources Trustees. Action: A. Krug (1/15/90)	Open: Pending overall resolution (7/18/91). NEPA wetlands approval pending. USACE approval: resolution pending. 6/24/92
1AAMS.1	The 100 Area schedule assumptions presented by Merl Lauterbach are to be discussed with the regulators and resolved. Action: Doug Sherwood, Larry Goldstein, Mike Thompson (9/19/91)	Closed 6/24/92.
1AAMS.2	WHC, DOE and the regulators are to meet to resolve questions on the 100 Area investigations. Topics to be discussed include geophysical logging, physical testing, archiving of "hot" samples, aquifer testing, etc. This meeting is tentatively scheduled for November 26, 1991. Action: Merl Lauterbach (11/21/91)	Closed 6/24/92.

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ITEM NO.	ACTION	STATUS
1AAMS.3	Clarify the level above which RAD samples can not be shipped off site. Action: DOE (12/17/91)	Closed 6/24/92.
1AAMS.4	Provide a plan for incorporating the comments of EPA and Ecology into the work plans. Action: RL (12/17/91)	Closed 6/24/92.
1AAMS.5	Ecology and EPA are to be provided with sampling data on mulberries from N-Springs as well as data from the vegetation eradication program. The specific herbicides that were used are to be included. Action: T. Poston and J. Goodenough. (1/23/92)	Open. Confirm that letter went out.
1AAMS.7	Provide information to the regulators on how to retrieve rad counting data from the 222-S Lab. Action to Jeff Lerch (2/27/92). Action: Karl Pool (6/24/92)	Open. How does WHC get their data for shipping?
1AAMS.8	Present a comparison of 222-S rad counting data, field screening data and geophysical logging results at the March UMMS. The data set used should include 2 or 3 boreholes, preferably holes in which both gross and spectral logs have been run. Action to Merl Lauterbach (2/27/92)	Closed 6/24/92.
1AAMS.9	DOE shall send a letter to Ecology, suggested from S. H. Wisness to D. Jansen with a cc. to EPA, explaining what is included in the ER Program for the N Reactor Area and how the multiple programs will be handled organizationally. Action to J. D. Goodenough (2/27/92). Action: E. D. Goller (5/27/92).	Open. Related to the N Areas Issues Papers.
1AAMS.10	Arrange a meeting on the 100 Area Feasibility Studies, Phases I and II, with the regulators for the week of April 6th. Action to E. D. Goller (RL) 3/26/92.	Closed 6/24/92.
1AAMS.11	Clarify if the 100 day turnaround time limit applies to Samples taken from 100 BC-??. Action to K.H. Pool (PNL) 5/27/92	Open

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ITEM NO.	ACTION	STATUS
1AAMS.12	Ecology requested that sampling on oil and grease well network be restarted in down-gradient wells N-3, N-8, and N-16 through N-26 (5/22/92 letter to Eric Goller from Steve Cross). Action to E.D. Goller (RL) 5/27/92	Open.
1AAMS.13	To contact appropriate parties to develop a checklist of all requirements (training and health and safety) necessary for personnel to gain access to radiation exclusion zones. Action: Eric Goller (6/24/92).	Open.

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Task Name	1991			1992								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>AREA WIDE ACTIVITIES</b>	[Solid black bar]											
<b>100 AREA FEASIBILITY STUDY</b>	[Solid black bar]											
1.0 Alternative Screen/Develop	[Solid black bar]											
1.1 Contaminant Identification	[Solid black bar]											
1.2 Alternative Development	[Dotted bar]											
1.3 Alternative Screening	[Dotted bar]											
1.4 Report Preparation (4)	[Dotted bar]											
<b>100 AREA RISK ASSESSMENT</b>	[Solid black bar]											
1.0 Risk Assessment Methodology	[Solid black bar]											
1.1 Methodology Development	[Dotted bar]											
1.2 Model Identification	[Solid black bar]											
1.3 Method. Report (Primary)	[Solid black bar]											
1.3.1 Report Preparation (3)	[Dotted bar]											
1.3.2 Reg. Review/Approval (2)	[Dotted bar]											
2.0 Model Support/Development	[Solid black bar]											
2.1 Model Development Plan	[Dotted bar]											
2.2 Sitewide Model Devel/Test	[Dotted bar]											
2.3 Secondary Report Prep. (4)	[Solid black bar]											
3.0 Preliminary 100 Area RA	[Solid black bar]											
3.1 Contaminant Identification	[Solid black bar]											
3.2 Exposure Assessment	[Solid black bar]											
3.3 Toxicity Assessment	[Solid black bar]											
3.4 Risk Characterization	[Solid black bar]											
3.5 Secondary Report Prep. (4)	[Solid black bar]											
<b>BACKGROUND DETERMINATION DOC.</b>	[Solid black bar]											
1.0 Submit Soils Backgrd. Plan	[Solid black bar]											
2.0 Submit Methodology Descrip	[Solid black bar]											
3.0 Submit Soils Study Report	[Solid black bar]											
4.0 Eval. Rpt/Exist. GW Data	[Solid black bar]											
<b>RIVER IMPACT STUDY</b>	[Solid black bar]											
<b>CULTURAL RESOURCES INVEST.</b>	[Solid black bar]											
<b>ECOLOGICAL INVESTIGATIONS</b>	[Solid black bar]											
<b>SHORELINE ACTIVITIES</b>	[Solid black bar]											

Task Name	1991			1992								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>AREA WIDE ACTIVITIES</b>	[Solid black bar]											
100 AREA FEASIBILITY STUDY	[Solid black bar]											
100 AREA RISK ASSESSMENT	[Solid black bar]											
BACKGROUND DETERMINATION DOC.	[Solid black bar]											
<b>RIVER IMPACT STUDY</b>	[Solid black bar]											
1.0 Spring/Seep Sampling	[Solid black bar]											
1.1 Sampling Activities	[Dotted pattern bar]											
1.2 Laboratory Analysis	[Dotted pattern bar]											
1.3 Secondary Report Prep. (3)	[Dotted pattern bar]											
2.0 Cum. Health Eff. (Primary)	[Solid black bar]											
2.1 Report Preparation (3)	[Dotted pattern bar]											
2.2 Reg. Review/Approval (2)	[Dotted pattern bar]											
3.0 Aquifer/River Interaction	[Solid black bar]											
3.1 Model Evaluation	[Dotted pattern bar]											
3.2 Equip. Instal/Data Coll.	[Solid black bar]											
3.3 Modeling	[Dotted pattern bar]											
3.4 Secondary Report Prep. (3)	[Dotted pattern bar]											
4.0 Long Term Aq./River Inter.	[Solid black bar]											
4.1 Initial Planning	[Dotted pattern bar]											
4.2 Equipment Installation	[Solid black bar]											
4.3 Monitoring & Analysis	[Solid black bar]											
<b>CULTURAL RESOURCES INVEST.</b>	[Solid black bar]											
1.0 Reactor Area Field Surveys	[Solid black bar]											
2.0 Inter-Reactor Field Survey	[Dotted pattern bar]											
3.0 Secondary Report Prep. (4)	[Dotted pattern bar]											
<b>ECOLOGICAL INVESTIGATIONS</b>	[Solid black bar]											
1.0 Data Compilation/Synthesis	[Dotted pattern bar]											
2.0 Aquatic Sampling	[Dotted pattern bar]											
3.0 Terr./Rip. Survey/Sampling	[Dotted pattern bar]											
4.0 Threat/Endon. Sp. Assess.	[Solid black bar]											
4.1 Field Activities	[Dotted pattern bar]											
4.2 Threat/End. Sp. Assess Rpt	[Dotted pattern bar]											
5.0 Ecological Sum. Rpt. Prep.	[Solid black bar]											
<b>SHORELINE ACTIVITIES</b>	[Solid black bar]											
1.0 Data Compilation	[Dotted pattern bar]											
2.0 Geologic Mapping	[Dotted pattern bar]											
3.0 Radiation Survey	[Dotted pattern bar]											

Control Number  13	100 NPL Agreement/Change Control Form  Change <input checked="" type="checkbox"/> Agreement <input type="checkbox"/> Information Operable Unit(s) _____	Date Submitted  Date Approved
Document Number & Title: Milestone M-30-03: Complete all non-intrusive field work as identified in draft work plans for the following operable units: 100-HR-1/3, 100-DR-1, 100-BC-1/5, 100-KR-1/4, 100-FR-1/3, and 100-NR-1/3.		Date Document Last Issued
Originator  R. P. Henckel		Phone  6-2091
<p><b>Summary Description</b></p> <p>Milestone M-30-03 was created in the spring of 1991, prior to the rescoping of the 100 Area Work Plans. It calls for the completion of all non-intrusive field work in the first 11 operable unit work plans. Since that time, the draft work plans have undergone a number of changes. The purpose of this 100 NPL Agreement/Change Control Form is to document agreement on those activities which must be completed by September 1992, to fulfill this milestone. The attached table lists the specific activities which, when completed, denote completion of the milestone.</p>		
<p><b>Justification and Impact of Change</b></p> <p>Not applicable.</p>		
<p>R. P. Henckel <i>RP Henckel</i></p> <hr/> <p>WHC 100 Area Rem. Investigation Mgr. E. D. Goller <i>E. D. Goller</i></p> <hr/> <p>DOE Unit Manager <i>[Signature]</i></p> <hr/> <p>EPA <i>[Signature]</i></p> <hr/> <p>Ecology <i>[Signature]</i></p>		<p><i>5/27/92</i></p> <hr/> <p>Date <i>5-27-92</i></p> <hr/> <p>Date <i>6-4-92</i></p> <hr/> <p>Date <i>6-4-92</i></p>
<p>Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3</p>		

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The M-30-03 milestone, which is to be completed by September, 1992, is stated as follows:

Complete all non-intrusive field work as identified in draft work plans for the following operable work plans:

100-HR-1, 100-HR-3, 100-DR-1, 100-BC-1, 100-BC-5, 100-KR-1, 100-KR-4, 100-NR-1, 100-NR-2, 100-FR-1 AND 100-FR-3.

For purposes of defining the scope of work for this milestone, non-intrusive activity shall be as described in Section 7.3.2 of the Tri-party Agreement Action Plan. This consists of the following type of activities:

- Survey location of sites
- Surface radiation
- Surface geophysical surveys
- Air sampling
- Soil gas surveys
- Biotic surveillance and
- Near-surface vadose zone sampling.

The attached table details the activities which, when conducted, will complete this milestone. It lists them on a operable unit by operable unit basis. The following is a summary by activity type:

1. Survey location of sites: Topographic mapping of the 100 Area was completed in FY '91 and provides the basis for site locations. As sampling and drilling is completed, individual sites are scheduled for surveying and entering into the HEIS data base. This is an on-going activity and will continue into FY '93 as additional sites are sampled.

2. Surface radiation: Surface radiation surveys have been completed or are scheduled to be completed in 100-HR-1, 100-DR-1, 100-NR-1 and the 100 Area shoreline of the Columbia River by September, 1992. No surveys are planned for 100-BC-1, 100-FR-1, 100-KR-1, 100-BC-5, 100-FR-3, 100-HR-3, 100-KR-4, and 100-NR-2.

3. Surface geophysical surveys: Surface geophysical surveys have been completed in 100-HR-1 and 100-DR-1 to aid in locating specific potential waste sites and drilling sites. No geophysical surveys are planned for the remaining operable units but surveys will be conducted as needed.

4. Air Sampling: No air sampling has been conducted or is planned to be conducted as part of the non-intrusive activities. Air sampling is, however, routinely conducted for Health and Safety reasons as part of the drilling and sampling activities.

5. Soil gas surveys: Soil gas surveys have been completed in the 100-DR-1 operable unit and are planned to be completed for the 100-NR-1 operable unit by September, 1992. No soil gas surveys are planned for the remaining operable units, although some surveys may be conducted to support specific waste site investigations.

6. Biotic surveillance: Various biotic surveillance and sampling activities have been conducted in all of the source and groundwater operable and along the 100 Area Columbia River Shoreline. These initial surveys provide the information to develop the conceptual models of environmental and human health risk for the 100 Area. Additional surveys will be conducted on an as needed basis.

7. Near-surface vadose sampling: Near-surface vadose sampling has been or is scheduled to be completed by September, 1992 in the 100-HR-1, 100-DR-1, 100-BC-1, and the 100-FR-1 operable units. Additionally, spring water and sediment sampling have been conducted along the 100 Area Columbia River shoreline. No near-surface vadose sampling is planned for the 100-KR-1, 100-NR-1, 100-BC-5, 100-FR-3, 100-HR-3, 100-KR-4, and 100-NR-2 operable units.

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OPERABLE UNIT	ACTIVITY DESCRIPTION
100 Area Wide	<p>Spring Water &amp; Sediment Sampling as identified in DOE/RL-92-12</p> <p>Shoreline Radiation Survey of HR-3 &amp; KR-4</p> <p>Ecological Surveys:</p> <ul style="list-style-type: none"> <li>i) Bird Surveys at HR-3 &amp; BC-5</li> <li>ii) Vegetation Maps of Shoreline from 100-B to 100-F</li> <li>iii) Mammal &amp; Burrowing Insect surveys for waste disposal cribs and trenches for HR-1, DR-1, BC-1, FR-1, KR-1, and NR-1.</li> </ul> <p>Ecological Sampling:</p> <ul style="list-style-type: none"> <li>i) Asp., reed canary grass and tree leaf sampling at HR-3, BC-5, FR-3, KR-4, and NR-2</li> <li>ii) Aquatic sampling at HR-3 and NR-2 as identified in Appendix D2 of the work plans.</li> </ul>
100-HR-1	<p>Surface Radiation Survey (all of HR-1 except controlled zones)</p> <p>Septic Tank Sampling 1607-H-4</p> <p>Septic Tank Sampling 1607-H-2</p> <p>100H Process Effluent Pipeline Inspection (north pipeline between expansion box #5 and the retention basin)</p> <p>Geophysical Surveys (116-H-4, 1716-H, 1717-H, 116-H-7, 190-H)</p> <p>Potential PCB Contaminated Electrical Facilities (105-H, 151-H)</p>

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OPERABLE UNIT	ACTIVITY DESCRIPTION
100-DR-1	<p>Surface Radiation Survey (100-DR-1 Area with the exception of Controlled Zones)</p> <p>Geophysical Survey (116-D-2 Pluto Crib, Waste Acid Disposal Reservoir, 1607-D4 Septic Tank, Questionable Septic Tank)</p> <p>Soil Gas Surveys (1713-D, 1714-D, 1715- D, 1716-D, 1722-D, Paint Shop Near 182- D, 184-DA UST, 166-D Tank and Piping, 103-D, 1607-D4 Septic Tank, Burial Ground 4A, Burial Ground 4B, Burial Ground 18, 126-D-2 Landfill)</p> <p>1724-DA Underwater Test Facility</p> <p>Sodium Dichromate Tank</p> <p>108-D Office Bldg/Decon Bldg</p> <p>Septic Tank File Field</p> <p>1714-D Solvent Storage Bldg</p> <p>1715-D Oil &amp; Paint Storage Bldg</p> <p>1716-D Gas Station</p> <p>1722-D Equipment Development Lab</p> <p>Paint Shop (West of 182-D)</p> <p>Ash Disposal Basin (126-D-1)</p> <p>Salt Dissolving Basin</p> <p>103-D Green Metal Storage</p> <p>Electrical Facilities (183-D, 185-D, 189-D, 190-D, 105-D, 151-D, 190-DR, 181-D, 186-D, 105-DR)</p>

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OPERABLE UNIT	ACTIVITY DESCRIPTION
100-HR-3	None
100-BC-1	Electrical Facility Sampling (181-B, 183-B, 186-B, 185-B, 190-B, 190-BA, 190-C, Pole E2-L2321, Pole E2-L2313, 1713-B)  116-C-5 Retention Basin
100-BC-5	None
100-KR-1	None
100-KR-4	None
100-NR-1	Soil Gas Survey (116-N, UN-100-N-17 Trench)  Surface Rad Survey (Excludes: parking lots, known rad areas, areas routinely surveyed, HGP and BPA facilities, and HGP Burn Pit & Grass Dump)
100-NR-2	None
100-FR-1	Source Investigation (132-F Feeding Barn)
100-FR-3	None

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## 100-HR-1 TASKS, JUNE 1992

### Task 1, Project Management

-On Going

### Task 2, Source Investigation

- Data Compilation, Completed (Dec 91)
- Topographic Mapping, Completed (Aug 91)
- Site Walkover, to be completed Spring-Summer 1992
- Surface Radiation Survey, Completed (Oct 91)
- Geophysical Survey-Completed (June 91)
- Septic Tanks, To be completed Summer 1992
- Pipeline Assessment- Completed (Jan 92)
- Electrical Facilities, Completed Sampling Dec 91

### Task 3, Geological Investigation

-Performed as part of 100-HR-3

### Task 4, Surface Water and Sediment Investigation

-Performed as part of 100-HR-3

### Task 5, Vadose Zone Investigation

- Drilling started on 26 Feb 1992
- Drilling completed on 13 Mar 1992
- 5 Boreholes Completed
  - 116-H-1 (Disposal Trench)
  - 116-H-2 (Disposal Trench)
  - 116-H-3 (French Drain)
  - 116-H-7 (Retention Basin)
  - 116-H-9 (Seal Pit Crib)

### Task 6, Groundwater Investigation

-Performed as part of 100-HR-3

### Task 7, Air Investigation

-Activity being performed as routine health and safety air monitoring in support of investigation activities.

### Task 8, Ecological Investigation

-Performed as part of 100-HR-3

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100-HR-1 DOW Schedule,		3/20/92		
Title & Document Number of DOW		One Week DOE-RL review starting:	Two week Regulatory review starting:	Sampling Activity starting:
1	100-H & 100-B Area Electrical Facilities Source Sampling, WHC-SD-EN-AP-064, Rev. 1	Completed	Completed	December 9, 1991
2	Description of Work for the 100-HR-1 Source Operable Unit, WHC-SD-EN-AP-066	Completed	Completed	February 26, 1992
3	1607-H4 Septic Tank Sampling (DOW in review)	Approx. June 1992	Approx. June 1992	Approx. July 1992
4				
5				

## 100-HR-1 DOCUMENTS

- o 100-HR-1 GEOPHYSICAL SURVEYS WHC-MR-0263
- o 100-HR-1 RADIOLOGICAL SURVEYS WHC-MR-0275
- o Engineering Report for H Area Process WHC-SD-NR-ER-092  
Effluent Line Examination

9 2 1 2 0 1 4 1 0 0 5

Task Name	1991			1992								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>REMEDIATION INVESTIGATION</b>	[Solid black bar]											
Task 2-Source Investigations	[Solid black bar]											
2.1 Data Compilation	[Solid black bar]											
2.2 Topographic Mapping	[Solid black bar]											
2.3 Field Activities	[Solid black bar]											
2.3.1 Surface Radiation Survey	[Solid black bar]											
2.3.2 Septic Tank Samp/Analys	[Solid black bar]											
1607-H2 Septic Tank	[Solid black bar]											
Analysis	[Hatched bar: Oct 15 - Dec 15]											
1607-H4 Septic Tank	[Solid black bar]											
Analysis	[Hatched bar: Apr 15 - Jun 15]											
2.3.3 Pipeline Assessment	[Hatched bar: Oct 15 - Dec 15]											
2.3.4 Geophysical Surveys	[Solid black bar]											
2.3.5 Sample Elect. Facilities	[Hatched bar: Oct 15 - Dec 15]											
2.3.6 Elect. Facility Analysis	[Hatched bar: Oct 15 - Apr 15]											
2.4 Data Evaluation	[Solid black bar]											
Task 5-Vadose Investigation	[Solid black bar]											
5.1 Data Compilation	[Hatched bar: Oct 15 - Dec 15]											
5.2 Field Activities	[Solid black bar]											
5.2.1 Mobilization	[Hatched bar: Feb 15 - Mar 15]											
5.2.2 Drilling/Sampling	[Solid black bar]											
5.2.2.1 Borings	[Solid black bar]											
116-H-2 Trench	[Hatched bar: Apr 15 - May 15]											
116-H-3 French Drain	[Hatched bar: May 15 - Jun 15]											
116-H-9 Seal PN Crib	[Hatched bar: Mar 15 - Apr 15]											
116-H-7 Retention Basin BH 3	[Hatched bar: May 15 - Jun 15]											
116-H-1 Trench	[Hatched bar: Jun 15 - Jul 15]											
5.2.3 Air Monitoring	[Hatched bar: Apr 15 - Jun 15]											
5.2.4 Cuttings Store/Dispose	[Hatched bar: Apr 15 - Jun 15]											
5.2.5 Borehole Abandonment	[Hatched bar: May 15 - Jun 15]											
5.2.6 Sample Analysis	[Solid black bar]											
5.2.7 Data Validation	[Solid black bar]											
5.2.8 Data Evaluation	[Solid black bar]											
Task 10-Data Evaluation	[Solid black bar]											
Task 13-RI REPORT	[Solid black bar]											
<b>FEASIBILITY STUDY</b>	[Solid black bar]											
<b>IRM PLAN</b>	[Solid black bar]											
<b>INTERIM ROD</b>	[Solid black bar]											

## 100 NPL Agreement/Change Control Form

Control Number  17	<input type="checkbox"/> Change <input type="checkbox"/> Agreement <input checked="" type="checkbox"/> Information Operable Unit(s) <u>100-HR-1</u>	Date Submitted: June 22, 1992 Date Approved: NA
Document Number & Title: WHC-SD-EN-AP-096, Rev. 0, Investigation Field Activities for the 100-HR-1 Operable Unit Description of Work		Date Document Last Issued: June 22, 1992
Originator: M. T. Stankovich		Phone: 6-2493
Summary Description: <p>This document details the field activities associated with the nonintusive source sampling in the 100-HR-1 Operable Unit of the Hanford Site. This document will be used in conjunction with the RFI/CSM Work Plan for the 100-HR-1 Operable Unit.</p> <p>Comments need to be returned by July 7, 1992. A comment resolution meeting will be scheduled to resolve any comments at this time.</p>		
Justification and Impact of Change: <p>TPA Agreement milestones 30-3.</p>		
<u>J. M. Ayres</u> WHC Operable Unit Coordinator		<u>6/22/92</u> Date
<u>NA</u> DOE Unit Manager		_____ Date
<u>NA</u> Lead Regulatory Unit Manager		_____ Date
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3.		

92126541007

### DISTRIBUTION SHEET

To: R. P. Henckel	From: M. T. Stankovich	Date: June 5, 1992
----------------------	---------------------------	-----------------------

Project Title/Work Order:

Source Investigation Field Activities for the 100-HR-1 Operable Unit Description of Work

EDT No.: 158677

ECN No.: WHC-SD-EN-AP-096, Rev 0

Name	MSIN	With Attachment	EDT/ECN & Comment	EDT/ECN Only
J. D. Ayres	H4-55	X		
D. R. Baker	X7-02	X		
G. S. Corrigan	H4-16	X		
K. A. Gano	X0-21	X		
E. D. Goller	A5-19	X		
J. D. Goodenough	A5-19	X		
C. E. Heiden	H4-55	X		
D. O. Hess	L6-57	X		
J. E. Hodgson	X7-02	X		
A. D. Krug	H4-55	X		
R. Mabry	X7-02	X		
J. F. Renken	X7-02	X		
M. T. Stankovich	H4-55	X		
B. G. Tuttle	N3-06	X		
EDMC (2)	H4-22	X		
Central Files	L3-04	X		
IRM Clearance	H4-17	X		

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ENGINEERING DATA TRANSMITTAL

Page 1 of \_\_\_\_\_  
1. EDT 158677

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) 100 Area Remedial Investigation	4. Related EDT No.: NA
5. Proj./Prog./Dept./Div.: 100-HR-1/100 RI/ERE/RR	6. Cog. Engr.: M. T. Stankovich	7. Purchase Order No.: NA
8. Originator Remarks: Description of Work is transmitted for release.		9. Equip./Component No.: NA
		10. System/Bldg./Facility: NA
11. Receiver Remarks:		12. Major Assm. Dwg. No.: NA
		13. Permit/Permit Application No.: NA
		14. Required Response Date: NA

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15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-EN-AP-096		0	Source Investigation Field Activities for 100-HR-1 Operable Unit Description of Work	3	2	1	

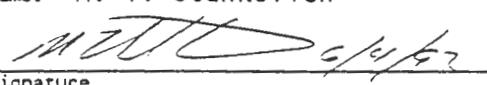
16. KEY			
Impact Level (F)	Reason for Transmittal (G)		Disposition (H) & (I)
1, 2, 3, or 4 (see MRP 5.43)	1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)										(G)	(H)
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
	1	Cog. Eng. M. T. Stankovich		6/22/92	H4-55						
	1	Cog. Mgr. R. P. Henckel		6/22/92	H4-55						
	1	QA G. S. Corrigan		6/22/92	H4-16						
		Safety									
		Env.									
	1	J. M. Ayres		6/22/92	H4-55						

18. M. T. Stankovich  Signature of EDT Originator	19. _____ Authorized Representative for Receiving Organization	20. R. P. Henckel Cognizant/Project Engineer's Manager	21. DOE APPROVAL (if required) Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
---------------------------------------------------------	-------------------------------------------------------------------	--------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

SUPPORTING DOCUMENT

1. Total Pages

<p>2. Title</p> <p>Source Investigation Field Activities for the 100-HR-1 Operable Unit Description of Work</p>	<p>3. Number</p> <p>WHC-SD-EN-AP-096</p>	<p>4. Rev No.</p> <p>0</p>
<p>5. Key Words</p> <p>Nonintrusive sampling 100-H Area 1607-H4</p>	<p>6. Author</p> <p>Name: M. T. Stankovich</p>  <p>Signature</p> <p>Organization/Charge Code 81221/PH1AA</p>	
<p>7. Abstract</p> <p>This activity plan details the field activities associated with the nonintrusive source sampling in 100-H Area of the Hanford Site and will serve as a field guide for those performing the work. Nonintrusive sampling that are not detailed in this activity plan are 100-HR-1 Electrical Facilities and 1607-D2 Septic Tank.</p> <p>Stankovich, M. T., 1992, <i>Source Investigation Field Activities for the 100-HR-1 Operable Unit Description of Work</i>, WHC-SD-EN-AP-096, Rev. 0, Westinghouse Hanford Company, Richland, Washington.</p>		
<p>3. PURPOSE AND USE OF DOCUMENT - This document was prepared for use within the U.S. Department of Energy and its contractors. It is to be used only to perform, direct, or integrate work under U.S. Department of Energy contracts. This document is not approved for public release until reviewed.</p> <p>PATENT STATUS - This document copy, since it is transmitted in advance of patent clearance, is made available in confidence solely for use in performance of work under contracts with the U.S. Department of Energy. This document is not to be published nor its contents otherwise disseminated or used for purposes other than specified above before patent approval for such release or use has been secured, upon request, from the Patent Counsel, U.S. Department of Energy Field Office, Richland, WA.</p> <p>DISCLAIMER - This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.</p>	<p>10. RELEASE STAMP</p>	
<p>9. Impact Level 3</p>		

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### 3.0 SAMPLING AND FIELD ACTIVITIES

#### 3.1 FACILITY BACKGROUND

The 1607-H4 Sanitary System received waste from the 181-H pumphouse. The system consisted of a six-person capacity tank with removable concrete covers. The associated tile fields consist of 48 ft of vitrified clay tile pipe (GE 1948a; GE 1948b). A drawing/document search confirms that the tank was placed south of the river and north of the 1607-H2 site (AEC 1953). The 1607-H4 system was active from 1949 to 1965. There has been no documented spill into the system (DOE-RL 1988).

During May 1991, an attempt was made to sample the contents of the septic tank. When the 1607-H4 tank top soil was excavated, it was determined that the septic tank had been backfilled with soil and large stones. The size of fill material and the tank constrained boring into the septic tank. As an alternative method, a test pit would be constructed in the tile field for sampling the contents of the system.

#### 3.2 LOCATION

The 1607-H4 septic system is located in the northwest area of 100-HR-1 Operable Unit on the bluff approximately 100 ft from the Columbia River. The NAD-83 coordinates are approximately E 577,560 and N 153,440 (DOE/RL 1991). The current surface grade is approximately 402 ft above sea level. Figure 1 shows the location of the septic system in relation to other buildings in the 100-HR-1 Operable Unit.

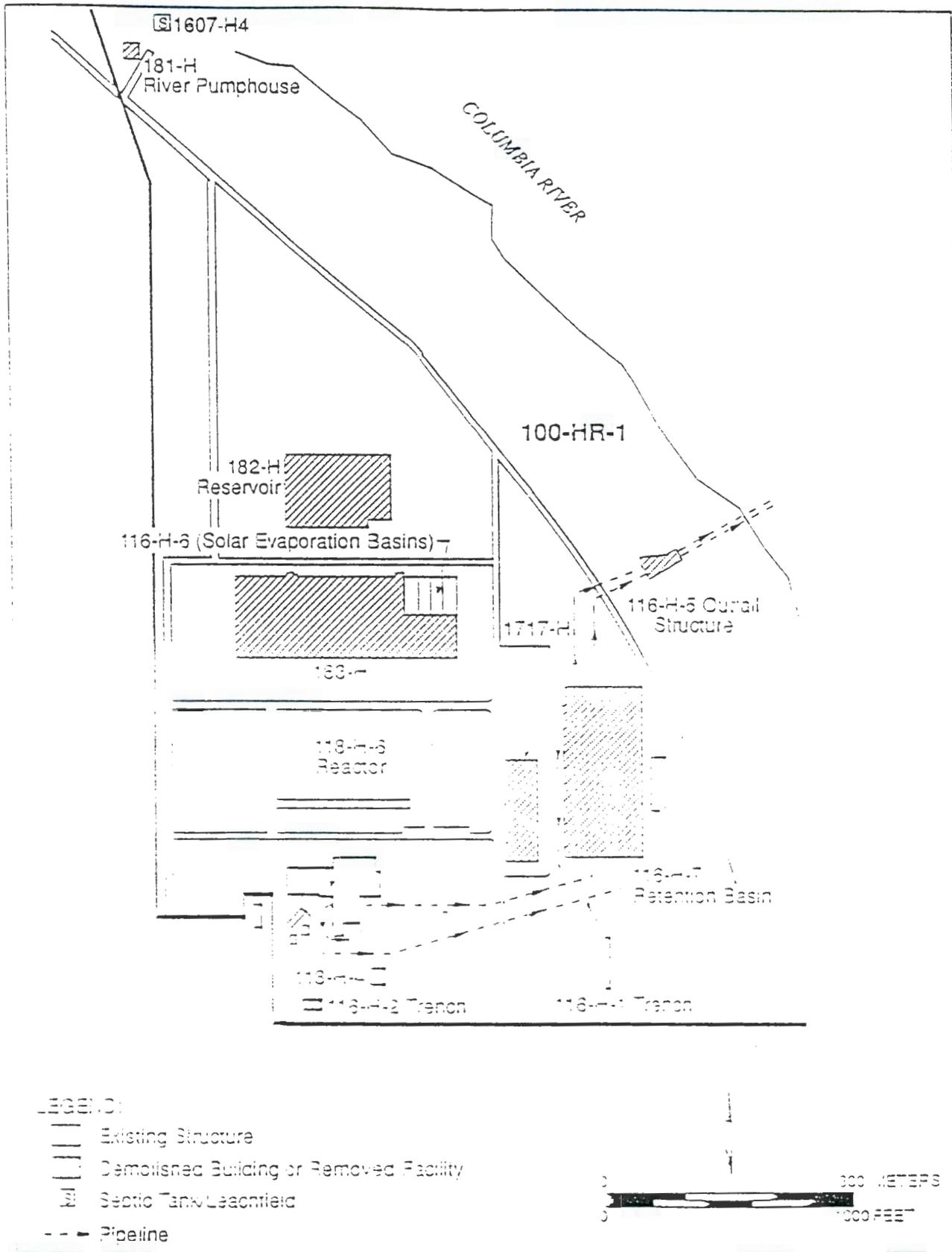
Information from ground-penetrating radar (GPR) has been used to determine the 1607-H4 septic tank location. This information and the plot maps (AEC-RL 1953 and GE 1948b) will be used to locate and stake out the tile field sampling site.

#### 3.3 SAMPLE ANALYSIS

##### 3.3.1 Contaminants of Concern

There are no specific contaminants of concern for the 1607-H4 Septic System. There have been no reported spills or introduction of contaminants into the system, but because of the uncertainty, soil samples will be analyzed for the radionuclides identified in the work plan, all CERCLA target analyte list (TAL) and target compound list (TCL) constituents, and specific anions (DOE/RL 1991, Table QAPJP-1).

9 2 1 2 3 4 5 6 7 8 9 10 11 12 13



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Figure 1. 1607-H4 Septic System.

### 3.3.2 Field Screening

The field screening discussed in this section is not for health and safety determination. Health and safety issues are covered in the radiation work permit (RWP) or the job safety analysis (JSA). Field screening covered in this section is for the purpose of selecting samples for laboratory analysis.

Samples will be field screened for radioactivity and volatile organics. Radiation field screening will be performed using a Geiger-Mueller instrument with a P-11 probe and volatile organics screened using an Organic Vapor Monitor (OVM) per EII 3.4, Field Screening, Appendices A and B (WHC 1988a).

If the field team leader finds radioactive contamination two times background or volatile organics contamination 5 ppm over background a sample will be taken per Section 3.5. Background will be determined before excavation is started. The field team leader will determine the ambient background 3 ft over the sampling site. The background will be determined per EII 3.4, Appendix A and B. The background will be recorded in the field logbook.

### 3.3.3 Laboratory Analysis

All samples will be analyzed per Section 5.0. The list of analytes is consistent with the work plan (DOE/RL 1991). If full sample volume requirements cannot be met, the field sampler will record the volume obtained in the sampling logbook per EII 1.5, Field Logbooks (WHC 1988c) and the analyses will occur in the following order:

- TCL volatiles
- TCL semivolatiles/PCB/pesticides
- TAL metals and cyanide
- Anions
- Radioisotopes
- Total activity.

### 3.4 TEST PIT CONSTRUCTION

The test pit will be constructed in an area staked out as part of Section 3.2. The test pit will form a "L" over the site. Figure 2 shows the site location and the projected test pit perimeter. The exploratory trench of the test pit will be excavated first. This trench will start approximately 5 ft from the end of the septic tank and be excavated across the two drain legs of the field. The purpose of this arm will be to identify one of the two legs of the tile field. When a leg has been identified the backhoe will excavate the leg in a manner that samples can be obtained from around the tiles. The tiles will be excavated to a length to enable sufficient quantity of soil to complete this activity. The excavated area will be approximately 4 ft deep. The depth of the pit will be determined using GPR data. If the results of the GPR are inconclusive the test pit will be 4 ft deep.

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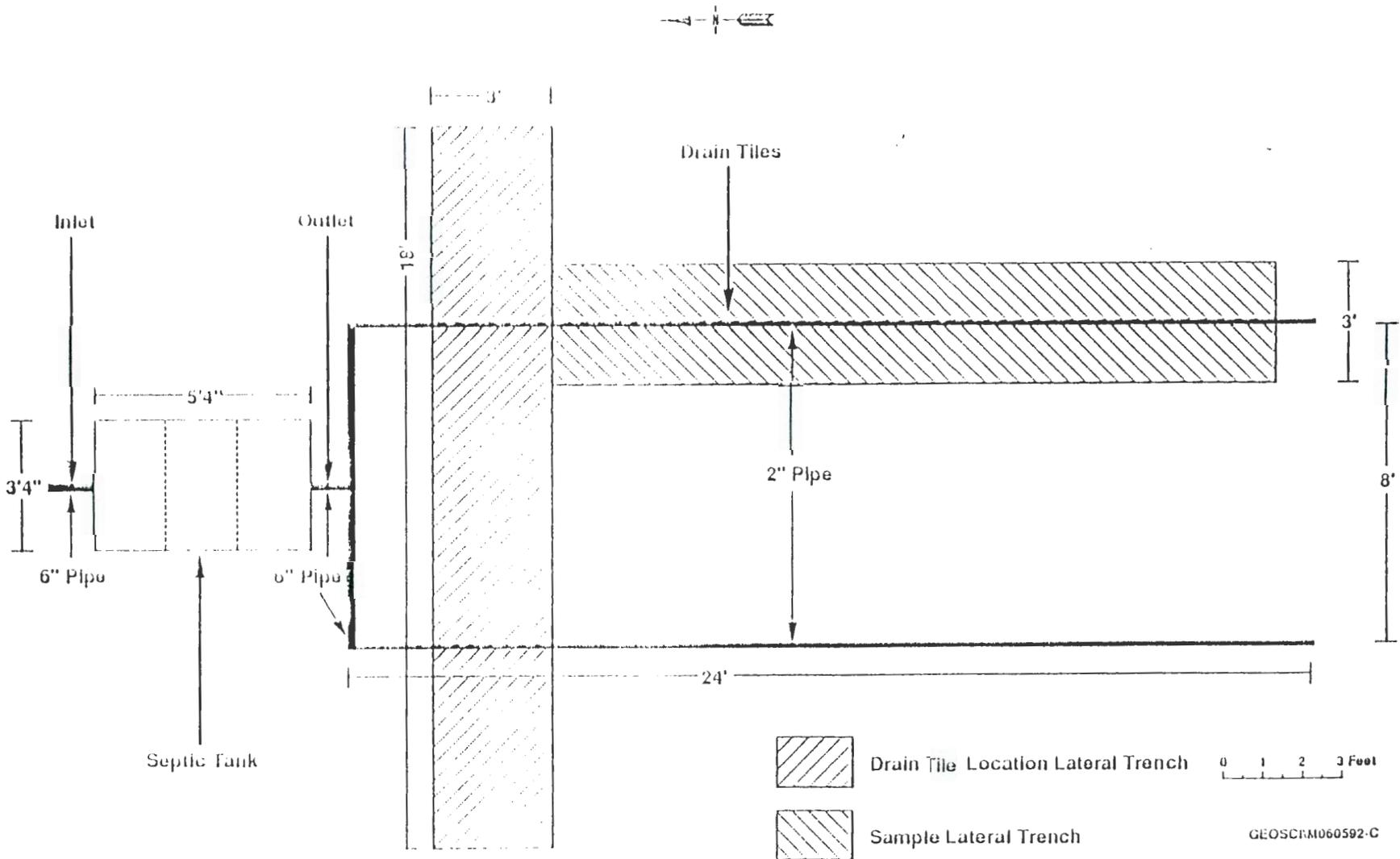


Figure 2. 1607-H4 Tile Field Test Pit.

The test pit will be constructed per the safety constraints required in the JSA. At the direction of the field team leader plastic or other covering may be placed on the ground adjacent to the excavation for the temporary stockpiling of excavated material. Excavated material will be continuously screened per the criteria stated in Section 3.3.2 from the surface to the final depth. If the whole body exposure or contamination exceeds the RWP limit, the sampling activities will be terminated and the task will be reassessed.

After all samples have been collected at the pit site, the excavation will be backfilled in approximately the reverse order, so the first bucketful excavated is the last bucketful backfilled. The test pit site will be returned to its original condition. Should any waste be generated it will be handled per EII 4.3, Control of CERCLA and Other Past-Practice Investigation Derived Waste (WHC 1988a).

### 3.5 SAMPLE COLLECTION

Analytical samples will be collected directly from the backhoe bucket using hand tools and standard soil sampling techniques per EII 5.2, Soil and Sediment Sampling, Appendix F (WHC 1988a). The bucket of the backhoe will be decontaminated or cleaned of visible dirt before sampling and between sample locations. A bucket of soil will be removed from the desired sampling intervals and brought to the side of the test pit for sampling. Samples shall be collected from soil in the middle of the bucket, away from the bucket sides. All sample material will be collected in the order shown in Section 3.3.3. A minimum of one sample or a maximum of two samples will be collected per the following criteria:

- Collect one sample the first time the material does not pass the screening criteria
- Collect the second sample 6 ft after first sample
- If no contamination is encountered collect the first sample at the intersection of the two arms of the test pit.

All test pit material will be field screened for radioactive contamination per Section 3.3.2. A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The logbook will be used and maintained per EII 1.5 Field Logbooks (WHC 1988a). All samples collected will be packaged and sent to an offsite laboratory for analysis. The packaging of the samples is done per EII 5.11, Sample Packaging and Shipping (WHC 1988a). A chain of custody is initiated and maintained after the sample is collected. The chain of custody is done per EII 5.1 Chain of Custody (WHC 1988a).

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## 4.0 SAMPLE LABELING

The Hanford Environmental Information System (HEIS) is used to track the sample and laboratory data obtained during environmental investigations conducted under this description of work. Each sample will be identified and labeled with a unique HEIS sample number. HEIS numbers will be assigned per the Hanford Environmental Information System (HEIS) User's Manual (WHC 1991). Field sampling data will be collected and recorded in the field logbook (WHC-N-429-1).

## 5.0 ANALYSES

Samples collected for chemical analysis will be analyzed for the full suite of CERCLA CLP TCL and TAL constituents, specific anions, and specified radionuclides. Estimated quantity of material needed for analyses are shown in Table 1. The laboratory will use existing Level III for anions, Level IV methods for CLP TCL and TAL constituents, and Level V for radionuclides. The specific anions will be analyzed using EPA methods (EPA 1986). Sample custody will follow the procedures as specified in the 100-HR-1 Operable Unit work plan (DOE/RL 1991, Appendix A, Section 5.1) and EII 5.1 Chain of Custody (WHC 1988a).

Table 1. 1607-H4 Soil Analyte List.

Analyte	Method	Holding time	Container volume
AA metals mercury cyanide	CLP	5 mo 28 d 14 d	Glass/500 mL
Volatile organic	CLP	14 d	Glass (septum)/125 mL
Semivolatile organic PCB/pesticides	CLP CLP	7 d <sup>a</sup>	Amber glass/1,000 mL
Anions: F <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , & SO <sub>4</sub> <sup>-</sup>	EPA 300 & 353.2	28 d	Amber glass/250 mL
Carbon-14 Strontium-90 Gross alpha Gross beta Gamma spec	Lab SOP	5 mo	Glass/1,000 mL
Alpha spec	Lab SOP		
Total Activity (222-S Lab)		5 mo	Plastic or glass vial (at least 1 g)

<sup>a</sup>7 d for extraction, 40 d after extraction for analysis.

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6.0 QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS

Internal quality control (QC) samples shall be collected as specified in the work plan Appendix A, Quality Assurance (QA) Project Plan.

The following QA samples will be collected for the 1607-H4 Septic System.

<u>QA Sample</u>	<u>QC</u>	<u>Medium</u>
Trip blank (one per trip container)	A pedigree of matrix will be included in project file.	Silica sand
Field duplicate (one sample)		First soil sample taken
Split (one sample)		First soil sample taken

The field team leader will document in the field logbook the QA sample's HEIS number, sample location, sample medium, and any relationship to other samples.

7.0 SCHEDULE

The following schedule is for nonintrusive source sampling in the 100-HR-1 Operable Unit. This schedule is subject to change and the operable unit coordinator should be contacted for current status. An agreement activity notification form will be issued at least 5 d before start of field work.

<u>Sample task</u>	<u>Sampling date</u>
1607-H4 Tile Field	Last 2 wk of June

3.0 CHANGES TO DESCRIPTION OF WORK

Major changes to this description of work, such as analyzing different parameters, using different analytical methods, or changing the sampling intervals will be submitted on the attached form (Attachment 2) and kept on file with the operable unit coordinator. The two digit change control tracking number will be supplied by the operable unit coordinator. The change will require, as a minimum, the verbal approval of field team leader and operable unit coordinator. The change will be filed as an Engineering Change Notice and a copy will be inserted into the 100-H Area project file. Copies

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will be submitted to the lead regulatory agency and appropriate field personnel.

## 9.0 REFERENCES

- AEC-RL, 1953, *Outside Lines, Sewers, 100-H Area* Drawing No. M-1904-H, Sheet 1 of 6, U.S. Atomic Energy Commission, Richland, Washington.
- DOE/RL, 1992, *RCRA Facility Investigation/Corrective Measure Study Work Plan for the 100-HR-1 Operable Unit, Hanford Site, Richland, Washington*, DOE/RL-88-35, Draft D, U.S. Department of Energy, Richland Field Office, Richland, Washington.
- GE, 1948a, *Septic Tank Structural Plans*, Drawing Number P-2090, General Electric Company, Richland, Washington.
- GE, 1948b, *Septic Tank/Tile Field Details*, Drawing Number P-1264, General Electric Company, Richland, Washington.
- EPA, 1986, *Test Methods for Evaluating Solid Waste Physical/Chemical Methods*, SW-846, U. S. Environmental Protection Agency, Washington D.C.
- Taylor, W. E., 1991, *100 Area Low Hazard Characterization Activities Safety Assessment*, WHC-SD-EN-SAD-002, Rev 0, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1987, *Industrial Safety Manual*, WHC-CM-4-3, Vol. 1 through 3, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988a, *Environmental Investigations and Site Characterization Manual*, WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington,
- WHC, 1988b, *Radiation Protection*, WHC-CM-4-10, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988c, *ALARA Program Manual*, WHC-CM-4-11, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988d, *Environmental Compliance Manual*, WHC-CM-7-5, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1990, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan*, WHC-EP-0383, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1991, *Hanford Environmental Information System (HEIS) User's Manual*, WHC-EP-0372, Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

100-H AREA NONINTRUSIVE  
SOURCE SAMPLING STATUS CHECKLIST

Signature/Date

LANDLORD CONTACTED FOR ENTRANCE

\_\_\_\_\_

100 AREA ENVIRONMENTAL PROTECTION NOTIFIED

\_\_\_\_\_

PREJOB SAFETY MEETING COMPLETED

\_\_\_\_\_

SAMPLES COLLECTED AND LABELED

\_\_\_\_\_

SAMPLES SURVEYED BY HPT

\_\_\_\_\_

SAMPLE PACKAGED IN SHIPPING CONTAINER

\_\_\_\_\_

TOTAL ACTIVITY SCAN OF SAMPLES COMPLETED

\_\_\_\_\_

CHAIN OF CUSTODY FORM COMPLETED

\_\_\_\_\_

SAMPLES SHIPPED TO LABORATORY

\_\_\_\_\_

1  
3  
C  
1  
1  
4  
2  
2  
6

ATTACHMENT 2  
100-HR-1 AREA NONINTRUSIVE SOURCE SAMPLING  
PROJECT CHANGE FORM

Date: \_\_\_\_\_

Tracking Number: \_\_\_\_\_

Person Initiating Change: \_\_\_\_\_

Change: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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Reason for Change: \_\_\_\_\_

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APPROVAL:

Field Team Leader: \_\_\_\_\_

Operable Unit Coordinator: \_\_\_\_\_

Environmental QA Representative: \_\_\_\_\_

92126541022

**100 HR-3 GROUNDWATER OPERABLE UNIT  
WORK SUMMARY 6/16/92**

**TASK 3 - GEOLOGIC INVESTIGATION**

Data Compilation is complete. WHC released a report titled, "Geologic Information Summary for the Northern Portion of the Hanford Site". A Geologic Map should be completed in June, 1992.

**TASK 5 - VADOSE INVESTIGATION**

Data Complilation is complete. WHC released a report titled, "Hydrologic and Geologic Data Available for the Region North of Gable Mountain".

**TASK 6 - GROUNDWATER INVESTIGATION**

Data Complilation is almost complete. WHC plans to release a report titled, "Hydrologic Information Summary for the Region North of Gable Mountain" in June, 1992.

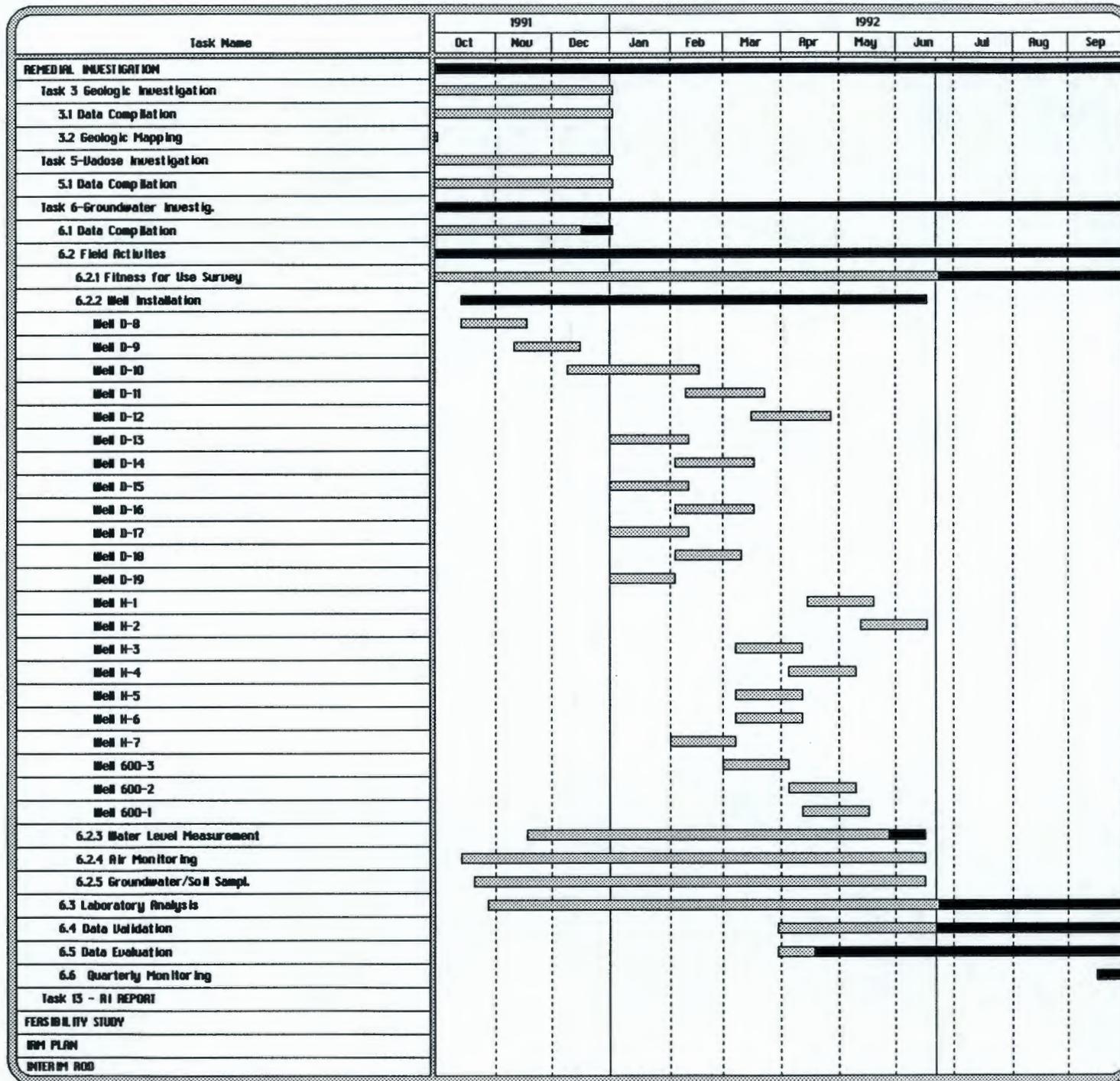
9 2 1 2 5 4 1 0 2 3

**100 HR-3  
GROUNDWATER WELL DRILLING  
STATUS 6/16/92**

Well #	Start Date	Present Depth (ft)	Finish Date	Status
1	1/29/92	55 TD	2/6/92	Sampled
2	1/17/92	57 TD	1/27/92	Sampled
3	1/23/92	62 TD	1/29/92	Sampled
4	1/23/92	60 TD	1/29/92	Sampled
5	1/30/92	62 TD	2/4/92	Sampled
6	1/31/92	60 TD	2/10/92	Sampled
7	1/29/92	57 TD	2/11/92	Sampled
8	10/17/91	70 TD	11/5/91	Sampled
9	11/7/91	77 TD	11/21/91	Sampled
10	10/17/91	149 TD	11/12/91	Sampled
11	11/25/91	75 TD	12/16/91	Sampled
12	12/11/91	112 TD	1/15/92	Sampled
13	12/16/91	100 TD	1/8/92	Sampled
14	1/9/92	115 TD	1/28/92	Sampled
15	12/17/91	100 TD	1/7/92	Sampled
16	12/20/91	95 TD	1/7/92	Sampled
17	1/8/92	113 TD	1/14/92	Sampled
18	1/10/92	101 TD	1/22/92	Sampled
19	1/15/92	102 TD	1/22/92	Sampled
20	2/5/92	83 TD	2/11/92	Sampled
21	2/10/92	46 TD	2/19/92	Sampled
22	2/10/92	51 TD	2/12/92	Sampled

\* Soil samples are collected for laboratory analysis at 10 ft. above, 5 ft. above and 5 ft. below the expected groundwater table.

9 2 1 2 6 5 4 1 0 2 4



Attachment #10

<b>Control Number</b>  15	<b>100 NPL Agreement/Change Control Form</b>  <input type="checkbox"/> Change <input checked="" type="checkbox"/> Agreement <input type="checkbox"/> Information Operable Unit(s) _____	<b>Date Submitted</b> 6/24/92 <b>Date Approved</b>
---------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------

<b>Document Number &amp; Title:</b>  100-HR-3 Operable Unit Groundwater Monitoring Network	<b>Date Document Last Issued</b>  First Issue
--------------------------------------------------------------------------------------------------	-----------------------------------------------------

<b>Originator</b>  S. E. Vukelich	<b>Phone</b>  (509) 376-5158
-----------------------------------------	------------------------------------

**Summary Description**

Proposed 100-HR-3 Groundwater Network.

**Justification and Impact of Change**

R. P. Henckel <u><i>[Signature]</i></u>	<u>6-23-92</u>
WHC 100 Area Rem. Investigation Mgr. E. D. Goller <u><i>[Signature]</i></u>	Date <u>6-24-92</u>
DOE Unit Manager <u><i>[Signature]</i></u>	Date <u>6/24/92</u>
EPA <u><i>[Signature]</i></u> Ecology	Date <u>6/24/92</u>

Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3

92126541026

**100 HR-3 OPERABLE UNIT  
GROUNDWATER MONITORING NETWORK**

This 100 HR-3 groundwater monitoring network integrates sampling efforts from the CERCLA and the RCRA programs. The primary network consists of 22 CERCLA wells drilled in FY92. The three supplementary networks consist of the D Area RCRA wells, the H Area RCRA wells and the existing wells deemed fit-for-use. In addition, Well 199-H4-2 (artesian well drilled into basalt) will be added to the network after it has been remediated. WHC is preparing remediation plans for the Regulator's approval.

Several differences between the CERCLA and RCRA programs are addressed in this network. First, CERCLA wells are tested using CLP methods, while RCRA wells are tested by SW-846 methods. The two methods are similar and should produce comparable results, therefore this network proposes to continue sampling RCRA wells with SW-846 methods and CERCLA wells with CLP methods. Second, the RCRA and CERCLA programs sample for different analytes because they sample for different purposes. This network proposes to analyze for the constituents that will serve both RCRA and CERCLA purposes.

9 2 1 2 0 1 4 1 0 3 7

May 21, 1992

**PRIMARY SAMPLING NETWORK  
100 HR-3**

WELL #	WELL TYPE	PURPOSE
D8-53	CERCLA	Between 116 DR-1 site and River
D8-54A	CERCLA	Between 116 D-7 site and River
D8-54B	CERCLA	Deep well between 116 D-7 site and River
D8-55	CERCLA	Between 116 D-7 site and River
D2-6	CERCLA	Monitors 118 D-2 site
D5-14	CERCLA	Monitors 116 D-3 and 116 D-4 sites
D5-15	CERCLA	Monitors D Reactor site
D5-16	CERCLA	Monitors 116 D-1A and 116 D-1B sites
D5-17	CERCLA	Monitors DR Reactor site
D5-18	CERCLA	Monitors 116 DR-6 site
D5-19	CERCLA	Monitors 116 DR-3 site
D5-20	CERCLA	Between 126 D-2 site and River
H4-45	CERCLA	Monitors 116 H-1 site.
H4-46	CERCLA	Monitors 116 H-3 and 118 H-3 sites
H4-47	CERCLA	Monitors H Reactor site
H4-48	CERCLA	Monitors elevated Chromium levels
H4-49	CERCLA	Monitors 118 H-4 and 116 H-9 sites
H5-1	CERCLA	Monitors 118 H-1 site
H6-1	CERCLA	Between 116 H-1 site and River
93-49B	CERCLA	Monitors offsite contaminant migration from D Reactor Area
93-46	CERCLA	Monitors 100 IU-4 site
91-43	CERCLA	Monitors offsite contaminant migration from D Reactor Area

All wells will be analyzed for the following constituents by CLP methods (where applicable): ICP/AA Metals, Mercury, Cyanide, VOA's, Semi-VOA's, PCB's/Pesticides, Anions, pH, Conductivity, Gross Alpha, Gross Beta, Gamma Spec, Alpha Spec, Sr-90, Tc-99, C-14 and Tritium.

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May 21, 1992

**SUPPLEMENTARY SAMPLING NETWORK  
D AREA RCRA WELLS  
100 HR-3**

<b>WELL #</b>	<b>WELL TYPE</b>	<b>PURPOSE</b>
D5-13	RCRA	Monitors D Pond site
D8-4	RCRA	Monitors D Pond site
D8-5	RCRA	Monitors D Pond site
D8-6	RCRA	Monitors D Pond site

All wells are currently being sampled quarterly using SW-846 methods for the following analytes: ICP/AA Metals, Mercury, Anions, pH, Conductivity, Gross Alpha, Gross Beta and Tritium. To integrate RCRA and CERCLA sampling programs, the RCRA program will expand its analyte list to include the following: Cyanide, VOA's, Semi-VOA's, PCB's/Pesticides, Gamma Spec, Alpha Spec, Sr-90, Tc-99 and C-14.

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May 21, 1992

**SUPPLEMENTARY SAMPLING NETWORK  
H AREA RCRA WELLS  
100 HR-3**

WELL #	WELL TYPE	PURPOSE
H4-3	RCRA	Monitors 116 H Solar Basin site
H4-4	RCRA	Monitors 116 H Solar Basin site
H4-5	RCRA	Monitors 116 H Solar Basin site
H4-6	RCRA	Monitors 116 H Solar Basin site
H4-11	RCRA	Monitors 116 H Solar Basin and 116 H-7 sites
H4-13	RCRA	Monitors 116 H Solar Basin and 116 H-7 sites
H4-14	RCRA	Monitors 116 H Solar Basin site
H4-15A	RCRA	Monitors 116 H Solar Basin site

All H Area RCRA wells are currently being sampled quarterly using SW-846 methods for the following analytes: ICP/AA Metals, Mercury, VOA's, PCB's/Pesticides, Anions, pH, Conductivity, Gross Alpha, Tc-99 and Gross Beta. To integrate RCRA and CERCLA sampling programs, the RCRA program will expand its analyte list for the following wells to include the following: Cyanide, Gamma Spec, Alpha Spec, Sr-90, C-14 and Tritium.

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May 21, 1992

**SUPPLEMENTARY SAMPLING NETWORK  
EXISTING WELLS  
100 HR-3**

WELL #	WELL TYPE	PURPOSE
D8-3	EXISTING	Between 116 DR-1 & 116 DR-2 sites and River
D5-12	EXISTING	Monitors 116 D-9 site
D5-13	EXISTING	Monitors 116 D-8 site
97-51A	EXISTING	<i>Monitors contaminant migration from D Area</i>
96-49	EXISTING	Monitors contaminant migration from D Area
97-43	EXISTING	Monitors contaminant migration from D Area

The existing wells above have been cleaned, re-developed and screened in the top 7-20 ft. of the unconfined aquifer. Surface seals, pads and posts have not been installed, but are planned in the future. All wells will be analyzed for the following constituents by CLP methods (where applicable): ICP/AA Metals, Mercury, Cyanide, VOA's, Semi-VOA's, PCB's/Pesticides, Anions, pH, Conductivity, Gross Alpha, Gross Beta, Gamma Spec, Alpha Spec, Sr-90, Tc-99, C-14 and Tritium.

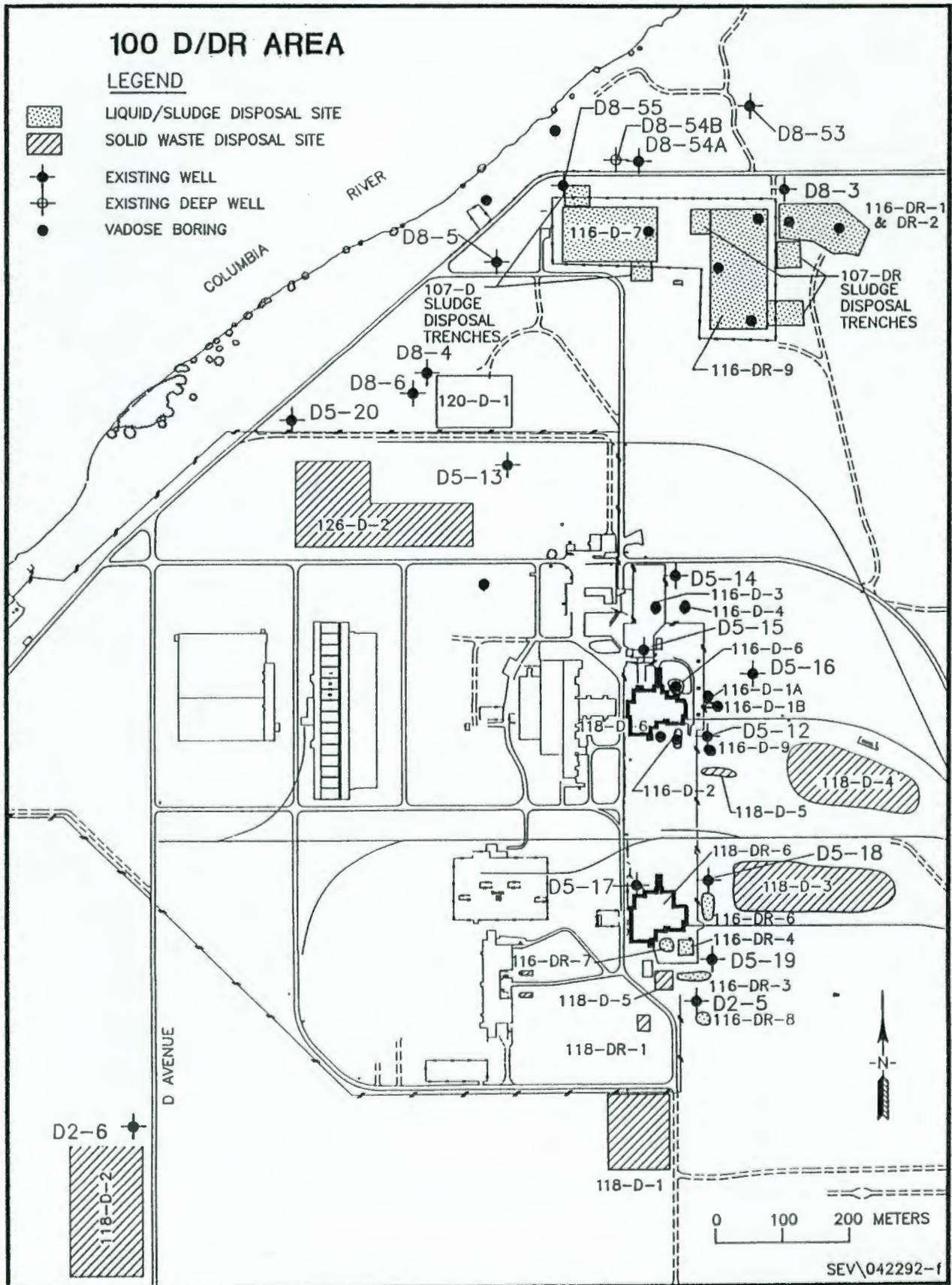
9 2 1 2 3 4 1 0 3 1

# 100 D/DR AREA

## LEGEND

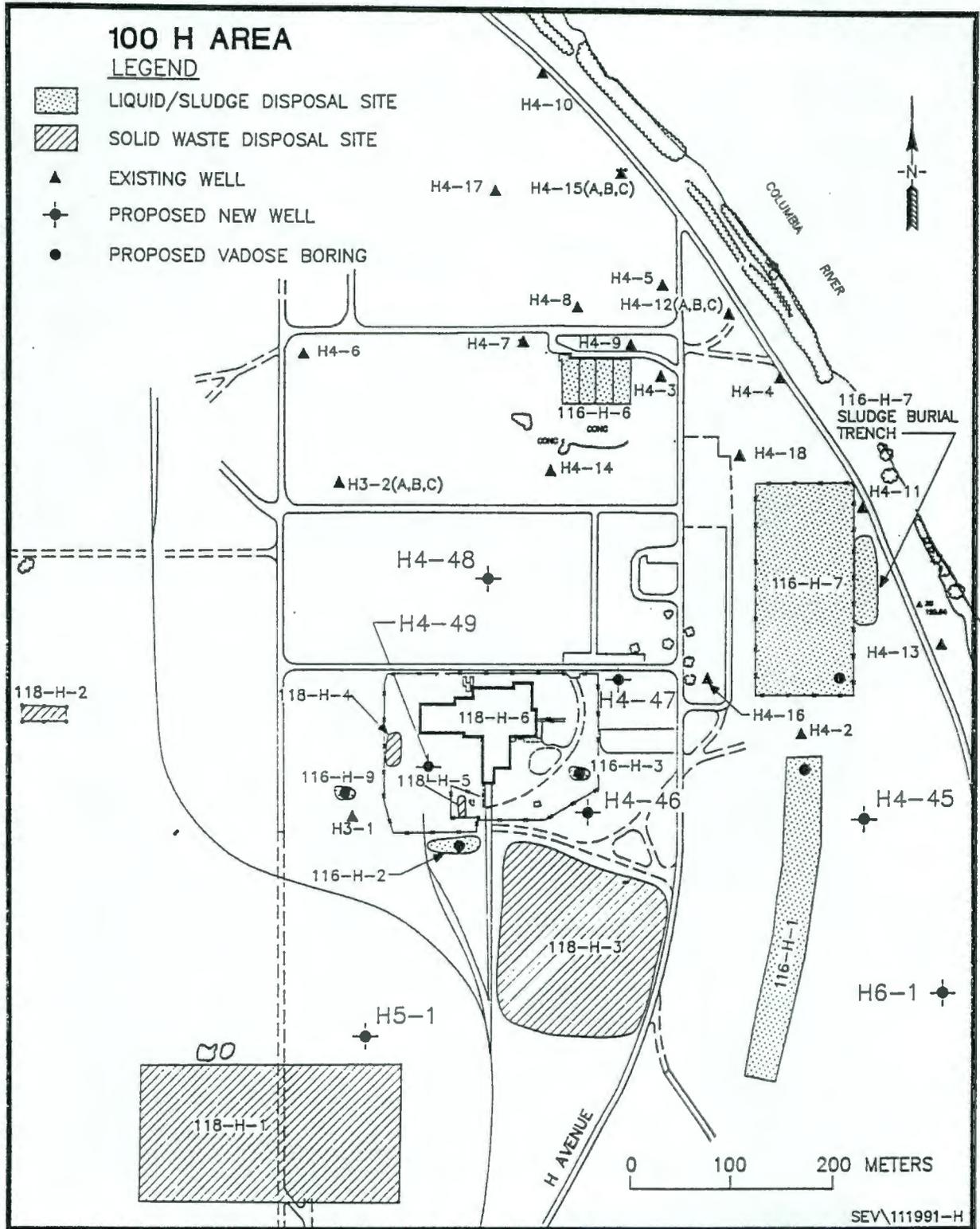
-  LIQUID/SLUDGE DISPOSAL SITE
-  SOLID WASTE DISPOSAL SITE
-  EXISTING WELL
-  EXISTING DEEP WELL
-  VADOSE BORING

9 2 1 2 6 5 4 1 0 3 2

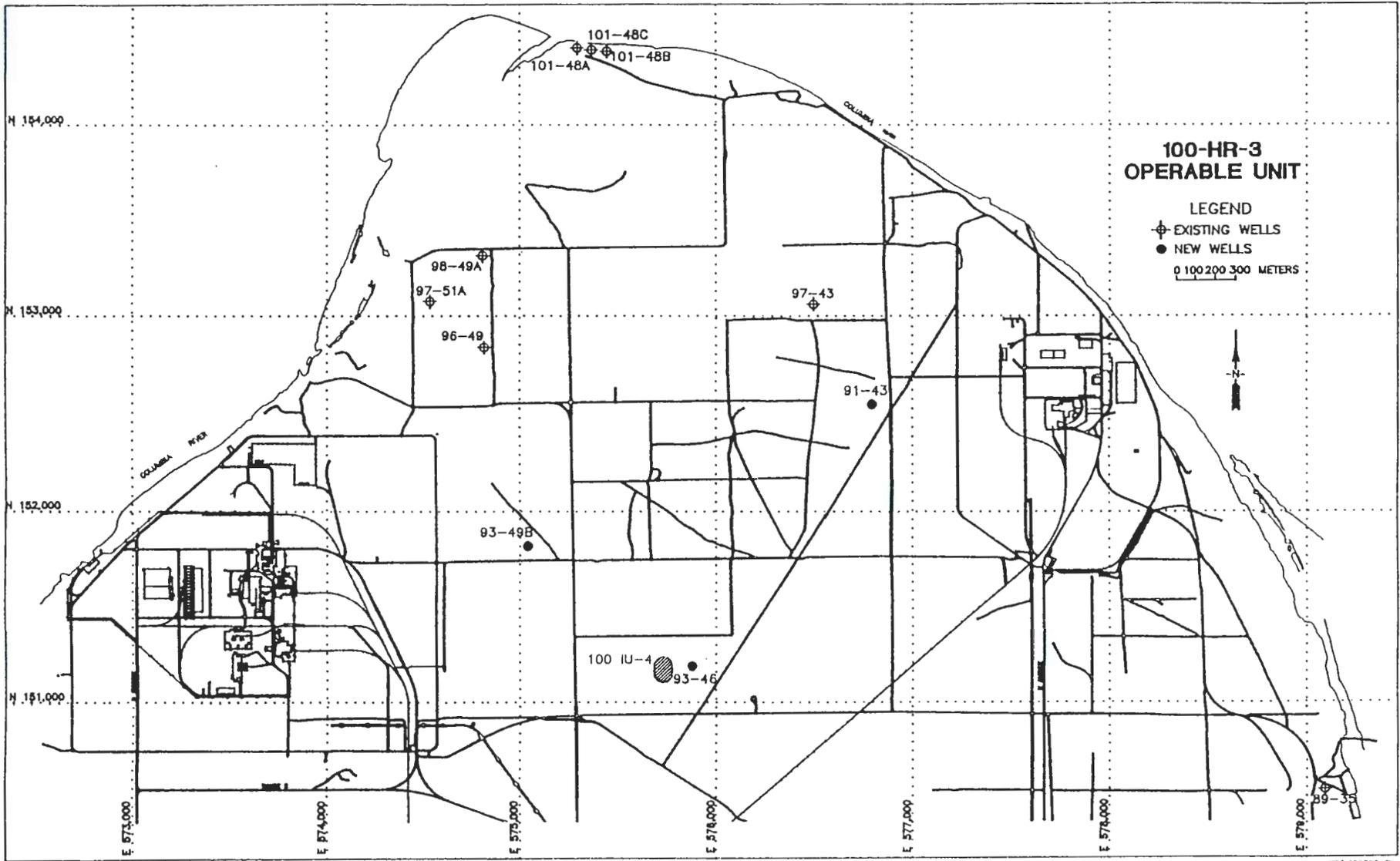


# 100 H AREA LEGEND

-  LIQUID/SLUDGE DISPOSAL SITE
-  SOLID WASTE DISPOSAL SITE
-  EXISTING WELL
-  PROPOSED NEW WELL
-  PROPOSED VAPOSE BORING



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SEA 030362-8

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Attachment #11

Control Number 16	100 NPL Agreement/Change Control Form  Change <input checked="" type="checkbox"/> Agreement <input type="checkbox"/> Information Operable Unit(s) 100-HR-3	Date Submitted 5/27/92 Date Approved
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Document Number & Title:  Physical Property Sampling Meeting Minutes	Date Document Last Issued
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Originator S. E. Vukelich	Phone 376-5158
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Summary Description

Meeting Minutes concerning Physical Property Samples - 100 Area

Justification and Impact of Change

R. P. Henckel <u>RP Henckel</u>	<u>5/28/92</u>
WHC 100 Area Rem. Investigation Mgr.	Date
E. D. Goller <u>E D Goller</u>	<u>6-2-92</u>
DOE Unit Manager	Date
<u>Patricia J. Francis</u>	<u>6-24-92</u>
EPA <u>Charles V. Clive</u>	<u>6/24/92</u>
Ecology	Date

Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3

92011025

## Meeting Minutes

### Physical Property Meeting May 26, 1992

#### Attendees:

Eric Goller  
John Relyea  
Harold Benny  
Jim Roberts  
Al Law

Ward Staubitz  
Steve Vukelich  
Bob Raidl  
Pam Innis  
Larry Gadbois

#### Meeting Results

The attendees above agreed to the following.

1. For groundwater wells, the sample collected in the saturated zone will only be analyzed for particle size and saturated hydraulic conductivity.
2. For groundwater wells, three samples will be collected from the unsaturated zone and one from the saturated zone. One will be collected from the top third, one from the middle third and one from the bottom third of the unsaturated zone.
3. For groundwater wells, samples will not be required from the capillary fringe. Instead, the sample from the bottom third of the unsaturated zone will be collected as close to the water table as possible. In most cases this will be 1 to 5 ft. above the water table.
4. For source sites, a backhoe will only be used to collect soil samples for physical properties when a backhoe is used to characterize the site. A backhoe will not be used specifically for collecting physical property samples.
5. The moisture retention test will only be performed on samples in which 25% of the sample passes the #10 screen. Samples will be archived pending assurance that the 25% cutoff gives an adequate representation of the soil matrix.

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6. Unsaturated hydraulic conductivity tests will only be conducted on samples in which 25% of the sample passes the #10 screen.

7. For source sites, samples will not be analyzed for unsaturated hydraulic conductivity unless the saturated hydraulic conductivities are significantly different than those measured in the groundwater wells.

8. Unsaturated hydraulic conductivity test results are highly desirable, however lab capacity and other logistical concerns may prevent analyzing every sample in the Westinghouse lab. Westinghouse will look into solutions to these problems and propose a solution at a later date.

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Attachment #12

**UNIT MANAGER'S MEETING  
100-DR-1 OU  
June 24-25, 1992  
Room 47, 450 Hills**

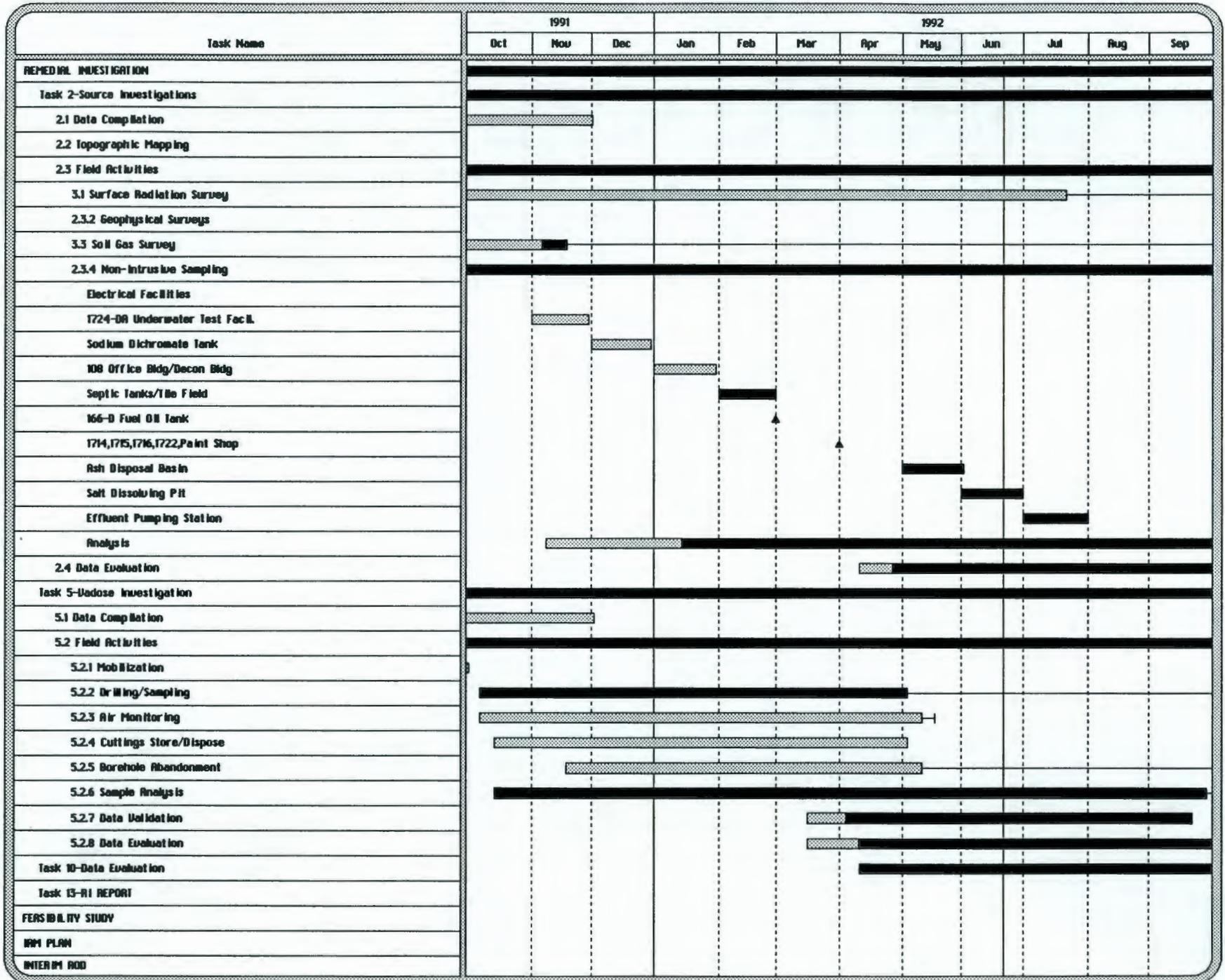
**Presenter - N. M. (Naik) Naiknimbalkar**

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## 100-DR-1 Remedial Investigation

TASK NO.	ACTIVITY	STATUS
Task 2	SOURCE INVESTIGATION	
Task 2.1	DATA COMPILATION	COMPLETED DECEMBER 1992
Task 2.2	TOPOGRAPHIC MAPS	COMPLETED AUGUST 1991
Task 2.3.1	SURFACE RADIATION SURVEY	COMPLETED APRIL 1992
	SITES: 100-DR-1 Area with the exception of Controlled Zones.	
Task 2.3.2	GEOPHYSICAL SURVEY	COMPLETED MAY 1991
	SITES: 116-D-2 Pluto Crib Waste Acid Disposal Reservoir 1607-D4 Septic Tank Questionable Septic Tank (Routine surveys were conducted to locate drill hole sites & non-intrusive sites).	
Task 2.3	Soil Gas Surveys	See Table 1.

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Task 2.3.3

**Table 1**  
**100-DR-1 Operable Unit Soil Gas Surveys**  
**Activity Completion Dates**

Site Name	Probes Installed	Screened for Total VOC*	Sampled	Analyzed	Results Validated
1713-D	08-07-91	08-16-91	09-10-91	09-12-91	12-15-91
1714-D	07-24-91	08-16-91	09-09-91	09-10-91	12-15-91
1715-D	07-24-91	08-16-91	09-09-91	09-10-91	12-15-91
1716-D	08-06-91	08-16-91	09-05-91	09-07-91	12-15-91
1722-D	08-07-91	08-16-91	09-10-91	09-12-91	12-15-91
Paint Shop Near 182-D	08-30-91	Did Not Screen for VOC	09-09-91	09-10-91	12-15-91
184-DA UST	08-06-91	08-16-91	09-09-91	09-10-91	12-15-91
166-D Tank and Piping	08-01-91	08-16-91	09-11-91	09-13-91	12-15-91
103-D	01-30-92	02-03-92	02-06-92	02-07-92	
1607-D4 Septic Tank	02-20-92	02-26-92	02-26-92	02-28-92	
Burial Ground 4A	02-25-92	02-26-92	02-26-92	02-28-92	
Burial Ground 4B	02-07-92	02-11-92	02-11-92	02-13-92	02-14-92
Burial Ground 18	01-23-92	01-28-92	02-19-92	02-21-92	
126-D-2 Landfill	11-25-91	12-17-91			

VOC\* - Volatile Organic Compounds

Task 2.3.4 Non-Intrusive

See Table 2

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Task 2.3.4

Table 2  
Non-Intrusive

OPER. UNIT	SAMPL ES	SAMPLING ACTIVITY	BEGINNING SAMPLING DATE	ENDING SAMPLING DATE	DATE DATA IS DUE FROM THE LAB.	VALIDATION COMPLETION DATE	REPORT MILESTONE DATE
100-DR-1	3	1724-DA Underwater Test Facility	10/16/91	10/16/91	3/16/92	4/6/92	6/30/92
	5	Sodium Dichromate Tank	1/16/92	1/16/92	6/16/92	7/6/92	8/30/92
	5	108-D Office Bldg/Decon Bldg	5/1/92	5/1/92	10/1/92	10/22/92	11/30/92
	5	Septic Tank Tile Field	5/1/92	5/1/92	10/1/92	10/22/92	11/30/92
		1714-D Solvent Storage Bldg	Postponed				
		1715-D Oil and Paint Storage Bldg	Postponed				
100-DR-1		1716-D Oil and Paint storage Bldg	Postponed				

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OPER. UNIT	SAMPL ES	SAMPLING ACTIVITY	BEGINNING SAMPLING DATE	ENDING SAMPLING DATE	DATE DATA IS DUE FROM THE LAB.	VALIDATION COMPLETION DATE	REPORT MILESTONE DATE
		1722-D Equipment Development Lab	Postponed				
	5	Paint Shop (west of 182-D)	7/13/92	7/13/92	11/1/92	11/22/92	1/30/93
	5	Ash Disposal Basin	7/1/92	7/1/92	12/1/92	12/22/92	2/30/93
	6	Salt Dissolving Basin	7/1/92	7/1/92	12/1/92	12/22/92	2/30/93
	5	132-D-2 Effluent Pumping Station	7/1/92	7/1/92	12/1/92	12/22/92	2/30/93
	5	103-D Green Metal Storage	7/1/92	7/1/92	12/1/92	12/22/92	2/30/93
100-DR-1	25	Electrical Facilities*	9/11/91	9/11/91	2/11/92	3/1/92	5/1/92

\*

Electrical Facilities Locations:

183-D (C4-S3), 185-D (C4-S11), 189-D (C4-S10), 190-D (E4-S9), 105-D (E4-S2), 151-D (A4), 190-DR (E4-S12/E4-S13), 181-D (C4-S1), 186-D (C4-S12), 105-DR (E4-S11), 190-D (C4-S13) and Pole East of D-Area along perimeter road.

Descriptions Of Work (DOW's):            See Table 3

9 2 1 2 6 5 4 1 0 4 3

Table 3  
Descriptions Of Work

DOW	One Week DOE-RL Review Starting:	Two Week Regulatory Review starting:	Sampling Activity Starting:
108 Office Building	3-04-92	3-18-92	5-27-92
Septic Tanks/Tile Fields	3-04-92	3-18-92	5-27-92
166-D Fuel Tank	NA	NA	NA
1714-D, 1715-D, 1716-D, 1722-D and Paint Shop	NA	NA	NA
Ash Disposal Basin	5-25-92	6-8-92	7-1-92
100-D Salt Dissolving Pit	5-25-92	6-8-92	7-1-92
132-D-3 Effluent Pumping Station	5-25-92	6-8-92	7-1-92
103-D Green Metal Storage Building	5-25-92	6-8-92	7-1-92

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Task 2.4 Data Evaluation

Task 3 Geological Investigation  
-Performed as part of 100-HR-3

Task 4 Surface Water and Sediment Investigation  
-Performed as part of 100 Area wide task

Task 5 Vadose Investigation

Task 5.1 Data Compilation Completed December 1991

Task 5.2 Field Activities

Task 5.2.1 Mobilization Completed

Task 5.2.2 Drilling/Sampling See following borehole Summary  
Table 4.

92125-41015

Table 4  
Complete 100-DR-1 Boreholes Data-Summary

Borehole No.	Total Depth	Number of Samples to Off-site Lab.	Gross Gamma / Spectral Gamma	Highest Rad Counts/Depth (HPT-GM)	Start/Finish Date
116-D-1A Trench	53.2 ft.	13	Gross Gamma / Spectral Gamma	1500/18 ft.	10-22/ 11-1-91
116-D-1B Trench	36.8 ft.	9	None	1100/15-20 ft.	10-25/ 11-4-91
116-DR-1 Trench	40.2 ft.	6+2 Physical	Gross Gamma	900/18 ft.	11-13/ 11-13 -91
116-DR-2 Trench	37.0 ft.	7	Gross Gamma	400/15 ft.	11-15/ 11-19-91
116-D-4 French Drain	23.0 ft.	4	Gross Gamma	< BKGRD*	12-2/ 12-2-91
116-D-9 Crib	27.8 ft.	2	Gross Gamma	< BKGRD*	12-9/ 12-9-91
116-D-3 French Drain	22.4 ft.	4	Gross / Spectral Gamma	< BKGRD*	12-10/ 12-11-91
116-D-7 Retention Basin	36.6 ft.	4	Gross Gamma	2000/3 to 4 ft.	12-13/ 12-31-91
116-DR-9 (A) Reten. Basin	36.9 ft.	10	Gross Gamma	14000/2 ft.	1-10/ 1-15-92

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Borehole No.	Total Depth	Number of Samples to Off-site Lab.	Gross Gamma/Spectral Gamma	Highest Rad Counts/Depth (HPT-GM)	Start/Finish Date
116-DR-9 (B) Retention Basin	37.4 ft.	6	Gross Gamma	7000/4 ft.	1-20/ 1-23-92
116-DR-9 (C) Retention Basin	37.5 ft.	5	None	2000/4 ft.	1-27/ 2-6-92
116-D-5 Outfall Structure	27 ft.	2	Gross Gamma/Spectral Gamma	< BKGRD*	1-24/ 1-28-92
130-D-1 Gasoline Storage Tank	37 ft.	9	Gross Gamma	< BKGRD*	2-6/ 2-10-92
116-DR-5 Outfall Structure	27.5 ft.	2	Gross Gamma/Spectral Gamma	< BKGRD*	2-4/ 2-10-92
132-D-3 Effl. Pump Sta.	38.5 ft.	4	Gross Gamma/Spectral Gamma	< BKGRD*	2-19/ 2-20-92
116-D-6 French Drain	22 ft.	5	Gross Gamma/Spectral Gamma	< BKGRD*	2-18/ 2-19-92
116-D-2 Pluto Crib	6 ft.	Abandoned**			
116-D-2A*** Pluto Crib	25 ft.	3	Gross Gamma/Spect. Gamma	2000/12 ft.	2-18/ 2-19-92

\* Background= 150 Counts per minute.

\*\* 116-D-2: Original location of 116-D-2 shown in Figure 5-1, Draft C of 100-DR-1 Work Plan, is actually a location of water tower. Prior to drilling

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for 116-D-2 Pluto Crib a walkover was conducted with R. Richards and a new location was established based on Mr. Richards recommendations. A hole was started at this location but was abandoned after intercepting unexpected cement slab.

\*\*\* 116-D-2A: A GPR survey, in the meanwhile, was being conducted for soil gas activities in the same area to locate 1607-D4 Septic Tank, suggested a disturbance 70 feet South and 30 feet West of the abandoned hole. This new location appeared to be the pluto crib because of the size and depth. Also, there was only one another disturbance in the area, the one intercepted for 1607-D4 Septic Tank. A hole was drilled to a depth of 25 feet and was designated as 116-D-2A. The drilling appears to confirm that this was the pluto crib because it encountered contamination beginning at 10 feet as expected.

Task 5.2.3	Air Monitoring	Continued as planned
Task 5.2.4	Cuttings Store/	Continued as planned
Task 5.2.5	Borehole Abandonment	Continued as planned
Task 5.2.6	Sample Analysis	Continued as planned
Task 5.2.7	Data Validation	
Task 5.2.8	Data Evaluation	

Report List for 100-DR-1 See Table 5

9 2 1 2 6 1 4 1 0 1 8

Table 5

Report List for 100-DR-1
WHC-SD-EN-DP-015, Summary Report Source Data Compilation for 100-HR-3 Operable Unit
WHC-SD-EN-AP-067. 100-DR-1 Area Nonintrusive Source Investigation Activities, December 26, 1991.
WHC-SD-EN-AP-067. Rev. 1, 100-DR-1 Area Nonintrusive Source Investigation Activities. (TBI).
WHC-SD-EN-AP-061, Rev.1. Description of Work for the 100-DR-1 Source Operable Unit. November 12, 1991.
WHC-SD-EN-AP-061, Rev.0. Description of Work for the 100-DR-1 Source Operable Unit. October 11, 1991.
WHC-MR-0257, 100-DR-1, Geophysical Surveys. May 1991.

92126541049

100 NPL Agreement/Change Control Form		
Control Number <b>18</b>	<input checked="" type="checkbox"/> Change <input type="checkbox"/> Agreement <input type="checkbox"/> Information Operable Unit(s) <u>100-DR-1</u>	Date Submitted: <b>05-05-92</b> Date Approved:
Document Number & Title: DOE/RL-89-09, Draft B, RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington, August 1990.		Date Document Last Issued: September 1991
Originator: <b>N.M. Naiknimbalkar</b>	Phone: <b>376-8739</b>	
Summary Description: Section 5.1.2.3.5 Activity 2c-5--Soil Gas Survey o 1713-D instrument and electrical development laboratory		
Justification and Impact of Change: 1713-D instrument and electrical development laboratory is a low priority support facility. The soil gas surveys were conducted at this site. The samples contained less-than detectable or insignificant concentrations of t-12-DCE, BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES, 1,1,1-TCA, TCE and PCE chlorinated solvent vapors. In summary no significant contamination was encountered at this site. See attached 100-DR-1 Soil Gas Survey Results.  Based upon the above documented information, it is recommended that no further activities be conducted at this location at this time.		
<u>N.M. Naiknimbalkar</u> WHC Operable Unit Coordinator	<i>N.M. Naiknimbalkar</i>	<u>5/28/92</u> Date
<u>E.D. Goller</u> DOE Unit Manager	<i>E.D. Goller</i>	<u>5-28-92</u> Date
<u>D. D. Teel</u> Lead Regulatory Unit Manager	<i>D.D. Teel</i>	<u>6-9-92</u> Date
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3.		

## With Attachments:

- o Soil Gas Measurements
- o Map showing Sample Points
- o General Background for the 100-DR-1 Work Plans

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Table 4.1. 1713-D, 1714-D, 1715-D, and 1722-D Building Soil Gas Monitoring Data

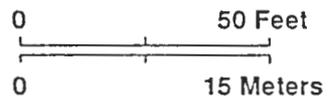
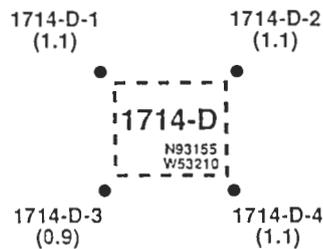
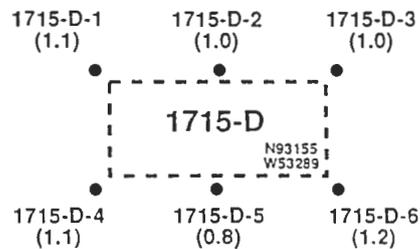
Soil Gas Measurements (ug/L)

Probe #	Depth (m)	VOC*	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE
1713-D-1	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-2	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-3	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-4	0.9	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-5	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-6	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-7	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-8	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-9	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-10	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-11	1.0	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-12	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-13	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-14	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-1	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-2	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-3	0.9	0.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-4	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-1	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-2	1.0	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-3	1.0	1.0	09/09/91	09/10/91	<1	<1	<1	1.0	<1	<0.1	<0.1
1715-D-4	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-5	0.8	0.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-6	1.2	2.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-1	1.2	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-2	1.1	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-3	1.1	2.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-4	1.1	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-5	1.0	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-6	1.1	2.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-7	1.2	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-8	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-9	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-10	0.9	2.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1

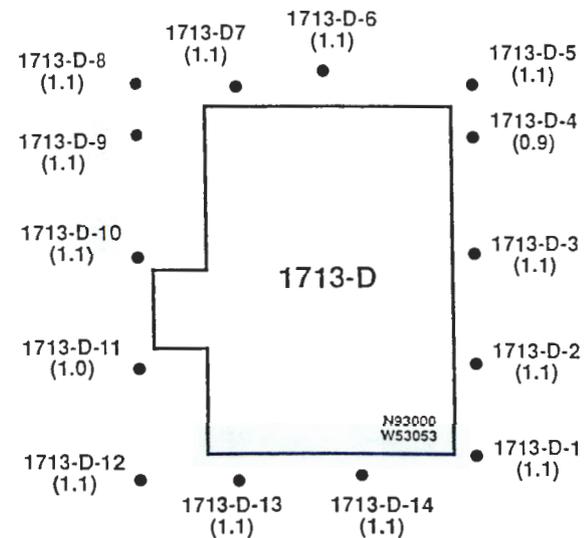
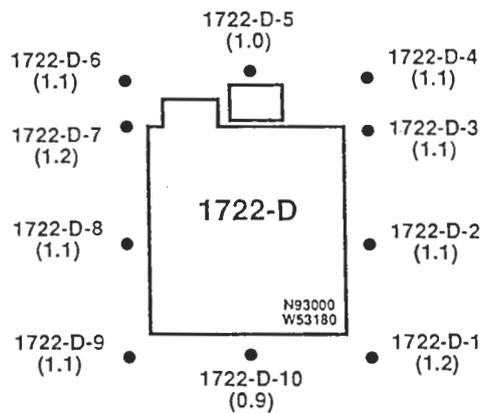
VOC\* - Total Volatile Organic Compounds (ppm) monitored with a 580B OVM on 08/16/91

Quality Control Samples (ug/L)

Type of QC Sample	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE
Ambient Air	09/10/91	09/11/91	<1	<1	<1	3.0	<1	<0.1	<0.1
Equipment Blank	09/10/91	09/11/91	<1	<1	<1	1.0	<1	<0.1	<0.1
1722-D-9 Duplicate	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1



● = Sample point  
 ( ) = Probe depth in meters



## GENERAL BACKGROUND FOR THE 100-DR-1 WORK PLANS

The Work Plans for 100-DR-1 have evolved through revisions from Draft A (October, 1989), Draft B (August, 1990), Draft C (September, 1991) and Draft D to be released in June 1992. Several significant changes were made during these revisions. As an example the Draft A and B contained Sampling and Analysis Plans but the subsequent drafts eliminated the Sampling Plans. Different revisions were used for conducting different activities. For the soil gas survey activities the Draft B was used.

The following low priority sites, being considered for postponement for any further investigative work at this time, were included in the Draft B (August 1990) Work Plan for Soil Gas Survey.

- o 1713-D instrument and electrical development laboratory
- o 1714-D solvent storage building
- o 1715-D oil and paint storage
- o 1716-D gas station
- o 1722-D equipment development laboratory

The plan describes the process of soil gas survey as follows:

"Probes will be installed from 1 m to 2 m (3 ft to 6 ft) deep in backfill around the buried tanks and pipelines, and other relatively small facilities (assumed for the purpose of this workplan to encompass an area of less than 930 square m (10,000 square ft) on about 7.6 m (25-ft) centers. The extent of contamination will be determined by installing additional probes until no detectable contamination is found in two adjacent probes bounding the area. Areas of contamination detected during the soil gas survey may be sampled during Task 5, Vadose Zone Investigation, as needed, to define the vertical extent of the contamination."

The soil Gas surveys have been completed for these sites and no significant contamination was encountered. Based on this documented data it is recommended that these sites be postponed from any further activities at this time and be considered at the time of final remedy selection phase as described in Figure 4-1 (Final Remedy Selection Process) of the 100-DR-1 Work Plan, Draft D.

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100 NPL Agreement/Change Control Form		
Control Number  19	<input checked="" type="checkbox"/> Change <input type="checkbox"/> Agreement <input type="checkbox"/> Information  Operable Unit(s) <u>100-DR-1</u>	Date Submitted: 05-05-92  Date Approved:
Document Number & Title:  DOE/RL-89-09, Draft B, RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington, August 1990.		Date Document Last Issued:  September 1991
Originator:  N.M. Naiknimbalkar	Phone:  376-8739	
Summary Description:  Section 5.1.2.3.5 Activity 2c-5--Soil Gas Survey o 1714-D solvent storage building		
Justification and Impact of Change:  1714-D solvent storage building is a low priority support facility. The soil gas surveys were conducted at this site. The samples contained less-than detectable or insignificant concentrations of t-12-DCE, BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES, 1,1,1-TCA, TCE and PCE chlorinated solvent vapors. In summary no significant contamination was encountered at this site. See attached 100-DR-1 Soil Gas Survey Results.  Based upon the above documented information, it is recommended that no further activities be conducted at this location at this time.		
<u>N.M. Naiknimbalkar</u> WHC Operable Unit Coordinator	<u><i>N.M. Naiknimbalkar</i></u> Date	<u>5/28/92</u>
<u>E.D. Goller</u> DOE Unit Manager	<u><i>E.D. Goller</i></u> Date	<u>5-28-92</u>
<u>D. D. Teel</u> Lead Regulatory Unit Manager	<u><i>D.D. Teel</i></u> Date	<u>6-9-92</u>
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3.		

## With Attachments:

- o Soil Gas Measurements
- o Map showing Sample Points
- o General Background for the 100-DR-1 Work Plans

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Table 4.1. 1713-D, 1714-D, 1715-D, and 1722-D Building Soil Gas Monitoring Data

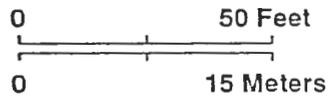
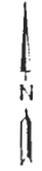
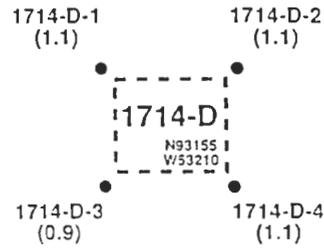
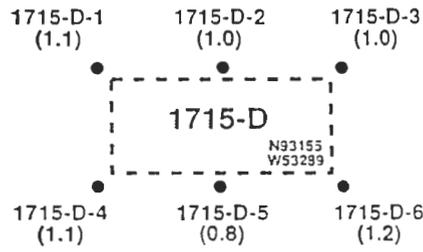
Soil Gas Measurements (ug/L)

Probe #	Depth (m)	VOC*	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE
1713-D-1	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-2	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-3	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-4	0.9	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-5	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-6	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-7	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-8	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-9	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-10	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-11	1.0	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-12	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-13	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-14	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-1	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-2	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-3	0.9	0.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-4	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-1	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-2	1.0	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-3	1.0	1.0	09/09/91	09/10/91	<1	<1	<1	1.0	<1	<0.1	<0.1
1715-D-4	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-5	0.8	0.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-6	1.2	2.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-1	1.2	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-2	1.1	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-3	1.1	2.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-4	1.1	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-5	1.0	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-6	1.1	2.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-7	1.2	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-8	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-9	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-10	0.9	2.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1

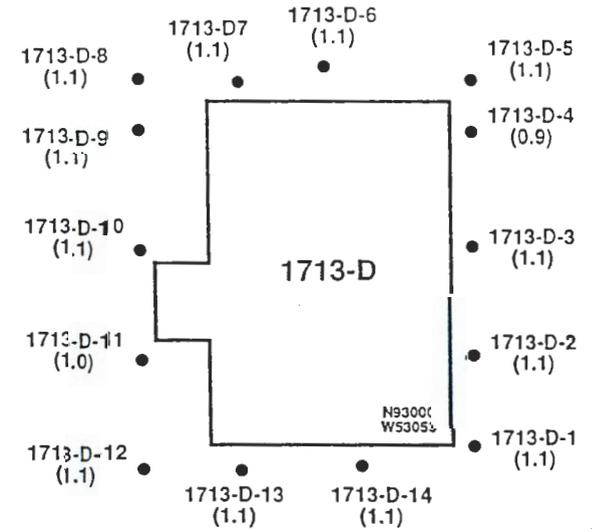
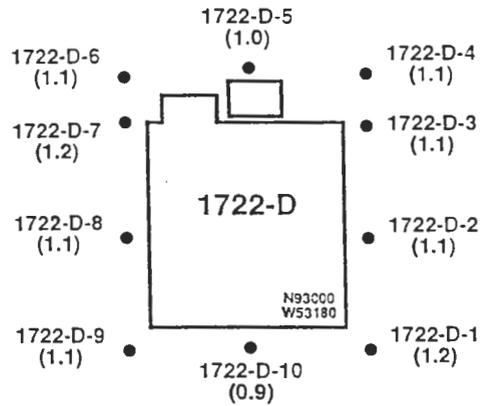
VOC\* - Total Volatile Organic Compounds (ppm) monitored with a 580B OVM on 08/16/91

Quality Control Samples (ug/L)

Type of QC Sample	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE
Ambient Air	09/10/91	09/11/91	<1	<1	<1	3.0	<1	<0.1	<0.1
Equipment Blank	09/10/91	09/11/91	<1	<1	<1	1.0	<1	<0.1	<0.1
1722-D-9 Duplicate	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1



● = Sample point  
( ) = Probe depth in meters



## GENERAL BACKGROUND FOR THE 100-DR-1 WORK PLANS

The Work Plans for 100-DR-1 have evolved through revisions from Draft A (October, 1989), Draft B (August, 1990), Draft C (September, 1991) and Draft D to be released in June 1992. Several significant changes were made during these revisions. As an example the Draft A and B contained Sampling and Analysis Plans but the subsequent drafts eliminated the Sampling Plans. Different revisions were used for conducting different activities. For the soil gas survey activities the Draft B was used.

The following low priority sites, being considered for postponement for any further investigative work at this time, were included in the Draft B (August 1990) Work Plan for Soil Gas Survey.

- o 1713-D instrument and electrical development laboratory
- o 1714-D solvent storage building
- o 1715-D oil and paint storage
- o 1716-D gas station
- o 1722-D equipment development laboratory

The plan describes the process of soil gas survey as follows:

"Probes will be installed from 1 m to 2 m (3 ft to 6 ft) deep in backfill around the buried tanks and pipelines, and other relatively small facilities (assumed for the purpose of this workplan to encompass an area of less than 930 square m (10,000 square ft) on about 7.6 m (25-ft) centers. The extent of contamination will be determined by installing additional probes until no detectable contamination is found in two adjacent probes bounding the area. Areas of contamination detected during the soil gas survey may be sampled during Task 5, Vadose Zone Investigation, as needed, to define the vertical extent of the contamination."

The soil Gas surveys have been completed for these sites and no significant contamination was encountered. Based on this documented data it is recommended that these sites be postponed from any further activities at this time and be considered at the time of final remedy selection phase as described in Figure 4-1 (Final Remedy Selection Process) of the 100-DR-1 Work Plan, Draft D.

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100 NPL Agreement/Change Control Form		
Control Number  20	<input checked="" type="checkbox"/> Change <input type="checkbox"/> Agreement <input type="checkbox"/> Information  Operable Unit(s) <u>100-DR-1</u>	Date Submitted: 05-05-92  Date Approved:
Document Number & Title:  DOE/RL-89-09, Draft B, RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington, August 1990.		Date Document Last Issued:  September 1991
Originator:  N.M. Naiknimbalkar	Phone:  376-8739	
Summary Description:  Section 5.1.2.3.5 Activity 2c-5--Soil Gas Survey o 1715-D oil and paint storage		
Justification and Impact of Change:  1715-D oil and paint storage is a low priority support facility. The soil gas surveys were conducted at this site. The samples contained less-than detectable or insignificant concentrations of t-12-DCE, BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES, 1,1,1-TCA, TCE and PCE chlorinated solvent vapors. In summary no significant contamination was encountered at this site. See attached 100-DR-1 Soil Gas Survey Results.  Based upon the above documented information, it is recommended that no further activities be conducted at this location at this time.		
<p><u>N.M. Naiknimbalkar</u> <i>N.M. Naiknimbalkar</i> <u>5/28/92</u> WHC Operable Unit Coordinator Date</p> <p><u>E.D. Goller</u> <i>E.D. Goller</i> <u>5-28-92</u> DOE Unit Manager Date</p> <p><u>D. D. Teel</u> <i>Darci Teel</i> <u>6-9-92</u> Lead Regulatory Unit Manager Date</p>		
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3.		

## With Attachments:

- o Soil Gas Measurements
- o Map showing Sample Points
- o General Background for the 100-DR-1 Work Plans

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Table 4.1. 1713-D, 1714-D, 1715-D, and 1722-D Building Soil Gas Monitoring Data

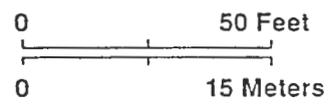
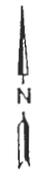
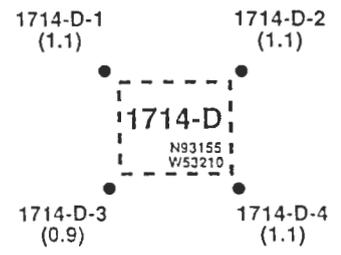
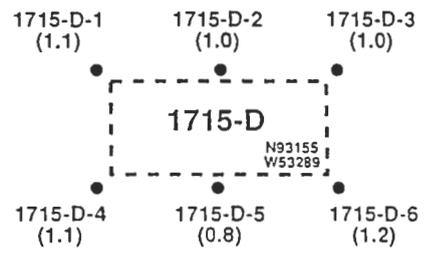
Soil Gas Measurements (ug/L)

Probe #	Depth (m)	VOC*	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE
1713-D-1	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-2	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-3	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-4	0.9	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-5	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-6	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-7	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-8	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-9	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-10	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-11	1.0	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-12	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-13	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-14	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-1	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-2	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-3	0.9	0.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-4	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-1	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-2	1.0	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-3	1.0	1.0	09/09/91	09/10/91	<1	<1	<1	1.0	<1	<0.1	<0.1
1715-D-4	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-5	0.8	0.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1715-D-6	1.2	2.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-1	1.2	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-2	1.1	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-3	1.1	2.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-4	1.1	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-5	1.0	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-6	1.1	2.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-7	1.2	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-8	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-9	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-10	0.9	2.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1

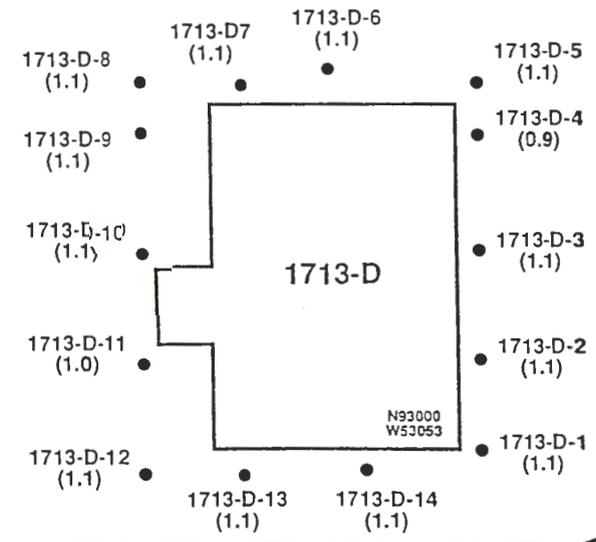
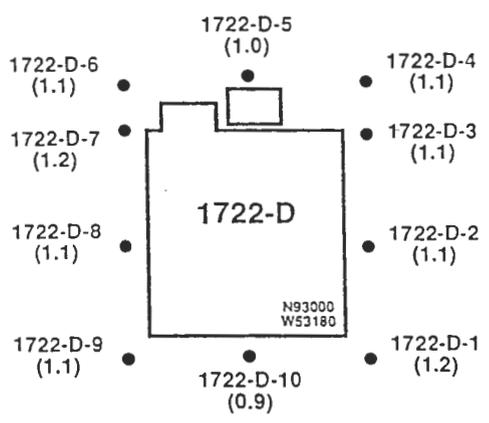
VOC\* - Total Volatile Organic Compounds (ppm) monitored with a 580B OVM on 08/16/91

Quality Control Samples (ug/L)

Type of QC Sample	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE
Ambient Air	09/10/91	09/11/91	<1	<1	<1	3.0	<1	<0.1	<0.1
Equipment Blank	09/10/91	09/11/91	<1	<1	<1	1.0	<1	<0.1	<0.1
1722-D-9 Duplicate	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1



● = Sample point  
 ( ) = Probe depth in meters



## GENERAL BACKGROUND FOR THE 100-DR-1 WORK PLANS

The Work Plans for 100-DR-1 have evolved through revisions from Draft A (October, 1989), Draft B (August, 1990), Draft C (September, 1991) and Draft D to be released in June 1992. Several significant changes were made during these revisions. As an example the Draft A and B contained Sampling and Analysis Plans but the subsequent drafts eliminated the Sampling Plans. Different revisions were used for conducting different activities. For the soil gas survey activities the Draft B was used.

The following low priority sites, being considered for postponement for any further investigative work at this time, were included in the Draft B (August 1990) Work Plan for Soil Gas Survey.

- o 1713-D instrument and electrical development laboratory
- o 1714-D solvent storage building
- o 1715-D oil and paint storage
- o 1716-D gas station
- o 1722-D equipment development laboratory

The plan describes the process of soil gas survey as follows:

"Probes will be installed from 1 m to 2 m (3 ft to 6 ft) deep in backfill around the buried tanks and pipelines, and other relatively small facilities (assumed for the purpose of this workplan to encompass an area of less than 930 square m (10,000 square ft) on about 7.6 m (25-ft) centers. The extent of contamination will be determined by installing additional probes until no detectable contamination is found in two adjacent probes bounding the area. Areas of contamination detected during the soil gas survey may be sampled during Task 5, Vadose Zone Investigation, as needed, to define the vertical extent of the contamination."

The soil Gas surveys have been completed for these sites and no significant contamination was encountered. Based on this documented data it is recommended that these sites be postponed from any further activities at this time and be considered at the time of final remedy selection phase as described in Figure 4-1 (Final Remedy Selection Process) of the 100-DR-1 Work Plan, Draft D.

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100 NPL Agreement/Change Control Form		
Control Number <b>21</b>	<input checked="" type="checkbox"/> Change <input type="checkbox"/> Agreement <input type="checkbox"/> Information Operable Unit(s) <u>100-DR-1</u>	Date Submitted: <b>05-05-92</b> Date Approved:
Document Number & Title: DOE/RL-89-09, Draft B, RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington, August 1990.		Date Document Last Issued: September 1991
Originator: <b>N.M. Naiknimbalkar</b>	Phone: <b>376-8739</b>	
Summary Description: Section 5.1.2.3.5 Activity 2c-5--Soil Gas Survey o 1716-D gas station,		
Justification and Impact of Change: 1716 gas station is a low priority support facility. The soil gas surveys were conducted at this site. The samples contained less-than detectable or insignificant concentrations of t-12-DCE, BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES, 1,1,1-TCA, TCE and PCE chlorinated solvent vapors. In summary no significant contamination was encountered at this site. See attached 100-DR-1 Soil Gas Survey Results.  Based upon the above documented information, it is recommended that no further activities be conducted at this location at this time.		
<u>N.M. Naiknimbalkar</u> WHC Operable Unit Coordinator	<u><i>N.M. Naiknimbalkar</i></u> Date	<u>5/28/92</u> Date
<u>E.D. Goller</u> DOE Unit Manager	<u><i>E.D. Goller</i></u> Date	<u>5-28-92</u> Date
<u>D. D. Teel</u> Lead Regulatory Unit Manager	<u><i>D.D. Teel</i></u> Date	<u>6-9-92</u> Date
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3.		

## With Attachments:

- o Soil Gas Measurements
- o Map showing Sample Points
- o General Background for the 100-DR-1 Work Plans

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Table 4.2. 1716-D Gas Station and 184-DA Underground Fuel Oil Tank Soil Gas Monitoring Data

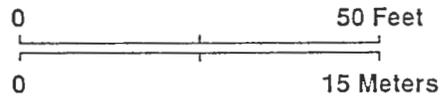
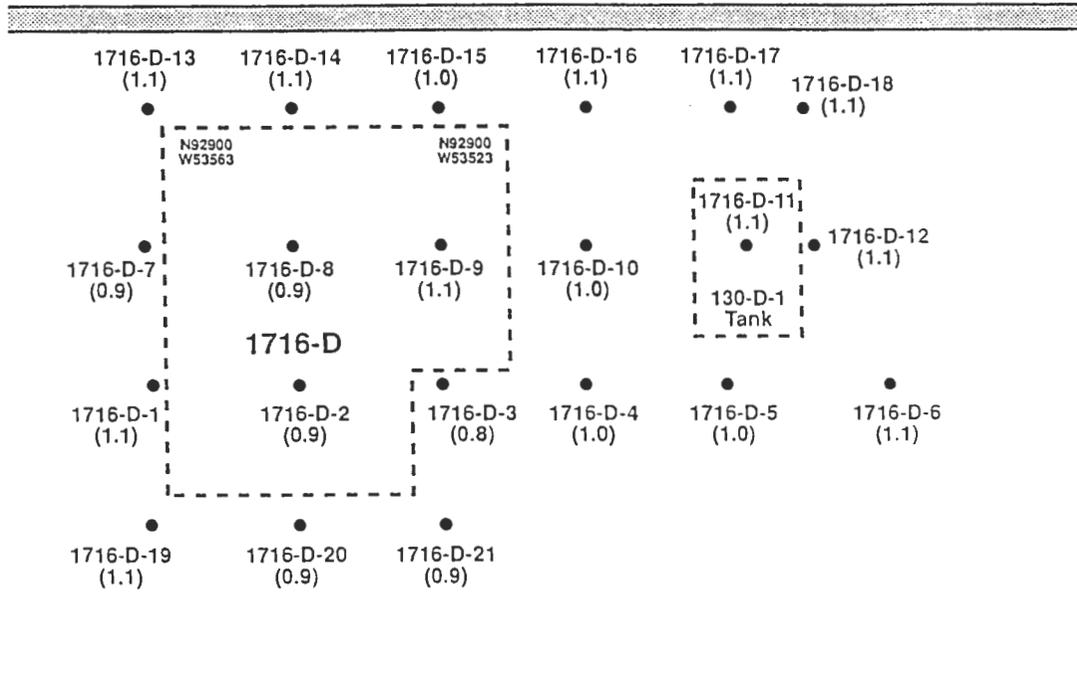
Soil Gas Measurements (ug/L)

Probe #	Depth (m)	VOC*	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE	PCE
1716-D-1	1.1	3.0	09/05/91	09/06/91	<1	<1	<1	1.0	<1	<0.1	<0.1	<0.1
1716-D-2	0.9	2.0	09/05/91	09/06/91	<1	<1	<1	2.8	<1	<0.1	<0.1	<0.1
1716-D-3	0.8	5.0	09/05/91	09/06/91	<1	<1	<1	8.7	<1	<0.1	<0.1	<0.1
1716-D-4	1.0	4.0	09/05/91	09/06/91	<1	<1	1.6	13.2	<1	<0.1	<0.1	<0.1
1716-D-5	1.0	2.0	09/05/91	09/06/91	<1	<1	<1	2.9	<1	<0.1	<0.1	<0.1
1716-D-6	1.1	2.0	09/05/91	09/06/91	<1	<1	<1	1.5	<1	<0.1	<0.1	<0.1
1716-D-7	0.9	2.0	09/05/91	09/06/91	<1	<1	<1	1.1	<1	<0.1	<0.1	<0.1
1716-D-8	0.9	1.0	09/05/91	09/06/91	<1	<1	<1	1.3	<1	<0.1	<0.1	<0.1
1716-D-9	1.1	1.0	09/05/91	09/06/91	<1	<1	<1	1.1	<1	<0.1	<0.1	<0.1
1716-D-10	1.0	3.0	09/05/91	09/06/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-11	1.1	2.0	09/05/91	09/06/91	<1	<1	<1	1.4	<1	<0.1	<0.1	<0.1
1716-D-12	1.1	2.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-13	1.1	1.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-14	1.1	2.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-15	1.0	1.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-16	1.1	1.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-17	1.1	3.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-18	1.1	1.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-19	1.1	1.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-20	0.9	2.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-21	0.9	4.0	09/05/91	09/07/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
184-DA-1	1.0	3.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
184-DA-2	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
184-DA-3	0.9	2.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
184-DA-4	1.3	1.0	09/09/91	09/10/91	<1	<1	<1	1.0	<1	<0.1	<0.1	<0.1
184-DA-5	1.3	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
184-DA-6	1.0	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1

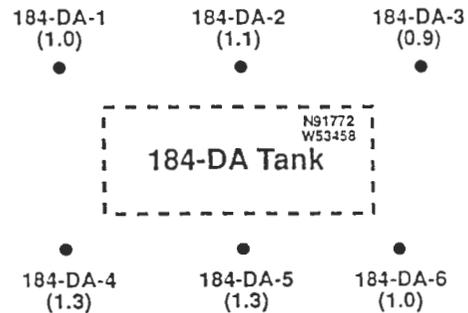
VOC\* - Total Volatile Organic Compounds (ppm) monitored with a 580B OVM on 08/16/91

Quality Control Samples (ug/L)

Type of QC Sample	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE	PCE
Ambient Air	09/05/91	09/06/91	<1	<1	<1	9.6	<1	<0.1	<0.1	<0.1
Ambient Air	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
Equipment Blank	09/05/91	09/06/91	<1	<1	<1	2.5	<1	<0.1	<0.1	<0.1
Equipment Blank	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
1716-D-3 Duplicate	09/05/91	09/06/91	<1	<1	<1	2.5	<1	<0.1	<0.1	<0.1
1716-D-6 Duplicate	09/05/91	09/06/91	<1	<1	<1	1.0	<1	<0.1	<0.1	<0.1



● = Sample point  
( ) = Probe depth in meters



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## GENERAL BACKGROUND FOR THE 100-DR-1 WORK PLANS

The Work Plans for 100-DR-1 have evolved through revisions from Draft A (October, 1989), Draft B (August, 1990), Draft C (September, 1991) and Draft D to be released in June 1992. Several significant changes were made during these revisions. As an example the Draft A and B contained Sampling and Analysis Plans but the subsequent drafts eliminated the Sampling Plans. Different revisions were used for conducting different activities. For the soil gas survey activities the Draft B was used.

The following low priority sites, being considered for postponement for any further investigative work at this time, were included in the Draft B (August 1990) Work Plan for Soil Gas Survey.

- o 1713-D instrument and electrical development laboratory
- o 1714-D solvent storage building
- o 1715-D oil and paint storage
- o 1716-D gas station
- o 1722-D equipment development laboratory

The plan describes the process of soil gas survey as follows:

"Probes will be installed from 1 m to 2 m (3 ft to 6 ft) deep in backfill around the buried tanks and pipelines, and other relatively small facilities (assumed for the purpose of this workplan to encompass an area of less than 930 square m (10,000 square ft) on about 7.6 m (25-ft) centers. The extent of contamination will be determined by installing additional probes until no detectable contamination is found in two adjacent probes bounding the area. Areas of contamination detected during the soil gas survey may be sampled during Task 5, Vadose Zone Investigation, as needed, to define the vertical extent of the contamination."

The soil Gas surveys have been completed for these sites and no significant contamination was encountered. Based on this documented data it is recommended that these sites be postponed from any further activities at this time and be considered at the time of final remedy selection phase as described in Figure 4-1 (Final Remedy Selection Process) of the 100-DR-1 Work Plan, Draft D.

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100 NPL Agreement/Change Control Form																				
Control Number  <b>22</b>	<input checked="" type="checkbox"/> Change <input type="checkbox"/> Agreement <input type="checkbox"/> Information  Operable Unit(s) <u>100-DR-1</u>	Date Submitted: <b>05-05-92</b>  Date Approved:																		
Document Number & Title:  DOE/RL-89-09, Draft B, RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington, August 1990.		Date Document Last Issued:  September 1991																		
Originator:  <b>N.M. Naiknimbalkar</b>		Phone:  <b>376-8739</b>																		
Summary Description:  Section 5.1.2.3.5 Activity 2c-5--Soil Gas Survey o 1722-D equipment development laboratory																				
Justification and Impact of Change:  1722-D equipment development laboratory is a low priority support facility. The soil gas surveys were conducted at this site. The samples contained less-than detectable or insignificant concentrations of t-12-DCE, BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES, 1,1,1-TCA, TCE and PCE chlorinated solvent vapors. In summary no significant contamination was encountered at this site. See attached 100-DR-1 Soil Gas Survey Results.  Based upon the above documented information, it is recommended that no further activities be conducted at this location at this time.																				
<table style="width:100%; border: none;"> <tr> <td style="border: none;"><u>N.M. Naiknimbalkar</u></td> <td style="border: none;"><i>N.M. Naiknimbalkar</i></td> <td style="border: none;"><u>5/28/92</u></td> </tr> <tr> <td style="border: none;">WHC Operable Unit Coordinator</td> <td style="border: none;"></td> <td style="border: none;">Date</td> </tr> <tr> <td style="border: none;"><u>E.D. Goller</u></td> <td style="border: none;"><i>E.D. Goller</i></td> <td style="border: none;"><u>5-28-92</u></td> </tr> <tr> <td style="border: none;">DOE Unit Manager</td> <td style="border: none;"></td> <td style="border: none;">Date</td> </tr> <tr> <td style="border: none;"><u>D. D. Teel</u></td> <td style="border: none;"><i>Darci Teel</i></td> <td style="border: none;"><u>6-9-92</u></td> </tr> <tr> <td style="border: none;">Lead Regulatory Unit Manager</td> <td style="border: none;"></td> <td style="border: none;">Date</td> </tr> </table>			<u>N.M. Naiknimbalkar</u>	<i>N.M. Naiknimbalkar</i>	<u>5/28/92</u>	WHC Operable Unit Coordinator		Date	<u>E.D. Goller</u>	<i>E.D. Goller</i>	<u>5-28-92</u>	DOE Unit Manager		Date	<u>D. D. Teel</u>	<i>Darci Teel</i>	<u>6-9-92</u>	Lead Regulatory Unit Manager		Date
<u>N.M. Naiknimbalkar</u>	<i>N.M. Naiknimbalkar</i>	<u>5/28/92</u>																		
WHC Operable Unit Coordinator		Date																		
<u>E.D. Goller</u>	<i>E.D. Goller</i>	<u>5-28-92</u>																		
DOE Unit Manager		Date																		
<u>D. D. Teel</u>	<i>Darci Teel</i>	<u>6-9-92</u>																		
Lead Regulatory Unit Manager		Date																		
Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3.																				

- With Attachments:
- o Soil Gas Measurements
  - o Map showing Sample Points
  - o General Background for the 100-DR-1 Work Plans

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Table 4.1. 1713-D, 1714-D, 1715-D, and 1722-D Building Soil Gas Monitoring Data

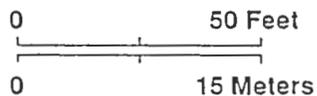
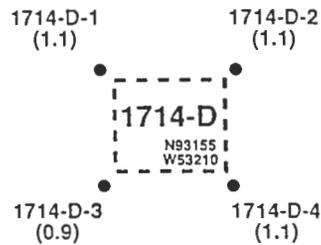
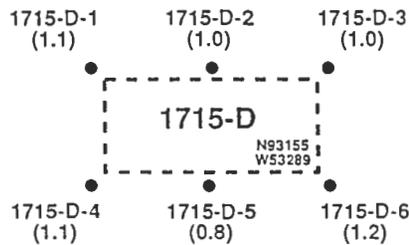
Soil Gas Measurements (ug/L)

Probe #	Depth (m)	VOC*	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE
1713-D-1	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-2	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-3	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-4	0.9	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-5	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-6	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-7	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-8	1.1	0.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-9	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-10	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-11	1.0	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-12	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-13	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1713-D-14	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1714-D-1	1.1	1.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
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1715-D-6	1.2	2.0	09/09/91	09/10/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-1	1.2	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-2	1.1	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-3	1.1	2.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-4	1.1	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-5	1.0	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
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1722-D-7	1.2	1.0	09/10/91	09/11/91	<1	<1	<1	<1	<1	<0.1	<0.1
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1722-D-9	1.1	1.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1
1722-D-10	0.9	2.0	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1

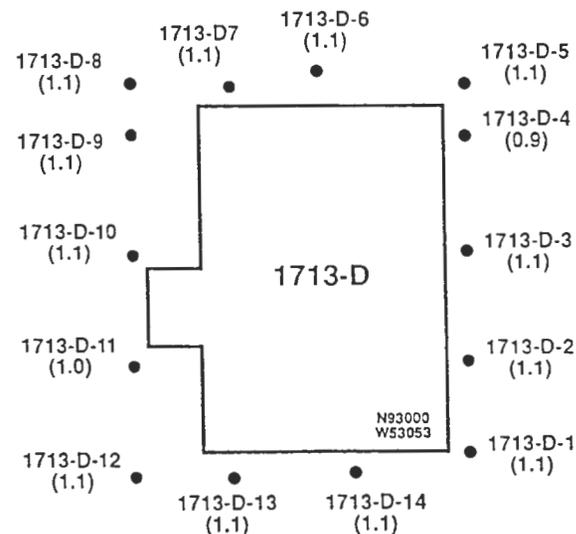
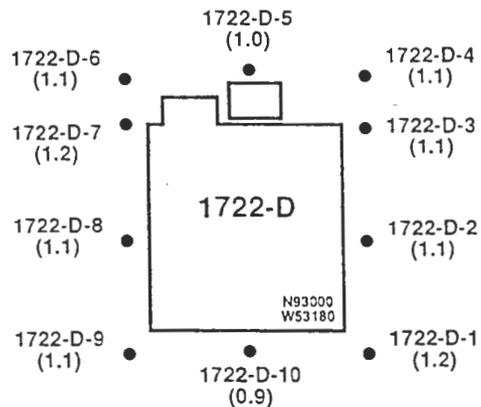
VOC\* - Total Volatile Organic Compounds (ppm) monitored with a 5808 OVM on 08/16/91

Quality Control Samples (ug/L)

Type of QC Sample	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE
Ambient Air	09/10/91	09/11/91	<1	<1	<1	3.0	<1	<0.1	<0.1
Equipment Blank	09/10/91	09/11/91	<1	<1	<1	1.0	<1	<0.1	<0.1
1722-D-9 Duplicate	09/10/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1



● = Sample point  
 ( ) = Probe depth in meters



## GENERAL BACKGROUND FOR THE 100-DR-1 WORK PLANS

The Work Plans for 100-DR-1 have evolved through revisions from Draft A (October, 1989), Draft B (August, 1990), Draft C (September, 1991) and Draft D to be released in June 1992. Several significant changes were made during these revisions. As an example the Draft A and B contained Sampling and Analysis Plans but the subsequent drafts eliminated the Sampling Plans. Different revisions were used for conducting different activities. For the soil gas survey activities the Draft B was used.

The following low priority sites, being considered for postponement for any further investigative work at this time, were included in the Draft B (August 1990) Work Plan for Soil Gas Survey.

- o 1713-D instrument and electrical development laboratory
- o 1714-D solvent storage building
- o 1715-D oil and paint storage
- o 1716-D gas station
- o 1722-D equipment development laboratory

The plan describes the process of soil gas survey as follows:

"Probes will be installed from 1 m to 2 m (3 ft to 6 ft) deep in backfill around the buried tanks and pipelines, and other relatively small facilities (assumed for the purpose of this workplan to encompass an area of less than 930 square m (10,000 square ft) on about 7.6 m (25-ft) centers. The extent of contamination will be determined by installing additional probes until no detectable contamination is found in two adjacent probes bounding the area. Areas of contamination detected during the soil gas survey may be sampled during Task 5, Vadose Zone Investigation, as needed, to define the vertical extent of the contamination."

The soil Gas surveys have been completed for these sites and no significant contamination was encountered. Based on this documented data it is recommended that these sites be postponed from any further activities at this time and be considered at the time of final remedy selection phase as described in Figure 4-1 (Final Remedy Selection Process) of the 100-DR-1 Work Plan, Draft D.

9 2 1 2 3 4 1 0 6 1

## 100 NPL Agreement/Change Control Form

Control Number

23

 Change     Agreement     Information

Date Submitted: 06-24-92

Operable Unit(s) 100-DR-1

Date Approved: NA

Document Number &amp; Title:

WHC-SD-EN-AP-092 Description of Work 100-D Ponds,  
Nonintrusive Characterization

Date Document Last Issued:

June 22, 1992

Originator:

Phone:

N.M. Naiknimbalkar

376-8739

Summary Description:

This document details the field activities associated with the nonintrusive source sampling in the 100-DR-1 Operable UNIT of the Hanford Site. This document will be used in sediment sampling work for the 100-D Ponds.

Comments to be returned by July 9, 1992. Sampling activities are planned for the following week after the comments are received and resolved.

Justification and Impact of Change:

PA Agreement milestone M-30-03

N.M. Naiknimbalkar

WHC Operable Unit Coordinator

Date

*N.M. Naiknimbalkar* 6/24/92NA

DOE Unit Manager

Date

NA

Lead Regulatory Unit Manager

Date

Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement  
Section 9.3.

92126541070

**ENGINEERING DATA TRANSMITTAL**

1 EDT 137051

2. To: (Receiving Organization)  
**Distribution**

3. From: (Originating Organization)  
**100 Area Remedial Investigation**

4. Related EDT No:  
**N/A**

7. Purchase Order No:  
**N/A**

5. Proj/Prog/Dept/Div: **Environmental Division**

6. Cog/Proj Engr: **N. M. Naiknimbalkar**

9. Equip/Component No:  
**N/A**

8. Originator Remarks:

10. System/Bldg/Facility:  
**100 D Ponds**

12. Major Assm Dwg No:  
**N/A**

11. Receiver Remarks:

13. Permit/Permit Application No  
**N/A**

14. Required Response Date:  
**N/A**

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(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev No.	(E) Title or Description of Data Transmitted	(F) Impact Level	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-EN-AP-092		0	Description of Work 100-D Ponds, Nonintrusive Characterization	3	2	1	

**KEY**

Impact Level (F)	Reason for Transmittal (G)	Disposition (H) & (I)
1, 2, 3, or 4 see MRP 5.43 and EP-1.7	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

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2	1	Cog./Proj. Eng N. M. Naiknimbalkar	<i>N. M. Naiknimbalkar</i>	4/22/92	H4-55	EDMC (2)			H4-22		
2	1	Cog./Proj. Eng. Mgr. R. P. Henckel	<i>R. P. Henckel</i>	4/28/92	H4-55	W. L. Johnson			H4-55		
2	1	QA G. S. Corrigan	<i>G. S. Corrigan</i>	5-6-92	H4-16	IRM Clearance			H4-17		
		Safety									
		R. C. Roos			H4-55						

18. *N. M. Naiknimbalkar*  
**N. M. Naiknimbalkar**  
Signature of EDT Originator Date

19. \_\_\_\_\_  
Authorized Representative Date for Receiving Organization

20. *R. P. Henckel*  
**R. P. Henckel**  
Cognizant/Project Engineer's Manager Date 6/22/92

21. DOE APPROVAL (if required)  
Ltr No. \_\_\_\_\_  
 Approved  
 Approved w/comments  
 Disapproved w/comments

SUPPORTING DOCUMENT		1. Total Pages 16
<p>2. Title</p> <p>Description of Work for 100-D Ponds, Nonintrusive Characterization</p>	<p>3. Number</p> <p>WHC-SD-EN-AP-092</p>	<p>4. Rev No.</p> <p>0</p>
<p>5. Key Words</p> <p>D Ponds, environmental characterization, contaminants</p>	<p>6. Author</p> <p>Name: N. M. Naiknimbalkar</p> <p><i>N. M. Naiknimbalkar</i></p> <p>Signature</p> <p>Organization/Charge Code 81221/PH1AA</p>	
<p>7. Abstract</p> <p>Naiknimbalkar, N. M., 1992, <i>Description of Work for 100-D Ponds, Nonintrusive Characterization</i>, WHC-SD-EN-AP-092, Rev. 0, Westinghouse Hanford Company, Richland, Washington.</p>		
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<p>9. Impact Level 3Q</p>		

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## 1.0 SCOPE OF WORK

This description of work specifies the field activities associated with nonintrusive source sampling 100-D Ponds in 100-DR-1 Operable Unit. It will serve as a field guide for those performing the work (DOE-RL 1991, Task 2). The description of work should be used in conjunction with *RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1991) for general investigation strategy and with *Environmental Investigations and Site Characterization Manual* (WHC 1988a) for specific procedures. This description of work describes specific limited field investigation (LFI) activities and sampling locations in accordance with discussions at the June 1991, 100 Area work plan rescoping meeting. Information gained from this effort will be used in the decision process to determine future sampling efforts, if required, and selection of a preferred option for closure of the facility.

## 2.0 GENERAL REQUIREMENTS

### 2.1 HEALTH AND SAFETY

All personnel working to this description will perform work in accordance with the following:

- WHC-EP-0383, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan* (WHC 1990)
- WHC-CM-4-10, *Radiation Protection* (WHC 1988b)
- WHC-CM-4-11, *ALARA Program Manual* (WHC 1988c)
- WHC-CM-4-3, *Industrial Safety Manual*, Vol 1 through 3, (WHC 1987)
- WHC-CM-7-5, *Environmental Compliance Manual* (WHC 1988d)
- WHC-SD-EN-SAD-002, *100 Area Low Hazard Characterization Activities Safety Assessment*, Rev. 0 (Taylor 1991)
- Site-specific job safety analysis.

### 2.2 PREREQUISITES

A readiness review will be completed by the cognizant engineer before the sampling task is attempted. The readiness review will be completed per Environmental Investigation Instruction (EII) 1.13, Environmental Engineering and Geotechnology Readiness Review (WHC 1991). The sampling status checklist (Attachment 1) will be initiated by the cognizant engineer or field team leader and dated as each step of the task is completed.

### 3.0 SAMPLING AND FIELD ACTIVITIES

The initial pond was brought into service in 1977 to receive water from the 183-D Water Filtration Plant. The filtration plant stream consists of alum-precipitated sand filter backflush (i.e., primarily water and alum that is used as the flocculating agent). The pond also received small discharges from the Thermal Hydraulics Test Facility and the Mechanical Development Laboratory, located in the combined 185-D/189-D Building. Discharges from the test facilities included cooling water from a heat exchanger and flushes from the regeneration of three water-demineralization systems.

#### 3.1 LOCATION

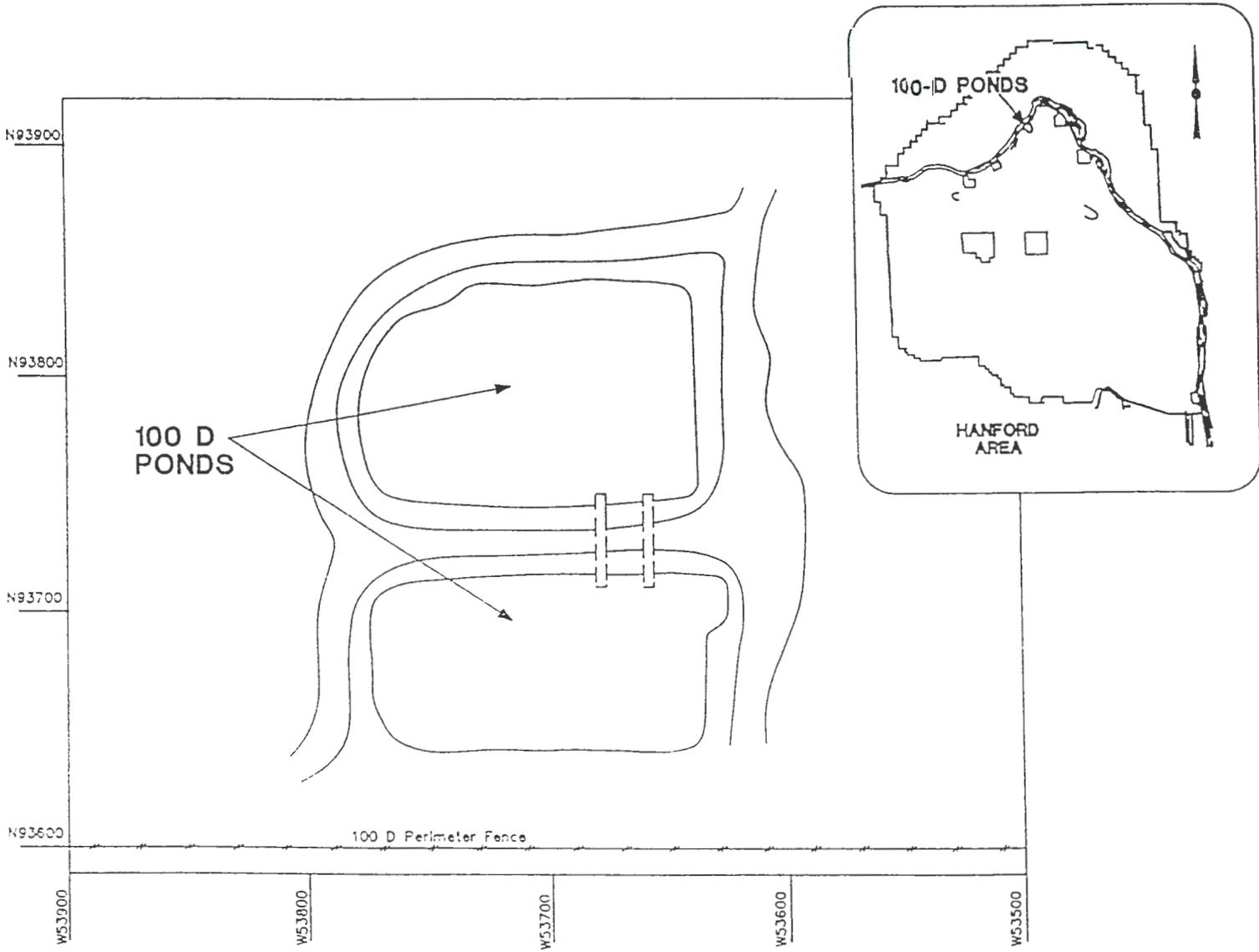
The 100-D Ponds occupy the area formerly used as an ash basin (188-D Ash Basin) in operational support of coal-fired boilers used to generate steam for the 100-D Reactor Area (DOE-RL 1987). The ash was removed when the area was prepared for water disposal. In 1977, a single pond was constructed by removing the ash accumulated in the original basin to a depth of approximately 9 m below grade. The excavated ash was deposited in piles around the perimeter of the excavation site (approximately 6 to 9 m high) where it remains today. In 1979, the original pond was modified to eliminate a bottom sealing problem caused by the accumulation of flocculent. A dike was constructed within the pond to form two compartments; a settling pond and a percolation basin. A corrugated metal pipe extending through the dike serves as the conduit between the two ponds. The pond site is approximately 0.8 ha in size and is located just north of the 100-D Reactor Area fence (Figure 1). Currently, the percolation basin receives very little water.

#### 3.2 SAMPLE ANALYSIS

The largest discharges to the 100-D Ponds have been nonradioactive, nonhazardous, nonregulated, aqueous backwash from the sand filters at 183-D Plant, and discharge water from the Thermal Hydraulics Test Facility and the Fuel Discharge Trampoline Test Facility. Additional discharges to the ponds have been potentially hazardous effluent streams from demineralizer recharge, and floor and sink drains from the 185-D/189-D Buildings. All operations at 185-D/189-D have ceased, and the buildings have been closed with no plans to reopen operations.

Mercury contamination of the 100-D Ponds is expected to be minimal. Factors leading to this expectation include the following: (1) total amount of mercury released to the drain system is small; (2) all releases of mercury to the drain system are reported to have occurred several years before construction of the D-Ponds; and (3) much of the mercury that was subject to washing through the drain system is expected to have washed through prior to use of the ponds.

It is not certain that the 100-D Ponds received hazardous waste. Concern for hazards at the ponds result from potential for contamination only. Water samples collected in 1987 and 1988 from the percolation pond indicated that no hazardous concentrations of chemicals existed at that time (Jungfleisch 1988).



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Figure 1. The 100-D Pond Location Map.

Ash from coal-fired power plants is known to be enriched in various trace elements (Smith 1981). This raises concerns that hazardous chemicals may be present at the ponds as a result of previous activities at that location or resulting from leaching from the large ash piles surrounding the ponds. However, studies have shown ash from power plants at the Hanford Site to be nonradioactive and nonhazardous per Washington Administrative Code (WAC) 173-303 (Rasmussen and Carlson 1987, Dworzak 1983). Table 1 summarizes the results of analysis of Hanford Site coal ash. Based on these analyses, there is little reason to expect that previous use of the site as an ash basin has resulted in hazardous contamination to the ponds.

Table 1. Evaluation of Hanford Coal Ash as a Potential Dangerous Waste. (From Rasmussen and Carlson 1987)

Contaminant	Extraction procedure toxicity analysis of six composite samples of Hanford Site coal ash (mg/mL in extract)	Extraction procedure toxicity list - minimum dangerous waste concentrations (mg/mL in extract)
Arsenic	<0.2	5
Barium	2.9	100
Cadmium	<0.05	1
Chromium	<0.05	5
Lead	<0.1	5
Mercury	<0.001	0.2
Selenium	<0.1	1
Silver	0.01	5

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### 3.3 SAMPLE COLLECTION

#### 3.3.1 Sampling Location

Since 1977, activities at the 100-D Area have diminished greatly. As a consequence, volume of effluent to the 100-D Ponds has been reduced so that water rarely flows from the settling pond to the percolation pond, which is currently dry. Because of the different nature and function of the two ponds, they will be sampled as separate entities. However, the same basic sampling pattern will be used for each of the two ponds.

- One sample will be collected at the influent to each pond. This site may be expected to be most heavily contaminated with mercury and other insoluble, or quickly precipitated constituents. A second sample will be collected from the deepest point in the pond. Dense constituents may be expected to settle at this point.

- Five locations have been randomly selected for sampling. These will provide samples of the general pond area, and information about variability of waste concentrations within the pond.
- The random sample sites will be located in each pond using the following protocol.
  - A grid system will be established over each of the ponds.
  - A scale interval in 5-m increments will be established along each axis of the grid.
  - Two random numbers (X, Y coordinates) have been drawn from a random numbers table. The point of intersection will be the location of the sample site. (If a given coordinate is beyond the appropriate axis, a second number will be selected.)
  - Locate the actual soil sampling site at these coordinates using a surveyor's tape.
  - The soil sampling location will be permanently marked with a stake 1 m due north (magnetic) of the sample location (in the dry pond).

Sampling locations will be measured in meters, beginning at the northwestern corner of each pond. The first number in each number pair (X) indicates meters south of the northwestern corner. The second number (Y) indicates meters east of the northwestern corner. Figure 2 shows a map of the ponds with proposed sampling locations. Proposed sampling locations for the ponds are shown in Table 2.

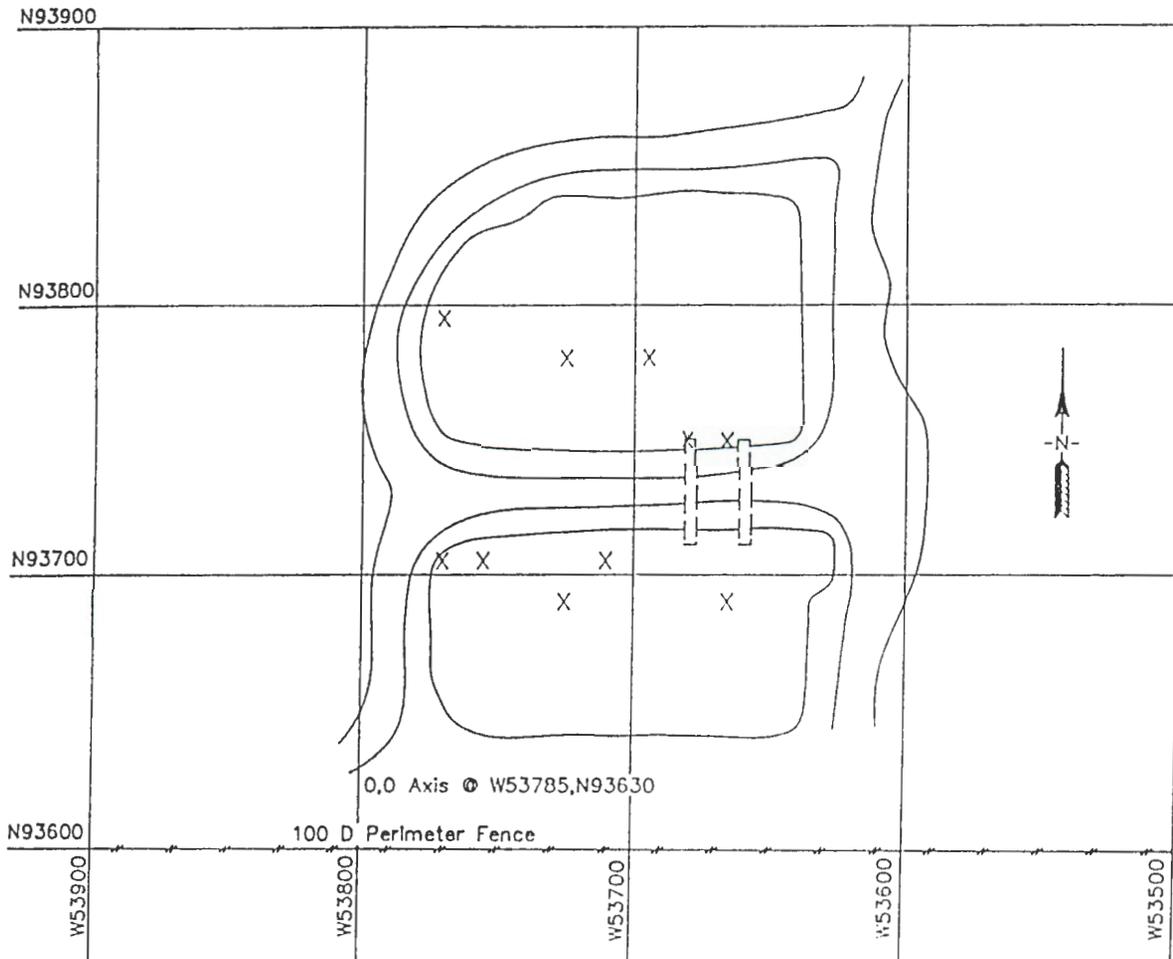
Individual samples will be collected from each of the 100-D Ponds as follows:

- Five randomly located samples
- One sample from the deepest portion
- One sample from near pond inlet
- One split sample (minimum)
- One duplicate sample (minimum)
- One trip blank (minimum)
- One equipment blank (minimum).

In wet pond areas, pond sediment samples will be collected using a dredge or coring sampler. The dredge sampler will be more appropriate where pond sediments are shallow. The coring sampler will be more appropriate where sediments are deep.

In dry pond areas, soil samples will be collected by taking grab samples after removing 15 cm of surface soil. Elimination of the surface few centimeters will remove material transported to the site by blowing dust and vegetation. In the dry pond, samples will be collected with a stainless-steel trowel or stainless-steel tablespoon.

Figure 2. The 100-D Pond Sampling Locations.



100-D PONDS  
Sample Grid @ 15' Intervals

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9 2 1 2 6 4 1 0 7 9

Table 2. Proposed Pond Sampling Locations.

<u>Settling pond</u>	<u>Percolation pond</u>
X - Y	X - Y
5 - 10	35 - 40
5 - 5	20 - 5
10 - 40	25 - 20
5 - 25	35 - 35
10 - 20	25 - 30

### 3.3.2 Soil Sample Depth

Soil underlying the 100-D Ponds is largely composed of coarse cobbly sands. The function of the ponds was liquid disposal through percolation. Potential hazardous constituents not sorbed onto soil fines and sediment at the surface of the pond bottoms would not be expected to remain in the coarse underlying soil. For this reason, sampling will concentrate on the surface 30 cm of soil.

## 4.0 SAMPLE LABELING

The Hanford Environmental Information System (HEIS) is used to track the sample and laboratory data obtained during environmental investigations conducted under this description of work. Each sample will be identified and labeled with a unique HEIS sample number. HEIS numbers will be assigned in the field per EII 1.11, Technical Data Management (WHC 1988a). The sample location and corresponding HEIS numbers will be documented in the field logbook (WHC-N-429-1).

## 5.0 ANALYSES

Samples will be screened onsite with hand-held instruments for radiological contamination and organic vapors. Additional screening for radiological constituents will be done before shipment of samples to an offsite laboratory. This screening will be done using laboratory instruments or semiportable field instruments.

To facilitate use of data in decisions regarding 100-DR-1 Operable Unit, selected samples collected from the 100-D Ponds will be analyzed for Contract Laboratory Program (CLP) organic and inorganic parameters (target compound list and target analyte list, Table 3), using procedures specified in the CLP statements of work (EPA 1988, 1989b).

Table 3. Contract Laboratory Procedures Target Compound List Analytes.

Organic target analyte list	Inorganic target analyte list
Volatiles	Aluminum
Semivolatiles	Antimony
Pesticides/polychlorinated biphenyls	Arsenic
	Barium
	Beryllium
	Cadmium
	Calcium
	Chromium
	Cobalt
	Copper
	Iron
	Lead
	Magnesium
	Manganese
	Mercury
	Nickel
	Potassium
	Selenium
	Silver
	Sodium
	Thallium
	Vanadium
	Zinc
	Cyanide

The sample volumes shall be collected unless modified by the Environmental Engineering Group cognizant engineer to accommodate additional requirements. The samples will be analyzed as shown in Table 4.

Before shipment to an analytical laboratory, samples will be screened for radioactive constituents. Samples found to contain radionuclides above expected background levels will be analyzed in the laboratory for gross alpha, gross beta, <sup>90</sup>Sr, and <sup>137</sup>Cs. Radiological analysis will be performed and documented according to routine laboratory procedures outlined by EPA (1986).

Onsite screening will be conducted using portable field equipment. These qualitative analyses are sufficient for the purposes of health and safety assessment and sample screening purposes.

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Table 4. Analyte List.

Analyte	Method	Holding Time	Container/Volume
AA metals and mercury	6010 7470	6 mo	Glass/250 mL
Cyanide	9010	14 d	Glass/250 mL
Volatile organic	8240	14 d	Glass/150 mL
Semivolatile organic PCB/pesticides	8270 8080	7 d <sup>a</sup>	Amber glass/1,000 mL
Anions	EPA 300.0	48 h <sup>b</sup>	Amber glass/250 mL
Carbon-14	Lab SOP	6 mo	Plastic or glass/10 g
Strontium-90 Gross alpha Gross beta Gamma spec	Lab SOP	6 mo	Glass/1,000 mL
Alpha spec	Lab SOP		
Total Activity (222-S Lab)		6 mo	Plastic or glass vial (at least 1 g)

<sup>a</sup>7 d for extraction, 40 d after extraction for analysis.

<sup>b</sup>48 h for extraction.

### 6.0 QA/QC REQUIREMENTS

Sample blanks and sample splits will be taken (as a minimum) of one for every 20 samples, or once each day, whichever results in the greatest number of QA samples. Measures to be taken in association with sampling QA include:

- Duplicate samples--Two separate samples are taken from the same sampling point in the field and placed into separate containers to undergo separate analyses.
- Split samples--Sample splits are technically the same as duplicates, except that the two samples go to different laboratories.
- Equipment blank--An equipment blank consists of clean silica sand or distilled water that is as free of analyte as possible and is transported to the site, opened in the field, poured over or through the sample collection device, collected in a sample container, and returned to the laboratory for analysis. In the case of soil blanks, clean silica sand will be used. Distilled water will be used if equipment blanks are taken in association with water samples. Equipment blanks will be analyzed for constituents listed in Table 4.

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- Trip blanks--Trip blanks are prepared to detect contamination of volatile organic samples during transport to the laboratory. They consist of clean silica sand for soil samples, or distilled water for water samples. Trip blanks are packaged just as volatile organic analysis samples and are sent to the laboratory along with samples.

## 7.0 SCHEDULE

Before sampling, the contractor laboratory will be contacted and the laboratory's capacity for analysis will be confirmed. This will avoid samples being stored for long periods because of equipment failure or overburden of laboratory facilities in the event that a time-consuming test is requested.

The D Pond sampling activity is scheduled to be initiated during the last part of May 1992, and will take approximately 3 to 5 d. An agreement Activity Notification form will be issued at least 5 d prior to the start of field work.

## 8.0 CHANGES TO DESCRIPTION OF WORK

Major changes to this description of work, such as analyzing different parameters or using different analytical methods, will be submitted on the Project Change Form (Attachment 2). The change will require, at least, the verbal approval of field team leader and the operable unit coordinator. The change will be filed as an Engineering Change Notice (ECN) and a copy will be inserted into the 100-DR-1 project file. Copies will be submitted to the regulatory agencies and the appropriate field personnel within 10 d of the change.

## 9.0 REFERENCES

DOE-RL, 1987, *Preliminary Closure/Post-Closure Plan 100-D Ponds*, U.S. Department of Energy Richland Operations Office, Richland, Washington.

EPA, 1986, *Test Methods for Evaluating Solid Waste - Physical/Chemical Methods*, 2nd Ed. SW-846, U.S. Environmental Protection Agency, Washington, D.C.

EPA, 1988, *USEPA Contract Laboratory Program Statement of Work for Organic Analysis*, Sample Management Office, U.S. Environmental Protection Agency, Washington, D.C.

- EPA, 1989b, *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis*, Sample Management Office, U.S. Environmental Protection Agency, Washington, D.C.
- Jungfleisch, F. M., 1988, *Preliminary Evaluation of Hanford Liquid Discharges to Ground*, WHC-EP-0052, Westinghouse Hanford Company, Richland, Washington.
- Rasmussen, O. R. and R. A. Carlson, 1987, *Design Specifications for the Semiworks (201-C) Site Engineered Barrier*, SD-DD-TI-004, Westinghouse Hanford Company, Richland, Washington.
- Roos R. C., 1992, *100-D Ponds: Characterization of Potential Hazardous Waste in the Near-Surface Soil Sediments*, WHC-SD-EN-AP-044, Rev. 0, Westinghouse Hanford Company, Richland, Washington.
- Smith, R. D., 1981, *Evaluation of Flash Surface Phenomena and the Application of Surface Analysis Technology*, PNL-3842, Pacific Northwest Laboratory, Richland, Washington.
- Taylor, W. E., 1991, *100 Area Low Hazard Characterization Activities Safety Assessment*, WHC-SD-EN-SAD-002, Rev. 0, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1987, *Industrial Safety Manual*, WHC-CM-4-3, 3 Vols., Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988a, *Environmental Investigations and Site Characterizations Manual*, WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988b, *Radiation Protection*, WHC-CM-4-10, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988c, *ALARA Program Manual*, WHC-CM-4-11, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988d, *Environmental Compliance Manual*, WHC-CM-7-5, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1990, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan*, WHC-EP-0383, Westinghouse Hanford Company, Richland, Washington.

## APPENDIX A

### CLAMSHELL DREDGE SAMPLING METHOD

#### A-1.0 SAMPLING EQUIPMENT

The sampling equipment consists of the following:

- Dredge sampler or equivalent clamshell-bucket-style dredge assemblies
- Wood or metal extension pole of suitable length (for lightweight dredge assemblies)
- Steel cable of appropriate length, with diameter to accommodate the retrieval weight of a loaded dredge

#### A-2.0 METHOD DESCRIPTION

The depth of the sediments to be sampled should be established with a sounding line or other suitable means. Secure the extension pole or cable to the dredge, depending on the size and weight of the assembly, and test the security of the attachment before dropping the assembly to depth. Both types of dredges consist of a steel bucket with opposing jaws; one type of dredge has spring-loaded jaws that close on contact with the bottom. The dredge sampler relies on the upward force of the cable to close the jaws. Retrieve the closed assembly and transfer the sampled sediments to appropriate sample containers.

#### A-3.0 SAMPLING CONSIDERATIONS

The sampling device should be lowered at a controlled rate of speed to minimize pressure wave disturbance of sensitive bottom sediments. Both styles of dredge will retrieve disturbed but representative bottom sediment samples. One dredge is preferred for sampling softer, finer-grained sediments in the absence of bottom vegetation, while the other dredge sampler is more suitable for harder or gravelly sediments. Each dredge will be decontaminated before use in compliance with EII 5.5, Field Decontamination of Equipment for RCRA/CERCLA Sampling (WHC 1988a).

ATTACHMENT 1

100-AREA NONINTRUSIVE  
SOURCE SAMPLING STATUS CHECKLIST

Sampling Task: \_\_\_\_\_

Signature/Date

LANDLORD CONTACTED FOR ENTRANCE

\_\_\_\_\_

100 AREA ENVIRONMENTAL PROTECTION NOTIFIED

\_\_\_\_\_

PREJOB SAFETY MEETING COMPLETED

\_\_\_\_\_

SAMPLES COLLECTED AND LABELED

\_\_\_\_\_

SAMPLES SURVEYED BY HPT

\_\_\_\_\_

SAMPLE PACKAGED IN SHIPPING CONTAINER

\_\_\_\_\_

TOTAL ACTIVITY SCAN OF SAMPLES COMPLETED

\_\_\_\_\_

CHAIN OF CUSTODY FORM COMPLETED

\_\_\_\_\_

SAMPLES SHIPPED TO LABORATORY

\_\_\_\_\_

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ATTACHMENT 2

100-DR-1 NONINTRUSIVE SOURCE SAMPLING PROJECT CHANGE FORM

DATE: \_\_\_\_\_

Person Initiating Change: \_\_\_\_\_

Change: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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Reason for Change: \_\_\_\_\_  
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\_\_\_\_\_

APPROVAL:

Field Team Leader: \_\_\_\_\_

Operable Unit Coordinator: \_\_\_\_\_

Environmental QA Representative: \_\_\_\_\_

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**100-BC-1 SOURCE OPERABLE UNIT WORK SUMMARY**  
June 22, 1992

Task 2 - Source Investigation:

Source Data Compilation: Activity completed February, 1992. Identified documents are in the process of being cleared for external distribution.

Topographic Mapping: Activity completed August, 1991.

Field Activities:

Electrical Facility Sampling: Activity completed December, 1991.

116-C-5 Retention Basin Sampling: Activity completed April 28, 1992.

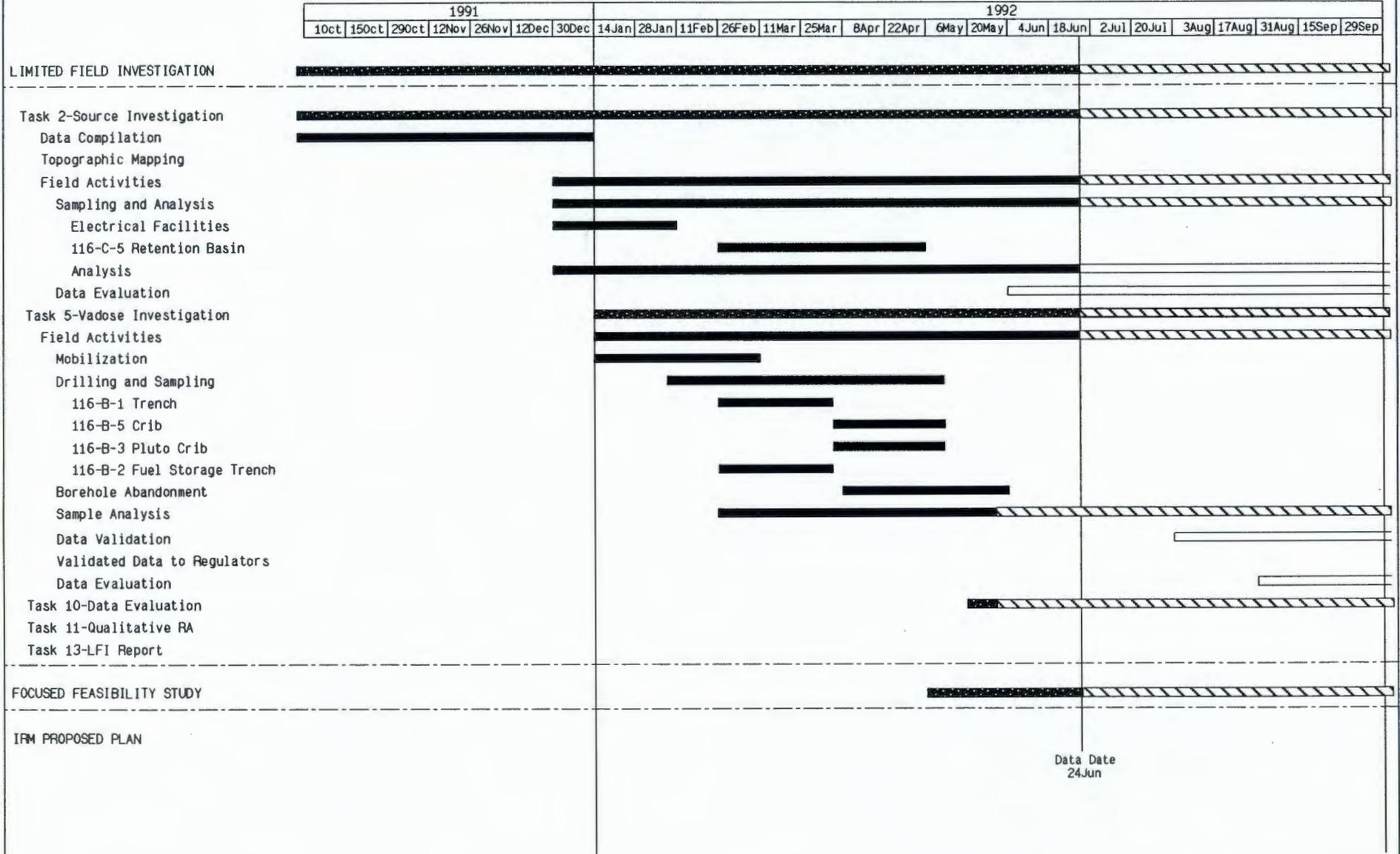
Task 5 - Vadose Investigation:

See attached table for specific vadose information.

Vadose drilling activities are complete. The retention basin test pit activity was completed June 10, 1992. Questions have arisen with respect to the depth of the excavation.

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100-BC-1 OPERABLE UNIT



Data Date  
24Jun

Summary Task [Hatched Box] Progress [Solid Black Box]  
Detail Task [White Box] Milestone [Black Triangle]

Project: 100-BC-1 | 100-BC-1 | Date: 24Jun92 7:46  
100-BC-1 OPERABLE UNIT  
Page: 1 | Drawn by ER Program Control-Scheduling

100-BC-1 Vadose Investigation Summary					
Location	Total Depth	# of Samples	Logging	Highest Rad & Depth (Ludlum)	Start/Finish Date
116-B-1 Borehole	28 feet	4 Chemical 2 Physical	Spectral	14,000 cpm (200 cpm GM) 17-19	3/19 - 3/26
116-B-2 Borehole	23 feet	4 Chemical	Spectral	8,000 cpm (750 cpm GM) 12-14	3/19 - 3/30
116-B-3 Borehole	20 feet	3 Chemical	Spectral	8,000 cpm (400 cpm GM) 6-7	4/2 - 4/8
116-B-5 Borehole	25 feet	3 Chemical	Spectral	2,000 cpm	4/13 - 4/22
Retention Basin Test Pit	20 feet	7 Chemical	N/A	(500 cpm GM) 5	6/10

# 100-BC-5 OPERABLE UNIT

	1991			1992								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>LIMITED FIELD INVESTIGATION</b>	[Progress bar spanning Oct 1991 to Sep 1992]											
Task 3-Geologic Investigation Data Compilation	[Progress bar]											
Task 5-Vadose Investigations Data Compilation	[Progress bar]											
Task 6-Groundwater investigations Data Compilation	[Progress bar spanning Oct 1991 to Sep 1992]											
Field Activities	[Progress bar spanning Oct 1991 to Mar 1992]											
Evaluate Existing Wells	[Progress bar spanning Oct 1991 to Mar 1992]											
Well Installation	[Progress bar spanning Oct 1991 to Mar 1992]											
Well BC-1 199-B3-46	[Progress bar in Feb 1992]											
Well BC-2 199-B3-47	[Progress bar in Feb 1992]											
Well BC-2A 199-B2-12	[Progress bar in Feb 1992]											
Well BC-3 199-B2-13	[Progress bar in Feb 1992]											
Well BC-4 199-B4-8	[Progress bar in Feb 1992]											
Well BC-5 199-B4-9	[Progress bar in Mar 1992]											
Well BC-6 199-B9-2	[Progress bar in Mar 1992]											
Well BC-7 199-B9-3	[Progress bar in Mar 1992]											
Well BC-8 199-B8-6	[Progress bar in Mar 1992]											
Well BC-9 199-B5-2	[Progress bar in Mar 1992]											
Groundwater Soil Samples Laboratory Analysis	[Progress bar spanning Feb 1992 to Jun 1992]											
Data Validation	[Milestone bar in Aug 1992]											
Validated Data to Regulators	[Milestone bar in Aug 1992]											
Data Evaluation	[Milestone bar in Aug 1992]											
<b>LFI REPORT (Issue as secondary doc)</b>												
<b>FOCUSED FEASIBILITY STUDY</b>												
<b>IRM PROPOSED PLAN (Issue as Primary Document)</b>												

Data Date  
24 Jun 92

Summary Task [Hatched Box] Progress [Solid Black Box]  
Detail Task [White Box] Milestone [Black Triangle]

**100-BC-5 DRILLING STATUS**

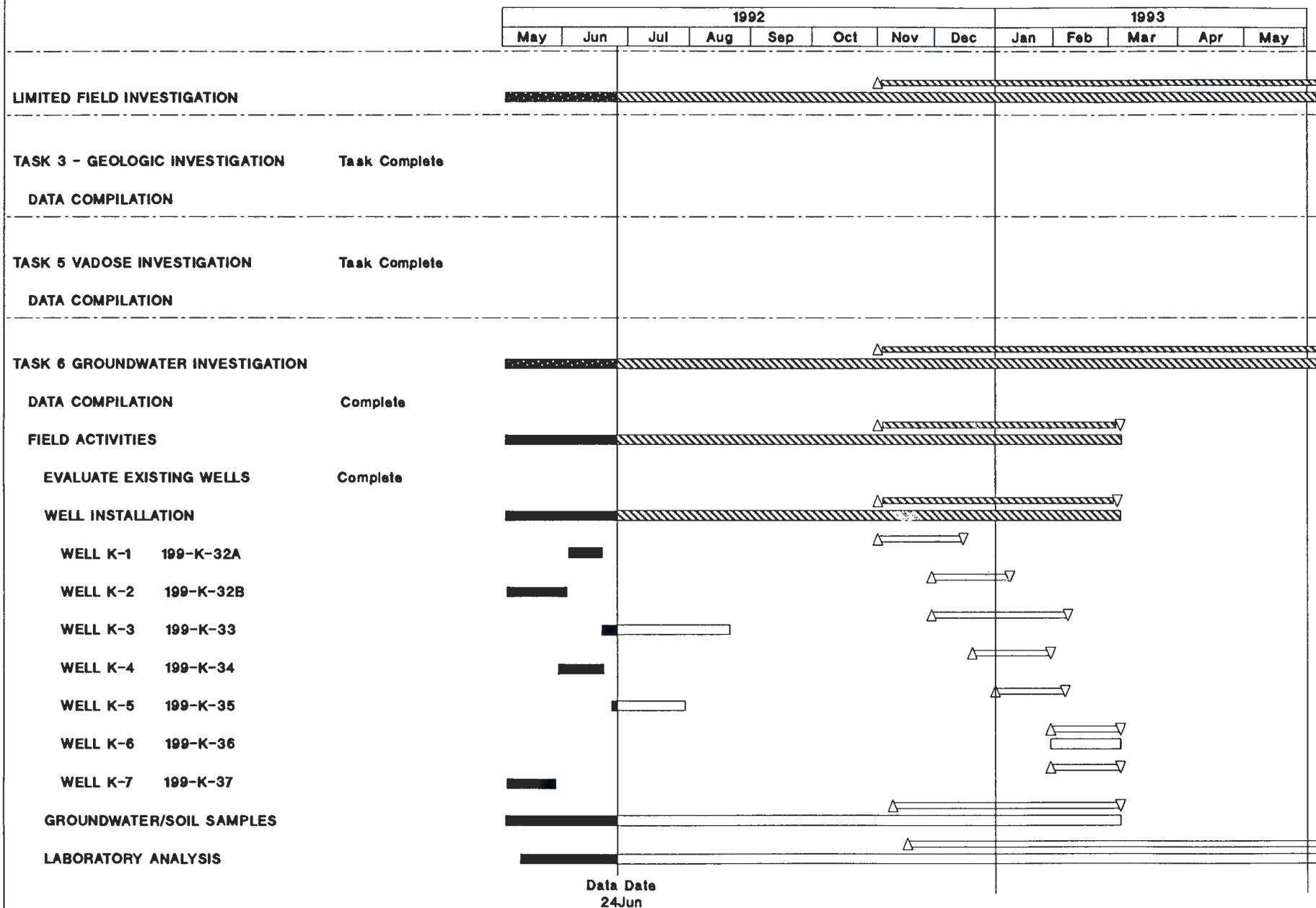
WELL NUMBER	START DATE	COMPLETION DATE	CURRENT DEPTH	INST. READINGS	SCREEN INSTALLED
199-B3-46	2/19/92	2/28/92	TD 67'	N/A	3/30/92
199-B3-47	2/19/92	2/25/92	TD 61'	N/A	5/4/92
199-B2-12	2/19/92	4/1/92	TD 179'	H <sup>+</sup> , 144'	5/20/92
199-B2-13	2/26/92	3/3/92	TD 40'	N/A	3/25/92
199-B4-8	2/20/92	3/5/92	TD 90'	N/A	4/1/92
199-B4-9	4/6/92	4/21/92	TD 90'	400cpm 16-23'	5/28/92
199-B9-2	3/4/92	3/12/92	TD 118'	N/A	4/29/92
199-B9-3	3/3/92	3/18/92	TD 109'	N/A	4/8/92
199-B8-6	3/10/92	3/23/92	TD 89'	H <sup>+</sup> , 50'	4/3/92
199-B5-2	3/25/92	4/10/92	TD 76'	N/A	4/30/92

**100-KR-4 DRILLING STATUS**

WELL NUMBER	START DATE	COMPLETION DATE	CURRENT DEPTH	INST. READINGS	SCREEN INSTALLED
199-K-37	5/4/92	5/26/92	TD 70 ft	N/A	6/23/92
199-K-32A	6/8/92	6/16/92	TD 70 ft	N/A	
199-K-32B	5/4/92	6/5/92	TD 175 ft	H <sup>+</sup>	
199-K-33	6/19/92		20 ft		
199-K-34	5/29/92	6/17/92	TD 89 ft	N/A	
199-K-35	6/23/92				
199-K-36					

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# 100-KR-4 OPERABLE UNIT



Summary [hatched pattern] Target [triangle with arrow]  
 Detail Task [white bar] Progress [black bar]

N-AREA SURFACE RADIATION SURVEY  
6/92 UPDATE

START DATE: 4/92

PROJECTED COMPLETION DATE:

SURVEY: 9/92  
REPORT: FY 1993

AREA:

AREA SURVEY: @ 227 acres  
ROAD SURVEY: @ 200 acres  
TOTAL AREA: @ 427 acres

AREA COMPLETED AS OF JUNE 22, 1992: @ 86 acres

AREAS ABOVE BACKGROUND FOUND: NONE

PROBLEMS: A) EQUIPMENT MODIFICATION  
B) MECHANICAL AVAILABILITY  
CAN STILL MEET SCHEDULE

92120341094

N-AREA SOIL GAS SURVEY  
6/92 UPDATE

START DATE: 6/92

PROJECTED COMPLETION DATE:

SURVEY: 8/92

REPORT: 9/92

AREA:

MAIN FUEL OIL UNLOADING STATION  
DIESEL OIL UNLOADING STATION  
OUTLET OF EACH 166-N STORAGE TANK  
UN-100-N-17 SITE

HGP BURN PIT (INCLUDES SCREENING FOR METALS)  
128-N-1 BURN PIT (INCLUDES SCREENING FOR METALS)

AREA COMPLETED AS OF JUNE 22, 1992: NONE (ACTIVITY TO DATE CONFINED TO  
ACQUISITION OF EQUIPMENT,  
SUPPLIES, AND PERMITS)

AREAS ABOVE BACKGROUND FOUND: NONE

PROBLEMS: NONE

92126141075

Attachment #25

Sample Turn Around Times for 100 Areas (Karl Pool)

The discussion was to formalize the response on lab turn around times as they relate to the 100-BC-1 and 100-BC-5 Work Plans.

- o All samples taken after June 1, 1992 will meet a 100 day turn around time.
- o Samples that are backlogged at TMA (received by the lab by May 1, 1992) will be analyzed by the end of June 1992 and will be reported in July; Samples backlogged at Weston (received by the lab by March 31, 1992) will be analyzed and reported by the end of August 1992. Samples received after the backlog date and before June 1, 1992 will meet the 100 day turn around time.
- o Some samples related to 100-BC-1&5 are considered to be in the backlog at each of the labs.

9 2 1 2 0 7 4 1 0 2 6

AGREEMENT ACTIVITY NOTIFICATION

Page \_ of \_

OPERABLE UNIT 100-FR-1

DATE 6/23/92

TSD \_\_\_\_\_

E. D. Goller

OTHER \_\_\_\_\_

UNIT MANAGER

ACTIVITY PERIOD \_\_\_\_\_

ACTIVITIES

SCHEDULED START DATE

132-F-1 Nonintrusive Test Pit

July 13-14, 1992

9212341037

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E. D. Goller, 6-23-92

UNIT MANAGER

EPA/Ecology/DOE representatives that may want to observe any of the listed activities should verify the start date with the Unit Manager. Depending on the activity, location, and the individual's needs relative to observation/participation, the individual may be required to meet the training requirements of Environmental Investigation Instruction 1.7.

**Distribution**  
**Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units**  
**June 24, 1992**

Julie K. Erickson . . . . . Chief, Env. Remed. Br., DOE-RL, ERD (A5-19)  
 Mike Thompson, . . . . . DOE-RL, EAP/RPB (A5-19)  
 Diane Clark, . . . . . DOE-RL, TSD/SSB (A5-55)  
 Steve Balone, . . . . . DOE-HQ (EM-442)  
 Suzanne Clarke, SWEC . . . . . GSSC to DOE-RL (A4-35)

Dennis Faulk . . . . . 100 Aggregate Area Manager, EPA (B5-01)  
 Ward Staubitz, USGS . . . . . Support to EPA  
 Audree DeAngeles, PRC . . . . . Support to EPA

Darci Teel . . . . . 100 Aggregate Area Manager, WDOE (Kennewick)  
 Larry Goldstein . . . . . WDOE (Lacey)

Lynn Albin . . . . . Washington Dept. of Health

Tom Wintczak, WHC . . . . . (L4-92)  
 Mel Adams, WHC . . . . . (H4-55)  
 Bob Henckel, WHC . . . . . (H4-55)  
 L.D. Arnold, WHC . . . . . (B2-35)  
 A.D. Krug, WHC . . . . . (H4-55)  
 Roberta, Day, WHC . . . . . (H4-55)  
 Powers, Linda L., WHC . . . . .

Don Praast, . . . . . GAO (A1-80)

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**ADMINISTRATIVE RECORD: 100 AAMS; Care of EDMC, WHC (H4-22)**

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Please inform Suzanne Clarke (SWEC) of deletions or additions to the distribution list.

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