

START

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Final

Meeting Minutes Transmittal/Approval
Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
740 Stevens Center, Room 1200, Richland, Washington
May 26, 1993

FROM/APPROVAL: *Eric Goller* Date 6/23/93
Eric D. Goller, 100 Area Unit Manager, RL (A5-19)

APPROVAL: *[Signature]* Date 6/23/93
Jack W. Donnelly, 100 Aggregate Area Unit Manager, WA Department of Ecology

APPROVAL: *[Signature]* Date 6-23-93
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 - Attendance Sheet
- Attachment #3 - Agenda
- Attachment #4 - Action Item Status List
- Attachment #5 - 100 Area Operable Units Summary May 1993
- Attachment #6 - DSI Transmitting Waste Control Plan for the 100-BC-2 Field Investigations
- Attachment #7 - DSI Transmitting Description of Work for the 100-BC-2 Vadose Investigation
- Attachment #8 - Waste Control Plan Rev 1, 100-KR-1
- Attachment #9 - Status of M-30-05 Activities
- Attachment #10 - 100-HR-3 Groundwater Treatability Tests
- Attachment #11 - 116-C-2C Pluto Crib Sand Filter 100-BC-2 Operable Unit
- Attachment #12 - Justification for Not Performing Limited Field Sampling at the 116-C-2C Pluto Crib Sand Filter

Prepared by: *Kay Kimmel* Date: 6/23/93
Suzanne Clarke, Kay Kimmel, GSSC (A4-35)

Concurrence by: *Alan D. Krueger* Date: 6/23/93
Bob Henckel, WHC Coordinator (H6-02)
A.D. Krueger



2820*7/5/93

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

**Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 26, 1993**

1. **SIGNING OF THE APRIL 100 AREA UNIT MANAGER'S MEETING MINUTES** - Minutes were reviewed and approved with no changes.
2. **ACTION ITEM UPDATE:** (See Attachment 4 for complete status, items listed below indicate the update to Action Items made during the meeting):
 - 1AAMS.9 No additional information.
 - 1AAMS.15 No additional information.
 - 1AAMS.16 No additional information.
3. **NEW ACTION ITEMS:** No new action items were initiated this month.
4. **INFORMAL TRANSMITTALS:** The following documents were informally transmitted to the Regulators:
 - Validated data (see attachment #5 for the transmittal letters).
 - *Waste Control Plan for the 100-BC-2 Field Investigations* was informally transmitted to the Regulators (see attachment #6). Comments are requested by June 9, 1993, if possible. The comments require resolution by the end of June in order to prevent impact on schedules.
 - *Description of Work for the 100-BC-2 Vadose Investigation* was informally transmitted to the Regulators (see attachment #7).
 - Waste Control Plan (Rev. 1) for 100-KR-1 is provided as attachment #8.
5. **100 AREA ACTIVITIES:**
 - Milestone 30-05 - Robert E. Peterson presented an update of activities being performed to fulfill the M-30-05 Milestone (see attachment #9). A report entitled *Equipment Installations and Monitoring Activities to Satisfy TPA Milestone M-30-05* and a draft agreement form concerning the scope of the milestone were informally transmitted to the Regulators. A meeting to discuss the scope of the milestone is planned for June 13, 1993.
 - Treatability Study Status: There will be an open house for the 100-Area Treatability Test equipment at 1:00 p.m. tomorrow, May 27 near FFTF.
 - 100-HR-3 Treatability Study: Jim Duncan presented the results of the bench studies for the soil

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washing treatability study, see attachment #10.

- 100-HR-1 Excavation Treatability Study: Joan Woolard led a discussion concerning the content of an article for the TPA Focus flier planned for distribution to the general public. The article is anticipated for distribution on June 7, 1993.
- Reduction of Analyte List: Jim Yokel led a discussion concerning analyte lists for future 100-Area groundwater monitoring. At the April 100-Area Unit Managers meeting the Regulators were provided with a list of analytes that were eliminated from the analyte list during the previous groundwater sampling round. It was proposed that these analytes continue to be eliminated from future sampling rounds upon Regulator concurrence. The Regulators concurred that hydrazine analyses be eliminated from future groundwater monitoring activities; however, tritium and gross alpha and gross beta should be retained on analyte lists.
- Limited Field Sampling for the 116-C-2C Pluto Crib: Kevin Kytola presented a proposal and justification for not performing the limited field sampling in the subject crib (see attachments #11 and #12).
- Attachment #5 was provided for general information on the 100 Areas Operable Units.
- D & D - Mike Hughes described past, current, and future Decontamination and Demolition projects in the 100-Areas. He indicated that over 200 facilities had already been decommissioned and there were over 100 surplus facilities waiting on D&D. Five buildings have gone through D&D, this year-to-date, with three more scheduled.
- Scoping meeting for the 100-DR-2 work plan is scheduled for 9:30 a.m. June 1, 1993.

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100 Aggregate Area Unit Manager's Meeting
Official Attendance Record
May 26, 1993

Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Eric Goller	DOE-RL	Post Practice 100 Area Unit Manager	(509) 376-7326
BOB SCHECK	GSSC-Daniel Moore		(509) 946-0176
N.M. Naiknimbalkar	WHC	DRIVER Coordinator	(509) 376-8739
DIRK DUNNING	OR DOE	OR HPC	(503) 378-3187
Tom Jones	PNL	Program officer	375-2710
Steve Weiss	WHC	100 project area	376-1683
RP HENCKEL	WHC	100 AREA	(509) 376-2091
BOB PETERSON	WHC	100 AREA GROUNDWTR	(509) 376-5858
KEVIN KYTOLA	WHC	100-BC-1 100-BC-2	509-372-1662
Jim Duncan	WHC	100-HR-3 Gdwtr	(509) 372-0896
Pamela Innis	EPA	UNIT MANAGER	509/376-4919
Larry Gadbois	EPA	" "	" " 9884
Dennis Faulk	EPA	" "	6-8631
Hart Beaver	EPA	" "	6-8665
J. W. Wadley	Ecology	UN	786-3012
Gary Friedman	Ecology	UN	736-3026
A. D. Krug	WHC	100 NR-1 100 Area Sources	376-5634
R.L. Biggerstaff	WHC	100 Areas GW	376 5634
A. L. Langstaff	WHC	100 BC	376-6056
Joseph Mollusky	PRC	EPA Support	206-624-2692
CHUCK CLINE	Ecology	Hydrogeo. Support	206 438-7556
JERRY YOKEL	Ecology	Tech. Support Dir. GARDNER	736-3009
Ward Staubitz	USGS	EPA Support	206 543-6510
KAY KIMMEL	MACTEC	RL Support	509-376-1985
Suzanne E. Clarke	James E. Moore	GSSC to RL	509-376-8189

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**Attachment #3
Agenda**

**Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 26, 1993**

100 Area General Discussions

- **D & D - Mike Hughes**

- **M-30-05 - Robert E. Peterson**

- **Treatability Studies**
 - **100-HR-1 Excavation Treatability Study - Jil Frain**
 - **Soil Washing Treatability Study - Jim Field**
 - **100-HR-3 Treatability Study - Jim Duncan**

Operable Unit Status - Questions - Naiknimbalkar/Ayres/Krug/Steve Vukelich/Jim Roberts/Kytola

Action Item Status

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Attachment #4

**Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 26, 1993**

Action Item Status List

ITEM NO.	ACTION	STATUS
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. No answer 7/29/92. No additional information (8/26/92). On General Topics Agenda for October (9/23/92). No new information (5/26/93).
1AAMS.15	Provide response to April 2 EPA letter concerning river seeps. Action: Eric Goller (RL) 7/29/92.	Open (7/29/92). In DOE for transmittal (8/26/92). No additional information (5/26/93).
1AAMS.16	DOE should transmit Revision 1 of M-30-01.	Open (7/29/92). In DOE for transmittal (8/26/92). No additional information (5/26/93).

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100-BC-1 SOURCE OPERABLE UNIT WORK SUMMARY

May 26, 1993

Task 11 - Qualitative Risk Assessment:

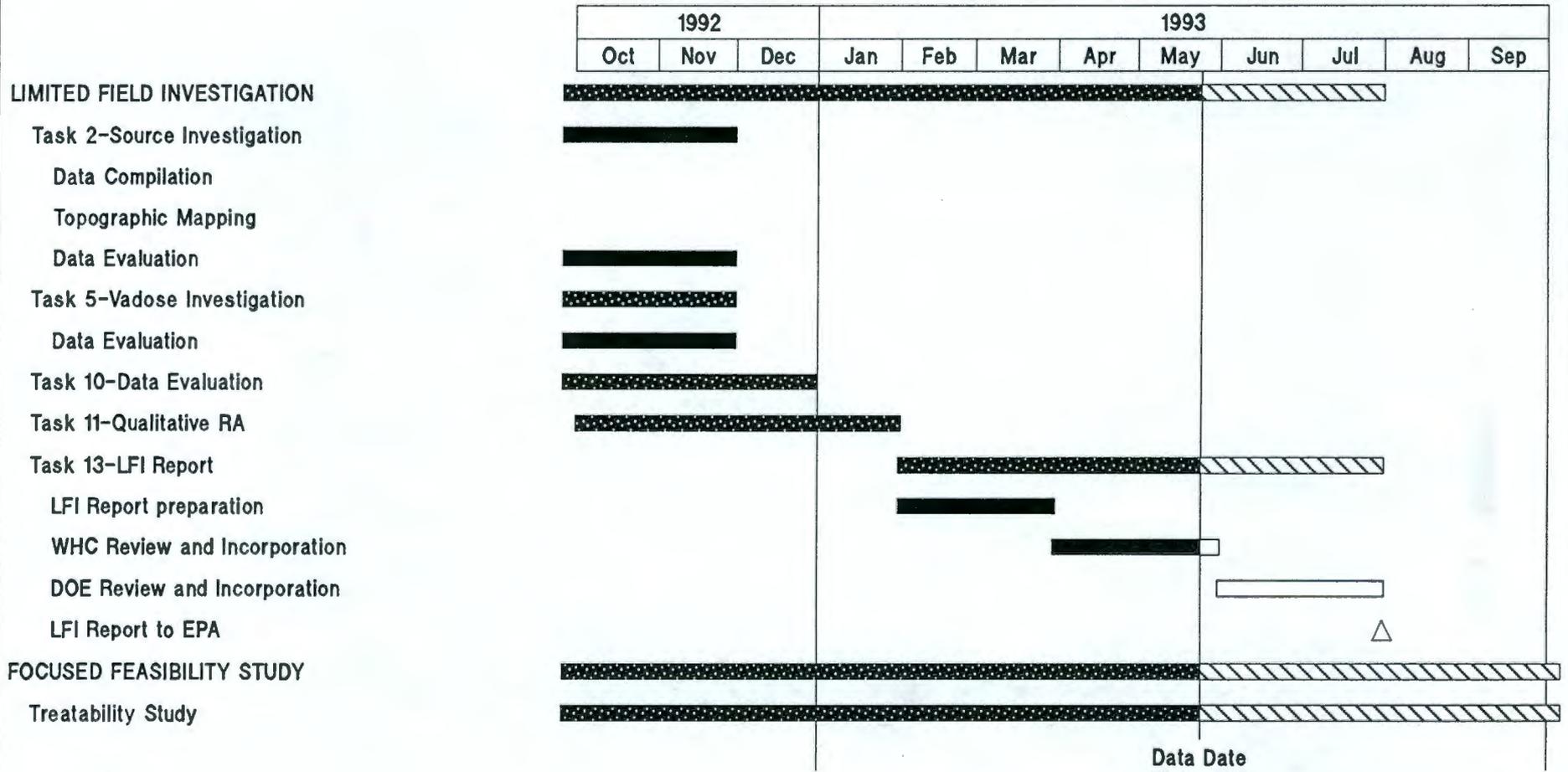
DOE/RL-HQ comments are currently being incorporated into the QRA and LFI.

Task 13 - Limited Field Investigation (LFI) Report:

The report has gone through internal WHC review and comments are being incorporated. Submittal of the document for DOE/RL review is anticipated to be at the end of May 1993.

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100-BC-1 OPERABLE UNIT



Data Date
26 May 93

Summary [hatched box]
Progress [solid black box]

Project: 100-BC-1	DOE-RL 90-07, Rev 0	Date: 21May93 15:32
100-BC-1 Operable Unit Work Plan		
Page: 1	Drawn by ER Program Control-Scheduling	

100-BC-2 SOURCE OPERABLE UNIT WORK SUMMARY

May 26, 1993

RI/FS Work Plan:

DOE/RL - HQ comments have been incorporated and the document is due to EPA and Ecology on May 21, 1993 for review. This work plan addresses all of the remaining source operable unit waste sites in the 100-B/C Area.

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100-BC-5 STATUS

- 1ST QUARTER (JULY), 2ND QUARTER (OCTOBER), 3RD QUARTER (JANUARY), 4TH QUARTER (APRIL) GROUNDWATER SAMPLING COMPLETE. SAMPLING WILL BE ON A SEMI-ANNUAL BASIS STARTING IN OCTOBER 1993.
- SAMPLE VALIDATION REPORTS FOR DRILLING SAMPLE DATA AND 1ST QUARTER GW SUBMITTED DECEMBER 31, 1992
- SAMPLE VALIDATION REPORT FOR 2ND QUARTER GW SUBMITTED APRIL 14, 1993
- LFI REPORT ACTIVITIES IN PROGRESS

100-KR-4 STATUS

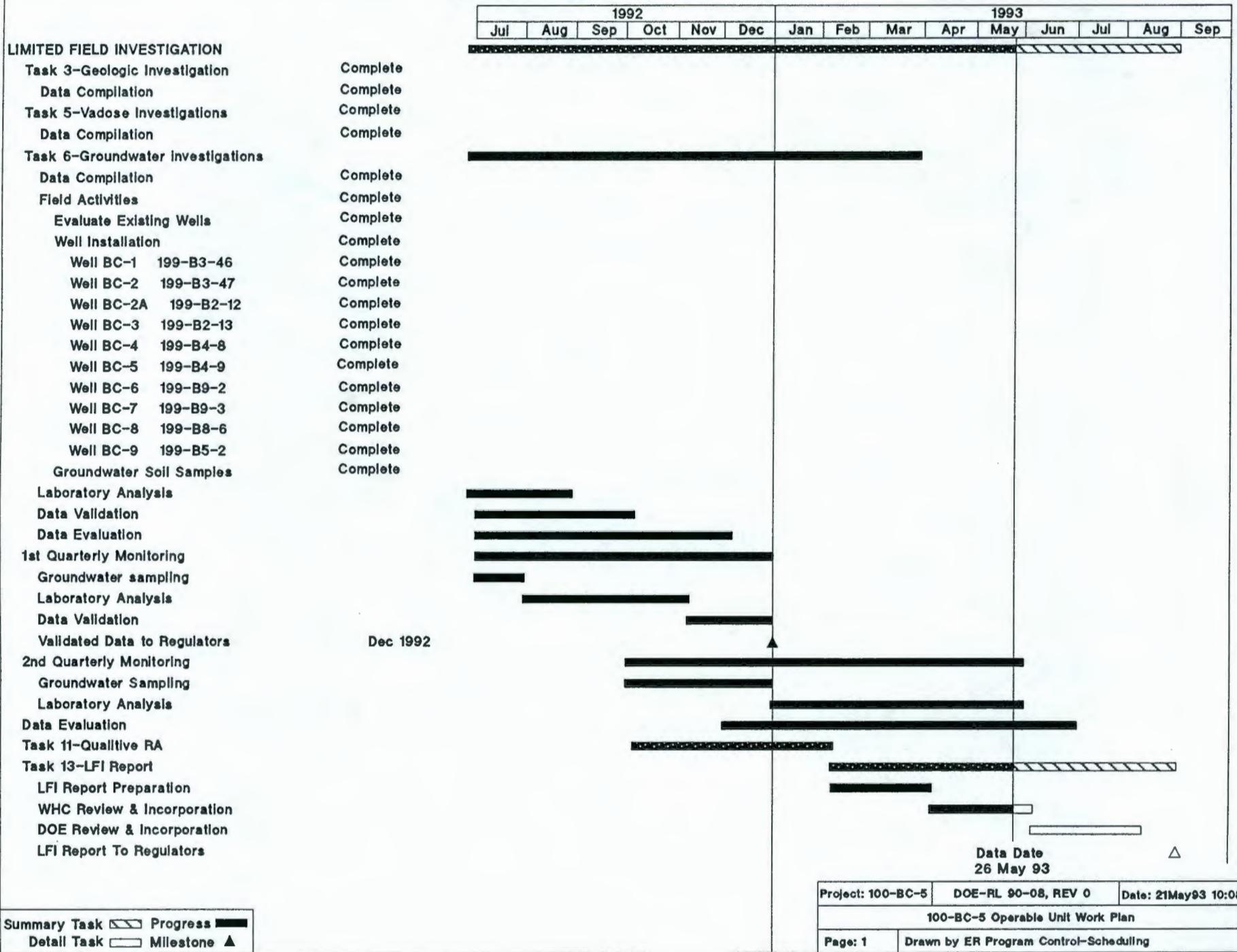
- 1ST QUARTER (SEPTEMBER), 2ND QUARTER (DECEMBER), 3RD QUARTER (MARCH) GROUNDWATER SAMPLING COMPLETE
- SAMPLE VALIDATION REPORTS FOR DRILLING SAMPLE DATA AND 1ST QUARTER GW SUBMITTED MARCH 12, 1993

100-FR-3 STATUS

- ALL FY92 DRILLING ACTIVITIES COMPLETE (DECEMBER)
- 1ST QUARTER (DECEMBER), 2ND QUARTER (APRIL) GROUNDWATER SAMPLING COMPLETE
- SAMPLE VALIDATION REPORT FOR DRILLING SAMPLE DATA SUBMITTED MARCH 12, 1993

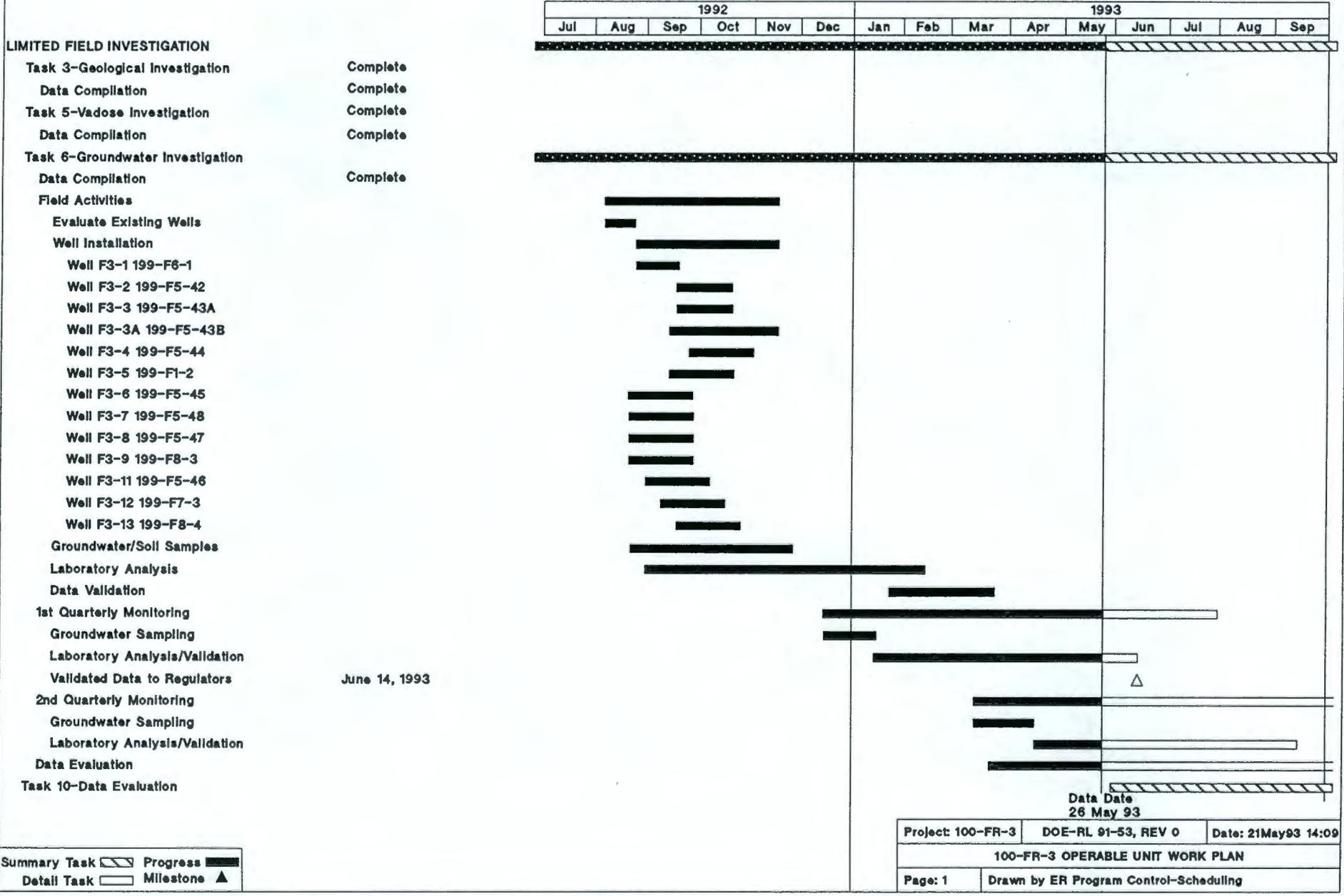
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100-BC-5 OPERABLE UNIT



Summary Task Progress
 Detail Task Milestone

100-FR-3 OPERABLE UNIT



Summary Task Progress
 Detail Task Milestone

Data Date
26 May 93

Project: 100-FR-3	DOE-RL 91-53, REV 0	Date: 21May93 14:09
100-FR-3 OPERABLE UNIT WORK PLAN		
Page: 1	Drawn by ER Program Control-Scheduling	

FY 1993 Activities for 100-DR-1
N.M. Naiknimbalkar

May 1993 Status Report

100-DR-1 DATA VALIDATION STATUS

Nonintrusive Data Validation:

The data validation reports for Electrical Facilities, and 108-D Office Building was submitted to DOE-RL/Regulators.

100-DR-1 QUALITATIVE RISK ASSESSMENT STATUS

Qualitative Risk Assessment
Document Preparation:

SAIC/Golder has prepared this report.

- o Qualitative Risk Assessment Report was received on 3-31-93 and was released through Westinghouse Document Control System on 4-19-93. Copies were submitted to DOE-RL for distribution to Regulators.

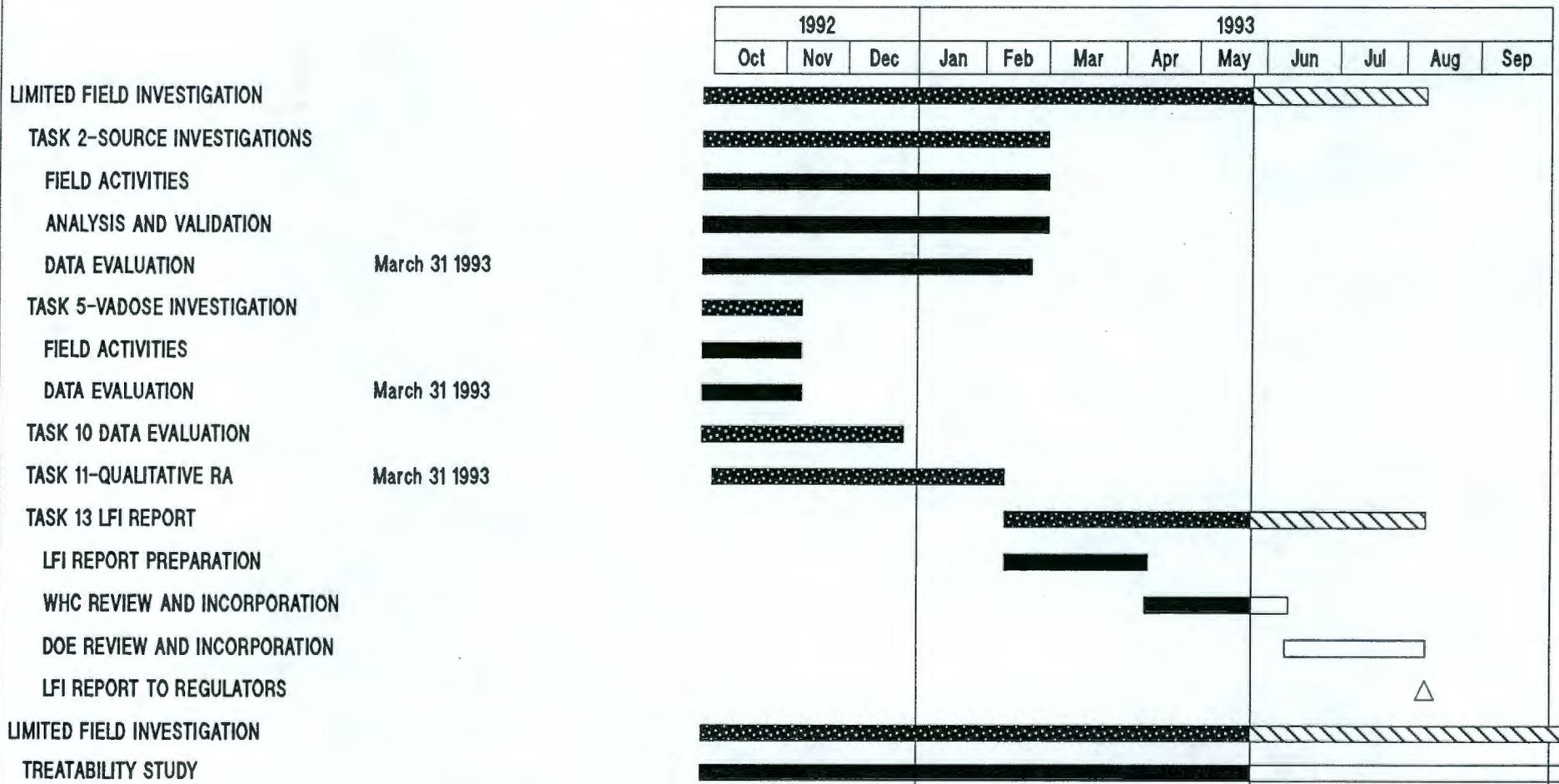
LFI Report

IT is preparing this document.

- o LFI Report Due: 08-09-93.

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100-DR-1 OPERABLE UNIT



March 31 1993

March 31 1993

March 31 1993

Data Date
26 May 93

Project: 100-DR-1 DOE-RL 89-09, Rev 0 Date: 21May93 11:26

100-DR-1 Operable Unit Work Plan

Page: 1 Drawn by ER Program Control-Scheduling

Summary 
Progress 

#5/ Page 9 of 25

OU MANAGERS MEETING - MAY 93

100-FR-1

- Excavation for the four vadose Test Pits (116-F-1B, 116-F-1C, 116-F-3, and 116-F-9D) has been completed. Slightly elevated counts were encountered in the Animal Waste Leach Trench (116-F-9D) and in the Fuel Storage Basin trench (116-F-3). Peak counts in the 116-F-9D were approximately 250 cpm and approximately 2500 cpm in the 116-F-3 trench.
- Preliminary laboratory data from the Vadose boreholes is beginning to arrive.

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100-FR-1 OPERABLE UNIT

LIMITED FIELD INVESTIGATION

Task 2-Source Investigation

- Data Compilation
- Topographic Mapping
- Field Activities

Source Sampling

132-F-1 Chronic Feeding Barn

Sample Analysis

Data Validation

Data Evaluation

Task 5-Vadose Investigation

Field Activities

Mobilization

Drilling/Excavation and Sampling

116-F-6 Liquid Waste Disposal Trench

116-F-3 Fuel Storage (Test Pit)

116-F-1A Lewis Canal

116-F-1B Lewis Canal (Test Pit)

116-F-1C Lewis Canal (Test Pit)

116-F-14 Retention Basin

116-F-2 Basin Overflow Trench

108-F French Drain (Hand Sample)

116-F-9C Animal Waste Trench (BH)

116-F-9D (Test Pit)

116-F-4 Pluto Crib (BH)

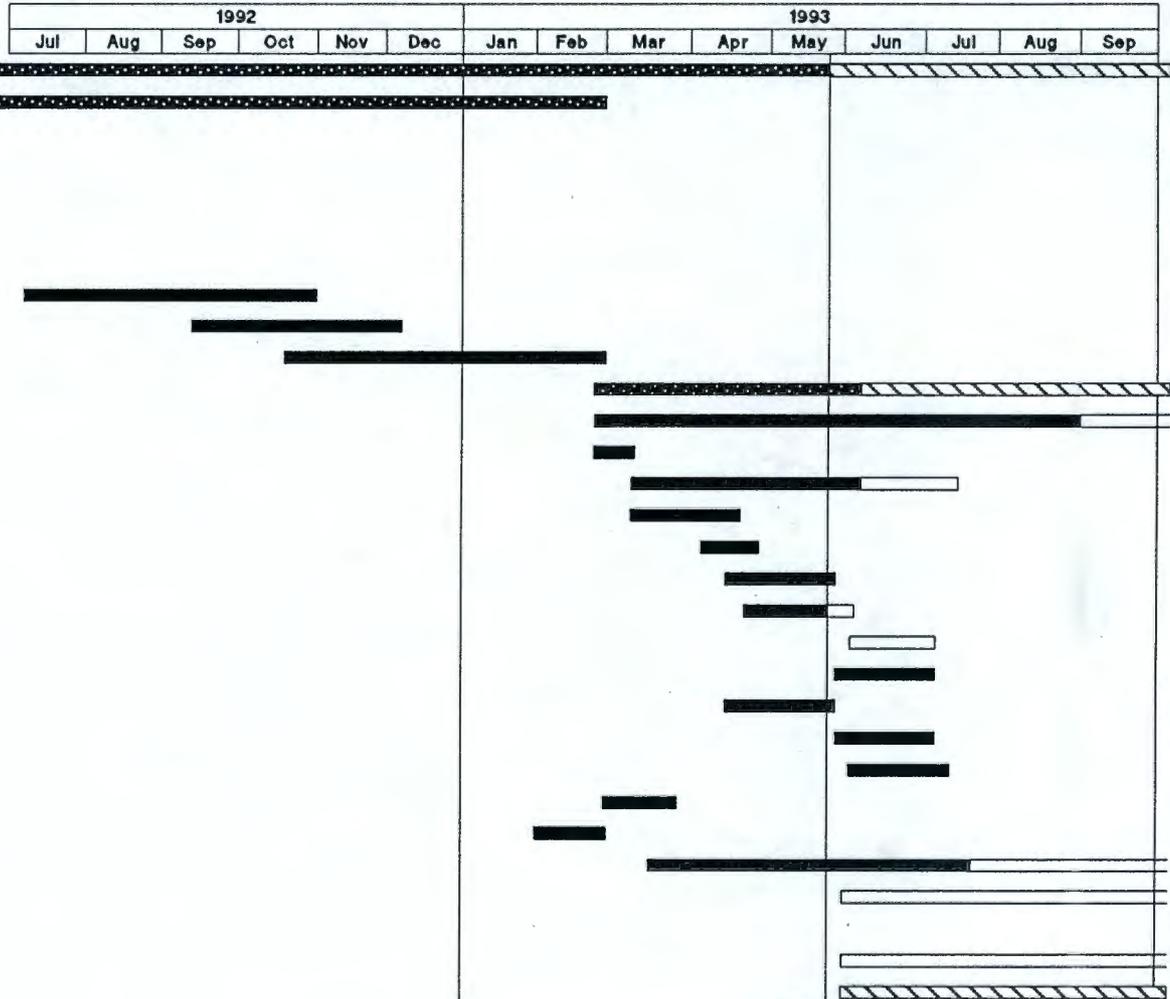
Sample Analysis

Data Validation

Validated Data to Regulators Nov 1993

Data Evaluation

Task 10-Data Evaluation



Summary
 Progress

Data Date 26 May 93		
Project: 100-FR-1	DOE-RL 90-33, REV 0	Date: 21May93 11:29
100-FR-1 OPERABLE UNIT WORK PLAN		
Page: 1	Drawn by ER Program Control-Scheduling	

100 HR-3 GROUNDWATER OPERABLE UNIT
WORK SUMMARY 5/19/93

TASK 6 - GROUNDWATER INVESTIGATION

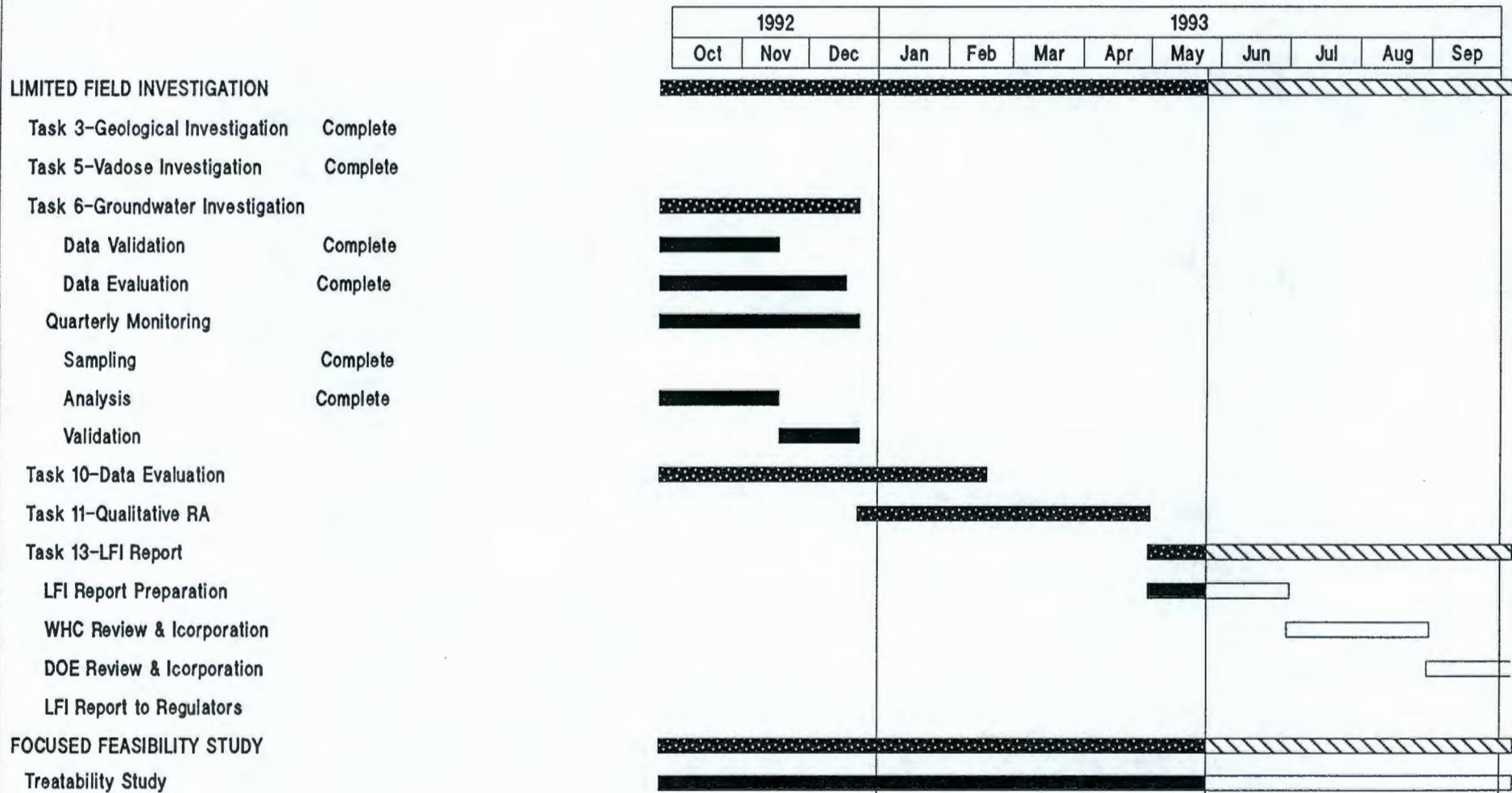
Quarterly Monitoring - Four rounds of groundwater samples have been taken. The fifth round is scheduled for August 1993 and will sample for a reduced analyte list.

Data Validation - First and second round groundwater data has been validated. The third round is being validated.

LFI Report - The LFI Report is in progress and is scheduled for release in August.

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100-HR-3 OPERABLE UNIT

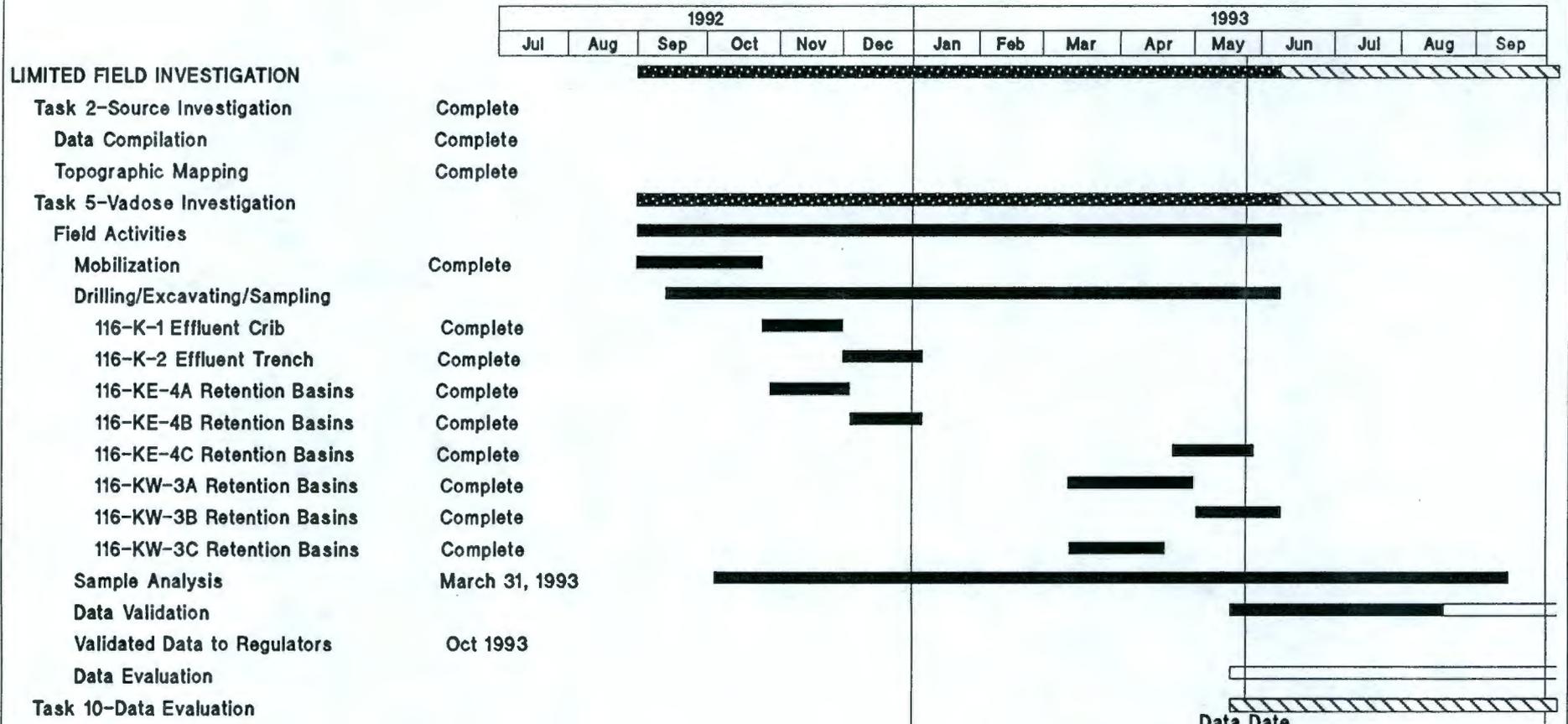


Data Date
26 May 93

Summary 
Progress 

Project: 100-HR-3	DOE-RL 88-36, Rev 0	Date: 21May93 9:00
100-HR-3 Operable Unit Work Plan		
Page: 1	Drawn by ER Program Control-Scheduling	

100-KR-1 OPERABLE UNIT

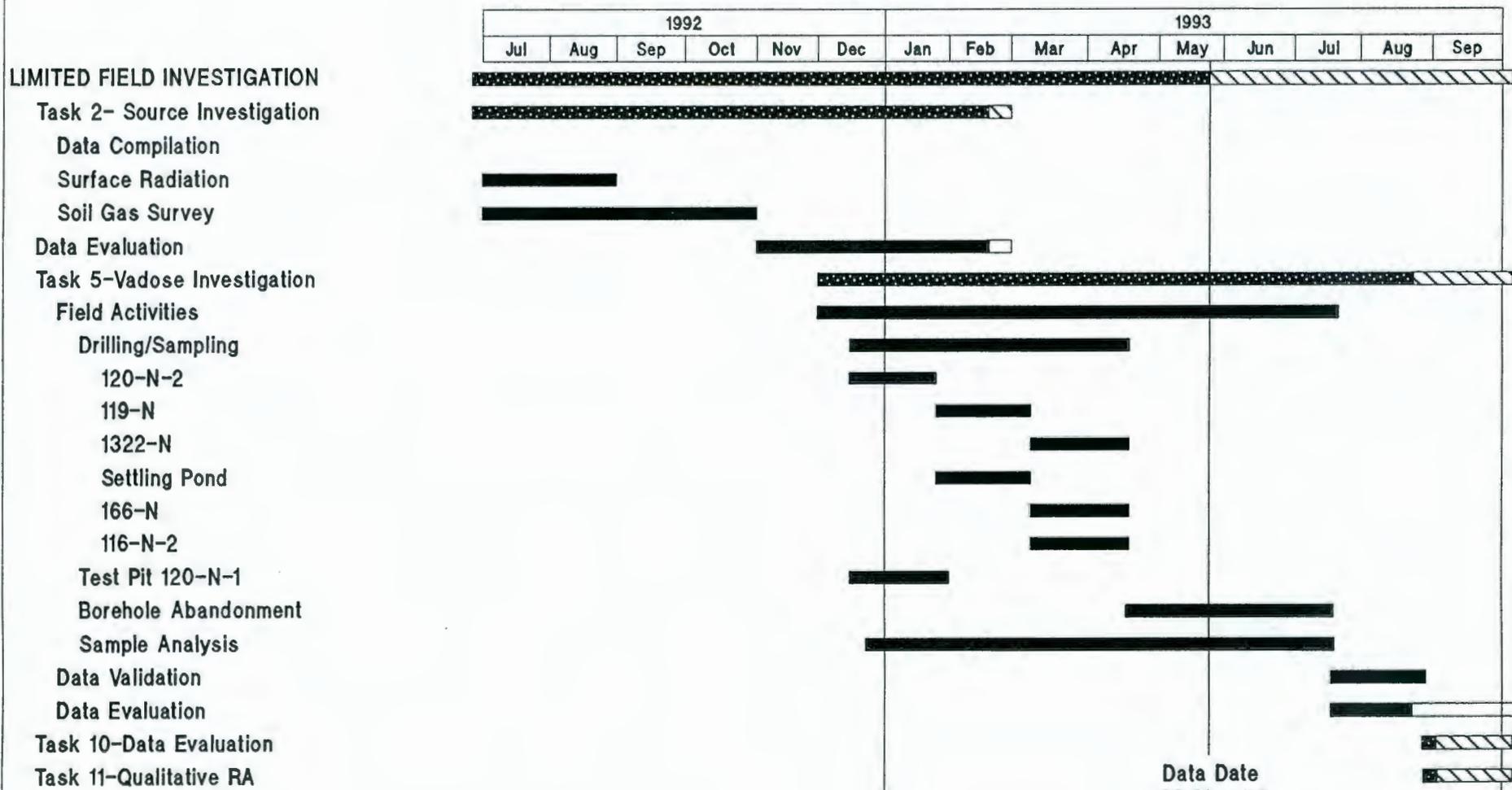


Summary [diagonal lines]
 Progress [solid black]

Data Date
26 May 93

Project: 100-KR-1	DOE-RL 90-20, REV 0	Date: 21May93 9:11
100-KR-1 OPERABLE UNIT WORK PLAN		
Page: 1	Drawn by ER Program Control-Scheduling	

100-NR-1 OPERABLE UNIT



Data Date
26 May 93

Summary 
Progress 

Project: 100-NR-1	DOE-RL	Date: 21May93 9:58
100-NR-1 OPERABLE UNIT WORK PLAN		
Page: 1	Drawn by ER Program Control-Scheduling	

100 NR-2 GROUNDWATER OPERABLE UNIT
WORK SUMMARY 5/19/93

TASK 6 - GROUNDWATER INVESTIGATION

Quarterly Monitoring - Three rounds of groundwater samples have been taken.

Data Validation - The soil data has been validated.

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Status of 100-Area Wide Activities
May 1992

River Impact Studies

Regulator Review of Columbia River Impact Evaluation Plan. EPA and Ecology commented on Draft B of the Columbia River Impact Evaluation Plan; the comment responses were sent to the regulators on 4/29/93. When the approval is given, a public review draft will be distributed (Primary Document)

River sediment sampling field work completed. The last sample results have just been returned from the lab and are being readied for validation. Report preparation has begun.

Cultural Resources Investigations

Evaluations of past excavations (from 100-K) and consultations with State Historic Preservation Office continues; results of radiocarbon dating have not yet been received.

100-Area Ecological Investigations

Aquatic Sampling report has recently been distributed

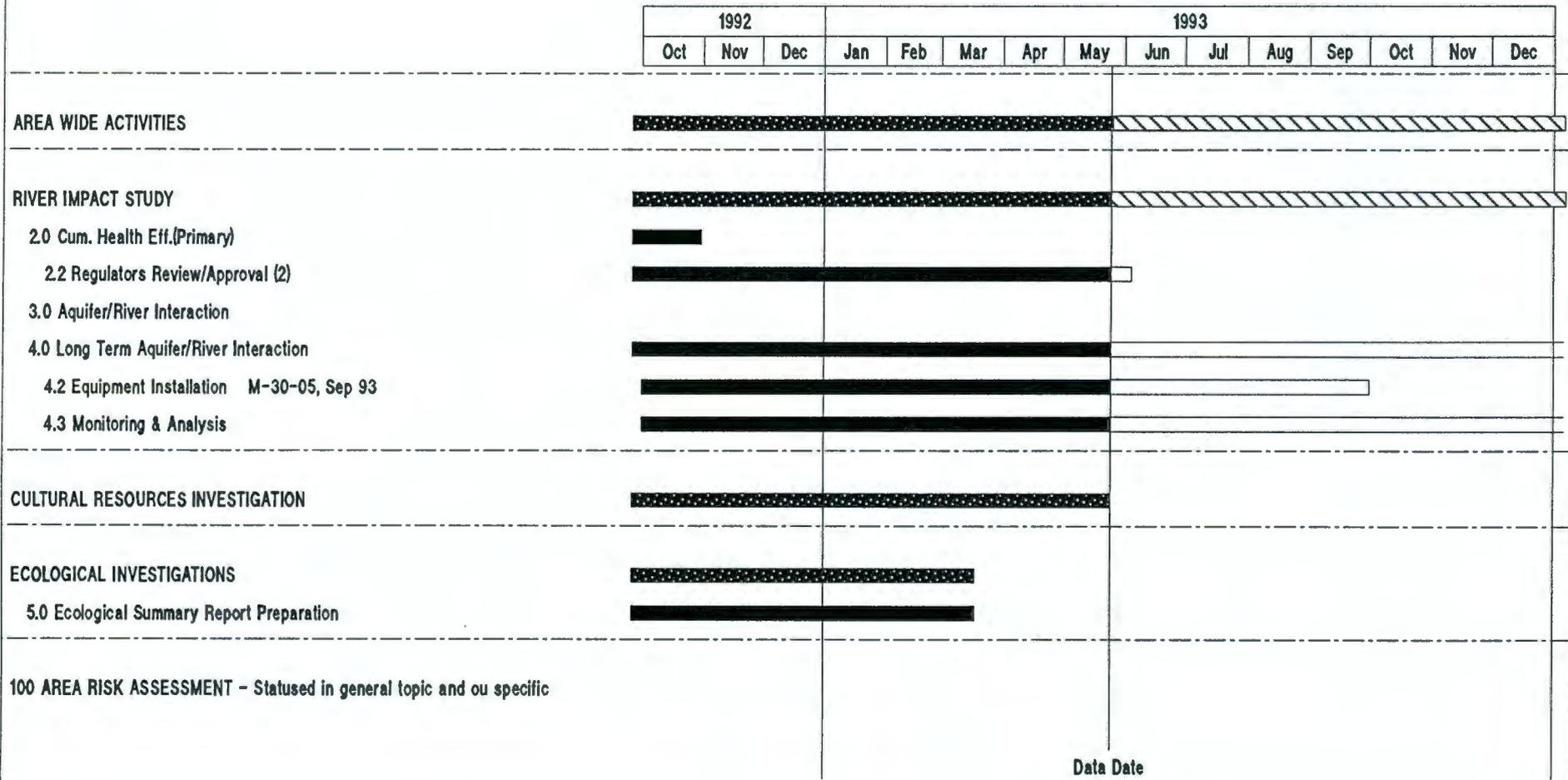
Work has begun to delineate habitats of concern as identified in the Hanford Site Baseline Risk Assessment Methodology Report and the Columbia River Impact Evaluation Plan. (No change)

Statements of work have been issued to PNL to 1) perform a literature search on the ecotoxicology of contaminants of concern for ecological investigations, and 2) make recommendations on methodologies for developing river sediment quality criteria.

A draft of the 100 Areas CERCLA Ecological Investigations report, with analysis of sample results, is in initial review.

9312972-0306

100-AREA WIDE ACTIVITIES



Data Date
26 May 93

Project: 100-AREA WIDE	DOE-RL	Date: 21May93 13:30
100 AREA WIDE ACTIVITIES		
Page: 1	Drawn by ER Program Control-Scheduling	

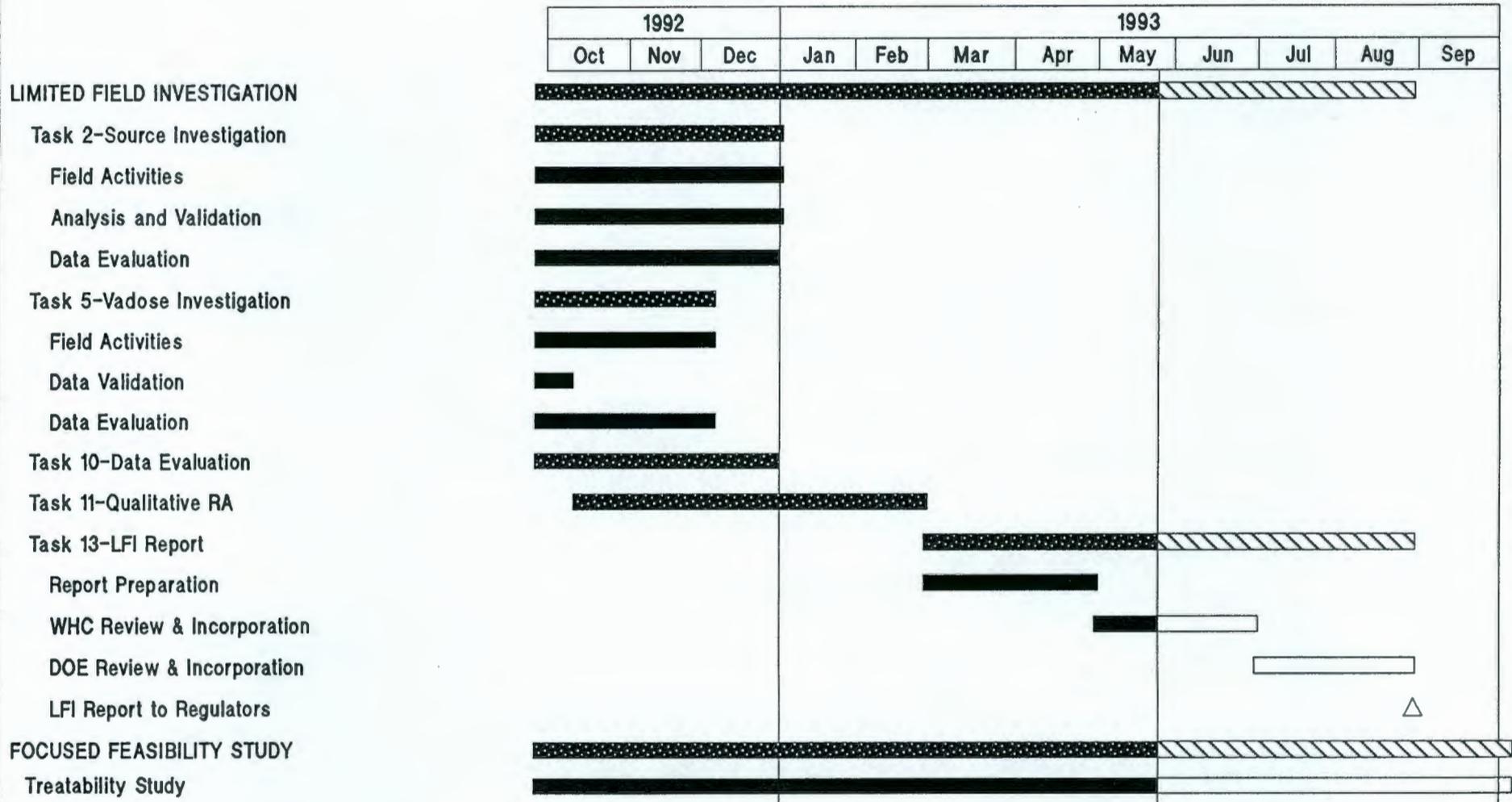
SUMMARY [diagonal lines icon]
PROGRESS [solid black icon]

100-HR-2

- Geophysical Exploration of select burial grounds has commenced. This survey is to confirm cell orientations and boundary extent. Selected sites are 118-H-1, 118-H-2, 118-H-3, and the Buried Thimble site. Other sites may be further investigated when needed.

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100-HR-1 OPERABLE UNIT



Data Date
26 May 93

Project: 100-HR-1	DOE-RL 88-35, Rev 0	Date: 21May93 10:11
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100-HR-1 Operable Unit Work Plan

Page: 1	Drawn by ER Program Control-Scheduling
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Summary	
Progress	

100 AREA TREATABILITY STATUS
Soil Washing

May 1993, Unit Managers Meeting

Soil washing tests are on schedule. Wet sieving of samples from the 116-D-1B trench and the test pit near the middle of the 116-C-1 trench has been completed. Preliminary gamma scanning by particle size has been completed for soils from the 116-D-1B trench. The radioactivity level in coarse soils from 116-D-1B was found to be two to three orders of magnitude lower than in soil particles less than 0.25 mm. The soils in 116-D-1B are mostly coarse sand with 80% to 85% of the particles greater than 0.25 mm in diameter.

PNL has indicated that a visit to the laboratory may be scheduled any time during the first week of June.

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DON'T SAY IT --- Write It!

DATE: May 10, 1993

TO: Jack Donnelly, Ecology Kennewick FROM: Eric Goller, RL A5-19
Paul Beaver, EPA B5-01 Telephone: 376-7326

cc: Jim Patterson, WHC H6-27 (w/o atts.)
Bob Henckel, WHC H6-02 (w/o atts.)
Alan Krug, WHC H6-02 (w/o atts.)
Bob Scheck, D&M G1-01
Kay Kimmel, D&M G1-01 (w/o atts.)

SUBJECT: 100-DR-1 OU LFI SOURCE INVESTIGATION VALIDATED DATA

Attached please find a document reporting validated data summaries from 100-DR-1 OU LFI source investigations. The document title and WHC identification number are:

WHC-SD-EN-TI-145 Data Validation Report for the 100-DR-1 Operable Unit
Electrical Facilities, rev. 0.

Please feel free to contact me with any comments or questions regarding this document. In addition, comments or questions regarding the technical elements of this document can be directed to Bob Henckel (376-2091) or Alan Krug (376-5634).

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DON'T SAY IT --- Write It!

DATE: May 10, 1993

TO: Dennis Faulk, EPA
Ted Wooley, Ecology

B5-01
Kennewick

FROM: Eric Goller, RL

A5-19

Telephone: 376-7326

cc: Jim Patterson, WHC H6-27 (w/o atts.)
Bob Henckel, WHC H6-02 (w/o atts.)
Alan Krug, WHC H6-02 (w/o atts.)
D Goswami, Ecology Kennewick (w/o atts.)
Bob Scheck, D&M G1-01
Kay Kimmel, D&M G1-01 (w/o atts.)

SUBJECT: 100-BC-5 OU LFI GROUNDWATER INVESTIGATION VALIDATED DATA

Attached please find a document reporting validated data summaries from 100-BC-5 OU LFI groundwater investigations. The document title and WHC identification number is:

WHC-SD-EN-TI-139 Data Validation Report for the 100-BC-5 Operable Unit
Second Round, rev 0.

Please feel free to contact me with any comments or questions regarding this document. In addition, comments or questions regarding the technical elements of this document can be directed to Bob Henckel (376-2091) or Alan Krug (376-5634).

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DON'T SAY IT --- Write It!

Attachment #6

Page 1 of 1

DATE: May 26, 1993

TO: 100-B/C Area Unit Managers

FROM: K. O. Kytola H6-02

Telephone: 2-1662

cc: A. D. Krug H6-02
R. P. Henckel H6-02

RPH

SUBJECT: **WASTE CONTRAL PLAN FOR THE 100-BC-2 FIELD INVESTIGATIONS**

Attached for your review and approval is the waste control plan for the 100-BC-2 Limited Field Investigation (LFI) wastes. This plan identifies the waste control site as the same site that is currently storing the waste generated by the 100-BC-1 LFI. Please be prepared to sign the waste control plan on June 4, 1993.

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DON'T SAY IT --- Write It!

DATE: May 26, 1993

TO: 100-B/C Area Unit ManagersFROM: K. O. Kytola H6-02Telephone: 2-1662cc: A. D. Krug H6-02
R. P. Henckel H6-02APHSUBJECT: DESCRIPTION OF WORK FOR THE 100-BC-2 VADOSE INVESTIGATION

Attached for your review and approval is the "Description of Work for the 100-BC-2 Vadose Boreholes: 116-C-2A Crib and 116-C-2C Sand Filter. These activities are in association with the 100-BC-2 Operable Unit work plan that is currently out for regulatory review. Please review and sign the Description of Work by June 14, 1993. The field activities are scheduled to begin on July 1, 1993.

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WASTE CONTROL PLAN REV 1

The document is revised to relocate the KR-1 waste from current location to a new location within KR-1 Operable Unit. (See attachment 2)

Work Scope Description Task 5 (Vadose Investigation) of 100-KR-1 and Task 6 (Groundwater Investigation) of 100-KR-4 Operable Units.

List Constituents of Concern See attachment 1

Site Description 100-KR-1 and 100-KR-4 Operable Units, Hanford Site, Richland, Washington.

References DOE/RL-90-20 and DOE/RL-90-21 Rev. 0 Date Approved September 1992

Safety Class 3 Impact Level 3

N.M. Naiknimbalkar *N.M. Naiknimbalkar* Date 5-12-93
Preparer/Project RI Coord. Print/Sign Name

Field Team Leader/

Cognizant Engineer T. Spicer IDW Coordinator L. Russell/G. Hopkins

Planned Start and Finish Dates: From May 1992 To June 1992

Waste Storage Facility ID Number(s) N/A

Field Screening Methods

Method	Frequency	Reference	Detection Range	Analyst
OVM	Continuous	EII 3.4	.1-1000 ppm	Geologist
GM	Per RWP	WHC IP 0692	0-100,000cpm	HPT
PAM	Per RWP	WHC IP 0692	0-100,000cpm	HPT
Ludlum (19c)	Continuous	EII 3.4	0-100,000cpm	Geologist
pH	Ex Borehole	Per HWOP	1-14	Geologist
Colorimetric Tubes	Per HWOP	Per HWOP	Varies with	Site Safety Officer containment

Methods of Validating Field Screening Data

Method	Frequency	Reference	Threshold	Analyst
Calibration of	Per EII 3.2	Per EII 3.2	Per EII 3.2	Geologist

Instrument _____ Site Safety Officer

HPT

APPROVALS (Print/Sign Name and Date)
N.M. Naiknimbalkar *N.M. Naiknimbalkar* 5/13/93
 Project/RI Coordinator
T.W. Spicer *T.W. Spicer* 5/17/93
 Field Team Leader/Cognizant Engineer

G.G. Hopkins *G.G. Hopkins* 5-17-93
 IDW Coordinator
Gary Corrigan *Gary Corrigan* 5-13-93
 Quality Assurance (if required)

Safety Function: N/A

9312972.0315

WASTE CONTROL PLAN REV 1

#8/ Page 2 of 4

Waste Site Coordinate Location See attachment 2 for location of waste sites
116-K-1, 116-K-2, 116-KE-4A, 116-KW-3A

Waste Container Storage Area(s) Coordinate Location(s) See attachment 2. The location has been verbally
approved by Unit Managers during April UM meeting. NK5880 / WK3660 (116-K-1 Crib Fences
Area)

Requirements for Soil Pile Sampling (if any) N/A

Nonregulated Material Disposal Location(s) Central Waste Landfill (paper, plastic, etc.) Soils, water
and slurry will be dumped near borehole or well outside exclusion zone.

Sketch of Work Site

See attachment 2.

APPROVALS (Print/Sign Name and Date)

L.E. Gadbois *LE Gadbois*, May 17, 1993
Lead Regulatory Agency Representative

Eric Goller *Eric Goller* 5/12/93
DOE/RL

N.M. Naikimbalkar *N.M. Naikimbalkar* 5/12/93
Project/RI Coordinator

9312972.0316

WASTE CONTROL PLAN REV 1 #8/Page 3 of 4
100-KR-1 and 100-KR-4 Operable Units

List of Analytes (Soil Samples)

ICP/AA metals
Mercury
Cyanide
VOA
Semi-VOA
PCB's/Pesticides
Anions
 Fluoride
 Nitrate
 Sulfate

Gross alpha
Gross beta
Gamma spec.
Sr-90
C-14
U-235, 238
Pu-239, 240
Am-241
Total Activity
(222S Lab)

List of Analytes (Groundwater)

ICP/AA metals
Mercury
Cyanide
VOA
Semi-VOA
PCB's/Pesticides
Anions
 Fluoride
 Sulfate

pH
Conductivity
Gross alpha
Gross beta
Gamma spec.
Sr-90
U-235, 238
Pu-239, 240
Am-241

C-14
Tritium
Tc-99
Total Activity
(222S Lab)

ATTACHMENT 1

9312972.0317

STATUS OF M-30-05 ACTIVITIES

" Install equipment and initiate monitoring activities to perform long-term evaluation of river/aquifer interaction . . . " (September 1993)

9312972.0319

STATUS OF M-30-05 ACTIVITIES Continued . . .

EPA Comments on DOE/RL-92-64 (M-30-04)

- **Comment responses informally transmitted at 4/28/93 unit managers' meeting -- formal transmittal in process**

Field Equipment Installations

- **Continued operations at 100-B, 100-H, and 100-F Areas; conductivity probe at 100-H**
- **Obtained data from temporary arrays at 100-K (February), 100-D (April), and 100-F (May)**
- **New automated stations completed in May at 100-K and 100-D; remaining stations at 100-F, 100-B, and 100-H planned for June**

9312972.0320

STATUS OF M-30-05 ACTIVITIES Continued . . .

Initiate Monitoring Activities for Long-Term Evaluation

- **Draft planning document covers tasks associated with M-30-05, including equipment installations and applications for data**
- **Satisfies need to document M-30-05 activities regarding "Installation of field equipment" and "Initiation of monitoring activities"**
- **Synopsis of plan included with NPL Agreement regarding milestone completion criteria**

9312972.0321

STATUS OF M-30-05 ACTIVITIES Continued . . .

Tasks include in NPL Agreement

- **Analyze Existing Information on Groundwater Direction and Rate of Flow (Update to Hartman and Peterson, 1992)**
- **Deploy Temporary Transducer Arrays**
- **Install Automated Water Level Recorders**
- **Continue Steel Tape Measurements**
- **Obtain Borehole Velocity Measurements**
- **Initiate Field Activities for Bank Storage/River Interaction Studies**
- **Maintain Field Data Logger Systems Capability**

9312972.0322

STATUS OF M-30-05 ACTIVITIES Continued . . .

Task 1: Analyze Existing Flow Regime Information

- **Regional Flow Regime**
- **For each reactor area:**
 - > **Water Table Maps (Historical conditions, seasonal high and low; flow direction and gradients; inland extent of river influence)**
 - > **Hydrostratigraphy (Units; profiles perpendicular and parallel to river)**
 - > **Vertical Gradients, Other Results . . .**
- **Columbia River Flow Characteristics**
 - > **Hydrographs from river stations, gradients**
- **Aquifer Test Results**

9312972.0323

9312972.0324

100-HR-3 GROUNDWATER TREATABILITY TESTS

5

EX SITU REDUCTION/PRECIPITATION - ION EXCHANGE

- **CURRENT STATUS**

- COMPLETED THE CHROMIUM REDUCTION/PRECIPITATION TESTS
- SAMPLES ARE AWAITING LABORATORY ANALYSIS
- FORMATION OF A NON SETTLEABLE PINFLOC (COLLOIDIAL SUSPENSION)
 - CORRECTIVE ACTIONS: POLYELECTROLYTE POLYMER

- **NEXT LABORATORY PHASE**

- BEGAN THE URANYL PHOSPHATE PRECIPITATION TESTING
- ION EXCHANGE RESINS BEING CONDITIONED

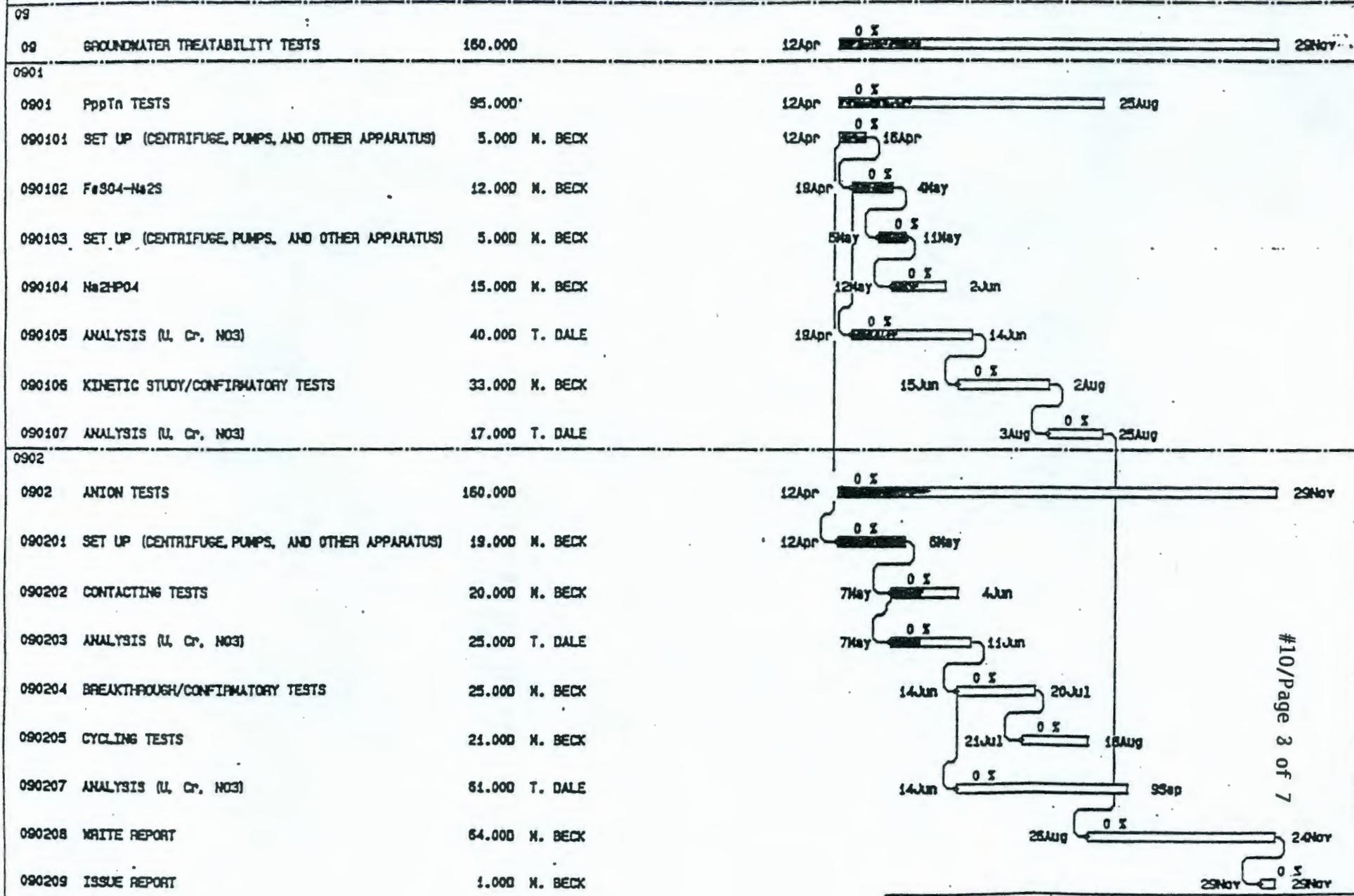
Exs: Removal of
Chromate, Nitrate, & Uranium (VI)

Actual setup bal. January 27, 1993.

9312972-0326

CODE1

1993									
3Feb	4Mar	1Apr	5May	4Jun	2Jul	3Aug	8Sep	6Oct	3Nov



#10/Page 3 of 7

Legend
Early CPM

Project: GWT	GWT	Date: 9Apr93 11:52
GROUNDWATER TREATABILITY TESTS		
Page: 1	Drawn by QNIXNET Graphics	

BIODENITRIFICATION

- **CURRENT STATUS**

- EXPERIMENTS ON THE EFFECT OF pH HAVE BEEN COMPLETED

- EXPERIMENTS BEGINNING ON:

- CARBON RATIOS;

- TEMPERATURE;

- CARBON SOURCE.

04/30/93 10:45 509 376 1867 324 BLDG PNL 740 STEVENS 1219 002

ID	Name	Scheduled Start	Scheduled Finish	1993											
				Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	100-HR-3 BIODENITRIFICATION	11/26/92	1/7/94	[Summary bar]											
2	QUALITY ASSURANCE	11/29/92	1/7/94	[Summary bar]											
3	PREPARE TEST DOCUMENTS	11/26/92	2/10/93	[Summary bar]											
9	TEST SET UP	2/2/93	3/30/93	[Summary bar]											
16	TESTING	3/25/93	8/2/93	[Summary bar]											
17	Task 3.4.1 Inhibition Tests	3/25/93	4/19/93	[Summary bar]											
24	Task 3.4.3 pH Tests	4/14/93	5/14/93	[Summary bar]											
31	Task 3.4.2 Carbon Ratios	5/4/93	6/4/93	[Summary bar]											
38	Task 3.4.4 Temperature	5/11/93	6/4/93	[Summary bar]											
45	Task 3.4.5 Carbon Source	5/16/93	7/2/93	[Summary bar]											
52	Task 3.4.6 Large Volume Denitrification	5/26/93	7/8/93	[Summary bar]											
60	Task 3.4.7 Final Confirmation Tests	7/6/93	7/30/93	[Summary bar]											
68	Data Analysis and Draft Final Report Preparation	4/27/93	7/30/93	[Summary bar]											
69	Submit Draft Report to WHC	8/2/93	8/2/93	[Milestone diamond]											
70	FINAL REPORT REVIEWS	8/2/93	1/7/94	[Summary bar]											
76	ISSUE FINAL REPORT	1/7/94	1/7/94	[Milestone diamond]											

Project: 100 Area Biodenitrification
Date: 4/30/93

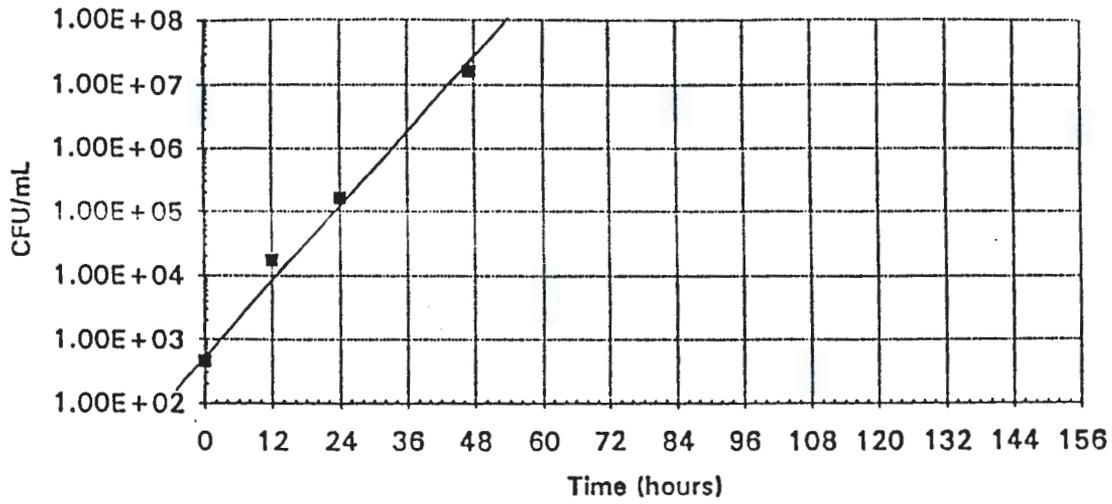
Critical [white bar]
Noncritical [black bar]

Progress [white bar]
Milestone [diamond]

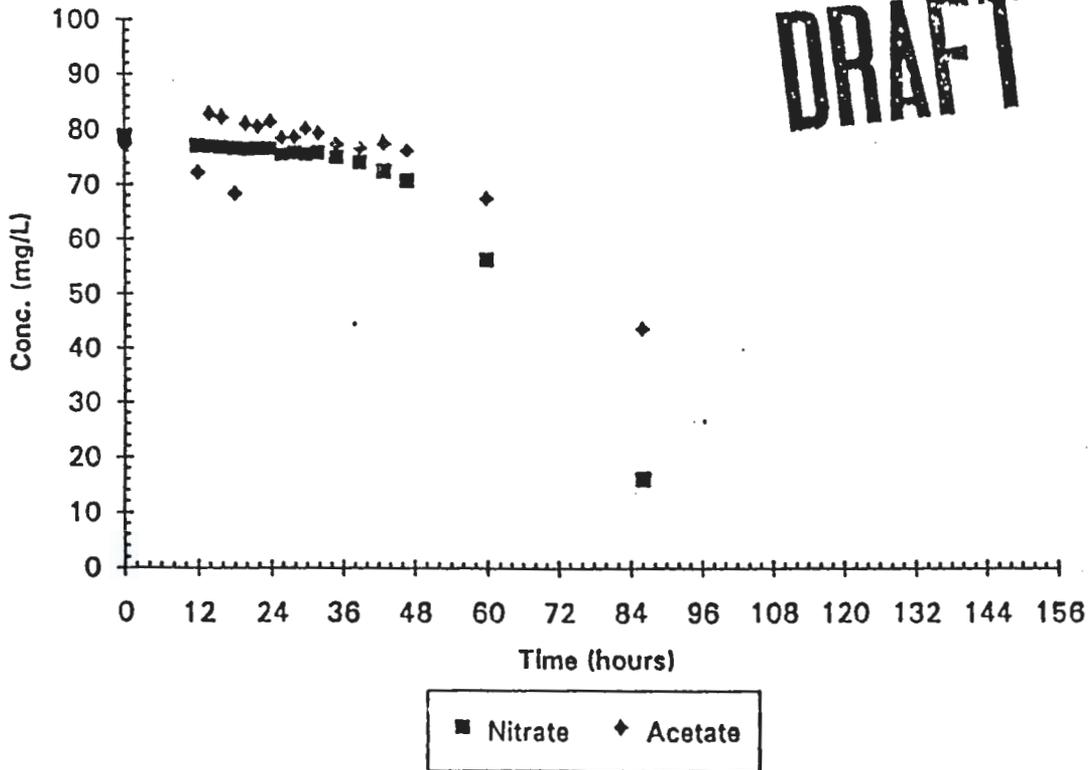
Summary [white bar]
Rolled Up [diamond]

9312972.0330

Composit Sample - pH 8



Composit Sample - pH 8



116-C-2C Pluto Crib Sand Filter 100-BC-2 Operable Unit

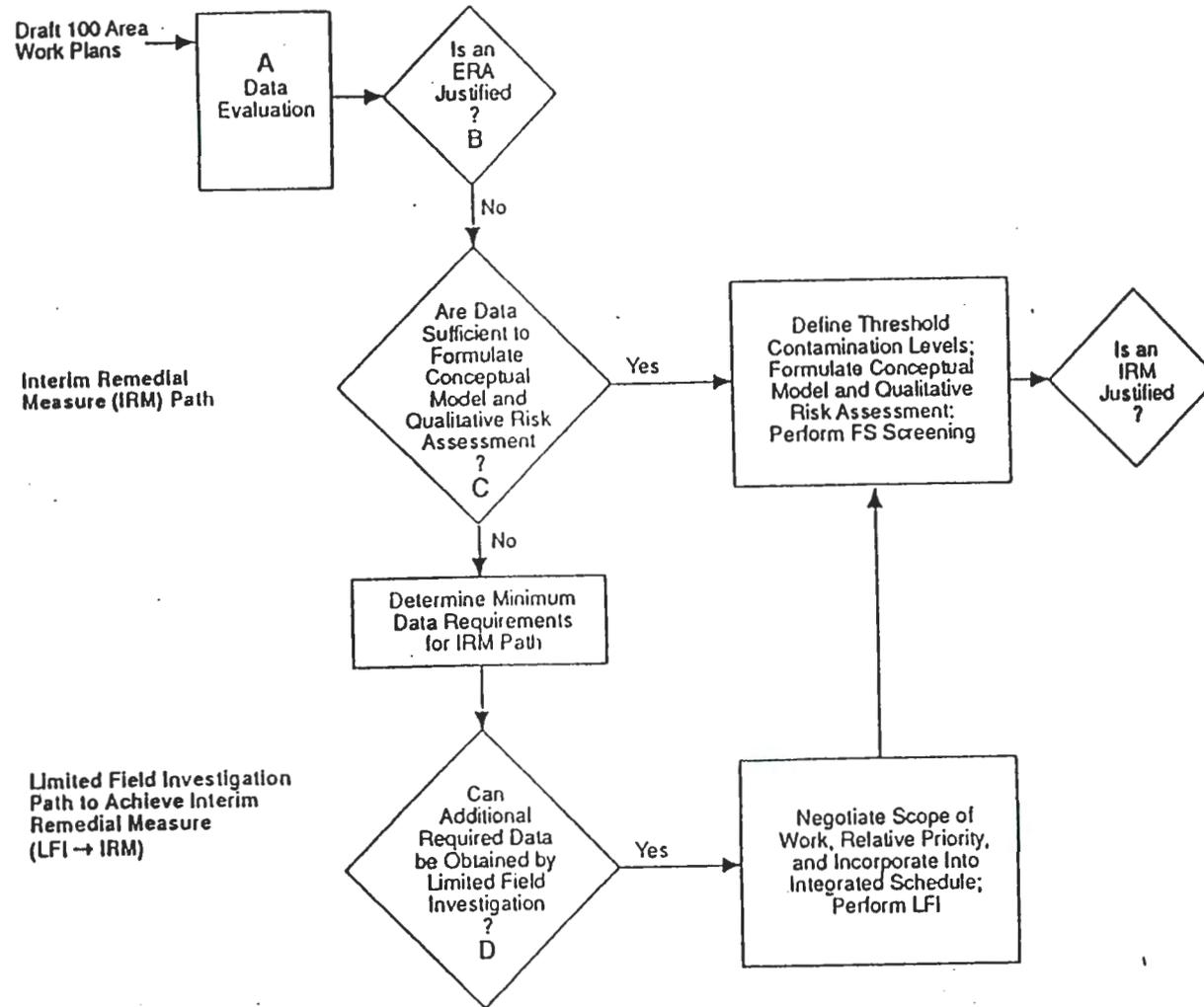
Proposal to not perform additional limited field sampling.

Presented at the April 1993 Unit Managers Meeting

April 28, 1993

9312972.0391

Interim Remedial Measure (IRM) Pathway



Interim Remedial Measure (IRM) Path

Limited Field Investigation Path to Achieve Interim Remedial Measure (LFI → IRM)

Based on Hanford Site Past-Practice Strategy

Are data sufficient to:

- **Formulate the Conceptual Model?**
- **Perform a Qualitative Risk Assessment?**

Background Information

Years in service:

17 years (1952-1969)

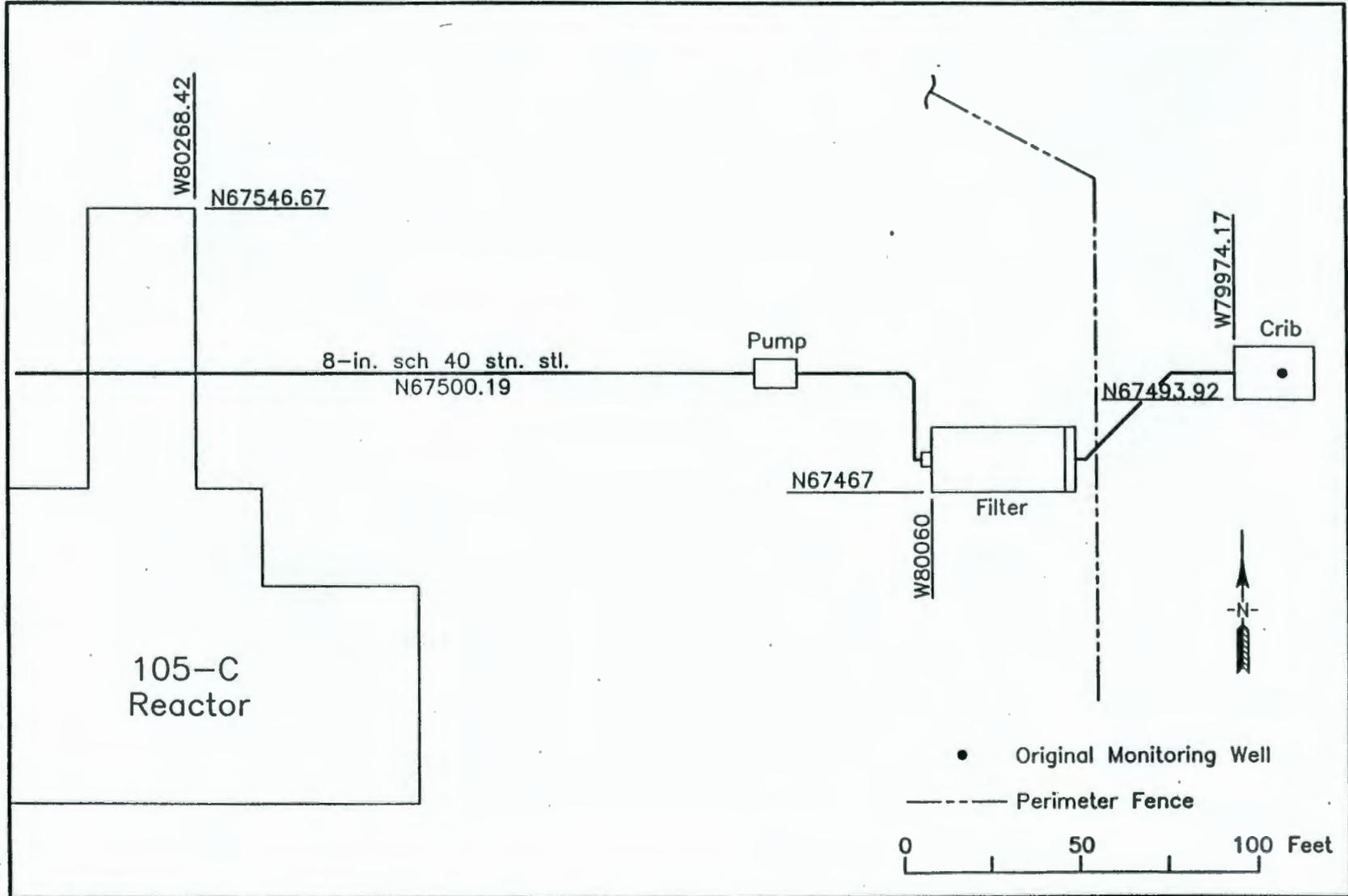
Waste Received:

Contaminated reactor cooling water from fuel cladding failures, spacer and hardware decontamination, and irradiated fuel examination facility wastes. Estimated total volume: 7,500,000 Liters.

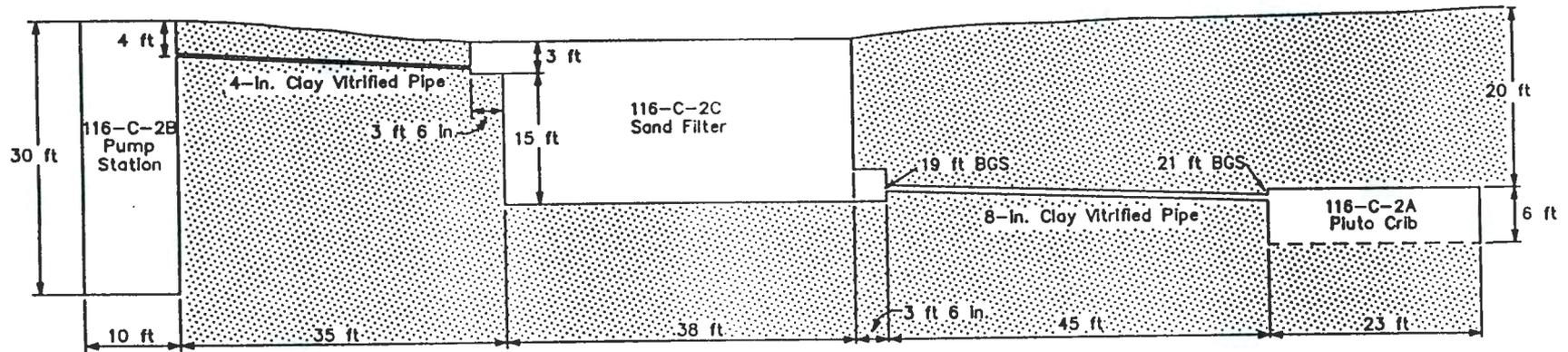
Dimensions:

18 ft wide X 38 ft long X 18 ft deep

116-C-2 Pluto Crib System (Top View)

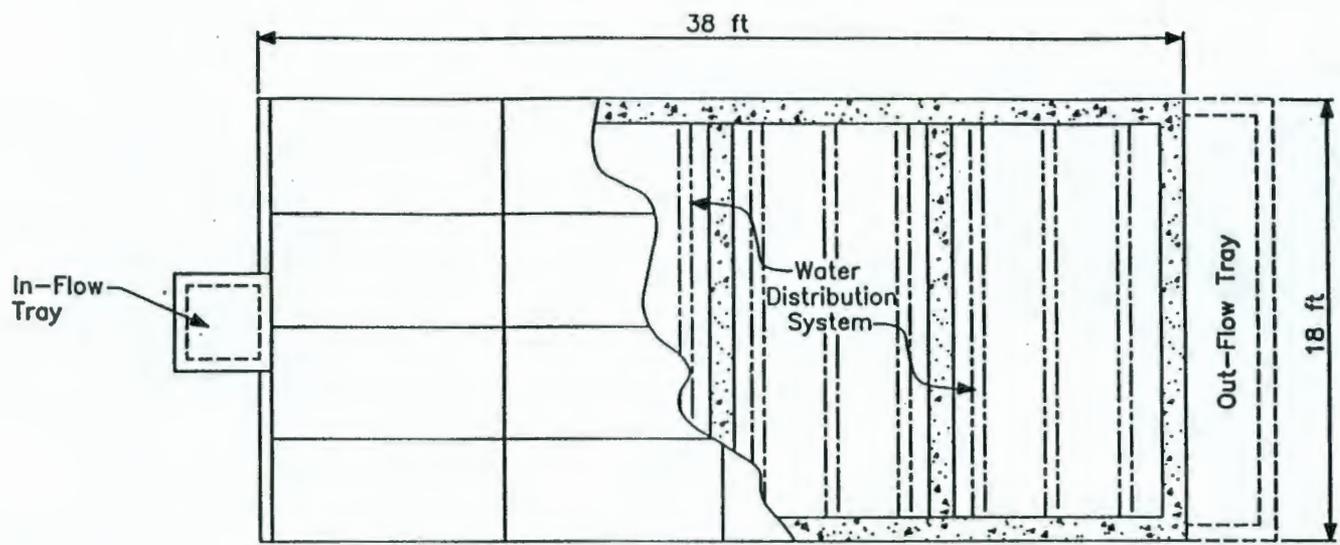


116-C-2 Pluto Crib System (Side View)

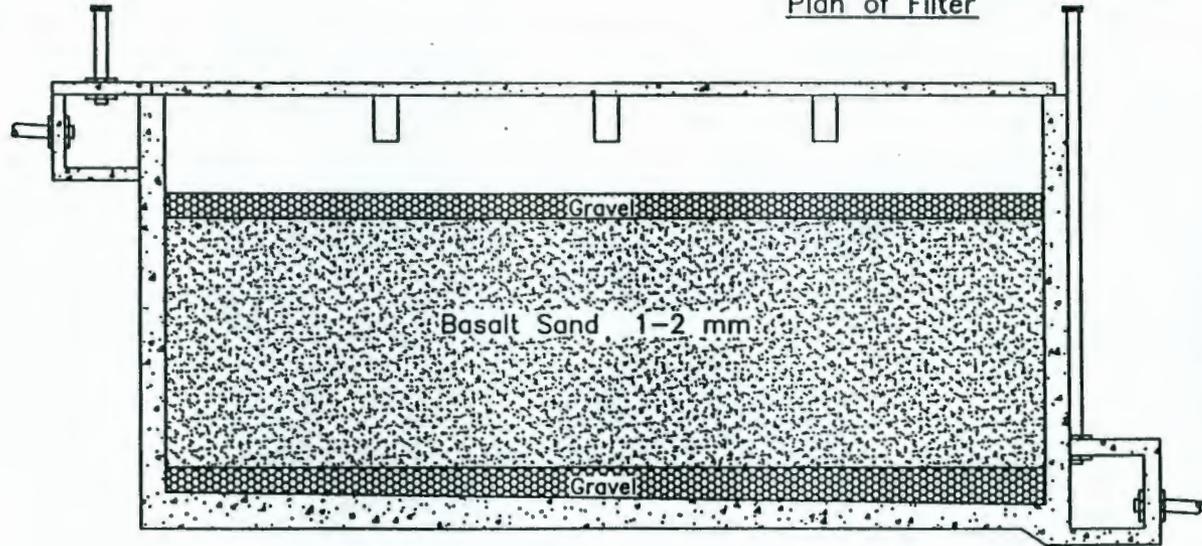


KOK\020193-D

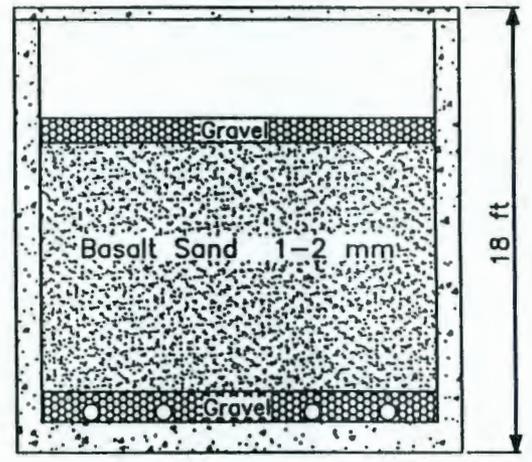
116-C-2C Sand Filter



Plan of Filter



Typical Longitudinal Section



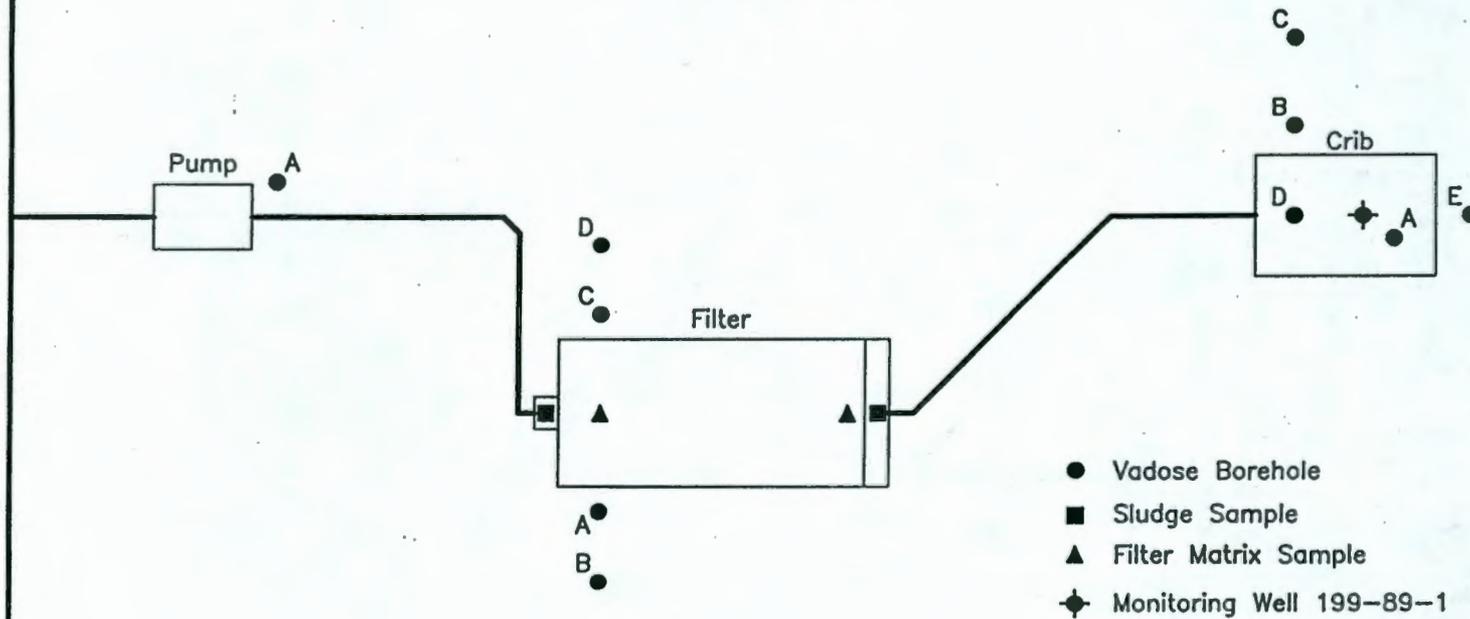
Typical Cross Section

KOK\041293-A

Dorian and Richards Sampling Data

- **Sampling Locations**
- **Sampling Methods**
- **Results**

Sampling Sites Dorian and Richards 1976



KOK\050493-F

Sampling Methods

- **In-Flow and Out-Flow Trays**
 - Access through stand-pipes
 - Sample sludge in bottom of trays

- **Filter Bed**
 - Remove concrete slab
 - Take a grab sample of filter matrix

- **Boreholes**
 - Cable tool drilling
 - Screen the sample interval
 - Send "hottest" material to lab

Dorian and Richards Data (1976)

LOCATION	DEPTH ft	P-11 C/M	CONCENTRATION pCi/g										
			Pu-238	Pu-239/240	Sr-90	H-3	Eu-152	Eu-154	Eu-155	Ce-134	Ce-137	Co-60	U.
In-Tray	grab	120 mR/hr	1600	1500	29,000	220					1.4x10 ⁵	7.1x10 ⁶	
In-Bed	grab	15 mR/hr					2000				5.7x10 ³	8.3x10 ⁴	
Out-Tray	grab	80 mR/hr									4.9x10 ³	1.2x10 ⁵	
Out-Bed	grab	80 mR/hr				520					2.1x10 ³	1.0x10 ⁵	
C	22.5	500		1.1	12		270	37	12	.43	160	180	
A	25	1000	.77	7.9	14	93	53	3.3		7.7	280	490	.13
A	30	750		.97	22		710	41	900	12	87	42	

Dorian and Richards Data Estimated Decay to 1993

LOCATION	DEPTH ft	P-11 C/M	CONCENTRATION pCi/g											
			Pu-238	Pu-239/240	Sr-90	H-3	Eu-152	Eu-154	Eu-155	Ce-134	Ce-137	Co-60	U	
In-Tray	grab	120 mR/hr	1445	1500	20,197	89						1x10 ⁵	8x10 ⁵	
In-Bed	grab	15 mR/hr					850					4x10 ³	9.3x10 ³	
Out-Tray	grab	80 mR/hr										3.5x10 ³	1.3x10 ⁴	
Out-Bed	grab	80 mR/hr				210						1.5x10 ³	1.1x10 ⁴	
C	22.5	500		1	8		114	9	1			115	20	
A	25	1000	.7	8	10	38	22	.8				201	55	.13
A	30	750		1	15		300	10	78			63	5	

Formulation of Conceptual Model

- 1. Sources of Contamination**
- 2. Types of Contaminants**
- 3. Affected Media**
- 4. Known and Potential Routes of Migration**
- 5. Known or Potential Human and Environmental Receptors**
- 6. General Understanding of Structure/Process**

Perform Qualitative Risk Assessment

1. Data Sources:

- **Process knowledge, Dorian & Richards**

2. Data Usability:

- **Non-CLP, but considered usable for the qualitative risk assessment with associated uncertainties**

3. Risk Drivers

- **concentrations are comparable to those in the 116-C-5 retention basins in 100-BC-1 which are designated as high risk**

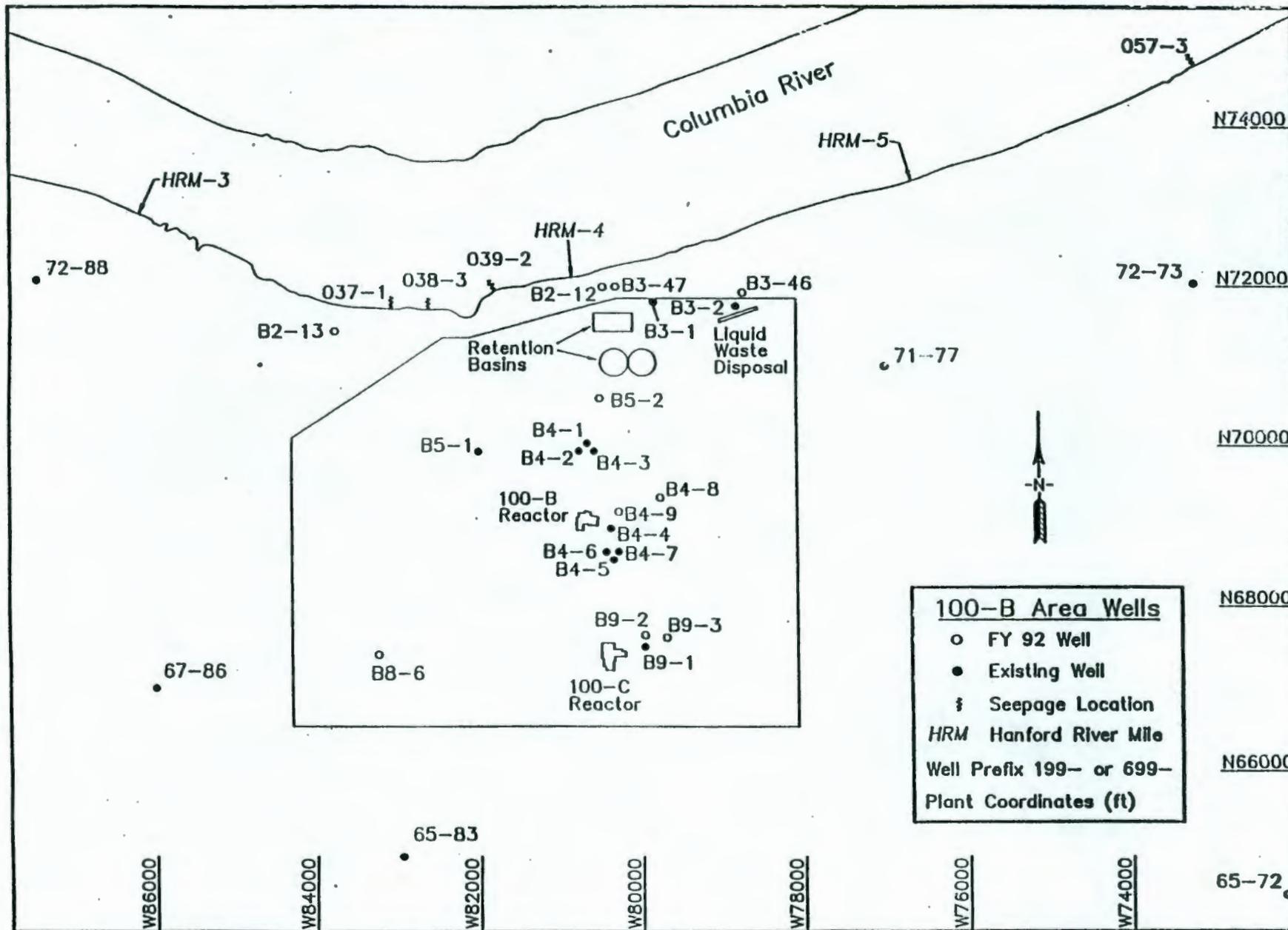
4. Potential Impact to Groundwater

- Dorian and Richard identified contamination to 30 ft**

- Depth to groundwater ~ 90 ft**

- Solid, confined structure will limit vertical migration**
 - 116-B-1 vs sand filter**

- Neighboring monitoring wells have not identified any contaminants attributable to the pluto crib system**



Summary

- **Conceptual Model can be formulated**
- **Data is sufficient to support risk assessment**
- **Existing data identifies the site as highly contaminated with low-level, potentially low-level mixed waste at levels which warrant an IRM.**
- **Utilization of the observational approach will allow efficient, cost-effective remediation of the site.**

Justification for not performing limited field sampling at the
116-C-2C Pluto Crib Sand Filter

Proposed: May 26, 1993

As a result of scoping meetings with the United States Department of Energy, Richland (DOE/RL), the U.S. Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (Ecology), it was decided that there was insufficient data for the 116-C-2C sand filter (100-BC-2 operable unit) to support the formulation of the conceptual model and perform a qualitative risk assessment. For this reason, a vadose borehole would be drilled at the site to obtain additional information. Recently, as-built architectural plans of the site were discovered. Upon review of existing data and visiting the site, in conjunction with these drawings, it became apparent that an LFI at the site would not gain much valuable information beyond what already exists. The following discussion justifies not drilling a vadose borehole at the site.

1. Goal of the LFI: Define nature and vertical extent of contamination to support the decision of if or when an IRM is justified. This requires limited contaminant identification and knowledge of site location, dimensions and construction.
2. What is currently known:
 - Location is defined by surface features. Concrete slabs that cover the filter are visible on the surface.
 - Radiological constituents from Dorian and Richards identify major radiological contaminants at levels that will probably warrant an IRM. Location of Dorian and Richards sampling points is well documented.
 - Vertical extent of contamination will be limited due to the sand filter having a solid (concrete) bottom.
 - Excess liquids disposed to the filter were routed to the pluto crib.
 - As-Built engineering drawings display the structure, dimensions and location of the sand filter.
3. Conclusions that can be drawn:
 - Historical information identifies significant contamination that warrants remediation.
 - Exact knowledge of site location exists.
 - The structure of the filter allows the assumption that vertical migration will be limited.
4. Supporting Information:
 - Dorian and Richards Data
 - Process Knowledge
 - As-Built Drawings
 - Current identifiable surface features

9312972-0348

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Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 26, 1993

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9312972.0349