

# START

0020347

February 25, 1992

Meeting Minutes Transmittal/Approval  
200-BP-1 Operable Unit Managers Meeting  
450 Hills Street, Richland, WA  
January 22, 1992

From/ Appvl.: Allen Harris Date: 3-2-92  
 Allan Harris, 200-BP-1 Unit Manager, DOE-RL (A5-19)

Appvl.: Doug Sherwood Date: 27 Feb 92  
 Doug Sherwood, 200-BP-1 Unit Manager, EPA (B5-01)

Appvl.: Larry Goldstein Date: 4/2/92  
 Larry Goldstein, 200-BP-1 Unit Manager, WA Department of Ecology

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

- Attachment #1 - Meeting Summary/Summary of Commitments and Agreements
- Attachment #2 - Attendance List
- Attachment #3 - Agenda for the Meeting
- Attachment #4 - Status of Action Items
- Attachment #5 - Change Control Form #19
- Attachment #6 - Baseline Risk Assessment Modeling
- Attachment #7 - Task 6 Groundwater Well Installation
- Attachment #8 - Task 3 Near Surface Soil Sampling
- Attachment #9 - Column Leach/Sorption Testing
- Attachment #10 - Task 11 Hydraulic Pump Testing
- Attachment #11 - Groundwater Sampling
- Attachment #12 - Source and Vadose Sampling
- Attachment #13 - Schedule



Prepared by: W. E. McClung Date: 3/26/92  
 SWEC Support Services

Concurrence by: M. A. Blase Date: 3/31/92  
 WHC RI Coordinator

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Attachment #1

Meeting Summary and Summary of Commitments and Agreements

200-BP-1 Operable Unit Managers Meeting  
January 22, 1992

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1. The status of outstanding action items (Attachment #4) was given by Mark Buckmaster (WHC).  

2BP1.49: Mark Buckmaster (WHC) and Doug Sherwood (EPA) met and discussed comments on the column leach test; and therefore, this action item was closed.

2BP1.50 An update on the characterization data for the area around the flush tank was given by Mark Buckmaster. No elevated levels of contamination have been found, with the exception of a reading of 265 picocuries per gram at location number six. This reading is just over the health physics criteria for radioactivity. The report will be finalized through the Radioactive Area Remedial Action (RARA) program, and Mr. Buckmaster should receive the report within two months. This action item was then closed.

2BP1.51 The status of the groundwater data package was provided to EPA. This action item was then closed.
  2. Mark Buckmaster reported there was one work plan change for the month of January 1992. The change was a proposal to log only one of the three boreholes that were planned per crib (see Attachment #5). Mr. Buckmaster said the technical reason for this work plan change was that the tools were becoming saturated due to the high intensity of gamma rays at the bottom of the cribs. There was no objection to the work plan change and it was approved.
  3. Len Collard (WHC) gave a presentation on modeling to be used for the risk assessment (see Attachment #6).
  4. An update on remedial investigation activities was presented by Mark Buckmaster (see Attachments #7-#10). The sample results from near surface soil samples indicate low levels of contamination (including the area around the flush tank - see Action Item #2BP1.50). The chemical data for subsurface soil sampling has been validated and transmitted to the regulators, and the radiochemical data validation is nearly complete and will also be transmitted to the regulators.
  5. Doug Sherwood inquired about groundwater data. Mr. Buckmaster said the first quarter of chemical data had been transmitted to the regulators, and the radiochemical data is nearly complete and will be transmitted (see Attachment #11). Jeff Lerch (OSM) said WHC is working with Weston to close out the rad data from the first and second quarter, and that all the *wet chemistry* groundwater data from the second quarter has been validated. Mr. Lerch also said that the metals data is in the process

of being transmitted to the Environmental Data Management Center (EDMC), and that the metals will be validated by a subcontractor. Mr. Buckmaster said that in the future all data will be handled in this manner.

6. Mr. Buckmaster estimated that there were 12 remaining boreholes to be completed for source and vadose sampling (see Attachment #12). An update received from the field showed extremely high levels of radiation in the 16-B-45 crib that was anticipated to contain the highest levels of contamination. The contamination is highest right below the crib, and it decreases further below the crib. Mr. Buckmaster estimated that the contamination was four times the amount anticipated and he attributed this to an inaccurate historical inventory. The high levels of contamination indicate that more contaminants went into the cribs than had been anticipated. Mr. Sherwood said that during the analysis of the liquid waste that went into the cribs, the samples were filtered and only the liquid fractions of the waste samples were analyzed. If there were suspended solids, they were probably not measured in the analysis. This could account for the much higher levels of contamination than were projected.
7. Mr. Buckmaster gave an update on the 200-BP-1 schedule (Attachment #13). Task 4, which consists of the three deep holes, was behind schedule. However, Mr. Buckmaster indicated that WHC should now be able to meet the January 30, 1992 schedule date. WHC is still evaluating some of the ~~passive~~ historical data on sorption testing and will probably revamp the test plan, resulting in a slight delay in the schedule. Mr. Buckmaster said WHC is still trying to meet the February 1993 date for the RI Phase I report, and that all the milestones should be met, providing there are no further delays of the analytical work.
8. Joan Bartz (CNES) and Bryan Foley (DOE-RL) from the sampling audit team were requested to give an update on their work. Ms. Bartz said that the team is looking primarily at activities in the Battelle laboratory. The laboratory has only been receiving hot samples, so there have been limitations on the resulting data. There are ten team members who have been assigned to various areas: change control, corrective action, field operations for groundwater, and soils.

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Attachment #2

Attendance

200-BP-1 Operable Unit Managers Meeting  
January 22, 1992

<u>Name</u>	<u>Org.</u>	<u>O.U. Role</u>	<u>Phone</u>
Allan Harris	DOE-RL	Unit Manager	509-376-4339
Bryan Foley	DOE-RL	CMP	509-376-6679
Joan Bartz	CNES	GSSC, DOE-RL	509-376-6324
Kathy Knox	CNES	GSSC, DOE-RL	509-376-5011
Chuck Cline	Ecology	Hydrogeology	206-438-7556
Doug Sherwood	EPA	Unit Manager	509-376-9529
Kirth Erickson	SWEC	GSSC, DOE-RL	509-376-8189
Bill Fryer	SWEC	GSSC, DOE-RL	509-376-9830
Bill McClung	SWEC	GSSC, DOE-RL	509-376-1853
Brian Drost	USGS	EPA Support	206-593-6510
Staubitz, Ward	USGS	EPA Support	206-593-6510
Mark Buckmaster	WHC	RI Coordinator	509-376-1792
Len Collard	WHC	Modeling	509-376-1032
Hal Downey	WHC	ER-Program Office	509-376-5539
Raz Khaleel	WHC	Modeling	509-376-6903
Jeff Lerch	WHC	OSM	509-373-3419

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Attachment #3

Agenda

200-BP-1 Operable Unit Managers Meeting  
January 22, 1992

Introduction:

Status:

Action Items:

Work Plan:

- o Task 2 Logging Requirements

Remedial Investigation:

- o Baseline Risk Assessment
- o Task 6 Phase IB Wells
- o Task 3 Near Surface Soil Sampling
- o Column Leach/Sorption Testing
- o Task 11 Hydraulic Pump Testing
- o Groundwater Sampling
- o Source and Vadose Sampling

Issues:

Other Topics:

- o Schedule

Agreements and Commitments:

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Attachment #4

Action Items

200-BP-1 Operable Unit Managers Meeting  
January 22, 1992

<u>Item Number</u>	<u>Action</u>	<u>Status</u>
2BP1.49	Written comments are to be submitted on the column leach test procedure satisfying the DQO's of the Work Plan. Action: Sherwood (9/18/91)	Closed:
2BP1.50	Provide an update on characterization data for the area around the flush tank. Action: Buckmaster (12/17/91)	Closed: Jan UMM
2BP1.51	Provide status of the ground water data package to EPA. Action: Buckmaster (12/17/91)	Closed: Jan UMM

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200-BP-1 UNIT MANAGERS MEETING AGENDA  
JANUARY 22, 1992  
2:00-3:30 PM  
450 HILLS ST., ROOM 47

Introduction:

Status:

Action Items:

Work Plan:

- o Task 2 Logging Requirements

Remedial Investigation:

- o Baseline Risk Assessment
- o Task 6 Phase IB Wells
- o Task 3 Near Surface Soil Sampling
- o Column Leach/Sorption Testing
- o Task 11 Hydraulic Pump Testing
- o Groundwater Sampling
- o Source and Vadose Sampling

Issues:

Other Topics:

- o Schedule

Agreements and Commitments:

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ACTION ITEMS

<u>Item Number</u>	<u>Action</u>	<u>Status</u>
2BP1.49	Written comments are to be submitted on the column leach test procedure satisfying the DQO's of the Work Plan. Action: Sherwood (9/18/91)	Closed:
2BP1.50	Provide an update on characterization data for the area around the flush tank. Action: Buckmaster (12/17/91)	Closed: Jan UMM
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Change Number 19	APPROVED DOCUMENT CHANGE CONTROL FORM Do not use blue ink. Type, or print in black	Date 1/21/92
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Document Number & Title DOE-RI, Rev. 1, "Remedial Investigation/Feasibility Study Work Plan for the 200-BP-1 Operable Unit, Hanford Site, Richland, Washington"	Date Document Last Issued March 1990
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Originator M. A. Buckmaster 200-BP-1 RI Coordinator	<i>M.A. Buckmaster</i> 1/21/92	Phone 6-1792
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**Description of Change**

Modify Task 2, Source Sampling & Analysis - Spectral-gamma logging will be completed on only 1 of the 3 boreholes per crib. No logging will be completed on the remaining 2 boreholes.

Note: Include affected page number

**Justification and Impacts of Change**

Due to the intense gamma activity beneath the cribs, the high purity germanium detector and counting electronics are saturated. No analysis will be possible for these intervals. One chemical sample is collected in this high activity zone and should be adequate to characterize this interval.

<u>A. C. Harris</u>	_____
DOE UNIT MANAGER	DATE
<u>D. R. Sherwood</u>	_____
LEAD REGULATORY UNIT MANAGER	DATE

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

Sen Chand 6  
1/22/92

**TOPICS**

- I. Transition to Three Dimensional Models for Individual Cribs**
- II. New Grid and Properties**
- III. Incorporation of New Data into Models**
- IV. Related and Supporting Work for Models at Hanford**
- V. Consideration of Data Variability within Models**
- VI. WHC Groundwater Modeling Forum**
- VII. Comparisons with Field Studies**
- VIII. Infiltration Pathway Study**
- IX. Plan of Attack (Where do we go from here?)**

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## **I. Transition to Three Dimensional Models for Individual Cribs**

### **Advantages**

- 1) Easy to understand**
- 2) Can calibrate each crib individually**
- 3) Each computer analysis can be extended to other cribs**
  - a) use nominal values**
  - b) superimpose appropriate factors (concentration, half-life)**
- 4) Try to establish functions for nonlinear factors, e.g., run for a wide band of  $K_d$ 's and curve fit results (flux, peak concentration travel time to key boundary)**

### **Disadvantages**

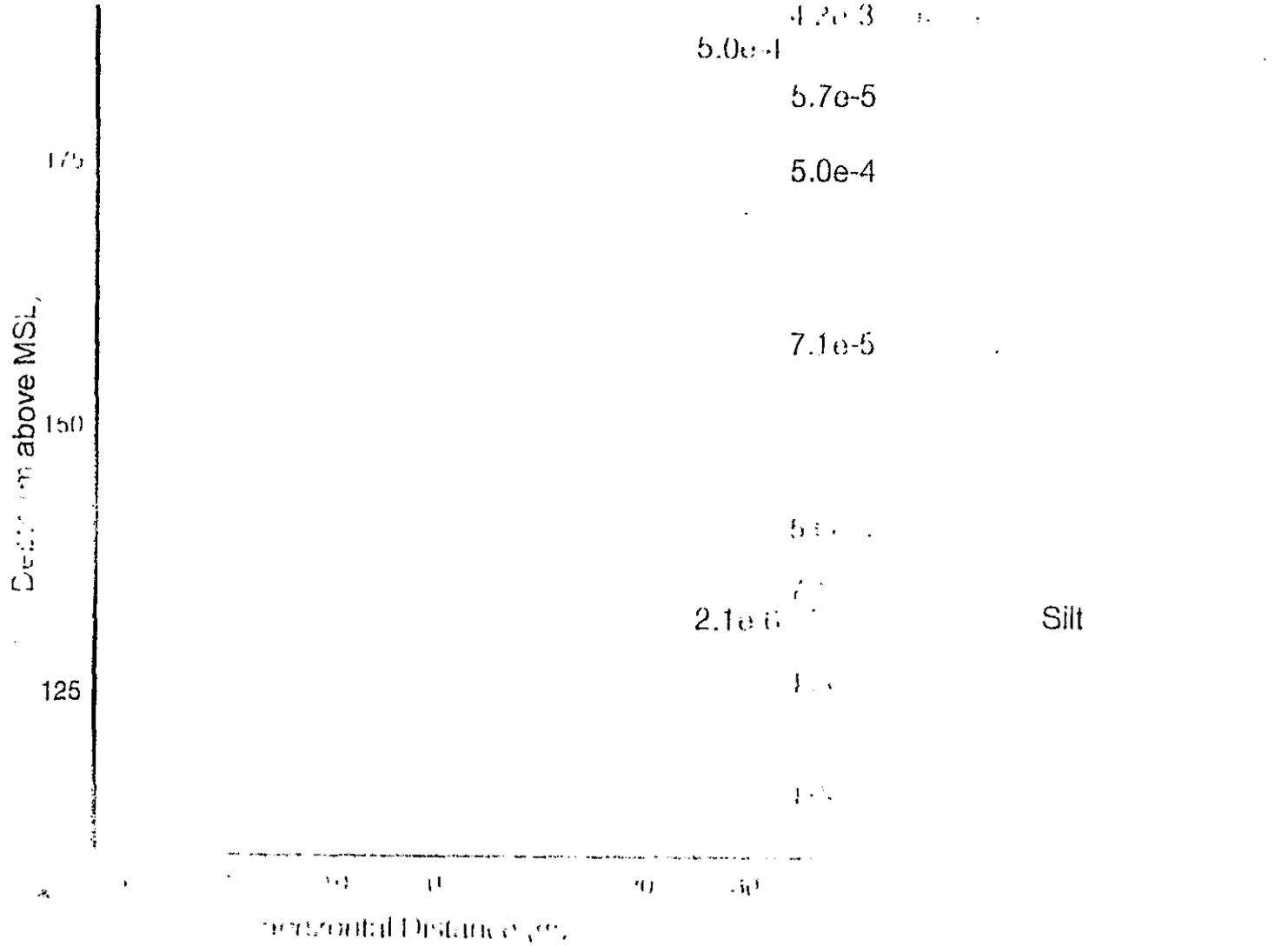
**Ignores interactions with other cribs**

### **Future**

**Develop consolidated three dimensional model with all cribs but with coarser mesh**

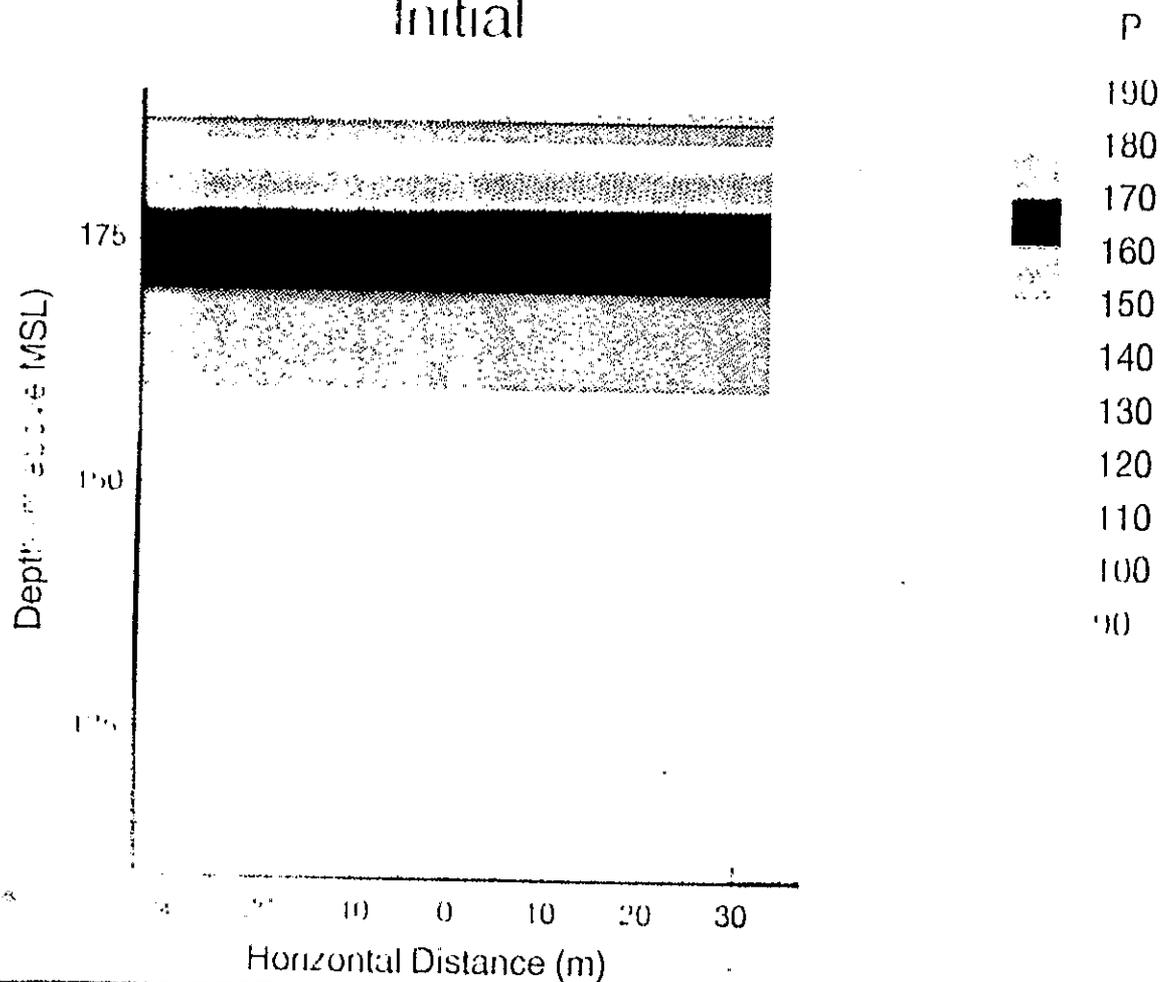
# MESH B-43 CRIB

Ksat (cm/sec)



# HYDRAULIC HEAD B-43 CRIB

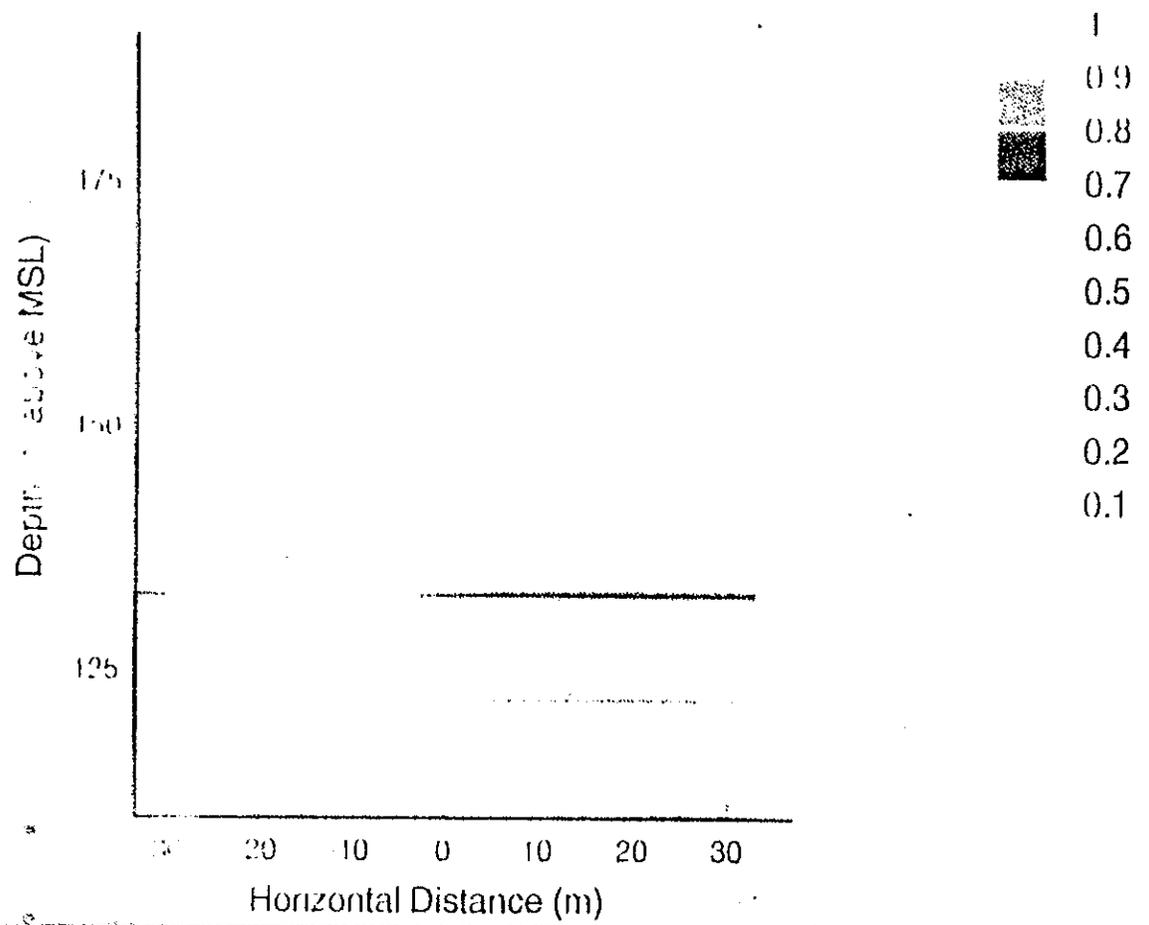
Initial



# RELATIVE SATURATION B-43 CRIB

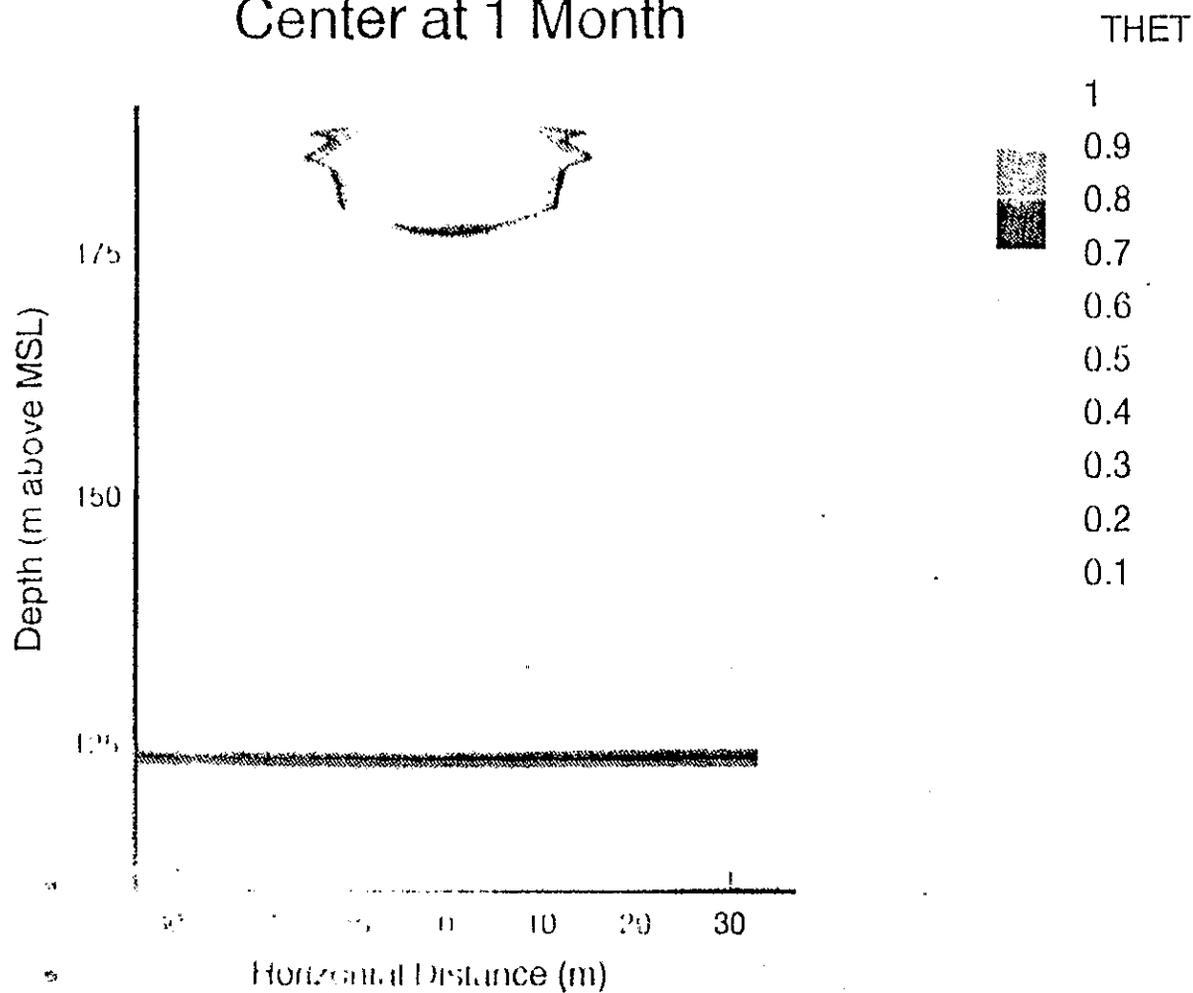
Initial

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# RELATIVE SATURATION B-43 CRIB

## Center at 1 Month

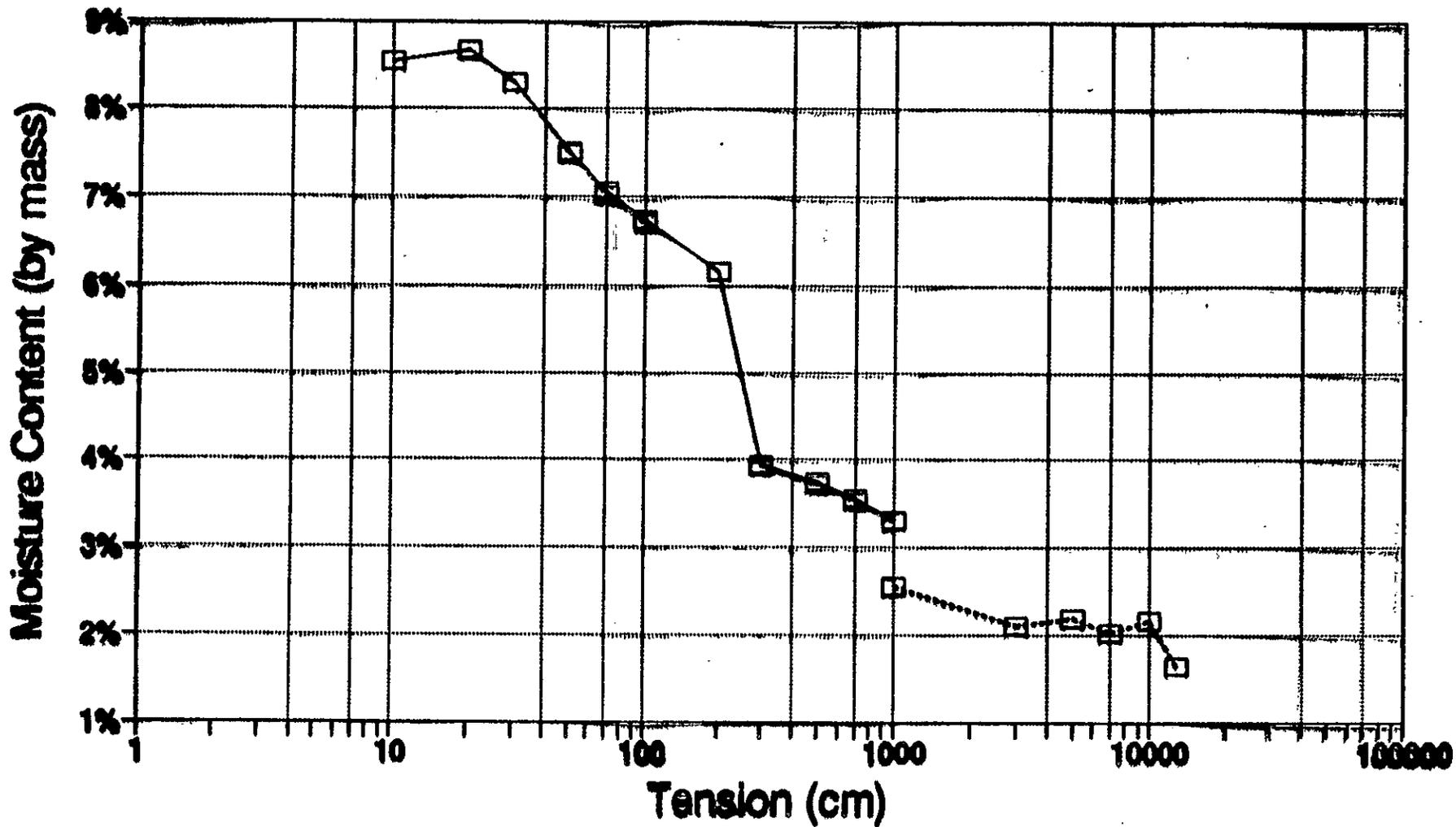


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### **III. Incorporation of New Data into Models**

- 1) Moisture retention data is available from well 299-E33-38 (near B-47)**
- 2) Samples submitted from B-57 for grain size distribution**

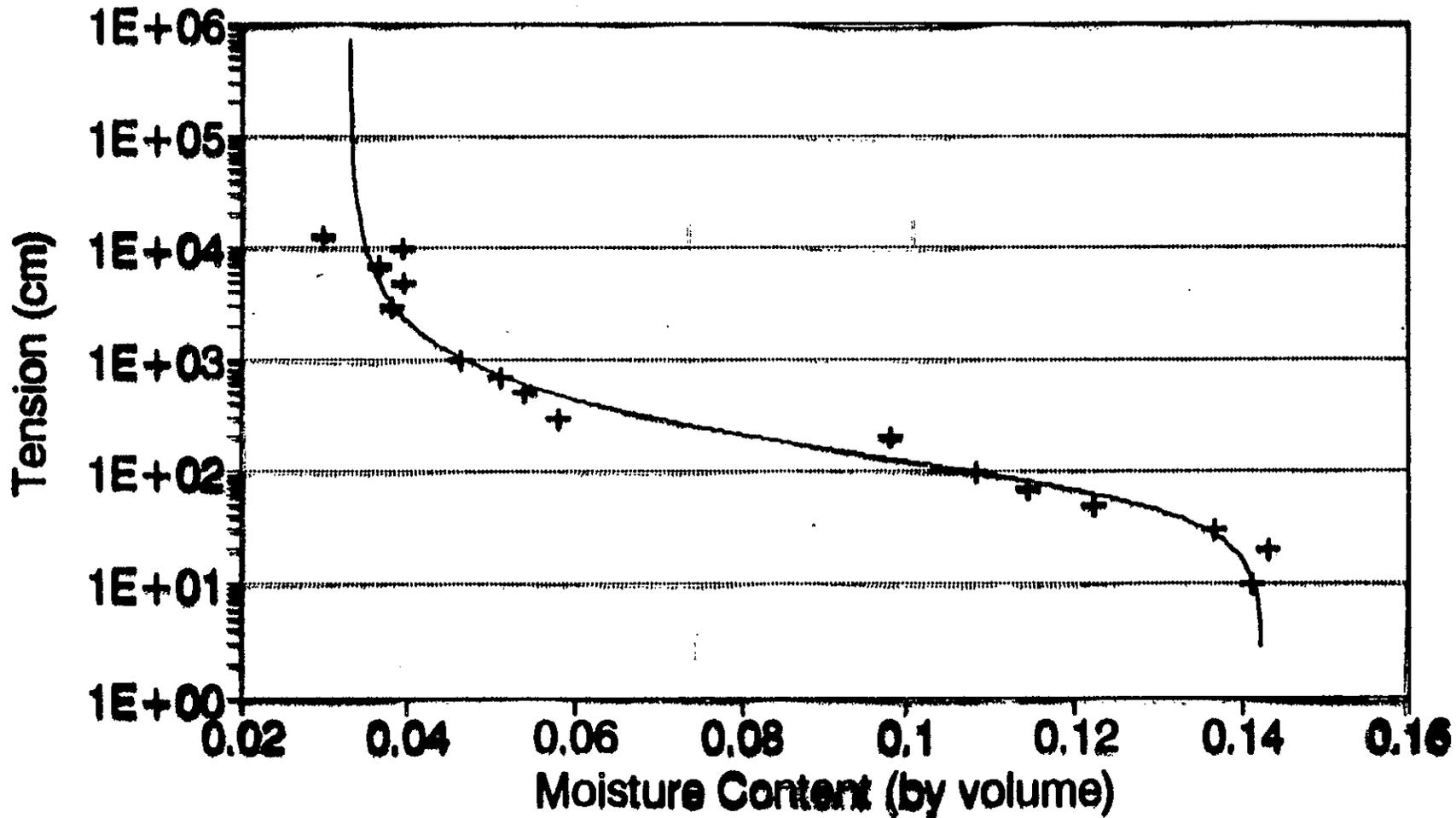
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**200-BP-1 Moisture Retention**  
Sample 1-0528-G



—□— 1 B Drying    ···□··· Kettle Drying

# 200BP-1 MOISTURE RETENTION

Sample 1-0528-G (167.4 ft 299-E33-38)



+ Laboratory Data

— Van Genuchten Curve

#### **IV. Key Related and Supporting Work for Models at Hanford**

##### **1) Interactions among modelers, field personnel, and laboratory personnel**

- . thermal effects (storage) on insitu moisture content**
- . effects of drilling and recovery on sample**
- . selection of samples for testing**
- . size of samples needed for lab based on soil type**
- . how good are lab data (in general, specifically)**
- . difficult soils to work with**
- . need to read log books**
- . need for written reports for reference**

##### **2) Difficulties with moisture retention data**

- . typical drying curve results**
- . typical RETC results**
- . problems with wetting curve needed for hysteresis**
- . suggest WSU for checking and different lab techniques**

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**IV. Key Related and Supporting Work for Models at Hanford (cont.)**

**3) Particle size distribution and bulk density used to predict soil moisture retention data - Arya and Paris**

**4) Unsat K from centrifuge method to predict moisture retention and to determine applicability of van Genuchten curves to one site at Hanford**

**5) Adjoint method for VAM2D**

**. recommend Raz Khaleel give presentation and his studies be extended to include 200-BP-1**

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## **V. Consideration of Data Variability within Models**

**1) Refinement on number of soil layers needed**

**2) Monte Carlo analyses**

- . develop pdf's for key soil and hydraulic properties (e.g., lognormal or maximum entropy distribution)**
- . problem with small amount of data available**
- . data can be grouped for similar soil layers into 1 bin**

**3) Particle size distributions as a proxy (Arya-Paris model)**

**4) Adjoint method**

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## **VI. WHC Groundwater Modeling Forum**

**1) Sharing Information**

**2) Modeling Activities**

**3) Tools**

**4) Program Familiarity**

**5) Issues**

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**VII. Comparisons with Field Studies**

**Nothing to report yet**

**VIII. Infiltration Pathway Study**

**Nothing to report yet**

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**IX. Plan of Attack (Where do we go from here?)**

**1) Perform 3D studies**

**2) Compare results of 10 soil layers vs. 4 soil layers and decide which model to use**

**3) Perform deterministic analysis with nominal values**

**4) "Scale" results or establish "functions" where possible**  
**. use key radionuclides and chemicals**

**5) Conduct separate analysis for B-50 and B-57**

**6) "Calibrate" models to current data - include any new data**

**6a) Study hysteresis effects with VAM3D if wetting curve data is available**

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**IX. Plan of Attack (Where do we go from here?) cont.**

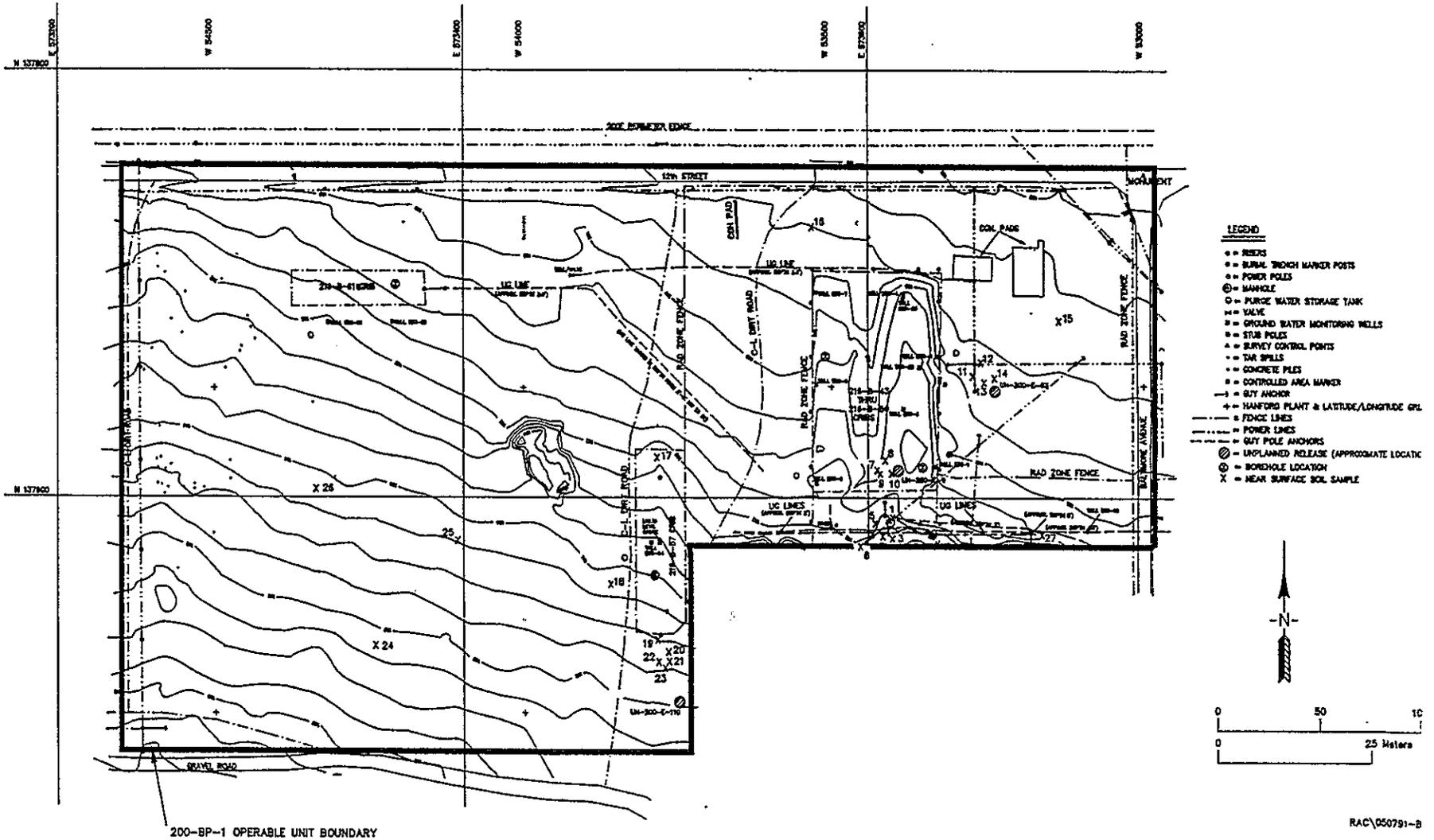
- 7) Extend analyses to future (peak concentration at boundary)**
  
- 8) Prepare deterministic report for baseline (1992)**
  - . **cumulative flux at well 100 m downstream**
  - . **travel time for peak concentration to boundary well**
  - . **description of plumes vs. time, etc.**
  
- 9) Establish method for variability studies**
  
- 10) Conduct variability studies - include new data (report 1993)**
  
- 11) Conduct alternative remediation analyses as required**
  
- 12) Cray may disappear in 1993 - imperative that we have replacement capabilities**

**TASK 6 GROUNDWATER WELL INSTALLATION**

1. Wells 699-55-55, 699-52-54, and 699-52-57 have been completed.
2. Phase IB wells.
  - o Well 699-57-59 is scheduled for construction in early March.
  - o "Fitness for Use" for wells 699-60-60, 699-59-58, and 699-60-57 should be completed by the end of January.

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200-BP-1 Operable Unit Surface Sampling Locations

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200-BP-1, TASK 3, NEAR SURFACE SOIL SAMPLE DATA SUMMARY

ABBREVIATIONS

- U The material was analyzed for, but was not detected above the level of the associated value. The associated value may be the Sample Quantitation Limit (SQL) or the Detection Limit (DL).
- J The associated value is an estimated quantity.
- UJ The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
- R The data are unusable.
- B The material was analyzed for, and was above the Instrument Detection Limit but below the Contract Required Detection Limit.

Sample Number	Location			Nitrate (mg/kg)	Phosphate (mg/kg)	Sulfate (mg/kg)	Bismuth (mg/kg)	Selenium (mg/kg)	Total Cyanide (mg/kg)	Cyanide Lab
	North	East	Elevation							
200-BP-1 Detection Limits				1.0	5.0	20.0	10.0	0.5	0.5	
1 BOOJ48	137,590.774	573,613.030	629.34	8.2 J	4.2 J	2.3 R	28.3 U	0.208 U	0.519 U	Weston
									0.3 U	PNL
3 BOOJ49	137,580.927	573,613.230	628.95	7.4 J	1.2 UJ	1.2 R	30.1 U	0.280 U	0.574 U	Weston
									0.3 U	PNL
4 BOOJ50	137,581.749	573,608.363	629.29	2.0 J	1.2 UJ	1.2 R	33.0 U	0.212 U	0.573 U	Weston
									0.3 U	PNL
5 BOOJ51	137,587.814	573,604.650	629.62	4.5 J	2.5 UJ	2.5 R	31.2 U	0.189 U	0.521 U	Weston
									0.3 U	PNL
6 BOOJ52	137,577.262	573,597.297	630.81	23.1 J	1.2 UJ	1.2 R	26.9 U	0.180 U	0.538 U	Weston
									0.3 U	PNL
7 BOOJ53	137,612.625	573,604.993	626.11	2.5 UJ	2.5 UJ	2.5 UJ	25.9 U	0.208 U	0.519 U	Weston
									0.3 U	PNL
8 BOOJ54	137,617.479	573,609.522	627.56	1.2 UJ	1.2 UJ	1.2 R	28.1 U	0.190 B	0.549 U	Weston

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Sample Number	Location			Nitrate (mg/kg)	Phosphate (mg/kg)	Sulfate (mg/kg)	Bismuth (mg/kg)	Selenium (mg/kg)	Total Cyanide (mg/kg)	Cyanide Lab
	North	East	Elevation							
200-BP-1 Detection Limits				1.0	5.0	20.0	10.0	0.5	0.5	
9 BOOJ55	137,611.161	573,607.314	626.92	1.2 UJ	1.2 UJ	1.2 R	29.8 U	0.173 U	0.567 U	Weston
10 BOOJ56	137,611.070	573,612.736	627.99	1.2 UJ	1.2 UJ	1.2 R	24.9 U	0.193 U	0.534 U	Weston
11 BBOJ60	1137,656.579	573,651.439	620.68	6.4 J	1.2 UJ	1.2 R	27.3 U	0.175 U	0.511 U	Weston
									0.3 U	PNL
12 BOOJ61	137,662.888	573,655.159	620.41	7.6 J	1.2 UJ	1.2 R	30.0 U	0.182 U	0.500 U	Weston
									0.3 U	PNL
13 BOOJ62	137,653.438	573,656.267	620.94	2.7 J	1.2 UJ	1.2 R	24.3 U	0.174 U	0.510 U	Weston
									0.3 U	PNL
13 DUP BOOJ75	137,653.438	573,656.267	620.94							K-25
									0.3 U	PNL
14 BOOJ63	137,655.713	573,661.673	620.77	1.3 J	1.2 UJ	1.2 R	25.1 U	0.156 U	0.513 U	Weston
									0.3 U	PNL
15 BOOJ64	137,682.174	573,692.301	619.08	7.8 J	2.7 J	1.2 R	25.4 U	0.203 U	0.508 U	Weston
16 BOOJ65	137,725.962	573,572.803	619.94	1.2 UJ	1.2 UJ	1.2 R	25.4 U	0.203 U	0.508 U	Weston
									0.3 U	PNL
17 BOOJ66	137,618.481	573,498.442	630.90	8.5 J	1.2 UJ	1.2 R	24.2 U	0.180 U	0.522 U	Weston
									0.3 U	PNL
17 DUP BOOJ76	137,618.481	573,498.442	630.90							K-25
									0.3 U	PNL

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Sample Number	Location			Nitrate (mg/kg)	Phosphate (mg/kg)	Sulfate (mg/kg)	Bismuth (mg/kg)	Selenium (mg/kg)	Total Cyanide (mg/kg)	Cyanide Lab
	North	East	Elevation							
200-BP-1 Detection Limits				1.0	5.0	20.0	10.0	0.5	0.5	
18 BOOJ68	137,559.272	573,475.623	636.95	1.2 UJ	1.2 UJ	1.2 R	27.1 U	0.151 U	0.507 U	Weston
19 BOOJ69	137,533.388	573,498.296	639.56	5.0 J	1.2 UJ	1.2 R	26.0 U	0.196 U	0.529 U	Weston
20 BOOJ70	137,527.656	573,503.630	639.81	5.0 J	1.4 J	1.2 R	27.1 U	0.168 U	0.520 U	Weston
21 BOOJ71	137,523.308	573,503.479	640.45	1.2 UJ	1.2 UJ	1.2 R	26.1 U	0.161 U	0.531 U	Weston
									0.3 U	PNL
22 BOOJ72	137,523.168	573,498.778	640.32	26.9 J	1.9 J	1.2 R	25.9 U	0.196 U	0.526 U	Weston
23 BOOJ73	137,520.236	573,502.104	640.96	23.9 J	1.5 J	1.2 R	24.9 U	0.170U	0.535 U	Weston
24 BOOJ57	137,530.593	573,358.789	643.35	1.2 UJ	1.2 UJ	1.2 R	27.0 U	0.198 U	0.527 U	Weston
									0.3 U	PNL
25 BOOJ58	137,579.765	573,399.297	637.47	1.2 UJ	1.2 UJ	1.2 R	28.8 U	0.180 U	0.525 U	Weston
									0.3 U	PNL
26 BOOJ59	137,603.389	573,329.833	636.98	1.2 UJ	1.2 UJ	1.2 R	27.3 U	0.200 B	0.527 U	Weston
									0.3 U	PNL
27 BOOJ67	137,582.316	573,684.670	625.23	2.9 J	1.2 UJ	1.2 R	30.6 U	0.186 U	0.511 U	Weston
QA SAM BOOJ74				1.2 UJ	1.2 UJ	1.2 R	27.3 U	0.187 U	0.500 U	Weston
QA SAM BOOJ77				1.2 UJ	1.2 UJ	354 R	23.5 U	0.155 UJ	0.500 U	Weston

Sample Number	Total Alpha (pCi/g)	Total Beta (pCi/g)	Tc-99 (pCi/g)	Sr-90 (pCi/g)	Cs-137 (pCi/g)	Co-60 (pCi/g)	Pu-238 (pCi/g)	Pu-239/240 (pCi/g)	Total U (pCi/g)	Ru-106 (pCi/g)	Other isotopes
Detection Limit	0.2	0.1	5.0	1.0	1.0	1.0	0.5	0.5	1.0	0.2	
1/B00J48	6.8 ± 4.6	200. ± 10.0	< 0.7	< 0.02	71.8 ± 7.2	< 0.06				< 1.0	K-40, Ra-226, Th-228
3/B00J49	4.6 ± 2.3	44.0 ± 3.0	< 0.3	18.0 ± 2.0	11.6 ± 1.2	< 0.03	< 0.05	< 0.02		< 0.4	K-40, Ra-226, Th-228
4/B00J50	3.6 ± 2.1	49.0 ± 3.0	< 0.2	2.0 ± 0.5	15.3 ± 1.5	< 0.04	< 0.04	< 0.01		< 0.6	K-40, Ra-226, Th-228
5/B00J51	7.3 ± 4.7	190. ± 10.0	1.4 ± 0.7	< 0.03	93.6 ± 9.4	< 0.06				< 2.0	K-40, Ra-226, Th-228
6/B00J52	6.3 ± 4.4	330. ± 10.0	< 0.7	< 0.04	265. ± 27.0	< 0.05				< 2.0	K-40, Ra-226
7/B00J53	8.9 ± 5.0	91.0 ± 5.0	< 1.0	< 0.02	28.3 ± 2.8	< 0.06				< 1.0	K-40, Ra-226, Th-228
8/B00J54	2.7 ± 2.0	38.0 ± 3.0	< 0.3	2.6 ± 1.4	1.25 ± 0.12	< 0.03	< 0.08	< 0.02		< 0.3	K-40, Ra-226, Th-228
9/B00J55	5.5 ± 2.4	55.0 ± 4.0	< 0.7	< 0.5	3.51 ± 0.35	< 0.04	< 0.1	< 0.03		< 0.4	K-40, Ra-226, Th-228
10/B00J56	4.4 ± 2.2	40.0 ± 3.0	< 0.6	0.53 ± 0.11	1.92 ± 0.19	< 0.04	< 0.02	< 0.01		< 0.5	K-40, Ra-226, Th-228
11/B00J60	3.6 ± 2.1	65.0 ± 4.0	< 0.9	< 0.03	6.07 ± 0.61	< 0.03	< 0.02	< 0.01		< 0.3	K-40, Th-228
12/B00J61	5.2 ± 4.2	40.0 ± 3.0	< 0.7	< 0.02	7.13 ± 0.71	< 0.06				< 0.7	K-40, Th-228
13/B00J62	< 2.0	32.0 ± 3.0	< 0.6	< 0.08	1.67 ± 0.17	< 0.04	< 0.03	< 0.01		< 0.3	K-40, Th-228
13D/B00J75											
14/B00J63	4.2 ± 2.2	35.0 ± 3.0	< 0.7	< 0.02	6.33 ± 0.63	< 0.04	< 0.03	< 0.01		< 0.4	K-40, Th-228
15/B00J64	4.7 ± 4.0	220. ± 10.0	< 0.8	< 0.02	149. ± 15.0	< 0.06				< 3.0	K-40
16/B00J65	8.9 ± 5.0	96.0 ± 5.0	< 0.6	< 0.02	53.3 ± 5.3	< 0.05				< 2.0	K-40, Th-228
17/B00J66	3.1 ± 2.0	34.0 ± 3.0	< 0.7	0.26 ± 0.06	17.2 ± 1.7	< 0.04	< 0.03	< 0.02		< 0.5	K-40, Ra-226, Th-228
17D/B00J76											
18/B00J68	6.4 ± 2.6	91.0 ± 5.0	< 0.6	0.97 ± 0.09	21.3 ± 2.1	< 0.03	< 0.09	< 0.04		< 0.6	K-40, Ra-226, Th-228
19/B00J69	2.6 ± 1.9	49.0 ± 3.0	< 0.6	1.1 ± 0.1	4.43 ± 0.44	< 0.008	< 0.08	< 0.03		< 0.1	K-40, Th-228
20/B00J70	2.7 ± 2.0	54.0 ± 4.0	< 0.5	0.39 ± 0.08	7.48 ± 0.75	< 0.03	< 0.09	< 0.02		< 0.4	K-40, Ra-226, Th-228
21/B00J71	4.0 ± 1.4	47.0 ± 2.0	< 0.6	0.45 ± 0.07	19.8 ± 2.0	< 0.04	< 0.06	< 0.02		< 0.6	K-40, Th-228
22/B00J72	4.6 ± 1.4	44.0 ± 2.0	< 0.6	.025 ± 0.017	16.5 ± 1.7	< 0.04	< 0.06	< 0.02		< 0.5	K-40, Mn-54, Ra-226, Th-228
23/B00J73	4.4 ± 1.4	41.0 ± 2.0	< 0.6	0.33 ± 0.07	4.77 ± 0.48	< 0.04	< 0.02	< 0.01		< 0.5	K-40, Ra-226, Th-228
24/B00J57	4.4 ± 2.2	37.0 ± 3.0	< 0.7	0.03 ± 0.019	6.24 ± 0.62	< 0.04	< 0.01	.015 ± .009		< 0.4	K-40, Ra-226, Th-228

Sample Number	Total Alpha (pCi/g)	Total Beta (pCi/g)	Tc-99 (pCi/g)	Sr-90 (pCi/g)	Cs-137 (pCi/g)	Co-60 (pCi/g)	Pu-238 (pCi/g)	Pu-239/240 (pCi/g)	Total U (pCi/g)	Ru-106 (pCi/g)	Other Isotopes
Detection Limit	0.2	0.1	5.0	1.0	1.0	1.0	0.5	0.5	1.0	0.2	
25/BOOJ58	3.6 ± 2.1	36.0 ± 3.0	< 0.7	< 0.03	6.45 ± 0.64	< 0.04	< 0.01	.013 ± .007		< 0.5	K-40, Ra-226, Th-228
26/BOOJ59	< 2.0	41.0 ± 3.0	0.78 ± 0.54	0.12 ± 0.05	4.67 ± 0.47	< 0.05	< 0.02	< 0.009		< 0.5	K-40, Ra-226, Th-228
27/BOOJ67	5.2 ± 4.2	270. ± 10.0	< 0.6	< 0.04	161. ± 16.0	< 0.05				< 2.0	K-40, Th-228
QA/BOOJ74	< 3.0	37.0 ± 3.0	< 0.5	< 0.04	< 0.03	< 0.04	< 0.02	< 0.02		< 0.4	K-40, Th-228
QA/BOOJ77	5.7 ± 4.0	40.0 ± 3.0	< 0.5	< 0.04	< 0.07	< 0.08	< 0.009	< 0.009		< 0.8	K-40, Th-228

### COLUMN LEACH/SORPTION TESTING

#### Column Leach Testing

- o Dry Run Training has been completed.
- o Groundwater mixture is ready.
- o Field testing is scheduled to begin in 2 weeks.

#### Sorption Testing

- o Comments have been received from EPA and are currently being dispositioned.
- o Draft literature search has been completed and is currently being reviewed.

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**TASK 11 HYDRAULIC PUMP TESTING**

1. Testing has been completed on 699-53-55C.
  - o Adequate draw down (4 ft.) occurred sooner than anticipated (1 day).
  - o Pumping rate was lower than anticipated (1200 gpm).
  - o Results are currently being evaluated.

9 2 1 2 5 5 1 4 2 6

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**200-BP-1 GROUNDWATER WELL SAMPLING**

1. The first semiannual groundwater sampling has been initiated
  - o 11 wells have been sampled to date.
  - o Completion is scheduled for the first week in February.
  - o Well remediation activities should not impact the this sampling period.
  
2. Analytical Data:
  - o First quarter chemical data has been transmitted.
  - o OSM Status

9 2 1 2 5 5 1 4 2 7

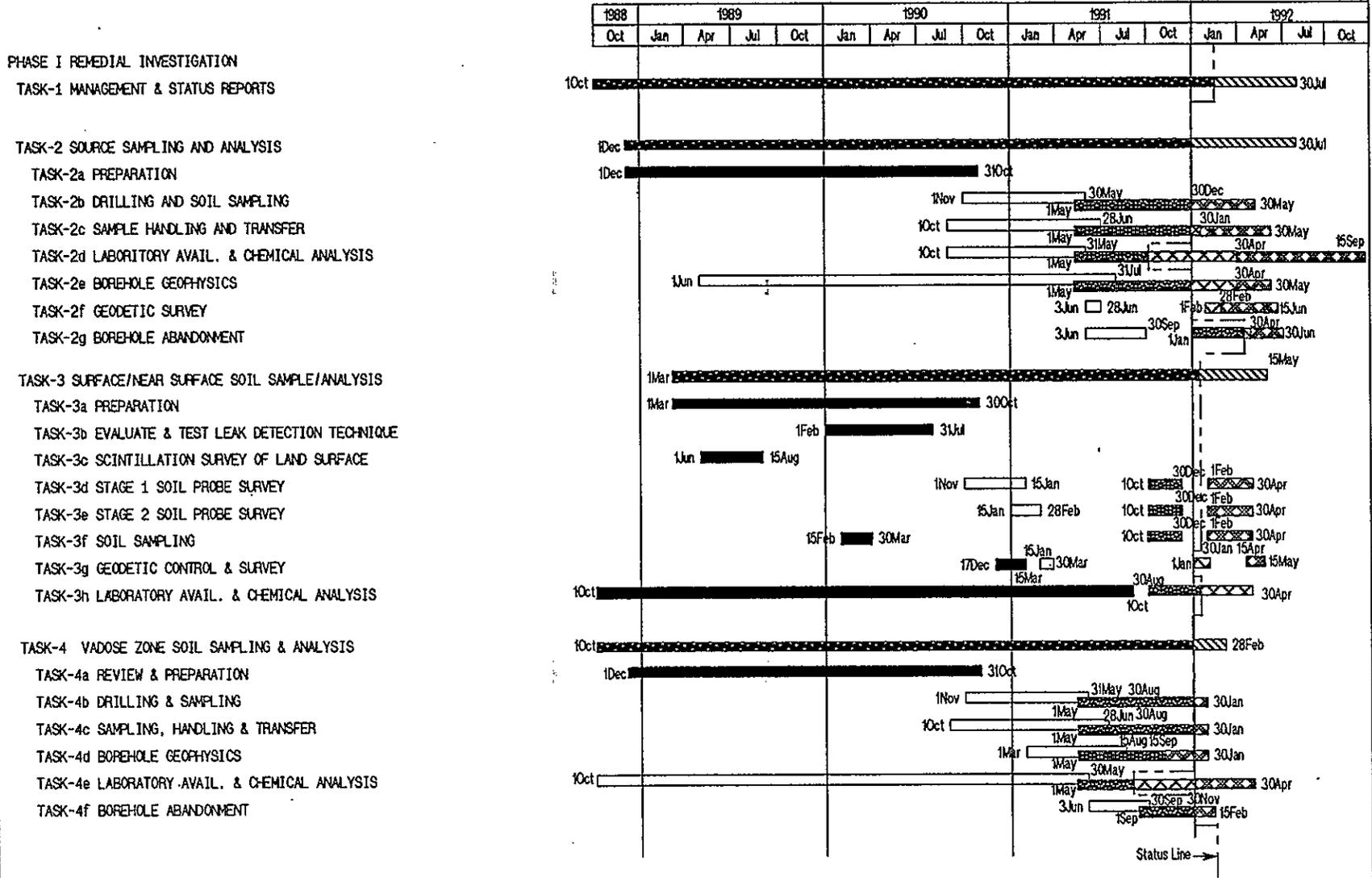
**SOURCE AND VADOSE SAMPLING  
STATUS DECEMBER 16, 1991**

- 216-B-43A Total depth drilled to date is 180 ft. Contamination levels have dropped off to less than detectable. Scheduled to be completed in 2 weeks.
- 216-B-46 Drilling has been completed on all three boreholes. This completes drilling and sampling for this crib. Abandonment activities will begin this week.
- 216-B-49A Abandonment activities have been completed including the 12 inch casing.
- 216-B-49C Drilling and sampling will begin this week.
- 216-B-45A Drilling and sampling was initiated on 1/20. Currently depth is 16 ft. No contamination to date.

9 2 1 2 5 5 1 4 2 8

9 2 1 2 5 5 5 1 4 2 9

### 200-BP-1 OPERABLE UNIT



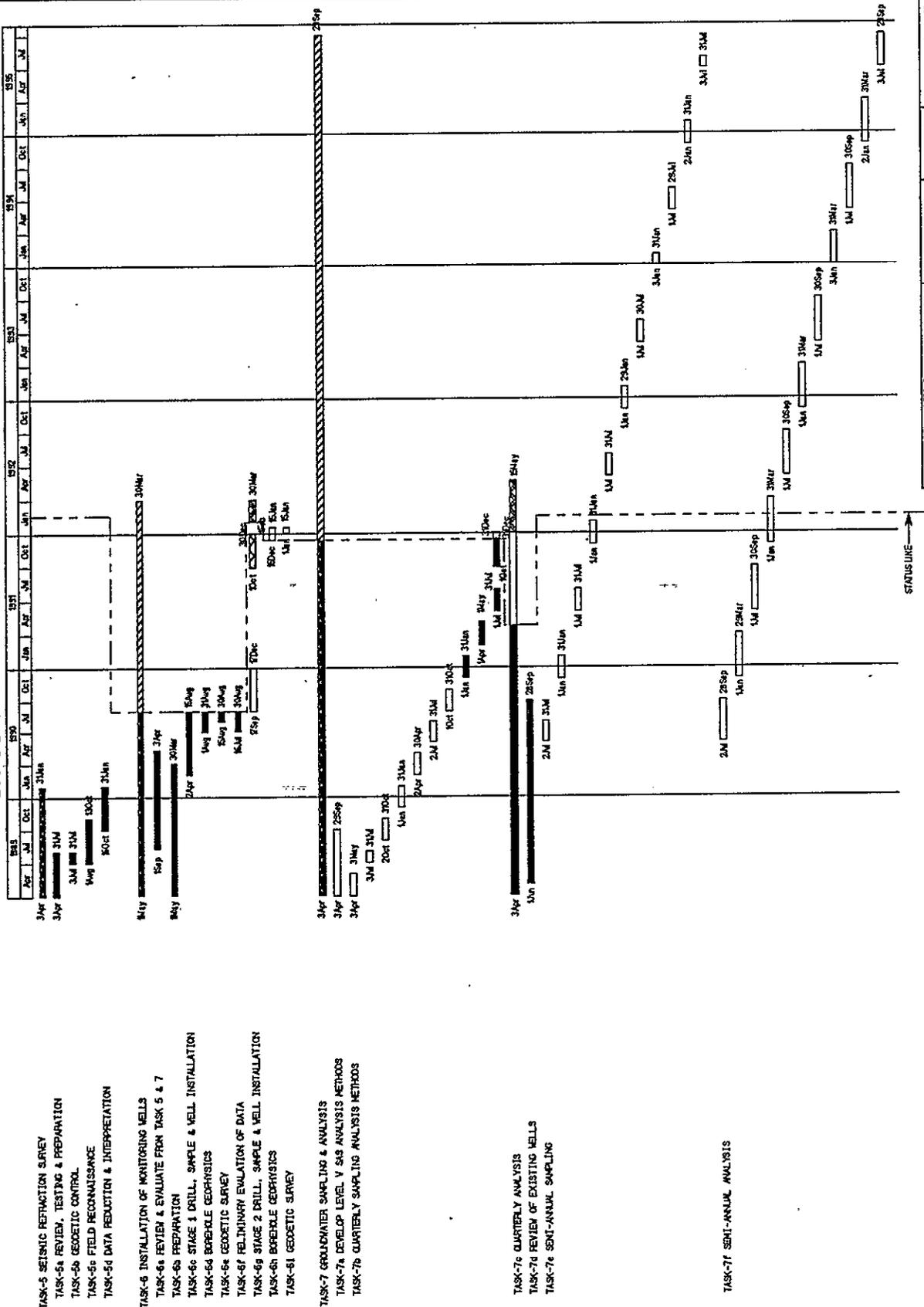
**LEGEND:**

	ORIGINAL SCHEDULE ACTIVITIES
	SUMMARY ACTIVITIES
	REVISED ACTIVITIES
	ACTUAL ACTIVITIES

Project: PE13A	200BP1U	Date: 20 Jan 92 11:35
200-BP-1 REMEDIAL INVESTIGATION		
Page: 1 of 3	Drawn by: Steve J. Sakey	6-3092

9 2 1 2 5 5 1 4 3 0

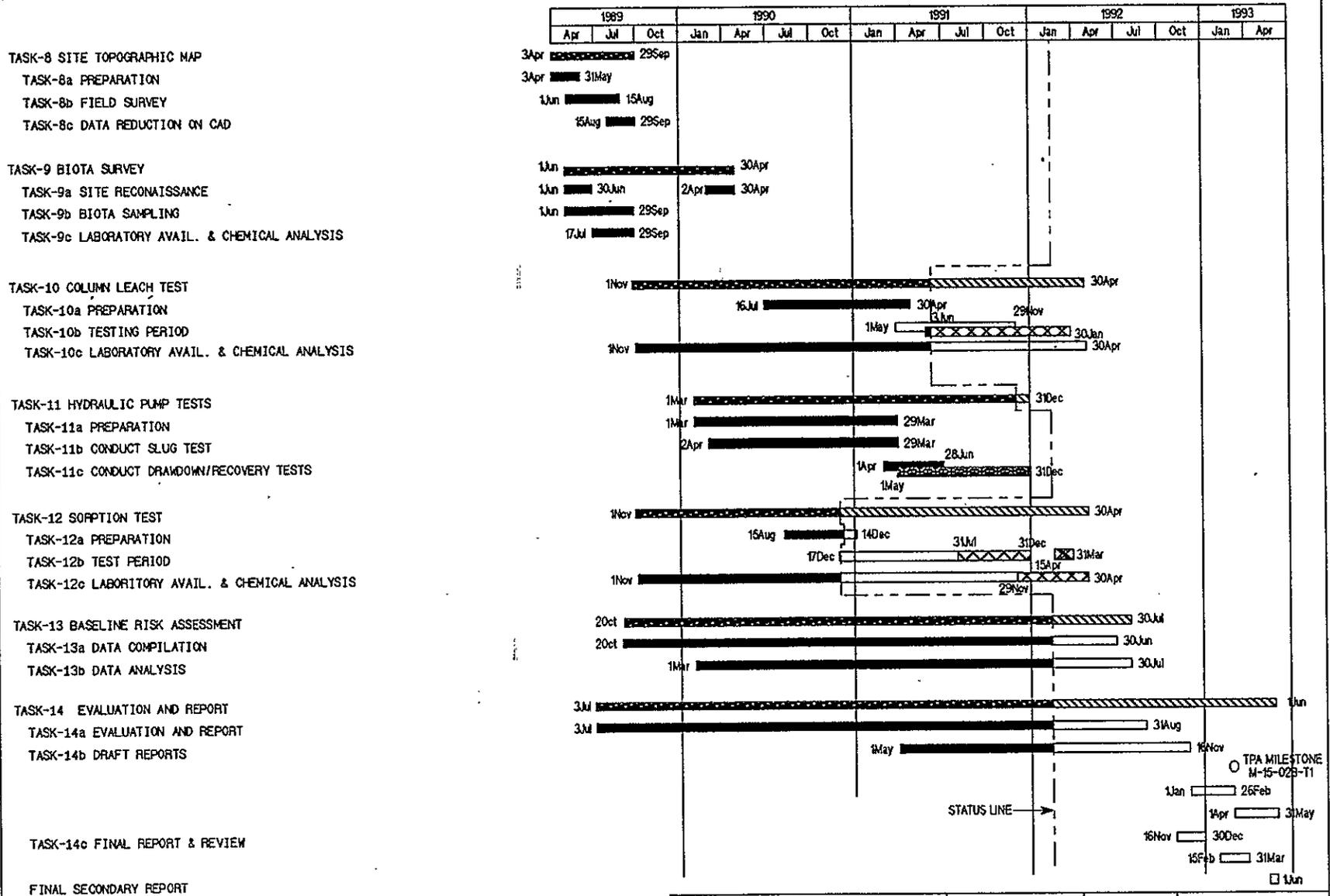
200-BP-1 OPERABLE UNIT



Project: PECA 2008P20 Date: 20 Jun 92 1555  
 2008-BP-1 OPERABLE UNIT  
 Page 2 of 3 Drawn by: Steve J. Shway 6-3092

LEGEND:  
 ORIGINAL SCHEDULE ACTIVITIES  
 SUMMARY ACTIVITIES  
 ACTUAL ACTIVITIES  
 SCHEDULED ACTUAL ACTIVITIES

### 200-BP-1 OPERABLE UNIT



Distribution

200-BP-1 Operable Unit Managers Meeting  
January 22, 1992

Donna Lacombe, PRC  
 Ward Staubitz, USGS  
 Doug Fassett, SWEC (A4-35)  
 Linda Powers, WHC (B2-35)  
 Tom Wintczak, WHC (B2-15)  
 Mel Adams, WHC (H4-55)  
 Wayne Johnson, WHC (H4-55)  
 Rich Carlson, WHC (H4-55)  
 Brian Sprouse, WHC (H4-22)  
 Bill Price, WHC (S0-03)  
 Ralph O. Patt,  
   OR Water Resources Dept.  
 Doug Dunster, Golder Assoc.  
 Mike Thompson, DOE (A6-95)  
 Diane Clark, DOE (A5-55)  
 Mark Buckmaster, WHC (H4-55)  
 Don Praast, GAO (A1-80)  
 L.D. Arnold, WHC (B2-35)

~~Ronald D. Izatt (A6-95)~~  
~~Director, DOE-RL, ERD~~  
 Donald E. Gerton (A6-80)  
 Director, DOE-RL, WMD  
 Roger D. Freeberg (A6-95)  
 Chief, Rstr. Br., DOE-RL/ERD  
~~Steven H. Wisness (A6-95)~~  
~~Tri-Party Agreement Proj. Mgr~~  
 Richard D. Wojtasek (B2-15)  
 Prgm. Mgr. WHC  
 Mary Harmon, DOE-HQ (EM-442)

ADMINISTRATIVE RECORD: 200-BP-1; Care of Susan Wray, WHC (H4-51C)

*H4-22*

9 2 1 2 5 5 1 4 3 2

Please inform Doug Fassett (SWEC) of deletions or additions to the distribution list.