0020319

March 11, 1992

Meeting Minutes Transmittal/Approval
100 Area Field Activities
345 Hills Street, Richland, Washington
February 27, 1992

From/
Appvl.: Eric Goller Date: 3-26-92
Eric Goller, Unit Manager, RL (A5-19)

Appvl.: Dave Steel Date: 3-26-92
Larry Goldstein, 100-HR-1/BC-1/BC-5/NR-1/KR-1 Unit Manager, WA Department of Ecology

Appvl.: for DRS Date: 3-26-92
Douglas R. Sherwood, 100-HR-1/HR-3/DR-1/BC-1/BC-5 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 - 100-HR-1 Report
Attachment #6 - 100 Area Groundwater Studies Report
Attachment #7 - 100-BC-5 Report
Attachment #8 - 100-DR-1 Report
Attachment #9 - 100-BC-1 Report
Attachment #10 - 100 Aggregate Area Studies Report
Attachment #11 - 100 Area Feasibility Study/Risk Assessment/Modeling Report
Attachment #12 - Columbia River/Groundwater Interaction Investigations Report
Attachment #13 - 100 Area Feasibility Study Report
Attachment #14 - 100 Area workplan production schedule

APR 1992 RECEIVED EDMC

Prepared by: Suzanne Clarke Date: 3/31/92
SWEC Support Services

Concurrence by: Date: 3/26/92
WHC Coordinator

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Attachment #1

Meeting and Summary of Commitments and Agreements

100 Area Field Activities
February 27, 1992

1. J. D. Goodenough (DOE) began the meeting with a review of the agenda items, and additional items for discussion were added. The minutes of the January UMM were presented for signature. A request was made by W. M. Fryer (GSSC) for attendees of the January 100 AA UMM to help locate the December, 1991 100 AA UMM minutes, which were misplaced at the January UMM meeting. A. D. Krug (WHC) also indicated he could provide another copy of Attachment 3 of the September, 1991 100 AA UMM minutes, which was lost in the review/signature process.

2. J. M. Ayres (WHC) reported on the 100-HR-1 OU RI, see Attachment 5. The order of drilling the vadose boreholes has been changed from the original schedule, with drilling starting at the 116-M-1 trench. Ecology was asked if there was a specific hole they wished to sample. B. Mauss replied that they would have to fit the sampling around their schedule. They were cautioned not to wait past the 9th or 10th, or drilling would be finished.

3. S. E. Vukelich (WHC) reported on groundwater investigations in the 100-HR-3 OU, see Attachment 6. All drilling has been completed, although not all completion/development work is completed. No contamination has been identified with the screening or logging that has been done. Sampling is scheduled to begin April 15th, but this is dependent on completion of 300-FF-5 sampling, which has been delayed several times. The sampling of the new wells will be coordinated with RCRA sampling, and parameters not currently being sampled for by RCRA added to the RCRA sampling. The issue of CLP vs. SW-846 analysis protocol will not be coordinated. The CERCLA wells will be analyzed using CLP protocol.

4. J. W. Roberts (WHC) reported on the 100-BC-5 OU, see Attachment 7. D. Faulk (EPA) indicated that he and W. Staubitz would like to make a site visit on 3/10 or 3/11.

5. A. D. Krug (WHC) reported on the 100-DR-1 OU, see Attachment 8. The DOW for the 108 Office Building/Decon Facility, sewer, septic tanks and fuel oil tank should be out next Monday.

6. B. Mauss (Ecology) asked questions about the rad counting data from the 222-S Lab, and whether there has been any screening data indicating contamination. WHC responded that the 222-S counting is done strictly for shipping and that all samples to date have been shipped off-site, measuring 200 counts or less. C. Cline asked about comparison of the rad counting data with the gross gamma and spectral gamma logs. E. D. Goller responded that that should be the subject of a separate technical meeting.

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Action Item: Provide information to the regulators on how to retrieve rad counting data from the 222-S Lab. Action to Jeff Lerch (2/27/91)

Action Item: 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)

7. R. E. Day (WHC) reported on the 100-BC-1 OU, see Attachment 9. Documents from the data compilation task are being reviewed for clearance, but no schedule is offered. Requests for particular information could probably be expedited. The document clearance process was discussed. Mobilization for drilling has begun, and it is expected that drilling would begin the second week of March. The DOW for the drilling was given to EPA on February 19th, and comment resolution should be forthcoming. It was noted that the schedule in the workplans to be released on Friday is the old schedule. The schedule will be updated once the 100 Area aggregate schedule is settled.

8. S. Weiss (WHC) reported on 100 aggregate area investigations, see Attachment 10. A discussion followed on review and sign-off of DOWs for aggregate area work. Topics included sign-off by both regulatory agencies, time frames for review and the schedule for all this work. J. D. Goodenough noted that DOW approval for non-intrusive work has not been previously been sought. It was proposed that each regulatory agency designate one person to sign-off on these DOWs until the work plans are approved, after which reviews would continue but sign-off not be required.

Agreement: DOWs on 100 Aggregate Area studies will be provided to both regulatory agencies for review and each agency will designate one person for approval authority. Darci ~~Teal~~ was designated as the Ecology lead. Dennis Faulk will provide the name for EPA.
TEEL (see)

9. L. M. Bergman (WHC) reported on the 100 Area feasibility studies and risk assessment(s), see attachment 11. The feasibility study is on schedule, and the report is being prepared. IT made a presentation on the report content later in the meeting. The draft risk assessment methodology document (MS-29-03) is in review, and should be issued by the end of March. An effort will then begin on the site-wide model discussed in the MS-29-02 document.

10. R. E. Peterson (WHC) presented results of field work completed on river/groundwater interaction investigations, see attachment 12. The work discussed was specifically related to the 3rd bullet of the Program Proposed for Milestone M-30-04. The results and possible conclusions to be drawn from the data were discussed.

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11. J. Chiaramonte (IT) presented an overview of the 100 Area Feasibility Study, see Attachment 13. Mr. Chiaramonte reported that there is a great degree of commonality in information regarding soils for all three of the feasibility studies that were agreed to. Consequently, it is proposed to put the three studies into one document so that common information is presented only once. However, the three areas would be addressed separately in the document. Discussion followed on whether this arrangement would satisfy the TPA Change Package requirement. R. Hibbard (Ecology) made a statement about MTCA requirements and mentioned that Ecology's soil closure policy was issued the previous week.

12. J. D. Goodenough introduced H. R. Trumble (DOE) from OPD, in charge of N Reactor shutdown. He discussed the multiple activities occurring at N reactor: CERCLA investigations, RCRA closures, and operations shutdown, and stated that all of the activities and budgets need to be integrated to avoid conflict in schedules and activities. DOE ERD would like to keep the UMM meetings restricted to those things for which ERD has responsibility. Information on operations is available at the bi-weekly meeting held by DOE Operations Division with regulatory agencies, Indian tribes, the Department of Health and other agencies to status operations on the Hanford site. R. Hibbard suggested that it is ERD's responsibility to coordinate with these other and bring information on these other activities to the Unit Managers. As an example of program divisions, Mr. Goodenough indicated that the ER program does not own N-springs. However, starting in 1994, the ER program will have budget responsibility for N reactor shutdown, although it has not been decided if the organization will be shifted to ER.

    R. Hibbard suggested that DOE needs to clarify the situation, present it to the regulators, and request concurrence. J. D. Goodenough also indicated that DOE was working on a response to L. Goldstein's (Ecology) February 10th letter about N-springs.

Action Item: 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).

13. R. E. Day (WHC) went over the 100 Area workplan production schedule, see Attachment 14. Discussion followed on time requirements for production of the documents and changes to the schedule to allow the regulators more time to review the documents. Also, the mechanism for distributing copies of documents was discussed, including how many copies would be provided to which offices by what means. K. M. Thompson proposed that copies of documents be provided to P. Day (EPA) in Richland, L. Goldstein (Ecology) in Olympia and Dave Nylander (Ecology) in Kennewick.

14. W. M. Fryer (GSSC) brought up a problem with the official UMM minutes passed around for signature at the January UMM. The December 1991 UMM

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minutes did not come back to the GSSC, and reconstructing them would require new copies of all the attachments. It was requested that the regulators check to see if they have that UMM package. Also, the September 1991 UMM package was signed and returned, but was missing Attachment 3. A. D. Krug (WHC) indicated that he could supply a copy of that attachment.

15. J. D. Goodenough mentioned that DOE has asked WHC to prepare a list of all of the documents that have been issued, including identifying the most recent revision. This list may be available at the next UMM.

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Attachment #2: No Agenda distributed

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Attachment #3

Attendance

100 Aggregate Area Operable Unit Managers Meeting

February 1992

Name	Org.	O.U. Role	Phone
Bill Fryer	SWEC	GSSC	(509) 376-[illegible]
Joe King	SWEC	GSSC	(509) 376-4726
Billie Mauss	Ecology	CERCLA	(509) 546-2993
Dave Teel	Ecology	CERCLA	(509) 545-2312
Rich Hibbard	Ecology	"	(206) 443-9367
Ward Staubitz	USGS	EPA Support	(206) 553-6510
M.T. Stankovich	WHC	EEG	(509) 376-2493
RE Day	WHC	EEG	(509) 376-7602
JA Lerch	WHC	OSM	(509) 373-3419
J.W. Roberts	WHC	EEG	(509) 376-5764
L.M. Bergmann	WHC	EEG	(509) 376-4369
M.J. Lauterbach	WHC	EEG	(509) 376-5257
SE Vukelich	WHC	"	(509) 376-5158
R.E. Peterson	WHC	Groundwater	(509) 376-5858
SG Weiss	WHC	100 Aggregate Area	(509) 376-1683
J.K. Patterson	WHC	ER Program	(509) 376-0568
Dennis Faulk	EPA	Unit Manager	(509) 376-8631
Mike Baehle	USACE	-	(509) 376-1275
Alan D. Krug	WHC	100 Area H.P.N	(509) 376-5634
Jim Goodenough	DOE-RL	OU Mgr.	(509) 376-7087
Eric Goller	DOE-RL	OU Mgr	(509) 376-7236
Chuck Cline	Ecology	O.U. Mgr.	(206) 438-7556
Pamela Innis	EPA	O.U. Mgr	(509) 376-4919
Jon Speecher	B&L	Ecology Support	(503) 244-7005
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ATTACHMENT #3

100 Aggregate Area
Attendance
February 26, 1992

NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Bill Fryer	SWEC	GSSC	509-376-9830
Joe King	SWEC	GSSC	509-376-4726
Billie Mauss	Ecology	CERCLA	509-546-2993
Darci Teel	Ecology	CERCLA	509-545-2312
Rich Hibbard	Ecology	CERCLA	206-493-9367
Ward Staubitz	USGS	EPA Support	206-593-6510
M. T. Stankovich	WHC	EEG	509-376-2493
R.E. Day	WHC	EEG	509-376-7602
J.A. Lerch	WHC	OSM	509-373-3419
J.W. Roberts	WHC	EEG	509-376-5164
L.M. Bergmann	WHC	EEG	509-376-4869
M.J. Lauterbach	WHC	EEG	509-376-5257
S.E. Vurelich	WHC	EEG	509-376-5158
R.E. Peterson	WHC	GROUNDWATER	509-376-5858
S.G. Weiss	WHC	100 Agg Area	509-376-1683
J.K. Patterson	WHC	ER Program	509-376-0568
Dennis Faulk	EPA	Unit Mgr.	509-376-8631
Mike Baehre	USACE	Unit Mgr.	509-376-1275
Alan D. Krug	WHC	100 Area HDN	509-376-5634
Jim Goodenough	DOE-RL	OU Mgr.	509-376-7087
Eric Goller	DOE-RL	OU Mgr.	509-376-7326
Chuck Cline	Ecology	OU Mgr.	206-438-7556
Pamela Innis	EPA	OU Mgr.	509-376-4919
Jon Sprecher	B & L	Ecology Support	503-244-7005

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Attachment #4

Action Item Status List

100 Area Field Activities
February 27, 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)	Open: Remains open on the question of when the data will be in HEIS. (7/18/91)
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)	Open: WHC sent a letter to DOE requesting guidance on the extent of NEPA documentation required and is awaiting DOE's response. (7/18/91)
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)
1NR.3	Provide to Ecology (and EPA if desired) the DOE guidance documents that are needed. Action: Larry Goldstein (7/18/91)	Open: Larry Goldstein will send a letter specifying exactly what supporting documents Ecology would like to receive. (7/18/91)
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)	Open

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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)	Open
1AAMS.3	Clarify the level above which RAD samples can not be shipped off site. Action: DOE (12/17/91)	Open
1AAMS.4	Provide a plan for incorporating the comments of EPA and Ecology into the work plans. Action: RL (12/17/91)	Open
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. (1/23/91)	Open
1AAMS.6	The N-Springs IRM program is to be reviewed and comments and recommendations are to be made to RL by 1/31/92. Action: L. Goldstein. (1/23/91)	Open

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Attachment #5

100-HR-1 TASKS, FEB 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 (8 Samples), Awaiting Analytical Results

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
-5 Boreholes Scheduled
  116-H-1 (Disposal Trench) (scheduled start 28 Feb 92)
  116-H-2 (Disposal Trench)
  116-H-3 (French Drain)
  116-H-7 (Retention Basin) (scheduled start 26 Feb 92)
  116-H-9 (Seal Pit Crib) (started 26 Feb 92)

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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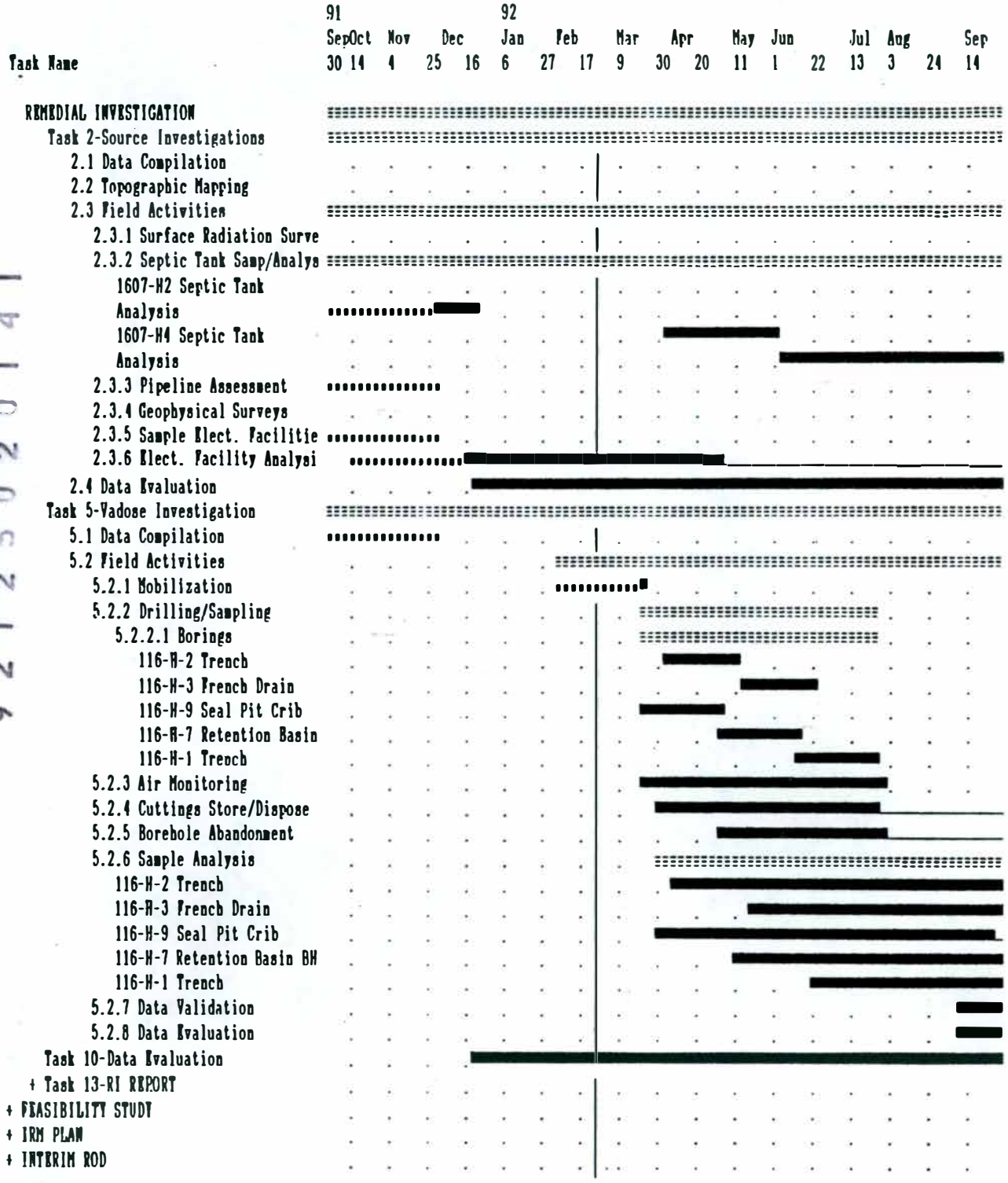
Schedule Name : 100 Area FY91
Responsible : J. Ayres
As-of Date : 24-Feb-92 Schedule File : HR-1



Detail Task ===== Summary Task ***** Baseline
(Progress) ===== (Progress) >>> Conflict
(Slack) ===__ (Slack) Resource delay

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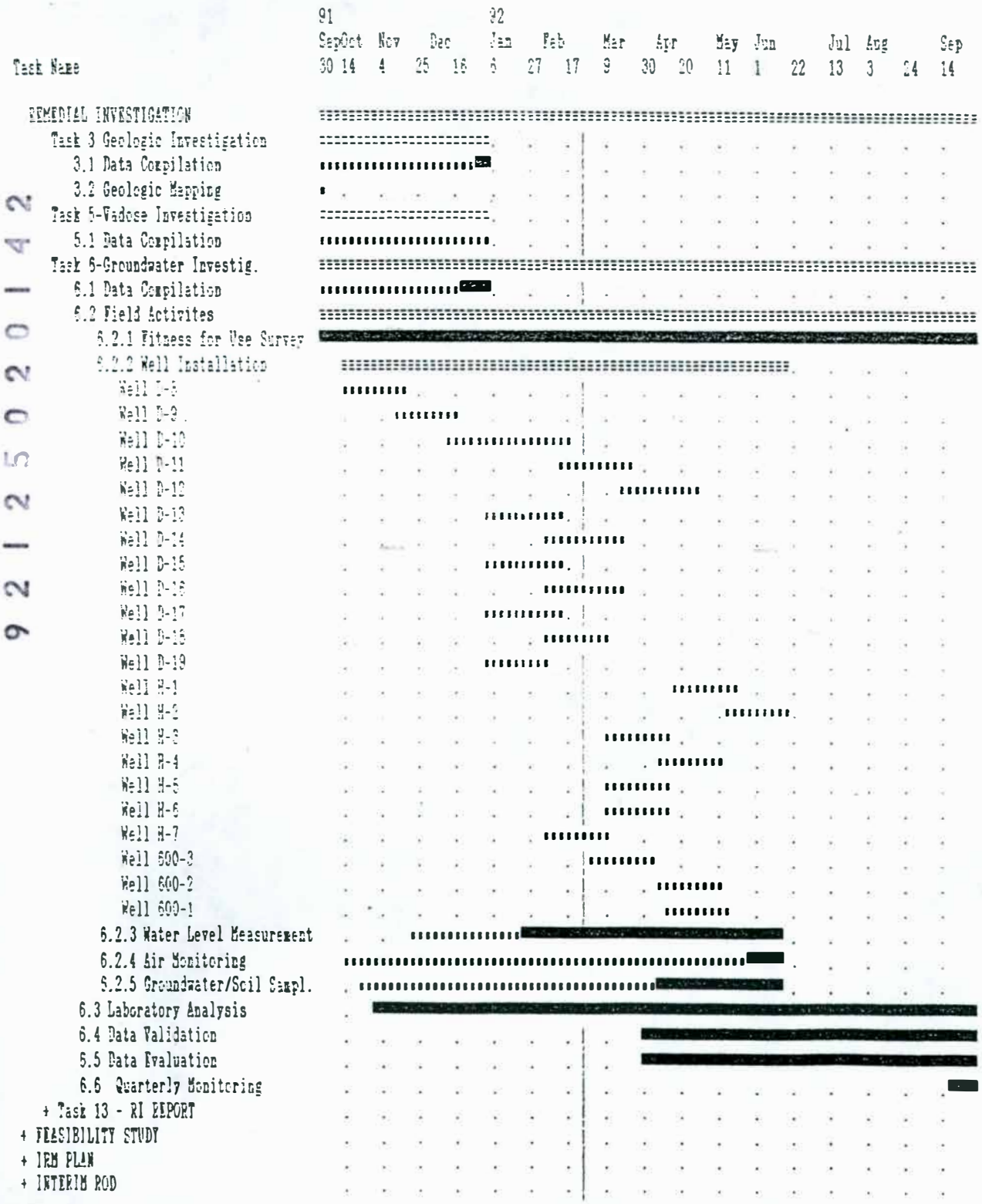
Attachment #6

Schedule Name : 100 Area FY91
Responsible : Steve Vukelich
As-of Date : 24-Feb-92 Schedule File : HR3

INVESTIGATION



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100 HR-3
GROUNDWATER WELL DRILLING
STATUS 2/25/92

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

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

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100 HR-3 GROUNDWATER OPERABLE UNIT
WORK SUMMARY 2/25/92

TASK 3 - GEOLOGIC INVESTIGATION

Data Compilation and Geologic Mapping is almost complete. WHC plans to release a report titled, "Geologic Information Summary for the Northern Portion of the Hanford Site" in the next two weeks. The Geologic Map should be released in March, 1992.

TASK 5 - VADOSE INVESTIGATION

Data Complilation is complete. In February, 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 March, 1992.

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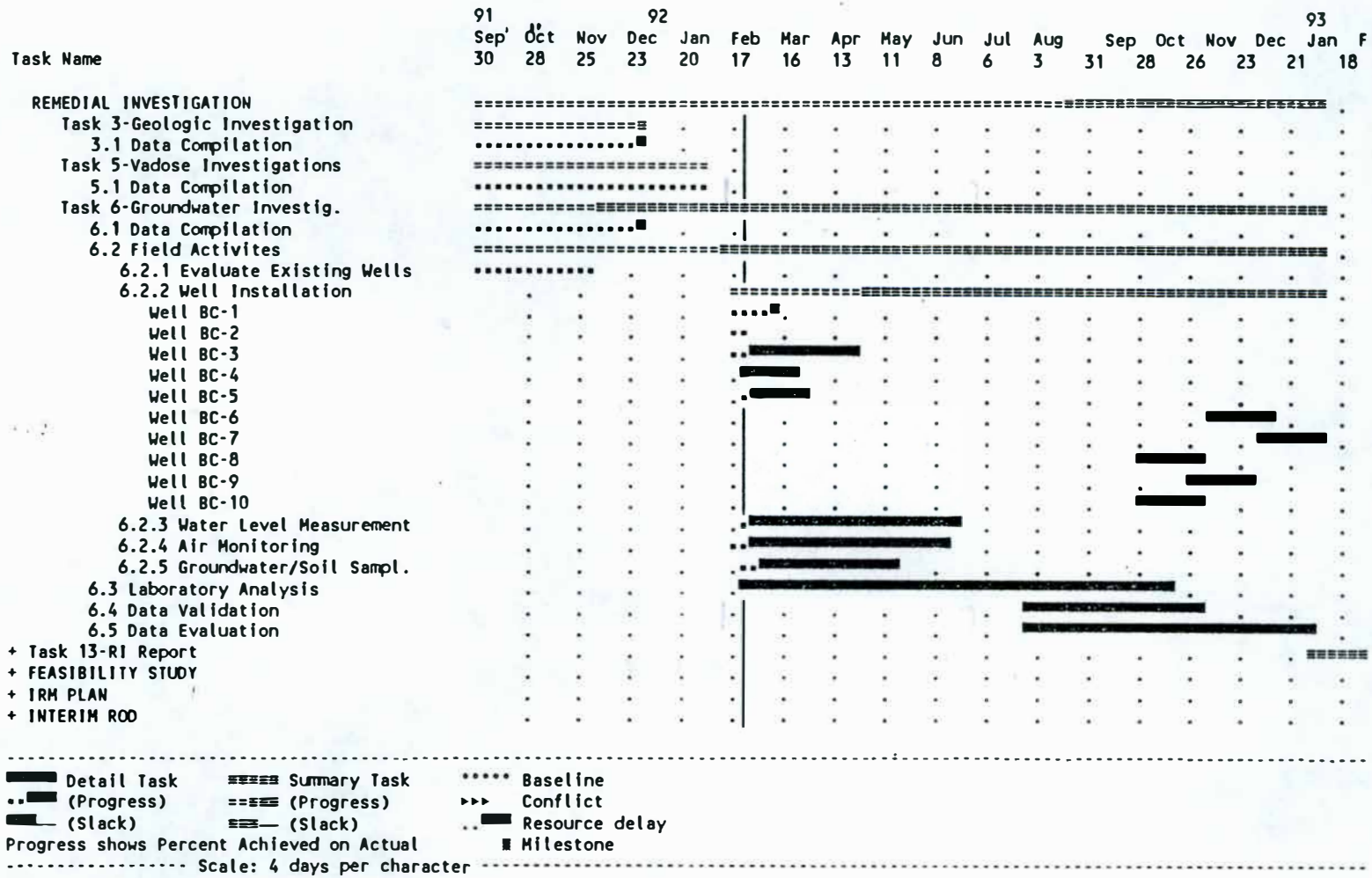
Schedule Name : 100-BC-5 GROUND WATER OPERABLE UNIT
Responsible : J. W. Roberts
As-of Date : 26-Feb-92 Schedule File : BC5STATS



Detail Task — Summary Task — Baseline
(Progress) — (Progress) — Conflict
(Slack) — (Slack) — Resource delay
Progress shows Percent Achieved on Actual — Milestone
Scale: 4 days per character

TIME LINE Gantt Chart Report, Strip 1

Attachment #7

100-BC-5 DRILLING STATUS

WELL NUMBER		START DATE	COMPLETION DATE	CURRENT DEPTH	WATER TABLE
BC-1	199-B3-46	2/19/92		57'	46'
BC-2	199-B3-47	2/19/92	2/25/92	TD 61'	45'
BC-3	199-B2-12	2/19/92		91'	45'
BC-4	199-B2-13	2/27/92			
BC-5	199-B4-8	2/24/92		28'	
BC-6	199-B4-9				
BC-7	199-B9-2				
BC-8	199-B9-3				
BC-9	199-B8-6				
BC-10	199-B5-2				

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100-BC-5 GROUNDWATER OPERABLE UNIT
WORK SUMMARY 2/27/92

TASK 2 - SOURCE INVESTIGATIONS

This investigation is being conducted under the 100-BC-1 source operable unit.

TASK 3 - GEOLOGIC INVESTIGATION

Activity coordinated with all 100 Area Groundwater OU's (100-HR-3, 100-BC-5, 100-KR-4, 100-NR-2, and 100-FR-3).

The Data Compilation and Geologic Mapping is almost complete. WHC plans to release a report titled "Geologic Information Summary for the Northern Portion of the Hanford Site" in the next two weeks. The Geologic Map should be released in March, 1992.

TASK 4 - SURFACE WATER AND SEDIMENTS INVESTIGATION

This investigation is being conducted under the 100 Aggregate Area Study.

TASK 5 - VADOSE INVESTIGATION

This investigation will be conducted under the 100-BC-1 source operable unit. The data compilation activity shall be coordinated with all 100 Area Groundwater OU's (100-HR-3, 100-BC-5, 100-KR-4, 100-NR-2, and 100-FR-3).

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

TASK 6 - GROUNDWATER INVESTIGATION

The data compilation activity shall be coordinated with all 100 Area Groundwater OU's (100-HR-3, 100-BC-5, 100-KR-4, 100-NR-2, and 100-FR-3). This activity is almost complete. WHC plans to release a report titled "Hydrologic Information Summary for the Region North of Gable Mountain" in March, 1992.

TASK 7 - AIR INVESTIGATION

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

TASK 8 - ECOLOGICAL INVESTIGATION

This investigation is being conducted under the 100 Aggregate Area Study.

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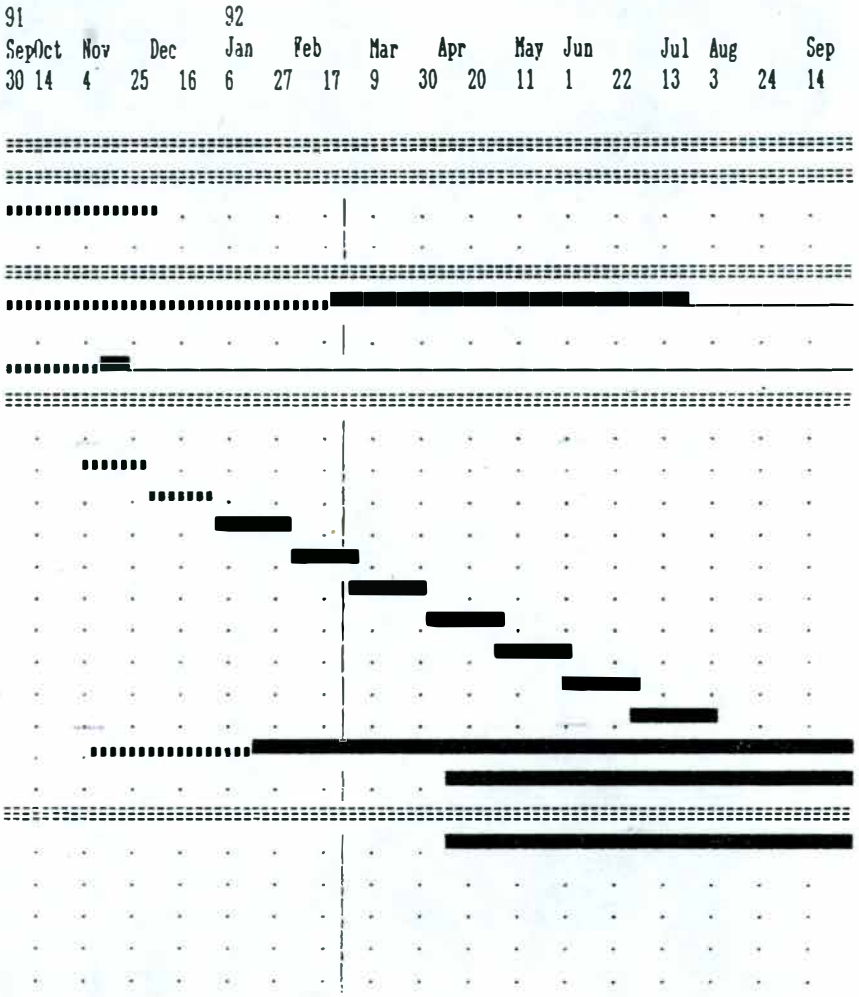
Attachment #8

Schedule Name : 100 Area FY91
Responsible : N. Naiknimbalkar
As-of Date : 24-Feb-92 Schedule File : DR1

Dependencies : REMEDIAL INVESTIGATION



Detail Task ===== Summary Task ····· Baseline
(Progress) ===== (Progress) ››› Conflict
(Slack) ===— (Slack) Resource delay
Progress shows Percent Achieved on Actual ▲ Milestone
---------- Scale: 3 days per character ----------

TIME LINE Gantt Chart Report, Strip 1

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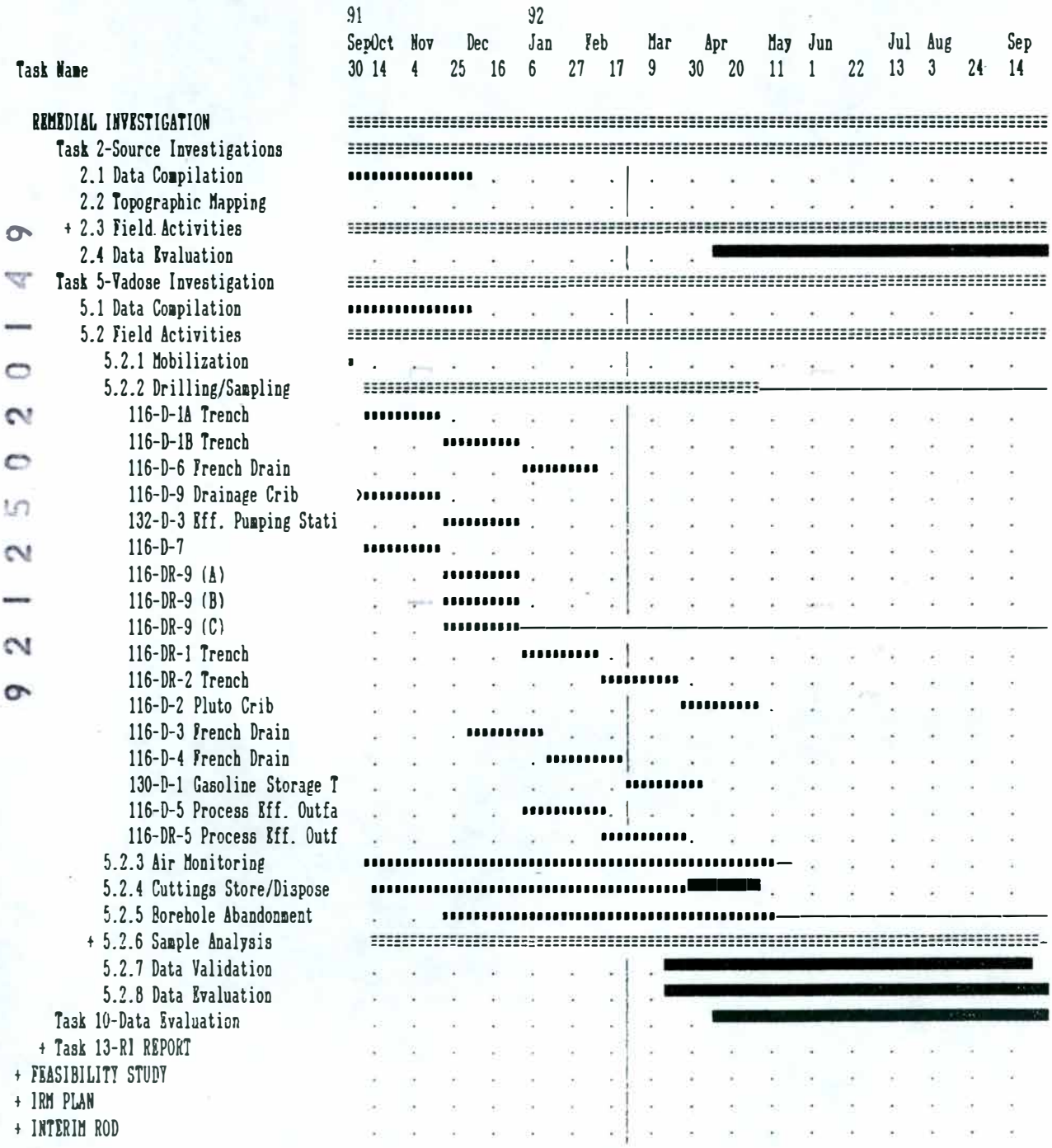
Schedule Name : 100 Area FY91
Responsible : N. Naiknimbalkar
As-of Date : 24-Feb-92 Schedule File : DR1

Dependencies : REMEDIAL INVESTIGATION



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Detail Task ===== Summary Task ''''' Baseline
(Progress) ===== (Progress) >>> Conflict
(Slack) ===— (Slack) Resource delay
Progress shows Percent Achieved on Actual ▵ Milestone

Scale: 3 days per character

100-DR-1 Remedial Investigation

TASK NO.	ACTIVITY	STATUS
Task 2	SOURCE INVESTIGATION	
Task 2.1	Data Compilation	Completed December 1991
Task 2.2	Topographic Maps	Completed August 1991
Task 2.3	Field Activities	
Task 2.3.1	Surface Radiation	Completion Estimated 3-31-92.
Task 2.3.2	Geophysical Survey	Completed May 1991.
Task 2.3.3	Soil Gas Survey	Expected to finish 2-28-92

To date, soil gas probes have been installed and monitored at the following sites in the 100-DR-1 Operable Unit.

- o 1713-D Instrument and Electrical Development Laboratory
- o 1714-D Solvent Storage Building
- o 1715-D Oil and Paint Storage Building
- o 1716-D Gas Station and 130-D-1 Underground Storage Tank Excavation Area
- o 1722-D Equipment Development Laboratory
- o 184-DA Fuel Oil Storage Tank
- o 166-D Fuel Oil Tank Site and Underground Fuel Oil Lines
- o Paint Shop West of 182-D Reservoir.
- o 126-D-2 Solid Waste Landfill

The following sites are being investigated:

- o 103-D Fuel Element Storage Building
- o Burial Ground 4A
- o Burial Ground 4B
- o Burial Ground 18
- o 1607-D-4 Septic Tank

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Task 2.3.4	Non-Intrusive	
	o Electrical Facilities	Completed September 1991
	o 1724-DA Underwater Test Facility	Completed November 1991
	o Sodium Dichromate	Completed January 15, 1992
	DOW's due to Regulators	
	o 108 Office Building	Description of Work in Progress
	o Septic Tanks/Tile Fields	Same as above
	o 166-D Fuel Tank	Same as above
	o 1714-D, 1715-D, 1716-D, 1722-D and Paint Shop	
	o Ash Disposal Basin	
	o 100-D Salt Dissolving Pit	
	o 132-D-3 Effluent Pumping Station	
	o 103-D Green Metal Storage Building	
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 attached borehole Summary

9 2 1 2 5 0 2 0 1 5 1

100-DR-1 Boreholes Data-Summary
As of 2/19/92

Borehole No.	Total Depth	Number of Samples	Gross Gamma/ Spectral Gamma	Start/Finish Date
116-D-1A Trench	53.2 ft.	13	Gross Gamma/ Spectral Gamma	10-22 / 11-1-91
116-D-1B Trench	36.8 ft.	8	None	10-25 / 11-4-91
116-DR-1 Trench	40.2 ft.	6+2 Physical	Gross Gamma	11-13 / 11-13 -91
116-DR-2 Trench	37.0 ft.	7	Gross Gamma	11-15 / 11-19-91
116-D-4 French Drain	23.0 ft.	4	Gross Gamma	12-2 / 12-2-91
116-D-9 Crib	27.8 ft.	3	Gross Gamma	12-9 / 12-9-91
116-D-3 French Drain	22.4 ft.	6	Gross / Spectral Gamma	12-10 / 12-11-91
116-D-7 Retention Basin	36.6 ft.	9	Gross Gamma	12-13 / 12-31-91
116-DR-9 (A) Reten. Basin	36.9 ft.	9	Gross Gamma	1-10/ 1-15-92

9 2 1 2 5 0 2 0 1 5 2

Borehole No.	Total Depth	Number of Samples	Gross Gamma/ Spectral Gamma	Start/Finish Date
116-DR-9 (B) Retention Basin	37.4	9	Gross Gamma	1-20/ 1-23-92
116-DR-9 (C) Retention Basin	37.5	5	None	1-27/ 2-6-92
116-D-5 Outfall Structure	27 ft.	6	Gross Gamm/ Spectral Gamma	1-24/ 1-28-92
130-D-1 Gasoline Storage Tank	37 ft.	9	Gross Gamma	2-6/ 2-10-92
116-DR-5 Outfall Structure	27.5 ft.	2	Gross Gamma/ Spectral Gamma	2-4/ 2-10-92
132-D-3 Effl. Pump Sta.	35 ft.		Gross Gamma/ Spectral Gamma	
116-D-6 French Drain	22 ft.		Gross Gamma/ Spectral Gamma	
116-D-2 Pluto Crib	25 ft.		Gross Gamma/ Spectral Gamma	

9 2 1 2 5 0 2 0 1 5 3

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	Continued as planned
Task 5.2.8	Data Evaluation	

9 2 1 2 5 0 2 0 1 5 4

Attachment #9

100-BC-1 SOURCE OPERABLE UNIT WORK SUMMARY
February 27, 1992

Task 1 - Project Management: On going.

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. **Preliminary (unvalidated) laboratory data has been received.**

116-C-5 Retention Basin Sampling: On Schedule. Pre-activities have begun. Sampling scheduled to be conducted during the month of **April**.

116-B-2 Fuel Storage Trench Sampling: Sampling has been removed as a source investigation activity and moved into the vadose drilling. One vadose borehole will be drilled in this trench.

Task 3 - Geological Investigation: Activity being performed as part of 100-BC-5.

Task 4 - Surface Water and Sediment Investigation: Activity being performed as part of the 100 Aggregate Area

Task 5 - Vadose Investigation:

One additional vadose borehole has been added due to comment disposition with the US Environmental Protection Agency during the January 16, 1992 meeting. This vadose borehole will replace the source investigation activities, mentioned in the above section, at the 116-B-2 Fuel Storage Trench.

Mobilization activities have begun. Drilling activities are currently scheduled to be initiated during the first week of March. The DOW was submitted to EPA on February 19, 1992. Review of the DOW by EPA is requested by March 2, 1992. A comment disposition meeting will be scheduled for that same day.

Task 6 - Groundwater Investigation: Activity being performed as part of 100-BC-5.

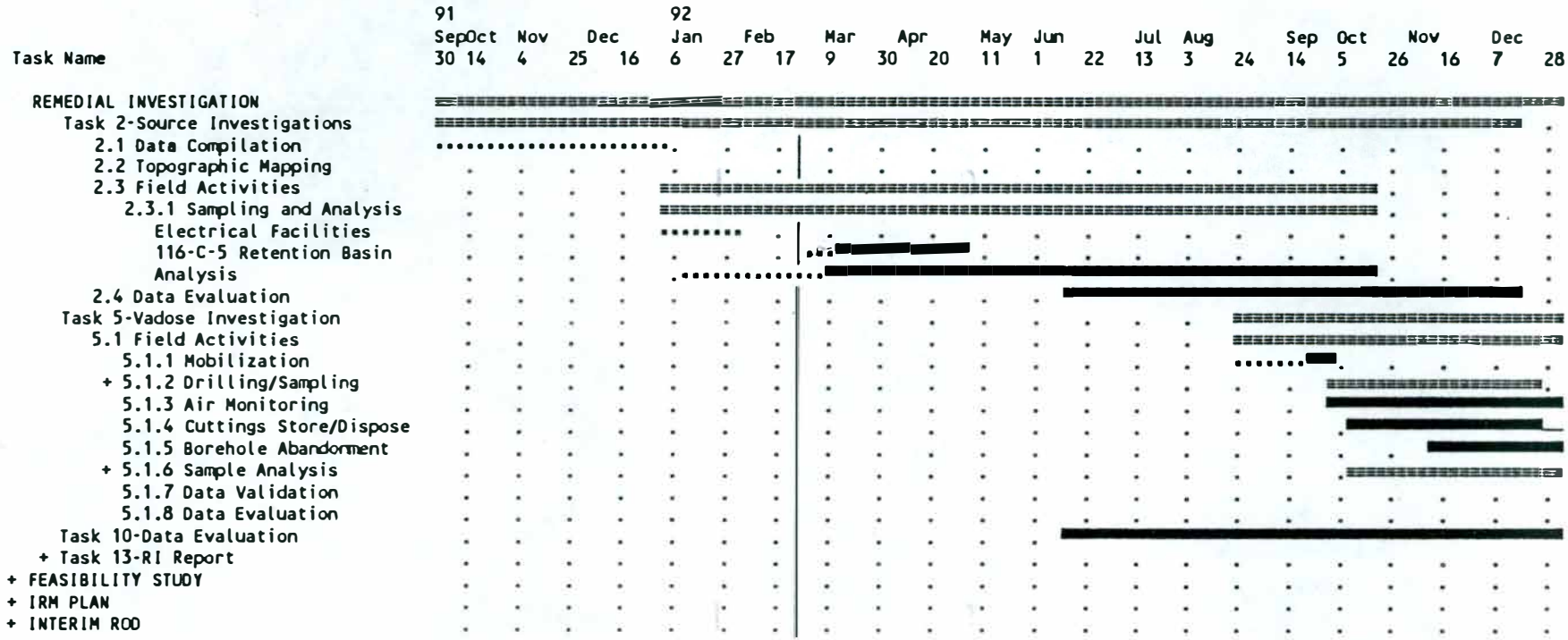
Task 7 - Air Investigation: Activity being performed as Health and Safety Monitoring in support of investigation activities.

Task 8 - Ecological Investigation: Activity being performed as part of the 100 Aggregate Area.

9 2 1 2 5 0 2 0 1 5 5

Schedule Name : 100-BC-1 OU
Responsible : R. E. Day
As-of Date : 26-Feb-92 Schedule File : BC1STATS

Dependencies : REMEDIAL INVESTIGATION



Detail Task (Progress) (Slack) — Summary Task (Progress) (Slack) — Baseline — Conflict — Resource delay — Milestone

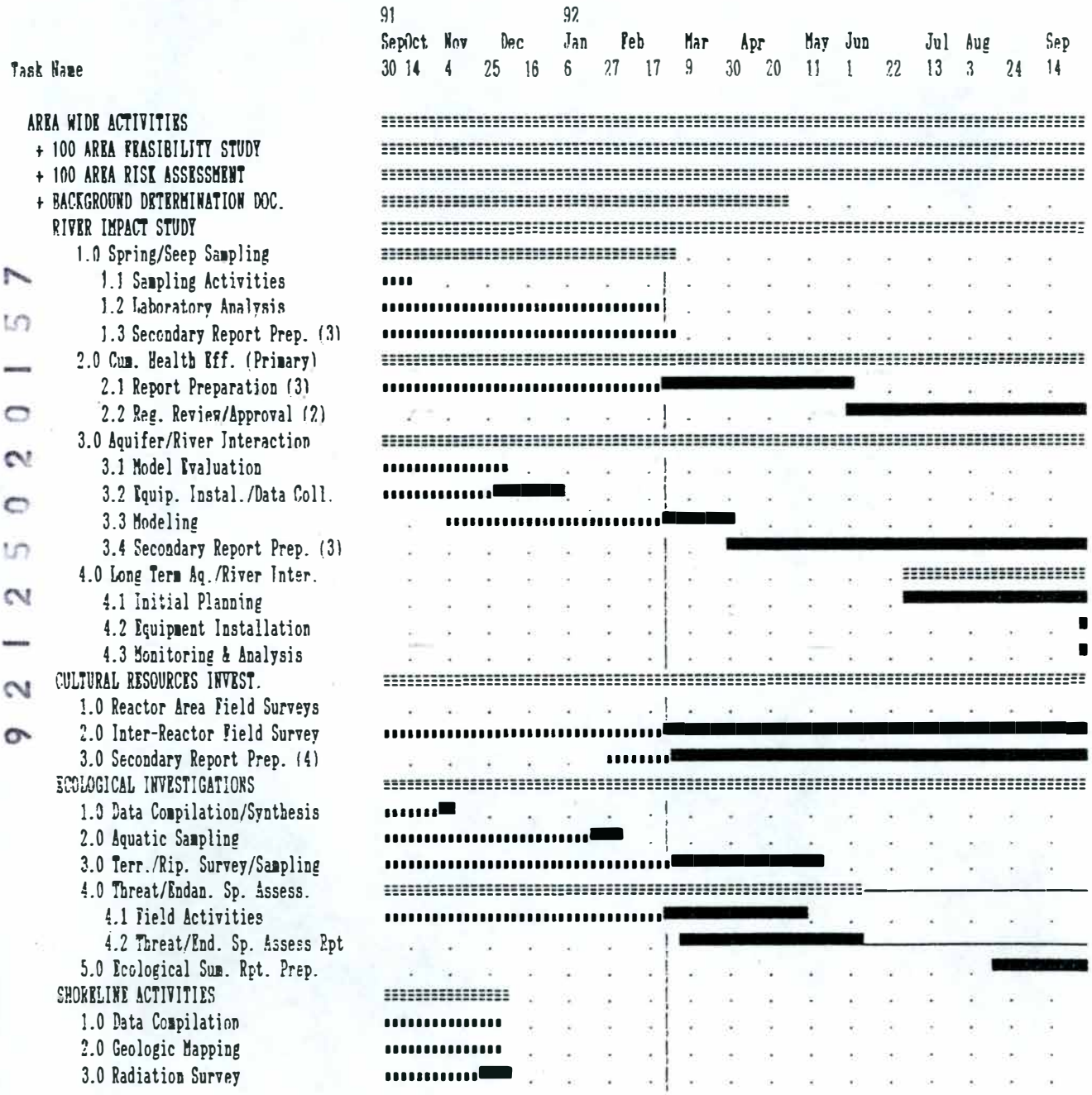
Progress shows Percent Achieved on Actual

Scale: 3 days per character

TIME LINE Gantt Chart Report, Strip 1, Page 1

Attachment #10

Schedule Name : 100 Area FY91
Responsible :
As-of Date : 24-Feb-92 Schedule File : DECSTAT



Detail Task ===== Summary Task ''''' Baseline
(Progress) ===== (Progress) >>> Conflict
(Slack) ===— (Slack) ..— Resource delay
Progress shows Percent Achieved on Actual ▲ Milestone
---------- Scale: 3 days per character ----------

TIME LINE Gantt Chart Report, Strip 1

9 2 1 2 5 0 2 0 1 5 7

Date: February 27, 1992
Subject: 100 Aggregate Area Investigations Status

RIVER IMPACT STUDIES

1.0 Spring Sampling (Milestone M-30-01): The report will be distributed this week to meet the TPA milestone.

2.0 Cumulative Health Effects (Milestone M-30-02) An outline of the proposed plan was submitted to the regulators at the Dec 17 UMM; no comments were received.

3.0 Aquifer/River Interaction (Milestone M-30-04) The feasability of approaches is complete; the application of approach (cyclic fluctuations in water levels to infer aquifer properties) using data from the installed loggers is in progress.

3.2 River Stage Recorder Installation: One-half of the equipment is installed (1 river recorder and 9 wells; installation of 3 river recorders and 7 wells is in progress.

CULTURAL RESOURCES SURVEYS:

Cultural Resources Work began on literature review to evaluate historic sites found in 1991 and locate pre-1943 aerial photos of the Hanford Site. Locations of farmsteads and other features are being plotted on maps prior to the on-foot survey of the 100-HR-3 area.

ECOLOGICAL INVESTIGATIONS:

1.0 Data synthesis (evaluation) report: A draft of the ecological data evaluation and synthesis has been peer reviewed. The comments are waiting to be incorporated.

2.0 Aquatic investigations: All sampling is complete. Despite innovative collection techniques, collection of adequate sample size of caddis fly larvae at both OUs, and inexplicably, periphyton at HR-3, was extremenly difficult. No results have been returned from the lab yet.

2.0 Sturgeon Sample Analysis: A report analyzing the levels of radionuclides in sturgeon from the Columbia River was received from PNL and forwarded to DOE for transmittal to regulators. A final PNL report with more in-depth analyses is due in late spring.

9 2 1 2 5 0 2 0 1 5 8

3.0 Terrestrial Surveys and Sampling: A draft of the FY 1991 report has been completed. the Review comments are being analyzed so the report can be completed. Only a few sampling results from last year have been received yet, and these (for asparagus) are only partly validated. For FY 1992, DOWs are in preparation for sampling both cut-down mulberry trees at N-area and for reed-canary grass, tree leaves, and asparagus at K and F areas.

4.0 Threatened and Endangered Species Biological Assessment and Bald Eagle Site Management Plan: Drafts of the Bald Eagle Site Management Plan and Biological Assessments for wildlife and for plants were sent for review. Not all reviews have been completed yet.

100 AGGREGATE AREA SHORELINE INVESTIGATIONS

1.0 Columbia River Data Compilation: The report has been received and is is WHC patent/legal clearance as a last step before printing.

2.0 Shoreline Mapping The identification of springs is complete; the information was used for planning milestone M-30-01 work. Other shoreline reconnaissance maps are completed and to be included in the Geologic Data Review Report.

3.0 Shoreline Radiation Surveys 100-HR-3 OU has been completed. The KR-4 shoreline survey has begun; it is only about 1 and 1/2 miles and should be completed soon.

9 2 1 2 5 0 2 0 1 5 9

9 2 1 2 5 0 2 0 1 6 0

100 AREA UNIT MANAGERS MEETING

February 27, 1992
450 Hills St./Rm. 47

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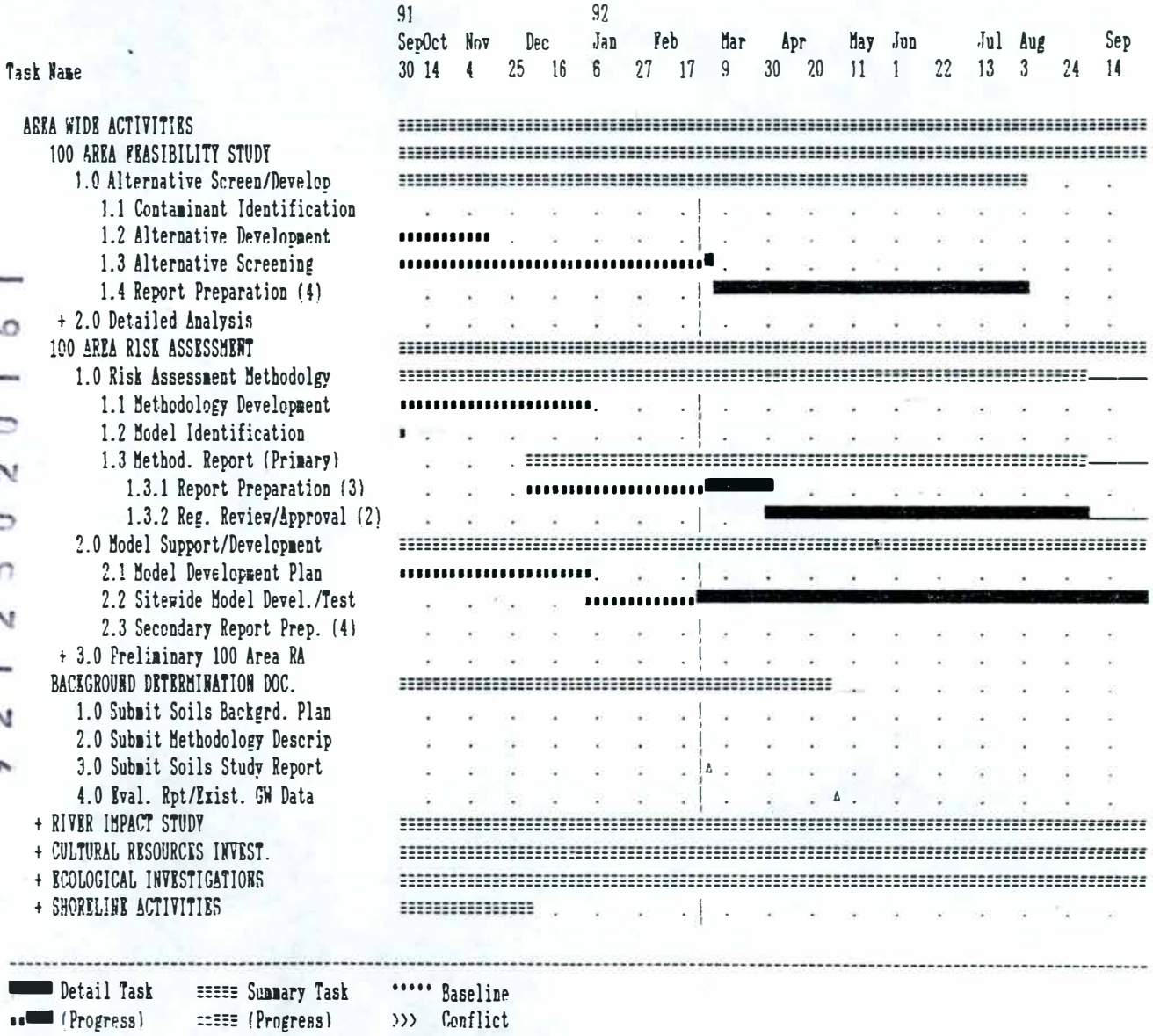
1. Schedule

2. 100 Area Feasibility Study

3. Risk Assessment Methodology and Modeling Status

Schednle Name : 100 Area FY91
Responsible :
As-of Date : 24-Feb-92 Schedule File : DECSTAT



Detail Task ===== Summary Task ••••• Baseline
(Progress) ===== (Progress)))) Conflict
(Slack) ===— (Slack) ..■ Resource delay
Progress shows Percent Achieved on Actual ▵ Milestone
---------- Scale: 3 days per character ----------

TIME LINE Gantt Chart Report, Strip 1

9 2 1 2 5 0 2 0 1 6 1

100 Area Feasibility Study

Status: Work on alternative evaluation for screening purposes and recommendations for treatability testing was initiated. Preparing draft report for internal WHC review.

Alternatives Development and Screening Report due for DOE review May 1, 1992. Currently on schedule.

Risk Assessment Methodology and Modeling Status

1. Risk Assessment Methodology

   Milestone M-29-03 - March 31, 1992 - "Submit risk assessment methodology document (primary document) and include in Appendix F" [of the Tri-Party Agreement].

Status: Submitted document to DOE for their review.

COLUMBIA RIVER/GROUNDWATER INTERACTION INVESTIGATIONS: 100 AGGREGATE AREA

R. E. Peterson, Geosciences Group

[Presented at the February 27, 1992 CERCLA Unit Managers Meeting, Richland, Washington]

Relevance to Work Plans and Tri-Party Agreement Milestones

- Appendix D, Task 3.4 "Spring and Seep Sampling" and Task 3.6 "River Stage Recorders and Data Loggers"
- TPA Milestone M-30-00 "Complete Integrated General Investigations and Studies for the 100 Areas"
  - M-30-02 " . . . determine the cumulative health and environmental impacts . . . of contaminated groundwater flow into the river"
  - M-30-04 "Evaluate Interaction of River and Unconfined Aquifer with Regard to Aquifer Properties"

Initial Investigation of Trends in River Bank Seepage and Nearby Well

- Well 199-H4-11 and Seep B015D6, 100-H Area
- Sampled Hourly on November 25 and 26 Between 8 AM and 4 PM
- Measured Temperature, Conductivity, and pH in Well, Seep, and River Using Field Instruments
- Measured Nitrate and Hexavalent Chromium Concentrations in Well and Seep Using Hach Portable Water Analysis Kit

Discussion

- Seepage Composition Changes Due to Outflow of Bank Storage Readily Identifiable Using a Variety of Indicators
- River Stage During the Hours Immediately Preceeding Sampling Plays a Significant Role in Seepage Water Quality

9 2 1 2 5 0 2 0 1 6 4

TPA MILESTONE M-30-00:

"Complete Integrated General Investigations and Studies for the 100-Areas"

M-30-01 Evaluate impact to Columbia River from contaminated springs and seeps . . .

M-30-02 Submit a plan . . . to determine the cumulative health and environmental impacts . . . of contaminated groundwater flow into the river

M-30-03 Complete all nonintrusive field work . . .

M-30-04 Evaluate interaction of river and unconfined aquifer with regard to aquifer properties

M-30-05 Install monitoring equipment for long-term evaluation of river and unconfined aquifer interaction

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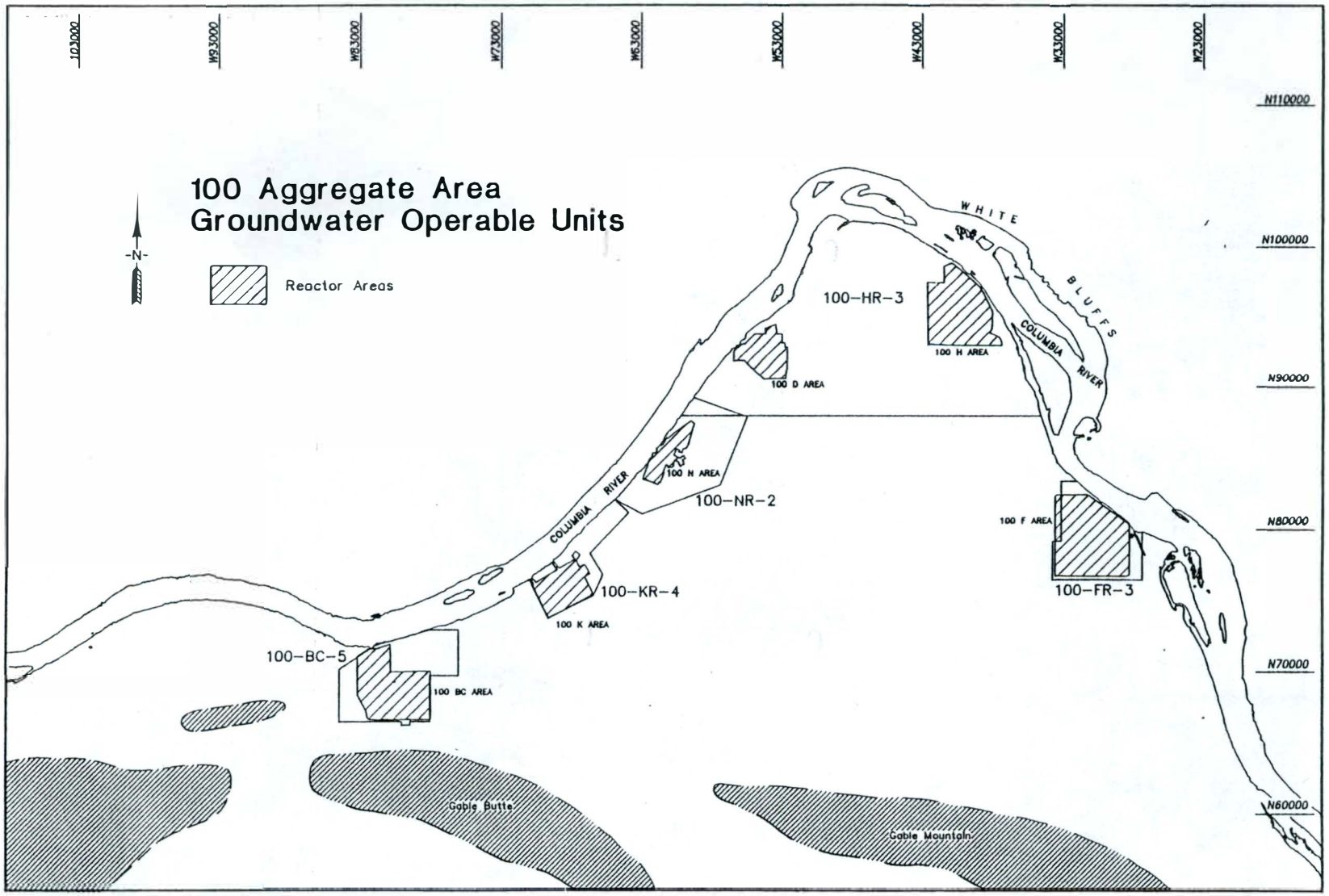

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PROGRAM PROPOSED FOR MILESTONE M-30-04:

"Submit a report to EPA and Ecology evaluating the interaction between the Columbia River and the unconfined aquifer for aquifer hydraulic parameters."

- Review published theoretical approaches
- Test published approaches with new water level data from wells near the river
- Describe bank storage phenomenon more fully, including variability in water levels, temperature, chemistry, and groundwater flux
- Integrate these results with those from Milestones M-30-01 and -02, to plan additional work
- Document results in Supporting Document by 9/92
- Install additional monitoring equipment as appropriate to meet Milestone M-30-05

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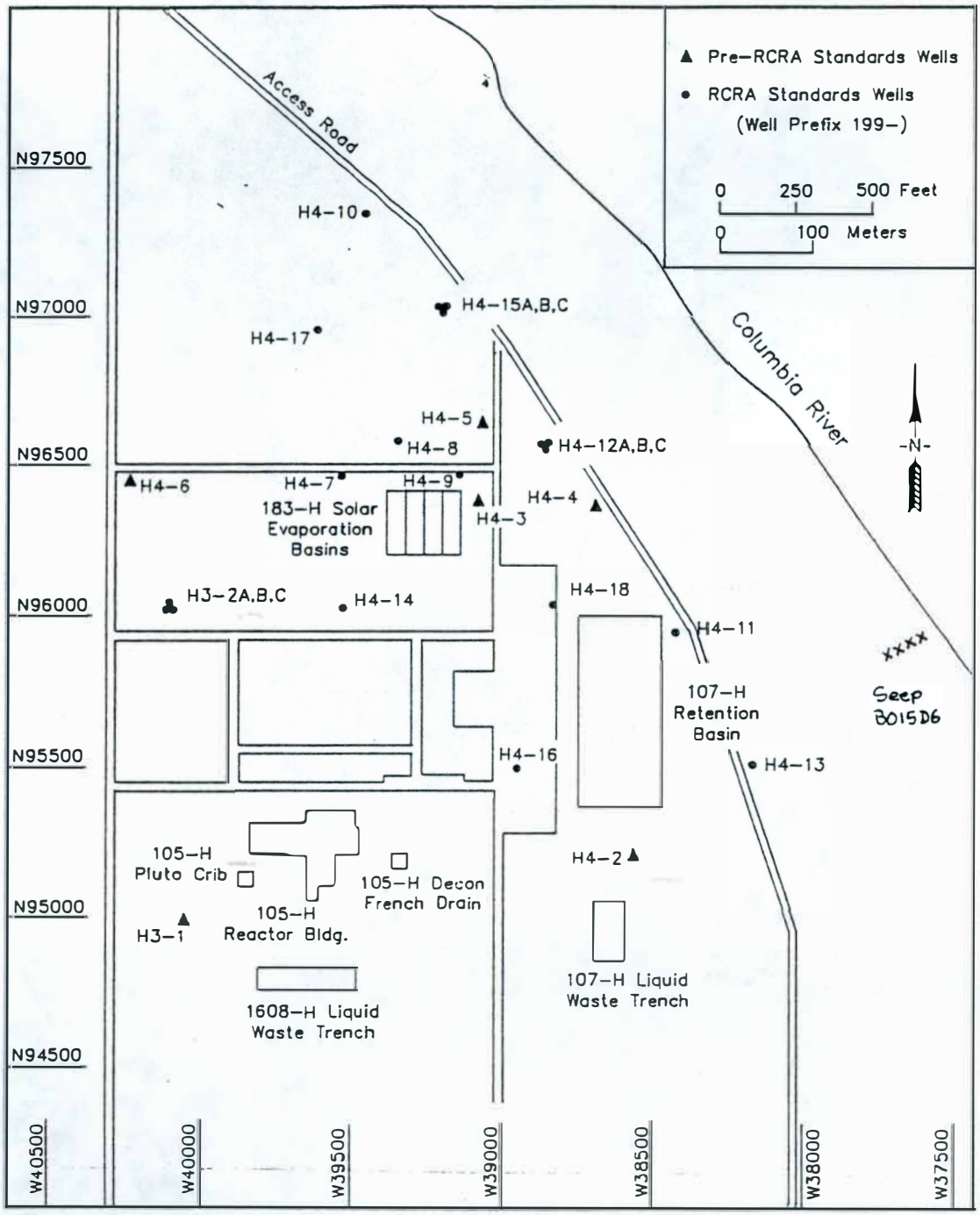

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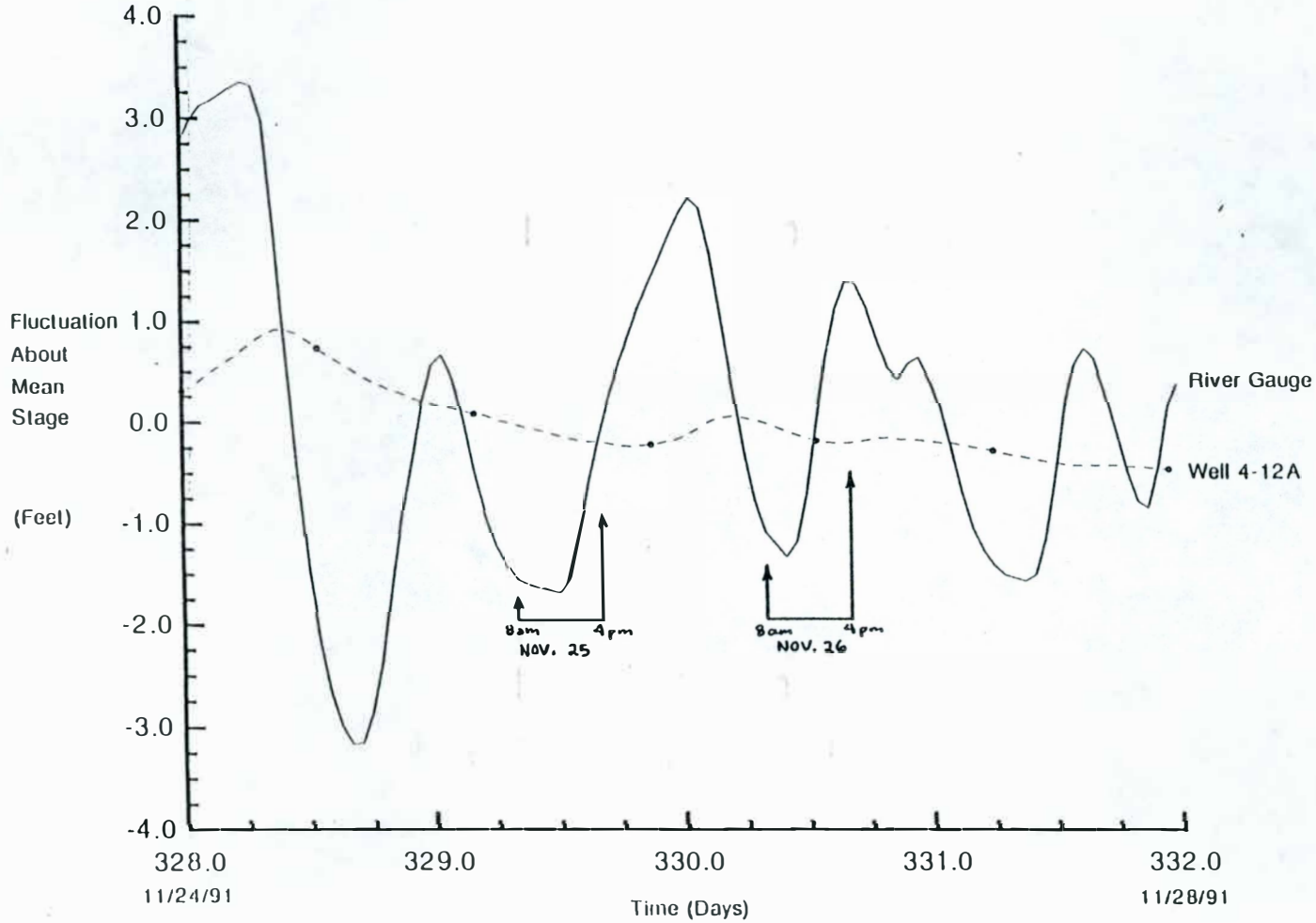
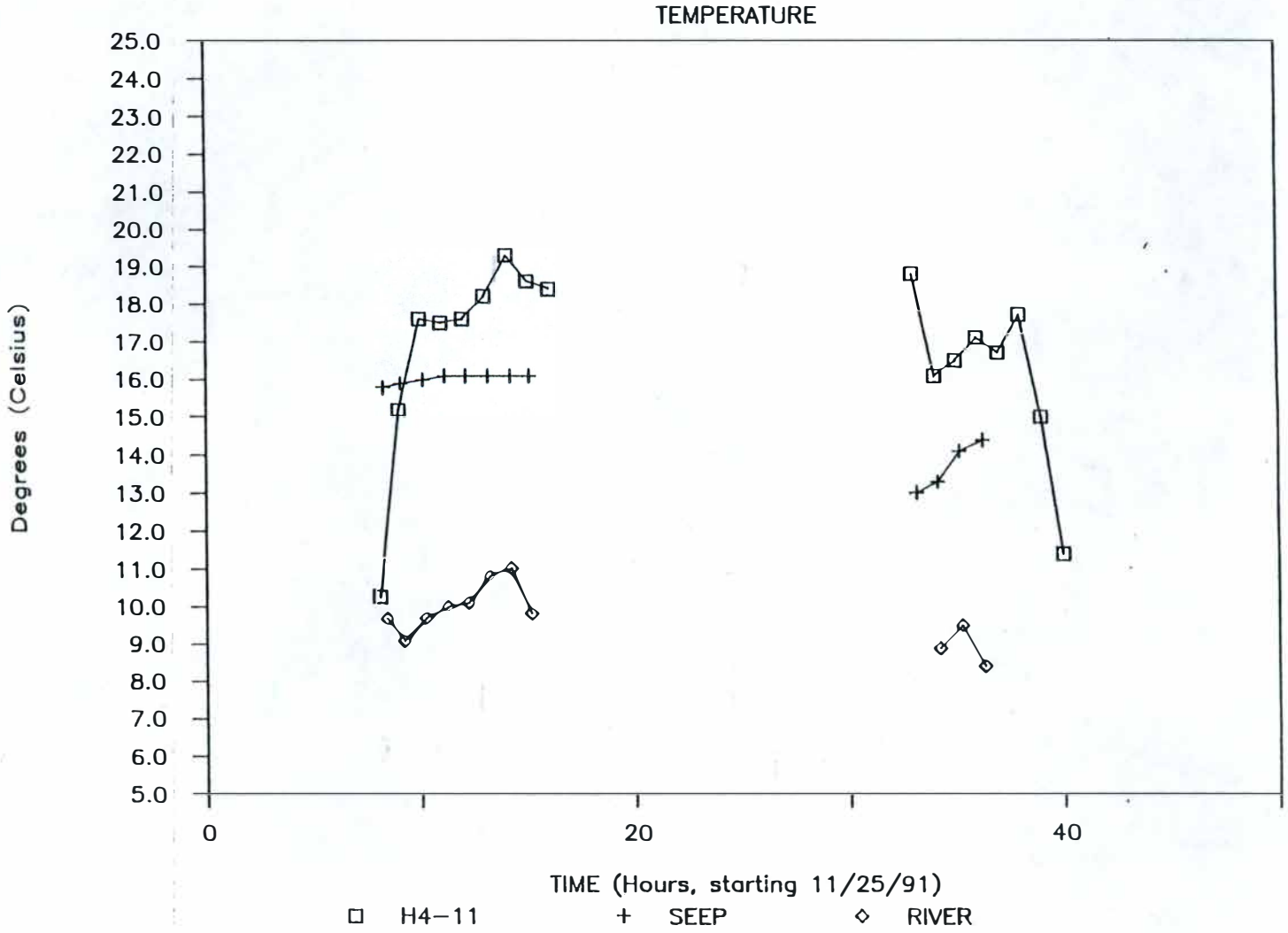
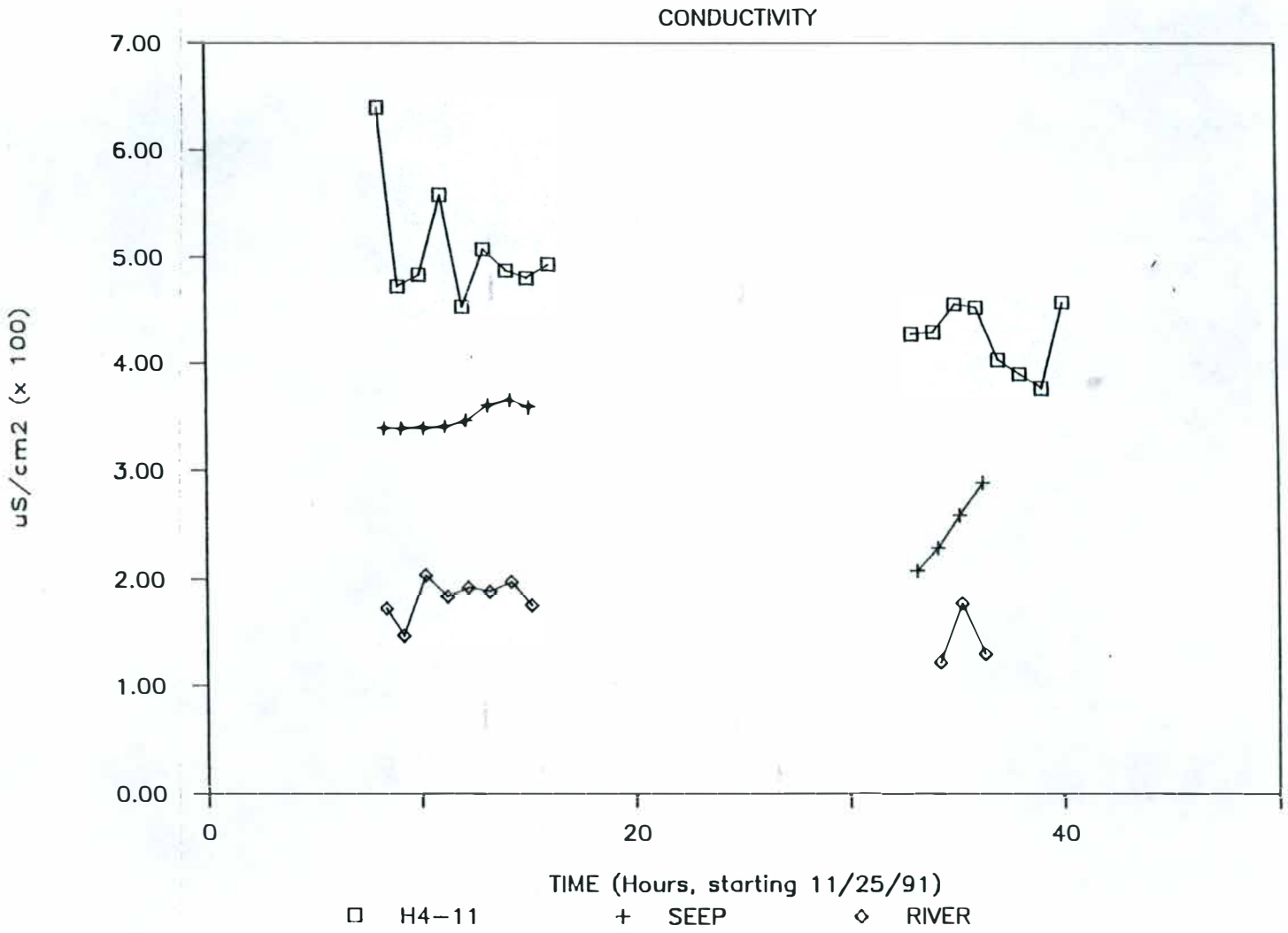
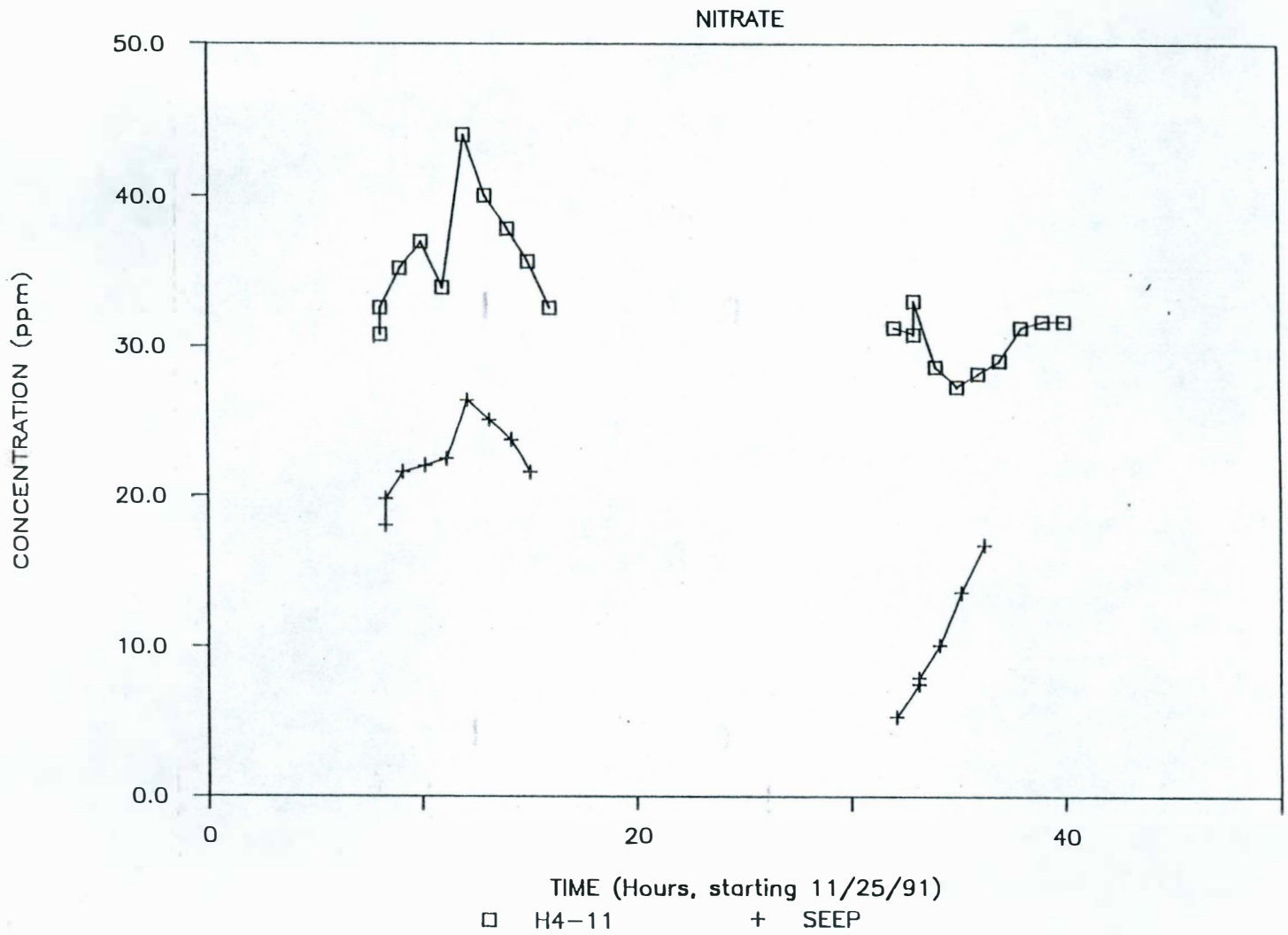
9 2 1 2 5 0 2 0 1 6 8

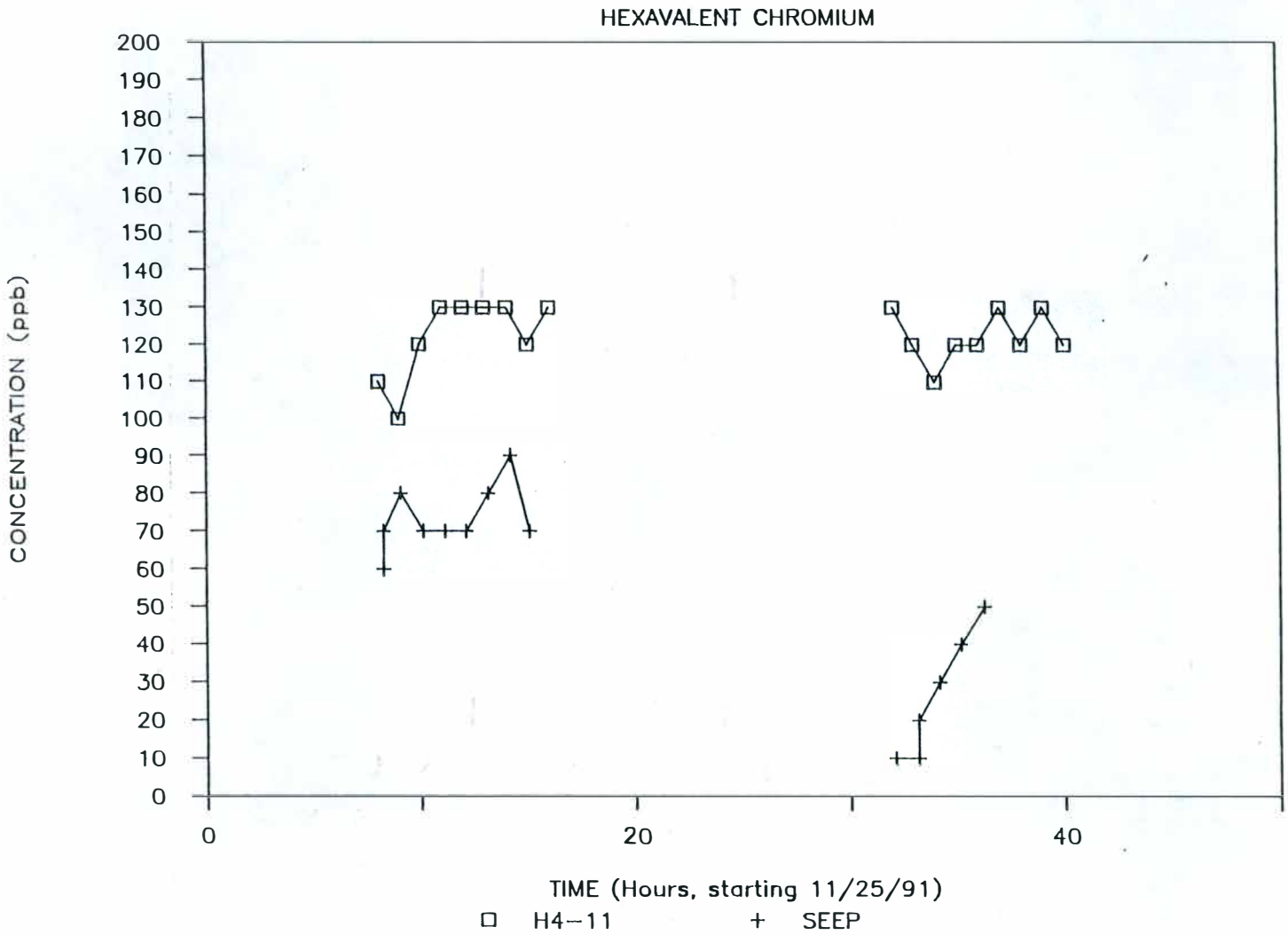
Stage Fluctuations at the 100 H Area River Gauge and
Water Level Fluctuations at Well 4-12A




TEMPERATURE
Degrees (Celsius)
25.0
24.0
23.0
22.0
21.0
20.0
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
0
20
40
TIME (Hours, starting 11/25/91)
H4-11
SEEP
RIVER


CONDUCTIVITY
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
uS/cm2 (x 100)
0
20
40
TIME (Hours, starting 11/25/91)
H4-11
SEEP
RIVER


NITRATE
50.0
40.0
30.0
20.0
10.0
0.0
CONCENTRATION (ppm)
0
20
40
TIME (Hours, starting 11/25/91)
H4-11
SEEP


HEXAVALENT CHROMIUM
CONCENTRATION (ppb)
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0
20
40
TIME (Hours, starting 11/25/91)
H4-11
SEEP

Attachment #13

100 AREA FEASIBILITY STUDY

JERRY CHIARAMONTE
IT CORPORATION

FEBRUARY 26, 1992

9 2 1 2 5 0 2 0 1 7 4

100 AREA FEASIBILITY STUDY

- SCOPE
- SUMMARY OF EXISTING DATA
- CONTAMINANTS OF CONCERN
- ARARs DEVELOPMENT
- REMEDIAL TECHNOLOGIES/PROCESS OPTIONS
- ALTERNATIVES DEVELOPMENT AND SCREENING
- TREATABILITY STUDIES
- NEXT STEPS/PROGRAM INTEGRATION

9 2 1 2 5 0 2 0 1 7 5

SCOPE

- PHASE I/II FS ONLY THROUGH ALTERNATIVES DEVELOPMENT AND SCREENING; DETAILED ANALYSIS COMES LATER

- MAY 16, 1991 TPA CHANGE PACKAGE REQUIRES THREE FSs

  - SOURCES OTHER THAN 100-N
  - GROUNDWATER OTHER THAN 100-N
  - 100-N SOURCE AND GROUNDWATER

  THESE THREE MEDIA HAVE BEEN ROLLED INTO ONE DOCUMENT SINCE THERE IS MUCH INFORMATION IN COMMON

- SOURCES ARE FURTHER SUBDIVIDED:

  - SOLID WASTES (E.G., BURIAL GROUNDS, RETENTION BASINS)

  - SOILS/NEAR-SHORE SEDIMENTS (E.G., LIQUID WASTE SITES)

- AIR/SURFACE WATER NOT IN SCOPE

9 2 1 2 5 0 2 0 1 7 6

SUMMARY OF EXISTING DATA

- SITE DESCRIPTIONS/BACKGROUND DATA ARE SUMMARIZED FOR ALL MEDIA

  - ELEVEN 100 AREA DRAFT WORK PLANS

  - OTHER 100 AREA SOURCE DOCUMENTS

  - NO CURRENT DATA INCORPORATED

- RANGES OF CONTAMINANT CONCENTRATIONS AND/OR INVENTORIES IDENTIFIED FOR WASTE SITE TYPES

  EXAMPLES:

  - LIQUID WASTE DISPOSAL FACILITIES
    PLUTO CRIBS
    108 BLDG. CRIBS
    115 BLDG. CRIBS
    ETC.

  - GROUNDWATER
    CONTAM. CONCENTRATIONS BY AREA

9 2 1 2 5 0 2 0 1 7 7

REPORT OUTLINE

HANFORD 100 AREA FEASIBILITY STUDY
PHASES I AND II

Executive Summary
1.0 Introduction
- 1.1 Purpose and Scope
- 1.2 Organization of Report
- 1.3 Background/Summary of Existing Data
  - 1.3.1 100 Area Description
    - 1.3.1.1 Location
    - 1.3.1.2 History of Operations
    - 1.3.1.3 Facility Characteristics and Waste Generating Processes (except N-Area)
    - 1.3.1.4 Facility Characteristics and Waste Generating Processes (N-Area)
  - 1.3.2 Physical Setting
    - 1.3.2.1 Topography
    - 1.3.2.2 Geology
    - 1.3.2.3 Hydrogeology
    - 1.3.2.4 Surface Water Hydrology
    - 1.3.2.5 Meteorology
    - 1.3.2.6 Environmental Resources
    - 1.3.2.7 Human Resources
  - 1.3.3 Summary of Hazardous Material Releases
  - 1.3.4 Nature and Extent of Contamination
    - 1.3.4.1 Sources (excluding N-Area)
    - 1.3.4.2 Sources (N-Area)
    - 1.3.4.3 Soils
    - 1.3.4.4 Groundwater
    - 1.3.4.5 Surface Water and Sediments
    - 1.3.4.6 Air
    - 1.3.4.7 Biota

2.0 Potential Contaminants of Concern
- 2.1 Regulatory Contaminants of Concern
- 2.2 Qualitative Toxicity Assessment
- 2.3 Potential Contaminants of Concern

3.0 Potential Applicable of Relevant and Appropriate Requirements (ARARs)
- 3.1 Identification of ARARs and TBCs
  - 3.1.1 Chemical Specific Requirements
  - 3.1.2 Action-Specific Requirements
  - 3.1.3 Location-Specific Requirements

9 2 1 2 5 0 2 0 1 7 8

REPORT OUTLINE (CONTINUED)
HANFORD 100 AREA FEASIBILITY STUDY
PHASES I AND II

4.0 Identification and Screening of Technologies and Process Options
- 4.1 Introduction
- 4.2 Remedial Action Objectives
  - 4.2.1 Affected Media
  - 4.2.2 Point of Compliance
  - 4.2.3 Remedial Action Goals
- 4.3 General Response Actions
- 4.4 Volumes or Areas of Media of Interest
- 4.5 Identification and Screening of Technology Types and Process Options
  - 4.5.1 Identification and Screening of Technologies
  - 4.5.2 Evaluation of Technologies and Selection of Representative Technologies

5.0 Development and Screening of Alternatives
- 5.1 Development of Alternatives
- 5.2 Screening of Alternatives
  - 5.2.1 Alternative 1
  - 5.2.2 Alternative 2
  - 5.2.x Screening Summary

6.0 Future Study Phases
- 6.1 Treatability Study Recommendations
- 6.2 Focused Feasibility Studies for Operable Units

7.0 References

Appendices

9 2 1 2 5 0 2 0 1 7 9

CONTAMINANTS OF CONCERN

- CONSISTENT METHODOLOGY APPLIED IN TWO STEPS:

  1. DETERMINE REGULATED CONTAMINANTS
  2. SCREEN THESE FOR TOXICOLOGICAL SIGNIFICANCE

- REGULATED CONTAMINANTS

  - DECISION LOGIC FOR CHEMICALS AND RADIONUCLIDES BASED ON RELEASE HISTORY, EXISTENCE OF LIMITS, EXCEEDANCE OF LIMITS OR BACKGROUND

- QUALITATIVE TOXICITY ASSESSMENT

  - USE EPA GUIDANCE ON CONTAMINANT SCREENING

- FINAL LIST INCLUDES:

  - POTENTIAL CONTAMINANTS OF CONCERN
  - SUSPECT CONTAMINANTS

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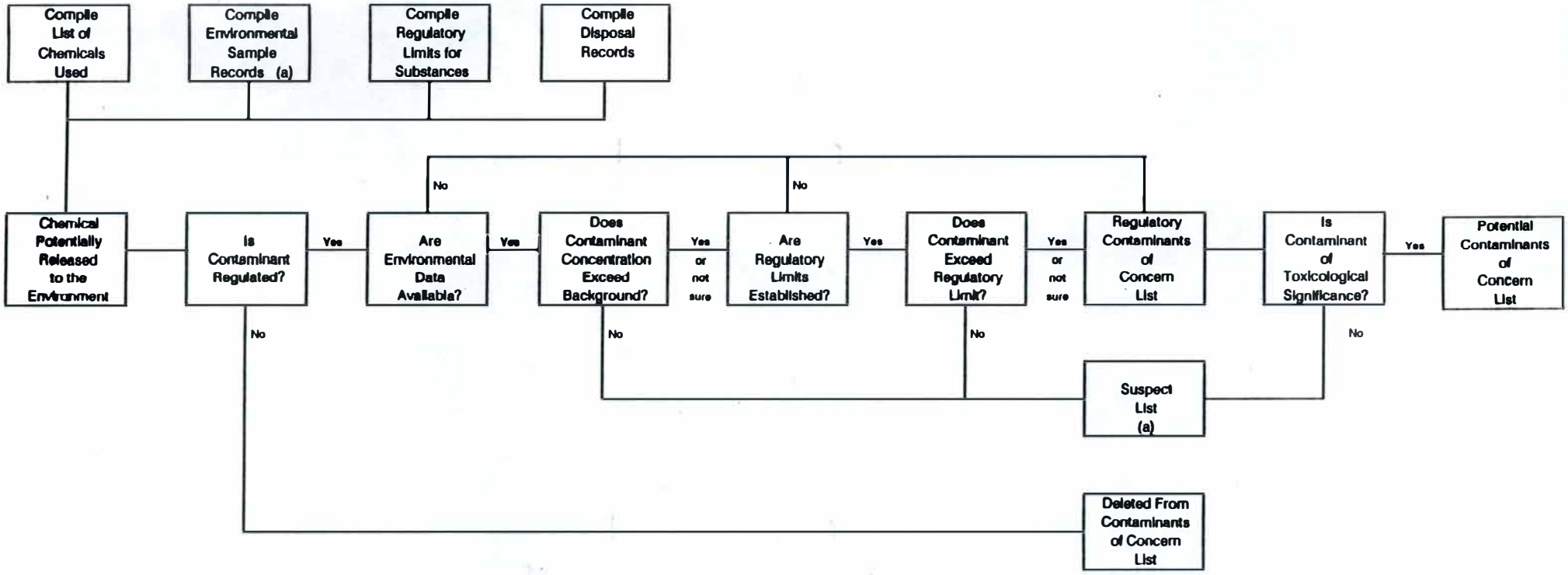
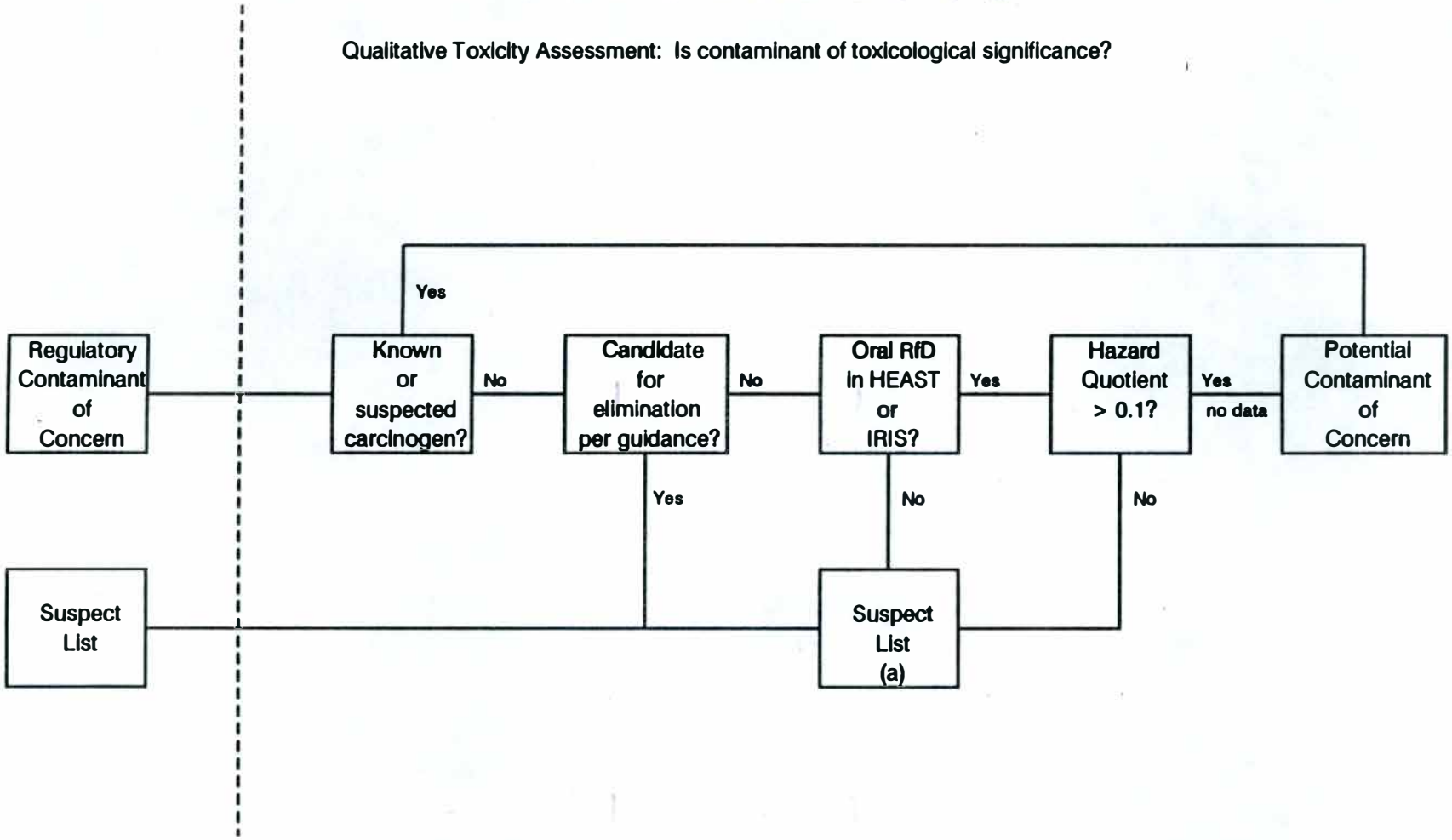


(a)Subsequently obtained data will require a re-evaluation of suspect contaminants.

FIGURE 1. DECISION LOGIC DIAGRAM - NONRADIOLOGICAL, CHEMICAL SUBSTANCES

RL/12-91/ JS/806.112/FIG1.XLS



(a) Subsequently obtained environmental data and/or toxicological data will require a re-evaluation of suspect contaminants. See Figures 1 and 2.

FIGURE 3. DECISION LOGIC DIAGRAM - QUALITATIVE TOXICITY ASSESSEMENT

RL/12-91/HJS/806.112/FIG3.XLS

ARARs

- STATE/FEDERAL POTENTIAL ARARs AND TBCs
  - CHEMICAL-SPECIFIC
  - ACTION-SPECIFIC
  - LOCATION-SPECIFIC

- BOTH NARRATIVE AND NUMERICAL REQUIREMENTS IDENTIFIED

9 2 1 2 5 0 2 0 1 8 3

REMEDIAL TECHNOLOGIES/PROCESS OPTIONS

- REMEDIAL ACTION GOALS (CLEANUP STANDARDS)

  - USE ARARs IN THE ABSENCE OF RISK ASSESSMENTS

- GENERAL RESPONSE ACTIONS

  - NO ACTION
  - INSTITUTIONAL CONTROLS
  - CONTAINMENT (INCL. IN-SITU TREATMENT)
  - REMOVAL/DISPOSAL
  - REMOVAL/TREATMENT/DISPOSAL

- CONTAMINATED VOLUMES

  - USE ESTIMATES FROM MACROENGINEERING STUDY

- TECHNOLOGIES/PROCESS OPTIONS

  - 90+ IDENTIFIED
  - DESCRIPTIONS PREPARED FOR EACH
  - 1ST SCREENING - TECHNICAL IMPLEMENTABILITY
  - 2ND SCREENING - ADMIN. IMPLEMENTABILITY/ EFFECTIVENESS/COST

9 2 1 2 5 0 2 0 1 8 4

REMEDIAL TECHNOLOGIES/PROCESS OPTIONS

- REMEDIAL ACTION GOALS (CLEANUP STANDARDS)

  - USE ARARs IN THE ABSENCE OF RISK ASSESSMENTS

- GENERAL RESPONSE ACTIONS

  - NO ACTION
  - INSTITUTIONAL CONTROLS
  - CONTAINMENT
  - IN-SITU TREATMENT
  - REMOVAL/DISPOSAL
  - REMOVAL/TREATMENT/DISPOSAL

- CONTAMINATED VOLUMES

  - USE ESTIMATES FROM MACROENGINEERING STUDY

- TECHNOLOGIES/PROCESS OPTIONS

  - 90+ IDENTIFIED
  - DESCRIPTIONS PREPARED FOR EACH
  - 1ST SCREENING - TECHNICAL IMPLEMENTABILITY
  - 2ND SCREENING - ADMIN. IMPLEMENTABILITY/ EFFECTIVENESS/COST

9 2 1 2 5 0 2 0 1 8 5

ALTERNATIVES DEVELOPMENT AND SCREENING

- ALTERNATIVES SELECTED TO:
  - SPAN THE RANGE OF RESPONSE ACTIONS
  - INCLUDE PROCESS OPTIONS REPRESENTATIVE OF ALL TECHNOLOGY TYPES
- 27 ALTERNATIVES DEVELOPED
  - 10 FOR SOLID WASTE
  - 6 FOR GROUNDWATER
  - 11 FOR SOILS/NEAR-SHORE SEDIMENTS
  - 18 ARE UNIQUE (SOME ARE COMMON TO SOLID WASTE AND SOILS)
  - SAME ALTERNATIVES APPLY TO N-AREA

9 2 1 2 5 0 2 0 1 8 6

ALTERNATIVE EXAMPLES

ALTERNATIVE 9: SOLID WASTE

- REMOVAL: EXCAVATION/DEMOLITION
- TREATMENT:
  - THERMAL: THERMAL DESORPTION (ORGANICS)
  - PHYSICAL: SIZE REDUCTION (COMPACTION)
  - STABILIZATION/SOLIDIFICATION: CEMENT-BASED
- ON-SITE DISPOSAL
  - VAULT (HIGH ACTIVITY MIXED)
  - TRENCH (LOW ACTIVITY MIXED)
- CAPPING: HANFORD BARRIER

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ALTERNATIVE EXAMPLES

ALTERNATIVE 16: GROUNDWATER

- REMOVAL: EXTRACTION WELLS

- TREATMENT:
  BIOLOGICAL: DENITRIFICATION (NITRATES)
  CHEMICAL: CHEMICAL REDUCTION (Cr+6)
  PHYSICAL: AIR STRIPPING/INCINERATION (ORGANICS)
  EVAPORATION (VOLUME REDUCTION)
  MEDIA FILTRATION (REMOVE CONC. SOLIDS)
  REVERSE OSMOSIS (POLISHING)
  STABILIZATION/SOLIDIFICATION: CEMENT-BASED FOR SECONDARY WASTES

- DISPOSAL: CRIB FOR TREATED WATER
  VAULT - HIGH ACTIVITY RESIDUES
  TRENCH - LOW ACTIVITY RESIDUES

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ALTERNATIVES SCREENING

- ALTERNATIVES ARE RATED AGAINST SCREENING CRITERIA

IMPLEMENTABILITY - TECHNICAL
- CONSTRUCTABILITY
- OPERATING RELIABILITY
- MAINTENANCE

IMPLEMENTABILITY - ADMINISTRATIVE

- AGENCY APPROVALS
- AVAILABILITY OF SERVICES
- SPECIALIZED PERSONNEL

EFFECTIVENESS

- SHORT-TERM PROTECTION OF HUMAN HEALTH AND ENVIRONMENT
- LONG-TERM PROTECTION OF HUMAN HEALTH AND ENVIRONMENT
- REDUCTION OF TOXICITY, MOBILITY OR VOLUME

COST
- ONLY A SECONDARY CONSIDERATION

- ALTERNATIVES WHICH DON'T MEET CRITERIA VERY WELL ARE SCREENED OUT

- ALTERNATIVES PASSING GO ON TO DETAILED ANALYSIS EVALUATION IN FUTURE PHASES (E.G. OU FFSs)

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TREATABILITY STUDIES

- IDENTIFY TREATABILITY STUDY DATA NEEDED FOR DETAILED ANALYSIS OF ALTERNATIVES

<u>EXAMPLE: BIODENITRIFICATION:</u>

- CONCENTRATION OF OTHER CONTAMINANTS
- CONTAMINANT SOLUBILITY IN WATER
- CONTAMINANT BIODEGRADABILITY
- TEMPERATURE, NUTRIENT, OXYGEN, PH, AND MOISTURE REQUIREMENTS
- INDIGENOUS MICROORGANISM POPULATION
- PRESENCE OF CONTAMINANTS WHICH MAY BE TOXIC TO MICROORGANISMS SUCH AS HEAVY METALS, CHLORINATED ORGANICS, PESTICIDES, HERBICIDES, AND INORGANIC SALTS
- SOIL PERMEABILITY
- EFFECTIVENESS FOR VARIABLE SOIL CONDITIONS

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Attachment 14

Workplan production schedule
February 26, 1992

Activity\Operable Unit	BC-1	BC-5	HR-1	HR-3	DR-1
1. Redline text available	2/7 (2/6)	(2/14)	2/20 (2/18)	2/20 (2/14)	2/20 (2/18)
2. Redline draft agreed to	2/10 (2/14)	2/24 (?)	3/3	3/3	3/3
3. Redline schedules available		3/4	3/17	3/17	3/17
4. Redline schedules agreed to	2/21 (2/21)	3/20	3/24	3/24	3/24
5. Golder completes review draft	2/28	3/13	3/24	3/24	3/24
6. Review draft comments disposed	3/3	3/20	3/31	3/31	3/31
7. Golder goes to press	3/6	3/27	4/7	4/7	4/7
8. WHC receives workplans	3/13	4/3	4/21	4/21	4/21
9. DOE-RL transmits workplans	3/16	4/6	4/28	4/28	4/28

Note: Dates in ( ) are actuals.

9 2 1 2 5 0 2 0 1 9 1

100 Area Field Activities
February 27, 1992

Distribution:

Pamela Innis, EPA (B5-01)
Donna Lacombe, PRC
Ward Staubitz, USGS
Diane Clark, DOE (A5-55)
Doug Fassett, SWEC (A4-35)
Mary Harmon, DOE-HQ (EM-442)
Mike Thompson, DOE-RL (A5-19)
Tom Wintczak, WHC (B2-15)
Mel Adams, WHC (H4-55)
Merl Lauterbach, WHC (H4-55)
Linda Powers, WHC (B2-35)
Don Praast, GAO (A1-80)
L.D. Arnold, WHC (B2-35)

~~Ronald D. Izatt (A6-95)~~
~~Director, DOE-RL, ERD~~
Ronald E. Gerton (A6-80)
Director, DOE-RL
Roger D. Freeberg (A6-95)
Chief, Rstr. Br., DOE-RL/ERD
~~Steven H. Wisness~~
~~Tri-Party Agreement, Prog. Mgr.~~
Richard D. Wojtasek (B2-15)
Prgm. Mgr. WHC

ADMINISTRATIVE RECORD: 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-3; Care of Susan Wray, WHC (H4-22)

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

9 2 1 2 5 0 2 0 1 9 2