Distribution
Unit Managers' Meeting: 100 Area Remedial Action Unit/Source Operable Units

Glenn Goldberg ..... DOE-RL, RP (A3-04)
Mary Jarvis ..... DOE-RL, RP (A5-15)
Owen Robertson ..... DOE-RL, RP (A3-04)
Chris Smith ..... DOE-RL, RP (A3-04)
Michael Thompson ..... DOE-RL, RP (A6-38)
Arlene Tortoso ..... DOE-RL, RP (A6-38)
Jon Yerxa ..... DOE-RL, RP (A5-15)

Lisa Treichel ..... DOE-HQ (EM-442)

John Price ..... WDOE (Kennewick) (B5-18)
Jean Vanni ..... WDOE (Kennewick) (B5-18)
Wayne Soper ..... WDOE (Kennewick) (B5-18)

Dennis Faulk ..... EPA (B5-01)

Randy Acselrod ..... Washington Dept. of Health
Debora McBaugh ..... Washington Dept. of Health
Richard Jaquish ..... Washington Dept. of Health

Eileen Murphy-Fitch ..... FD (A1-14)

John April ..... BHI (L6-06)
Jane Borghese ..... FH (E6-35
Ella Feist ..... CHI (H9-01)
Frank Corpuz ..... BHI (H0-17)
Michelle Coy ..... CHI (H9-02)
Rick Donahoe ..... BHI (X5-60)
Jack Donnelly ..... BHI (H0-17)
Jon Fancher ..... CHI (X5-60)
Rex Miller ..... BHI (X3-40)
Mark Morton ..... BHI (X9-05)
Robert Nielson ..... BHI (X9-08)
Tom Kisenwether ..... BHI (X9-11)
Dean Strom ..... CHI (X3-40)
Jill Thomson ..... CHI (H9-01)
Michael Wetzler ..... BHI (H0-17)
Joan Woolard ..... BHI (H0-02)
Administrative Record ..... BHI (H0-09) 2 copies

Please inform Michael Wetzler (372-9562) – BHI (H0-17)
of deletions or additions to the distribution list.

107311

Meeting Minutes Transmittal/Approval
Unit Managers' Meeting
100 Area Remedial Action and Waste Disposal Unit/Source Operable Unit
3350 George Washington Way, Richland, Washington
February 19, 2003

APPROVAL: _____ Date 4/24/03
Chris Smith/Jamie Zeisloft, 100 Area Unit Managers, RL (A3-04)

APPROVAL: Arlene Tortoso Date 4/24/03
Michael Thompson/ Arlene Tortoso, Waste Management Division, RL (A6-38)

APPROVAL: Elizabeth A. Rochette for J. Price Date 4/25/03
John Price, 100 Aggregated Area Unit Manager, Ecology (B5-18)

APPROVAL: _____ Date 4-24-03
Dennis Faulk, 100 Aggregate Area Unit Manager, EPA (B5-01)

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

Attachment 1	--	Attendance Sheet
Attachment 2	--	Agenda
Attachment 3	--	100 Area Meeting Minutes
Attachment 3a		100 Area Groundwater Monitoring Status Meeting Minutes from 1/29/03
Attachment 4	--	CVP Closeout Summary Table
Attachment 5	--	Additional Structures at 100-N Facilities (e-mail)
Attachment 6	--	100-N Area Plume location map
Attachment 7	--	Air Monitoring Plan for 100-N Area Ancillary Facility Decontamination & Decommissioning
Attachment 8	--	Clarification of Scope for 109-N Roof
Attachment 9	--	100-BC Area Map
Attachment 10	--	Addendum for 118-C horizontal Rod Cave Characterization Plan
Attachment 11	--	ERC IOM on 118-B-2 Burial Ground
Attachment 12		PowerPoint presentation of 118-B-2 Burial Ground

Prepared by: _____ Date 3/24/03
Amy Pennock (X3-16) / Mike Wetzler (H0-17)

Concurrence by: _____ Date 3/28/03
Vern Dronen, Project Manager
BHI Remedial Action and Waste Disposal Project (H0-17)

UNIT MANAGERS MEETING MINUTES

3350 George Washington Way, Assembly Room
February 19, 2003

107311

2:00 – 3:10 p.m. 100 Area 3350, Assembly Room

Groundwater

- Dennis Faulk (EPA) requested that the 100 Areas Groundwater Monitoring Status Meeting (meeting was between EPA and Ecology) minutes from January 29, 2003, (**Attachment 3**) be included in February's 100 Area Unit Managers Meeting Minutes.

100-BC-5 Groundwater OU

- Mark Sweeney (PNNL) announced that there is a BC-5 white paper for FR-3 Groundwater and BC-5 Groundwater. DQO document should be done by March 2003

100-FR-3 Groundwater OU

- See above under 100-BC-5.

100-HR-3 Groundwater OU

- Remediation and treatment status – was not discussed.

100-KR-4 Groundwater OU

- Remediation treatment status – They are operating at 205 to 275 gallons per minute. The flow rate is normal. There are no scheduled outages. They are operating at 99.4% efficiency for the month. There are no well-drilling issues to discuss. Both wells are done.

- A Request for Proposal (RFP) for installing vadose tubes near the 118-K-1 Burial Ground has been initiated. The benchmark proposals are due next week.

100-NR-2 Groundwater OU

- Remediation treatment status – was not discussed.

Review Open Action Items Logs

November Meeting Action Items

- Approval letter for 100-N RDR/RAWP has been received. Action item is closed.

- Open item for CSAP – revised CSAP must be approved before closing out.

General Cross Over Items

- CVP status – The WIDS Site CVP Closeout Summary Table (**Attachment 4**) was handed out and reviewed. All CVP's are on schedule.

- RESRAD Update – No updates have occurred since RESRAD version 6.21 was issued in September 2002. Dennis (EPA) suggested that we start tracking changes since there have been six or seven revisions. He also suggested that these be included in revision 5 of the 100 Area Remedial Design Report/Remedial Action Work Plan.

- Review and approval of last UMM minutes – Tom Kissenwether (ERC) provided a handout of the current signing process. It was noted since April 2002 the minutes have not been approved and signed. It was strongly suggested that this needed to be done at the end of the meeting. Dennis Faulk (EPA) suggested that Vern Dronen (ERC) sign first before the other signatures are acquired. Signage of the UMM minutes process should be contractor, U.S. Department of Energy, and then the regulators.

- A "Clarification of Scope" agreement was submitted to be recorded in the UMM meeting. The Clarification of Scope agreement allows the 2003 asbestos abatement activity at the 109N roof to use the same documentation, which was reproduced for a similar activity that occurred in 1999.

- The 100-N facilities were addressed in an *Action Memo* (**Attachment 5**).

Remedial Action

100 Area Common

- ESD Status – Chris Smith (DOE) noted the 116-N-1 Explanation of Significant Differences (ESD) public comment period started on February 3, and the public comment period has been extended 30 days– no comments have been received as of today.

- 118-K-1 Design – The kick-off is planned with 30% complete and 90% completed by summer of 2003. Larry Gadbois requested a copy of the 30% design be sent to him (The document was sent to Larry the day after this meeting).

100 F, K, and Group 4

- 100-F General status – The excavations were finished at the end of December 2002. The backfill activities have been started and should be completed by the end of June 2003. It was suggested that since the Waste Treatment Plant (WTP) has a stockpile of broken clean concrete that would eventually need to be removed that we use this concrete as backfill at the 100-F Area. Dennis Faulk (EPA) concurred with this approach provided it is buried at least 10 feet or more below the ground level. It was mentioned the 100-B/C area wants to follow a similar approach, using 100-B/C Area clean fence posts with concrete bases as backfill in the

remediation sites. Dennis Faulk (EPA) also agreed, this approach could also be used at 100-B/C provided the material was at least 10 feet or more below the ground level.

- 100-K General status – The Tri-Party Agreement milestone was started on December 11, 2002. At the 116-KW-3 site, 30% of the overburden has been removed.

- At the 116-KW-3 Retention Basin – it was reported that the first excavation came up clean. One meter below the basin, the contamination is isolated by steel and asphalt and should not be a problem. The WTP's concrete stockpile will be used as backfill.

100 N

- Project status – Dale Obenauer (ERC) provided an update of project activities. Plumes 2 through 7 and 11 are completed (**Attachment 6**) and additional plumes are being excavated.

- Airborne contaminants were detected at the area of excavation during remediation of the 116-N-1 Crib and work was halted immediately for worker safety. No airborne contaminants were detected at the surrounding near field monitors. The design for removal of crib material to ERDF will need to be re-evaluated before work can continue. In addition, alternative dust control methods will be evaluated for improved control of airborne contamination at the area of excavation in order to enhance worker protection.

- A new Ecology staff member, Beth Rochette, was present and introduced to all attending the meeting.

- The Air Monitoring Plan for 100-N Remedial Action was briefly discussed. The project would like the non-radioactive component of the plan be revised to include increasing poundage of abrasive used in decontamination activities (**Attachment 7**). Jon Fancher (ERC) provided a copy of the requested revision to Beth Rochette (Ecology). This document was previously approved on 1/17/03 and is being submitted for inclusion in the Administrative Record via these meeting minutes.

- RCRA Permit Mod Status – Jon Fancher discussed the schedule for the upcoming RCRA permit modifications for the 100-NR-1 TSD sites.

- 100-N Ancillary Facilities – Robert Nielson provided a summary of an e-mail (**Attachment 8**) sent from Rick Bond (Ecology) to Chris Smith (DOE). The e-mail discusses the position of Ecology and EPA that incorporates additional 100-N Area structures/facilities into the *Removal Action Work Plan for the 100-N Area Ancillary Facilities* (DOE/RL-2002-70, Draft A) will be sufficient to track the status of the ancillary facilities. Amending/Updating/Revising the *100-Area Ancillary Facilities Action Memorandum* (Accession #D199017702) will not be necessary.

100 B/C

- Project status – A map (**Attachment 9**) of the 100 B/C Area was handed out and Dean Strom (ERC) went over the work that is being done. The excavation and plume chasing north of B Avenue is 99% complete.

- 118-C-4 Status – Robert Nielson (ERC) briefly discussed the Addendum, *118-C-4 Horizontal Rod Cave Characterization Plan* that will be implemented by Decommissioning Projects (**Attachment 10**). This addendum to the original *118-C-4 Horizontal Rod Cave Characterization Plan* (DOE/RL-97-33) was previously approved on 2/19/03 and is being submitted for inclusion in the Administrative Record via these meeting minutes

- 118-B-2 Burial Ground Status – Based on the 100-BC Pipeline Remediation Project's scope of work, the 118-B-2 Burial Ground is a proximity site. Because it was not encountered, it is no longer within the scope of the project. The remediation of the 118-B-2 Burial Ground now falls within the future Burial Ground's scope of work (**Attachment 11 and 12**). This action is based on Dean's Strom's (ERC) investigation determining that the 118-B-2 Burial Ground location was within the boundary of the larger 118-B-3 Burial Ground.

Other

- Nothing else was discussed.

Attachment #1

Remedial Action and Waste Disposal Unit Managers' Meeting
Official Attendance Record – 100 Area
February 19, 2003

Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Jon Fancher	100N RA	Environmental Lead	373-9123
Dean Strom	100-BC	Resident Engineer	373-5519
Chris Smith	DOE/RL	100 Area Project Mgr.	372-1544
K. Michael Thompson	DOE-RL	Groundwater	373-0750
John Winterhalder	FH	"	372-8144
Jim Golden	BHI	100/SMET	376-3283
Robert Nielson	BHI	050 PEC	373-0089
Mark Sweeney	PNNL	100 BC & 100 FR 3	373-0703
Mary Hartman	PNNL	hydrogeologist N, D, & H	373-0028
Mark Buckmaster	BHI	Grp 4	521-2089
DALE ORENAUER	BHI	100N	373-4336
T Kiesnowski	BHI	100F/K	531-0673
Alex Nagazadi	BHI	CVP	372-9098
John Fruchter	PNNL	groundwater monitoring	376-3937
Dean LaPoe	BHI		376-9131
Steve Clark	CHI	CVP	372-9531
Jill Thomson	CHI	CVPs	372-9697
Lanny Gadbois	EPA	CVPs	376-9884
Jack Donnelly	BHI	Env. Lead	372-9565
Mike Schwab	BHI	CVP's	372-9407
MARK Morton	BHI	D&D	373-1628
Arlene Tortoso	DOE	100-Area GW	373-9631

Remedial Action and Waste Disposal Unit Managers' Meeting
Official Attendance Record – 100 Area
February 19, 2003

Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Pam Doctor	BHI	Risk Assess	372-9107

Attachment #2

100 AREA
UNIT MANAGERS MEETING AGENDA

3350 George Washington Way, Room 1B45
February 19, 2002

2:00 – 4:00 p.m. 3350 GWW (Assembly Room)

Groundwater

- 100 Area Open Action Items
- 100-Area Open forum and discussion
- 100-BC-5 and 100-FR-3 DQO status

100-BC-5 Groundwater OU

-

100-FR-3 Groundwater OU

-

100-HR-3 Groundwater OU

- Remediation treatment status

100-KR-4 Groundwater OU

- Remediation treatment status

100-NR-2 Groundwater OU

- Remediation treatment status

Review Open Action Items Log

General Crossover Items

- CVP status
- RESRAD Update
- Review and approve last UMM minutes

Remedial Action

100 Area Common

- ESD Status
- 100 Area Remaining Sites Confirmatory SAP
- 118-K-1 Design

100 F, K, and Group 4

- 100 F General Status
  - Near Reactor Pipeline Backfill
- 100 K General Status

100 N

- Project Status
- Air Monitoring Plan
- 1324N & 1234NA Certification of Closure
- RCRA Permit Mod Status
- 116-N-1 ESD

100 B/C

- Project Status
- 118-B-2 Waste Site Discussion

105F Fuel Storage Basin

- RAWD and D&D Interface at 105F Fuel Storage Basin
- Backfilling at 105 F Fuel Storage Basin by RAWD and D&D to support SSE subcontractor mobilization

100 D Area D&D

Other

Attachment #3

100 Areas Groundwater Monitoring Status
January 29, 2003

Federal Building 244B

Meeting Minutes

Attendees:
JV Borghese, FH
DA Faulk, EPA
JS Fruchter, PNNL
MJ Furman, DOE
SP Luttrell, PNNL
RE Peterson, PNNL
John Price, Ecology
Bob Raidl, FH
MD Sweeney, PNNL
KM Thompson, DOE
AC Tortoso, DOE

Groundwater Monitoring Audit Results: Stuart Luttrell and John Fruchter summarized the results of an internal audit of groundwater monitoring that was requested by DOE. The purpose of the audit was to determine if groundwater monitoring commitments previously made (e.g., in TPA Change Control Forms) were being met. The results indicated that sample collection during year 2000 had not been performed for one sampling event in five wells, as required under TPA Change Control Forms. Three of these wells were in 1100-EM-1 OU, and two of these wells were in 100-BC-5 OU. A handout (attached) listing the wells was provided. Dennis Faulk indicated that a formal notice describing these inadvertent omissions is not required.

River Shoreline Aquifer Tube Sampling Status: Bob Peterson summarized the annual Aquifer Sampling Tube event and presented preliminary results for on-site analyses. Complete results from off-site labs should be available by the end of March. A handout (attached) was provided, and discussion followed.

100 BC-5 and 100-FR-3 DQO: Mark Sweeney provided a status of the 100-BC-5 and 100-FR-3 DQO. In short, the initial work for the strawman report has been completed, including steps 1 through 5. Interviews with DOE and EPA will be scheduled soon.

Other: John Price asked if petroleum was found during sampling in 100-N Area. The response was that it has been noted, but the presence of free product was uncertain. John reminded attendees DOE agreed that product will be recovered if it is found during sample collection. Jane Borghese said that a plan is being prepared to address this.

Handout #1.

Notification of 100 Area CERCLA Monitoring Well Samples Not Collected in FY 2000

At the request of DOE, RL, the Hanford Groundwater Monitoring Project conducted a comprehensive audit of multi-year well samples collected against Sample and Analysis Plans for Hanford CERCLA Groundwater Operable Units (OU's) and RCRA Treatment, Storage and Disposal Units (TSD's). The audit revealed that during FY 2000, 5 well samples required by Tri-Party Agreement established Sample and Analysis plans were not collected at 2 OU's, and that no subsequent notification was made to the EPA. This document is meant to serve as that notification.

Operable Unit	Well ID	Required Frequency	Date Not Collected	Number of Samples Not Collected	Analyses Not Performed
100 BC-5	199-B5-1	Annual	FY 2000	1	Metals, anions, alpha, beta, sr-90, tritium, hex. chrome
100 BC-5	199-B5-2	Annual	FY 2000	1	Metals, anions, alpha, beta, sr-90, tritium
1100 EM-1	699—S29-E11	Annual	FY 2000	1	Volatile organics, anions
1100 EM-1	699-S29-E12	Annual	FY 2000	1	Volatile organics, anions
1100 EM-1	699-S30-E10B	Annual	FY 2000	1	Volatile organics, anions

In all cases, waste management issues, which impacted all site sample collection, caused the originally scheduled sampling event to be canceled. However, these 5 sampling events were inadvertently never rescheduled, and no notification was provided at the time to EPA. Steps are being taken by the Hanford Groundwater Monitoring Project to prevent a recurrence of this problem.

Preliminary Results for FY 2003 Aquifer Sampling Tube Project (prepared for January 29, 2003 unit manager briefing)

AQST_NAME _CURRENT	PORT_ DEPTH (feet-bgs)	SEGMENT	Install Status 1997 BHI-01153	FY 2003 Recon status	On 10/24/02 list	Fall 2002 Sample Date	Fall 2002 Sample No.	Lab	Specific Conduct (uS/cm)	Hexavalent Chromium (ug/L)	Sulfate (mg/L)	C-14 (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	Sr-90 (pCi/L)	Tc-99 (pCi/L)	Tritium (pCi/L)
01-S	7.0	VERN		ok	x		Not sampled										
01-M	16.0	VERN		ok	x		Not sampled										
01-D	24.0	VERN	No yield	ok	x		Not sampled										
02-S	6.0	VERN		ok	x		Not sampled										
02-M	14.9	VERN	No yield	ok	x		Not sampled										
03-M	7.0	BC5		ok													
03-D	13.0	BC5		ok													
04-S	8.3	BC5		ok	x	12/16/2002	B15YY8	SV	337	7							
04-M	13.0	BC5		ok	x	12/16/2002	B15YY6	SV	337	11							
04-D	25.0	BC5		ok	x	12/16/2002	B15YY5	STR	336								
04-D	25.0	BC5		ok	x	12/16/2002	B15YY4	SV	336	8							
05-S	8.5	BC5		ok	x	12/16/2002	B16004	SV	205	4							
05-M	17.0	BC5		ok	x	12/16/2002	B16001	STR	345								
05-M	17.0	BC5		ok	x	12/16/2002	B16000	SV	345	38							
05-D	25.5	BC5		ok	x	12/16/2002	B16002	SV	313	27							
06-S	8.8	BC5		ok	x	12/16/2002	B16012	SV	239								
06-M	15.5	BC5		ok	x	12/16/2002	B16007	STR	351								
06-M	15.5	BC5		ok	x	12/16/2002	B16006	SV	351	37							
06-D	23.0	BC5		ok	x	12/16/2002	B16008	SV	397	36							
07-M	8.0	BC5		ok	x	12/16/2002	No yield										
07-D	20.0	BC5		ok	x	12/16/2002	B16015	STR	284								
07-D	20.0	BC5		ok	x	12/16/2002	B16014	SV	284	9							
11-D	10.5	BC5			x		Not sampled										
12-D	10.0	BC5			x		Not sampled										
13-S	8.3	BC5		ok	x		Not sampled										
13-D	22.9	BC5	No yield	ok	x		Not sampled										
14-S	7.5	BC5		ok	x	11/20/2002	Not sampled										
14-M	14.5	BC5		ok	x	11/20/2002	Not sampled										
14-D	21.5	BC5		ok	x	11/20/2002	B15YT9	STS	371								
14-D	21.5	BC5		ok	x	11/20/2002	B15YV0	STS	371								
14-D	21.5	BC5		ok	x	11/20/2002	B15YV1	STR	371				1.21 U	42.2	-0.141 U	46.7	7,790
14-D	21.5	BC5		ok	x	11/20/2002	B16028	SV	371	3							
15-M	13.7	KR4		can't find	x	9/24/2002	Not sampled										
17-M	11.0	KR4		ok	x	11/20/2002	B15YV4	STS	302								
17-M	11.0	KR4		ok	x	11/20/2002	B15YV5	STR	302			67.2	2.76	5.93			74 U
17-M	11.0	KR4		ok	x	11/20/2002	B16032	SV	302	2							
17-D	19.5	KR4		ok	x	11/20/2002	B16030	SV	339	2							
18-S	8.5	KR4		can't find	x	9/24/2002	Not sampled										
19-M	10.0	KR4		ok	x	11/19/2002	None										
19-D	22.0	KR4		ok	x	11/19/2002	B16037	STR	226			3.57 U			0.00634 U		83 U
19-D	22.0	KR4		ok	x	11/19/2002	B15YV9	STR	226							-1.76 U	180 U
19-D	22.0	KR4		ok	x	11/19/2002	B16036	ML	226	< 5							
21-S	11	KR4		ok	x	11/19/2002	B160L1	SV	126	2							
21-M	15	KR4		ok	x	11/19/2002	B16040	ML	172	< 5							
22-M	7.5	KR4		ok	x	11/19/2002	B16043	SV	142	8							
22-D	12.3	KR4		ok	x	11/19/2002	B16042	ML	244	52							
23-M	7.0	KR4		can't find	x	9/24/2002	Not sampled										
23-D	12.0	KR4		can't find	x	9/24/2002	Not sampled										1,960
DK-04-2	11.5	KR4			x	11/19/2002	B161P9	STR	244								
DK-04-2	11.5	KR4			x	11/19/2002	B160K0	SV	244	30							
DK-04-3	15	KR4			x	11/19/2002	B160K1	ML	241	24							

Preliminary Results for FY 2003 Aquifer Sampling Tube Project (prepared for January 29, 2003 unit manager briefing)

AQST_NAME _CURRENT	PORT_ DEPTH (feet-bgs)	SEGMENT	Install Status 1997 BHI-01153	FY 2003 Recon status	On 10/24/02 list	Fall 2002 Sample Date	Fall 2002 Sample No.	Lab	Specific Conduct (uS/cm)		Hexavalent Chromium (ug/L)	Sulfate (mg/L)	C-14 (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	Sr-90 (pCi/L)	Tc-99 (pCi/L)	Tritium (pCi/L)
25-D	7.5	KR4			x	11/19/2002	B16046	ML	121	<	5							
26-S	6.0	KR4			x	11/20/2002	B16049	SV	112		1							
26-M	14.0	KR4			x	11/20/2002	B16048	SV	144		1							
26-D	23.0	KR4			x	11/20/2002	B15YW2	STR	340									1,610
26-D	23.0	KR4			x	11/20/2002	B16047	SV	340		17							
DD-50-1	15	NR2		ok	x	12/18/2002	B160J7	SV	192		14							
DD-50-2	20	NR2		ok	x	12/18/2002	B160J8	SV	245		24							
DD-50-3	24.7	NR2		ok	x	12/18/2002	B16005	STR	244									
DD-50-3	24.7	NR2		ok	x	12/18/2002	B160J9	ML	244		28	30						
DD-50-4	31	NR2		ok	x	12/18/2002	Not sampled											
DD-49-1	12	NR2		ok	x	12/18/2002	B160J4	SV	184		11							
DD-49-2	21.8	NR2		ok	x	12/18/2002	Not sampled											
DD-49-3	25	NR2		ok	x	12/18/2002	B160J2	SV	252		20							
DD-49-4	31	NR2		ok	x	12/18/2002	B160J3	SV	263		17							
DD-49-4	31	NR2		ok	x	12/18/2002	B160J5	ML	256		25	31						
DD-44-3	12	HR3D		ok	x	12/18/2002	B160J0	SV	202		46							
DD-44-4	18	HR3D		ok	x	12/18/2002	B15YY9	STR	533									
DD-44-4	18	HR3D		ok	x	12/18/2002	B160J1	ML	533		247	100						
DD-43-2	10	HR3D		ok	x	12/18/2002	No yield											
DD-43-3	13.9	HR3D		ok	x	12/18/2002	B160M8	ML	281		144	44						
DD-42-2	10.2	HR3D		ok	x	12/18/2002	No yield											
DD-42-3	15.2	HR3D		ok	x	12/18/2002	No yield											
DD-42-4	18.2	HR3D		ok	x	12/18/2002	B160H7	ML	354		295	58						
DD-41-1	8.1	HR3D		ok	x	12/18/2002	B160H4	SV	124		1							
DD-41-2	13.6	HR3D		ok	x	12/18/2002	B160H2	ML	295		176	59						
DD-41-3	18.6	HR3D		ok	x	12/18/2002	B160H3	SV	260		143							
Redox-4-3.0	3.00	HR3D		ok	x	12/18/2002	No yield											
Redox-4-6.0	6.00	HR3D		ok	x	12/18/2002	No yield											
Redox-3-3.3	3.30	HR3D		ok	x	12/18/2002	B160K6	SV	611		172							
Redox-3-4.6	4.60	HR3D		ok	x	12/18/2002	B160K7	ML	585		166	160						
DD-39-1	5.5	HR3D		ok	x	12/18/2002	B15YW9	SV	182		13							
DD-39-1	5.5	HR3D		ok	x	12/18/2002	B160F8	SV	182		12							
DD-39-2	10.5	HR3D		ok	x	12/18/2002	B160F9	ML	572		104	145						
DD-39-3	15	HR3D		ok	x	12/18/2002	No yield											
DD-39-4	21	HR3D	No yield	ok	x	12/18/2002	No yield											
Redox-2-3.0	3.00	HR3D		ok	x	12/18/2002	B160K4	SV	227		41							
Redox-2-6.0	6.00	HR3D		ok	x	12/18/2002	B160K5	ML	297		30	55						
Redox-1-3.3	3.30	HR3D		ok	x	12/18/2002	No yield											
Redox-1-6.0	6.00	HR3D		ok	x	12/18/2002	No yield											
35-S	8.0	HR3D																
35-M	14.0	HR3D	No yield															
35-D	21.0	HR3D	No yield															
36-S	8.0	HR3D																
36-M	14.0	HR3D																
36-D	21.0	HR3D																
37-S	6.5	HR3D																
37-M	13.5	HR3D	No yield															
37-D	19.5	HR3D	No yield															
38-M	10.0	HR3D																
38-D	16.5	HR3D																
DD-17-2	10.5	HR3D		ok	x	1/9/2003	B160F6	ML	166		34							

Preliminary Results for FY 2003 Aquifer Sampling Tube Project (prepared for January 29, 2003 unit manager briefing)

AQST_NAME _CURRENT	PORT_ DEPTH (feet-bgs)	SEGMENT	Install Status 1997 BHI-01153	FY 2003 Recon status	On 10/24/02 list	Fall 2002 Sample Date	Fall 2002 Sample No.	Lab	Specific Conduct (uS/cm)	Hexavalent Chromium (ug/L)	Sulfate (mg/L)	C-14 (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	Sr-90 (pCi/L)	Tc-99 (pCi/L)	Tritium (pCi/L)
DD-17-3	15	HR3D		ok	x	1/9/2003	No yield										
DD-16-3	17.5	HR3D		can't find	x	1/9/2003	Not sampled										
DD-16-4	25.5	HR3D		can't find	x	1/9/2003	Not sampled										
DD-15-2	15	HR3D		ok	x	1/9/2003	Not sampled										
DD-15-3	21	HR3D		ok	x	1/9/2003	B160F3	ML	182	21							
DD-15-4	25.5	HR3D		ok	x	1/9/2003	No yield										
TDP-15 C		HR3D		ok	x	1/9/2003	B160F2	ML	201	29							
DD-12-2	10	HR3D		ok	x	1/9/2003	Not sampled										
DD-12-3	15	HR3D		ok	x	1/9/2003	Not sampled										
DD-12-4	21	HR3D		ok	x	1/9/2003	B160D9	ML	149	14							
DD-10-2		HR3D		ok	x	1/9/2003	Not sampled										
DD-10-3		HR3D		ok	x	1/9/2003	Not sampled										
DD-10-4	22	HR3D		ok	x	1/9/2003	B160D7	ML	182	8							
DD-08-2		HR3D		can't find	x	1/9/2003	Not sampled										
DD-08-3	17.2	HR3D		can't find	x	1/9/2003	Not sampled										
DD-08-4	22	HR3D		can't find	x	1/9/2003	Not sampled										
DD-06-2	12	HR3D		ok	x	1/9/2003	No yield										
DD-06-3	16	HR3D		ok	x	1/9/2003	B160D1	ML	197	9							
39-S	8.0	HR3D															
39-M	18.0	HR3D															
39-D	28.0	HR3D	No yield														
40-S	8.0	HR3D															
40-M	15.5	HR3D															
41-S	10.0	HR3D	No yield														
41-M	15.0	HR3D															
41-D	25.0	HR3D															
42-S	10.0	HR3D			x		Not sampled										
42-M	15.0	HR3D			x		Not sampled										
42-D	24.0	HR3D	No yield		x		Not sampled										
43-M	7.5	HR3H															
43-D	9.7	HR3H															
44-M	8.5	HR3H			x		Not sampled										
44-D	12.7	HR3H			x		Not sampled										
DH-1451-1		HR3H															
DH-1452-1		HR3H															
45-S	8.0	HR3H															
45-M	15.0	HR3H															
45-D	23.0	HR3H															
DH-14-1	32	HR3H															
DH-14-11		HR3H															
46-D	10.5	HR3H		ok	x	1/14/2003	B15YT6	STR	183								
46-D	10.5	HR3H		ok	x	1/14/2003	B16056	ML	183	8							
47-M	8.0	HR3H		ok		1/14/2003	Not sampled										
47-D	14.5	HR3H		ok		1/14/2003	B15YW5	ML	143	8							
DH-22-1	4	HR3H															
DH-22-2	8	HR3H															
DH-22-3	13.5	HR3H															
48-S	9.0	HR3H		ok	x	1/14/2003	B16059	SV	466	15							
48-M	17.0	HR3H		ok	x	1/14/2003	B15YX5	STR	476								
48-M	17.0	HR3H		ok	x	1/14/2003	B16058	ML	476	21							
48-M	17.0	HR3H		ok	x	1/14/2003	B160L6	SV	476	18							

Preliminary Results for FY 2003 Aquifer Sampling Tube Project (prepared for January 29, 2003 unit manager briefing)

AQST_NAME _CURRENT	PORT_ DEPTH (feet-bgs)	SEGMENT	Install Status 1997 BHI-01153	FY 2003 Recon status	On 10/24/02 list	Fall 2002 Sample Date	Fall 2002 Sample No.	Lab	Specific Conduct (uS/cm)	Hexavalent Chromium (ug/L)	Sulfate (mg/L)	C-14 (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	Sr-90 (pCi/L)	Tc-99 (pCi/L)	Tritium (pCi/L)
48-D	25.0	HR3H	No yield	ok	x	1/14/2003	No yield										
49-S	8.5	HR3H		ok	x	1/14/2003	B16060	SV	163	10							
49-M	17.5	HR3H		ok	x	1/14/2003	B16061	SV	350	12							
49-D	25.5	HR3H		ok	x	1/14/2003	B16062	ML	381	20							
50-S	8.5	HR3H		ok	x	1/14/2003	B16065	SV	409	17							
50-S	8.5	HR3H		ok	x	1/14/2003	B16065	SV	409	16							
50-M	17.5	HR3H		ok	x	1/14/2003	B16064	ML	522	37							
50-D	26.5	HR3H	No yield	ok	x	1/14/2003	No yield										
51-S	9.5	HR3H		ok	x	1/14/2003	B16068	SV	367	23							
51-M	17.5	HR3H		ok	x	1/14/2003	B16067	SV	443	32							
51-D	25.5	HR3H		ok	x	1/14/2003	B16066	ML	455	43							
52-S	7.0	HR3H		ok	x	1/14/2003	B16071	SV	203	9							
52-M	15.0	HR3H		ok	x	1/14/2003	B16070	SV	256	2							
52-D	24.0	HR3H		ok	x	1/14/2003	B16069	ML	310	5							
53-S	8.0	HR3H			x	1/14/2003	Not sampled										
53-M	17.0	HR3H			x	1/14/2003	Not sampled										
53-D	26.0	HR3H	No yield		x	1/14/2003	Not sampled										
54-S	7.5	HR3H		ok	x	1/15/2003	B16077	SV	178	1							
54-M	17.0	HR3H		ok	x	1/15/2003	B16076	SV	286	7							
54-D	26.0	HR3H		ok	x	1/15/2003	B16075	SV	232	1							
55-S	10.0	HR3H															
55-M	18.0	HR3H	No yield														
55-D	26.0	HR3H	No yield														
57-S	7.0	HR3H															
57-M	18.0	HR3H															
57-D	29.0	HR3H	No yield														
58-S	11.0	HR3H															
58-M	19.5	HR3H															
58-D	26.5	HR3H															
59-S	11.0	HR3H															
59-M	16.5	HR3H															
59-D	23.0	HR3H															
60-S	8.5	HR3H															
60-M	17.5	HR3H															
60-D	26.5	HR3H	No yield														
61-S	8.5	FR3															
61-M	15.5	FR3															
61-D	24.0	FR3															
62-S	8.0	FR3			x	1/16/2003	B16082	SV	145	1							
62-M	18.0	FR3			x	1/16/2003	B16079	STR	444								
62-M	18.0	FR3			x	1/16/2003	B16080	SV	444	4							
62-D	28.0	FR3	No yield		x	1/16/2003	No yield										
63-S	10.0	FR3		ok	x	1/16/2003	B16088	SV	142	3							
63-M	16.0	FR3		ok	x	1/16/2003	B16086	SV	193	14							
63-D	23.0	FR3	No yield	ok	x	1/16/2003	No yield										
64-S	7.5	FR3		ok	x	1/16/2003	No yield										
64-M	17.0	FR3		ok	x	1/16/2003	B16092	SV	133	1							
64-D	27.0	FR3		ok	x	1/16/2003	B16091	STR	219								
64-D	27.0	FR3		ok	x	1/16/2003	B16090	SV	219	3							
65-S	8.5	FR3		ok	x	1/16/2003	B160B0	SV	153	7							
65-S	8.5	FR3		ok	x	1/16/2003	B160B0	SV	153	8							

Preliminary Results for FY 2003 Aquifer Sampling Tube Project (prepared for January 29, 2003 unit manager briefing)

AQST_NAME _CURRENT	PORT_ DEPTH (feet-bgs)	SEGMENT	Install Status 1997 BHI-01153	FY 2003 Recon status	On 10/24/02 list	Fall 2002 Sample Date	Fall 2002 Sample No.	Lab	Specific Conduct (uS/cm)	Hexavalent Chromium (ug/L)	Sulfate (mg/L)	C-14 (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	Sr-90 (pCi/L)	Tc-99 (pCi/L)	Tritium (pCi/L)
65-M	16.0	FR3		ok	x	1/16/2003	Not sampled		146								
65-D	27.0	FR3	No yield	ok	x	1/16/2003	No yield										
66-S	10.0	FR3			x	1/16/2003	B160B6	SV	176	0							
66-M	19.2	FR3			x	1/16/2003	B160B4	SV	209	3							
66-D	28.1	FR3			x	1/16/2003	B160B3	STR	204								
66-D	28.1	FR3			x	1/16/2003	B160B2	SV	204	4							
67-S	10.0	FR3			x	1/16/2003	B160C2	SV	179	1							
67-M	20.0	FR3			x	1/16/2003	B160B9	STR	181								
67-M	20.0	FR3			x	1/16/2003	B160C0	SV	181	2							
67-D	30.0	FR3	No yield		x	1/16/2003	No yield										
68-S	10.5	FR3			x	1/16/2003	Not sampled										
68-M	18.3	FR3			x	1/16/2003	Not sampled										
68-D	25.0	FR3			x	1/16/2003	Not sampled										
69-M	15.0	FR3															
69-D	31.0	FR3	No yield														
70-S	17.0	FR3															
70-M	24.0	FR3															
70-D	31.0	FR3															
71-D	7.5	FR3															
72-smd-S	9.5	FR3															
72-smd-M	18.0	FR3															
72-smd-D	28.0	FR3															
73-smd-S	10.5	FR3															
73-smd-M	19.0	FR3															
73-smd-D	27.0	FR3															
74-smd-S	11.0	FR3															
74-smd-M	17.0	FR3															
74-smd-D	29.0	FR3															
75-smd-S	11.0	FR3															
75-smd-M	19.0	FR3															
75-smd-D	27.0	FR3															
76-smd-S	11.0	FR3															
76-smd-M	19.0	FR3															
76-smd-D	25.0	FR3															
77-S	8.5	FR3															
77-M	16.5	FR3															
77-D	24.5	FR3															
78-S	8.0	FR3															
78-M	16.0	FR3															
78-D	24.0	FR3	No yield														
80-sm-S	15.5	HTS															
80-sm-M	25.5	HTS															
80-D	5.0	HTS															
81-S	8.5	HTS															
81-M	16.5	HTS															
81-D	24.5	HTS	No yield														
82-S	8.5	HTS															
82-M	14.5	HTS	No yield														
83-D	20.0	HTS	No yield														
84-S	8.0	HTS															
84-M	14.0	HTS															

Preliminary Results for FY 2003 Aquifer Sampling Tube Project (prepared for January 29, 2003 unit manager briefing)

AQST_NAME _CURRENT	PORT_ DEPTH (feet-bgs)	SEGMENT	Install Status 1997 BHI-01153	FY 2003 Recon status	On 10/24/02 list	Fall 2002 Sample Date	Fall 2002 Sample No.	Lab	Specific Conduct (uS/cm)	Hexavalent Chromium (ug/L)	Sulfate (mg/L)	C-14 (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	Sr-90 (pCi/L)	Tc-99 (pCi/L)	Tritium (pCi/L)
84-D	22.0	HTS															
85-S	8.0	HTS															
85-M	17.0	HTS															
85-D	26.0	HTS															
86-S	7.0	HTS															
86-M	10.0	HTS															
86-D	26.0	HTS															
TDP-39				ok		12/18/2002	Not sampled										

Attachment #4

Attachment 4

WIDS Site CVP Closeout Summary Table

WIDS Site Closeout	CVP Doc. No. documenting WIDS site closeout	EPA/ Ecology WIDS Signoff	Issue Rev. 0 CVP
100 B/C Area			
116-B-13	CVP-1999-00002	7/22/99	7/1999
116-B-14	CVP-1999-00003	7/22/99	7/1999
116-C-1	CVP-1998-00006	1/21/99	1/1999
116-B-1	CVP-1999-00012	12/8/1999	12/1999
116-B-11	CVP-1999-00001	12/8/1999	12/1999
116-C-5	CVP-1999-00004	12/8/1999	12/1999
116-B-4	CVP-1999-00014	2/24/2000	3/3/2000
116-B-6B	CVP-1999-00017	2/24/2000	3/3/2000
116-B-9	CVP-1999-00009	2/24/2000	3/3/2000
116-B-2	CVP-1999-00015	2/24/2000	3/3/2000
116-B-3	CVP-1999-00013	2/24/2000	3/3/2000
116-B-10	CVP-1999-00010	2/24/2000	3/3/2000
116-B-12	CVP-1999-00008	2/24/2000	3/3/2000
116-C-2A 116-C-2B 116-C-2C	CVP-1999-00019	3/15/2000	3/28/1999
116-B-6A 116-B-16	CVP-1999-00011	5/17/2000	5/26/2000
116-B-7 132-B-6 132-C-2	CVP-2002-00003	7/25/2002	8/6/2002
BC Pipeline	CVP-2002-0012	*(Review Draft 08/12/03; Signoff 9/30/03)*	
100 D Area			
100-D-4 (107D5)	CVP-98-00004	3/25/1999	3/1999
100-D-20 (107D3)	CVP-98-00003	3/25/1999	3/1999
100-D-21(107D2)	CVP-98-00002	3/25/1999	3/1999
100-D-22 (107D1)	CVP-98-00001	3/25/1999	3/1999
1607-D2		closed	
1607-D2:1 Tile Field	CVP-98-00005	3/25/1999	3/1999
Septic Pipelines	CVP-2000-0004	9/26/2000	9/2000
Septic Tank	CVP-99-00005	11/23/1999	12/1999
116-DR-9 100-D-25	CVP-99-00006	1/6/2000	1/2000
116-D-7	CVP-99-00007	8/15/2000	8/2000
100-D-18 (107D4)	CVP-2000-00001	9/26/2000	10/2/2000
116-DR-1 116-DR-2	CVP-2000-00002	9/26/2000	9/27/2000
100-D-48		closed	
100-D-48:1 (Grp 2 North Pipelines)	CVP-2000-00003	3/14/2001	3/2001
100-D-48:2 (Grp 2 West Pipelines)	CVP-2000-00005	9/26/2000	10/2/2000
100-D-48:3 (Grp 3 Large Pipelines)	CVP-2000-00034	4/20/2001	4/20/2001
100-D-48:4 (Grp 3 Small Pipelines)	CVP-2000-00033	4/17/2001	4/20/2001
100-D-19 UPR-100-D-4	CVP-2000-00003	3/14/2001	3/2001
100-D-49		closed	
100-D-49:1 (Grp 2 North Pipelines)	CVP-2000-00003	3/14/2001	3/2001
100-D-49:2 (Grp 2 East Pipelines)	CVP-2000-00005	9/26/2000	10/2/2000
100-D-48:3 (Grp 3 Large Pipelines)	CVP-2000-00034	4/20/2001	4/20/2001

WIDS Site CVP Closeout Summary Table

WIDS Site Closeout	CVP Doc. No. documenting WIDS site closeout	EPA/ Ecology WIDS Signoff	Issue Rev. 0 CVP
100 D Area (cont.)			
UPR-100-D-2 UPR-100-D-3	CVP-2000-00005	9/26/2000	10/2/2000
100-D-5 100-D-6	CVP-2000-00034	4/20/2001	4/20/2001
116-D-3	no CVP site rejected	5/17/2000	N/A
116-D-4	CVP-2000-00008	10/23/2000	10/31/2000
116-D-6	CVP-2000-00009	11/7/2000	11/9/2000
116-D-1A 116-D-1B 100-D-46	CVP-2000-00010	3/12/2001	3/2001
116-D-2	CVP-2000-00013	10/23/2000	10/25/2000
116-DR-6	CVP-2000-00014	10/23/2000	10/24/2000
116-DR-4	CVP-2000-00015	10/23/2000	10/25/2000
100-D-12	CVP-2000-00016	10/23/2000	10/26/2000
100-D-52	CVP-2000-00018	11/7/2000	11/9/2000
116-DR-7	CVP-2000-00019	9/26/2000	10/2/2000
116-D-9	CVP-2000-00012	3/23/2001	3/23/2001
100 H Area			
1607-H2	CVP-2000-00024	2/5/2001	2/2001
1607-H4	CVP-2000-00025	2/26/2001	2/26/2001
116-H-1	CVP-2000-00026	4/4/2001	4/11/2001
116-H-7	CVP-2000-00027	7/24/2001	8/1/2001
100-H-5	CVP-2000-00028	12/21/2000	12/21/2000
100-H-17 116-H-2 100-H-2 100-H-30	CVP-2000-00031	3/6/2001	3/8/2001
100-H-21 100-H-22 100-H-1	CVP-2000-00029	3/29/2001	3/29/2001
100-H-24	CVP-2000-00030	5/9/2001	5/2001
116-H-3	CVP-2000-00032	4/3/2001	4/11/2001
100 N Area			
120-N-1 120-N-2 100-N-58	CVP-2001-00021	3/28/2002	4/18/2002
116-N-3	CVP-2002-00002	9/26/2002	12/23/2002
100 Area Misc. & 300 Area			
JA Jones	CVP-2001-00019	11/8/2001	12/10/2001
600-23	CVP-2001-00020	11/30/2001	12/17/2001
300-49 (Landfill 1A)	CVP-2001-00015	*(Review Draft 02/28/03; Signoff 4/17/03)*	
300-50 (Landfill 1B)	CVP-2001-00016	*(Review Draft 02/28/03; Signoff 4/17/03)*	
628-4 (Landfill 1D)	CVP-2001-00017	*(Review Draft 04/10/03; Signoff 5/14/03)*	
316-1(South Process Pond)	CVP-2001-00018	*(Review Draft 04/10/03; Signoff 5/14/03)*	
628-4 (Burial Ground)	CVP-2002-00014	*(Review Draft 07/03/03; Signoff 08/21/03)*	

WIDS Site CVP Closeout Summary Table

WIDS Site Closeout	CVP Doc. No. documenting WIDS site closeout	EPA/ Ecology WIDS Signoff	Issue Rev. 0 CVP
100 F Area			
116-F-4	CVP-2001-00006	11/8/2001	11/15/2001
116-F-5	CVP-2001-00007	8/16/2001	8/23/2001
1607-F6	CVP-2001-00010	11/8/2001	11/15/2001
UPR-100-F2	CVP-2001-00011	4/22/2002	5/7/2002
100-F-19:1	CVP-2001-00002	5/21/2002	6/10/2002
100-F-19:3			
100-F-34			
116-F-12			
100-F-40	site closed (No CVP)	2/15/2002	2/15/2002
116-F-14	CVP-2001-00009	7/11/2002	7/18/2002
100-F-2	CVP-2001-00001	7/25/2002	8/5/2002
100-F-15	CVP-2002-00001	7/25/2002	8/6/2002
100-F-4			
100-F-11			
100-F-16			
116-F-9	CVP- 2001-00008	10/16/2002	10/22/2002
116-F-2	CVP- 2001-00005	*(Review Draft 1/13/03; Signoff 3/4/03)*	
126-F-1	CVP- 2002-00002	*(Review Draft 1/13/03; Signoff 3/4/03)*	
100-F-35	CVP-2002-00007	*(Review Draft 4/17/03; Signoff 6/6/03)*	
116-F-1	CVP-2002-00009	*(Review Draft 7/14/03; Signoff 9/2/03)*	
116-F-3	CVP-2002-00008	*(Review Draft 4/4/03; Signoff 6/10/03)*	
116-F-6	CVP-2002-00010	*(Review Draft 6/4/03; Signoff 7/24/03)*	
116-F-10	CVP-2002-00006	*(Review Draft 4/21/03; Signoff 6/10/03)*	
1607-F2	CVP-2002-00005	*(Review Draft 1/13/03; Signoff 3/4/03)*	
100-F-19:2	CVP-2001-00003	*(Review Draft 6/6/03; Signoff 7/28/03)*	
116-F-11			

Attachment #5

^BHI Document & Info Services 105850

From: Nielson, Robert R

Sent: Tuesday, February 18, 2003 6:34 AM

To: ^BHI Document & Info Services

Subject: Including Additional Structures in the 100-N Ancillary Facilities RAWP (DOE/RL-2002-

Please archive and send me the CCN#. Thanks,

Robert Nielson

Office: 373-0089

Cell: 521-0877

Pager: 85-4134

-----Original Message-----

From: Bond, Rick (ECY) [mailto:FBON461@ECY.WA.GOV]

Sent: Friday, February 14, 2003 1:11 PM

To: 'Jacques, Duane'; Nielson Robert (RRNielso@mail.bhi-erc.com); Smith Chris (Chris Smith)

Cc: Faulk Dennis (Faulk, Dennis)

Subject: Include Additional Structures in the RAWP

Gentlemen,

Dennis spoke with Dave Einan and Dave stated that incorporating the additional structures/facilities at N Area into the RAWP will be sufficient to track the status of the ancillary facilities and that we do not need to amend/update/revise the Action Memo. Thus, you have Ecology's approval to accomplish this objective via the RAWP.

Rick Bond

Facilities Transition Project Manager

Washington State Department of Ecology

(509) 736-3007

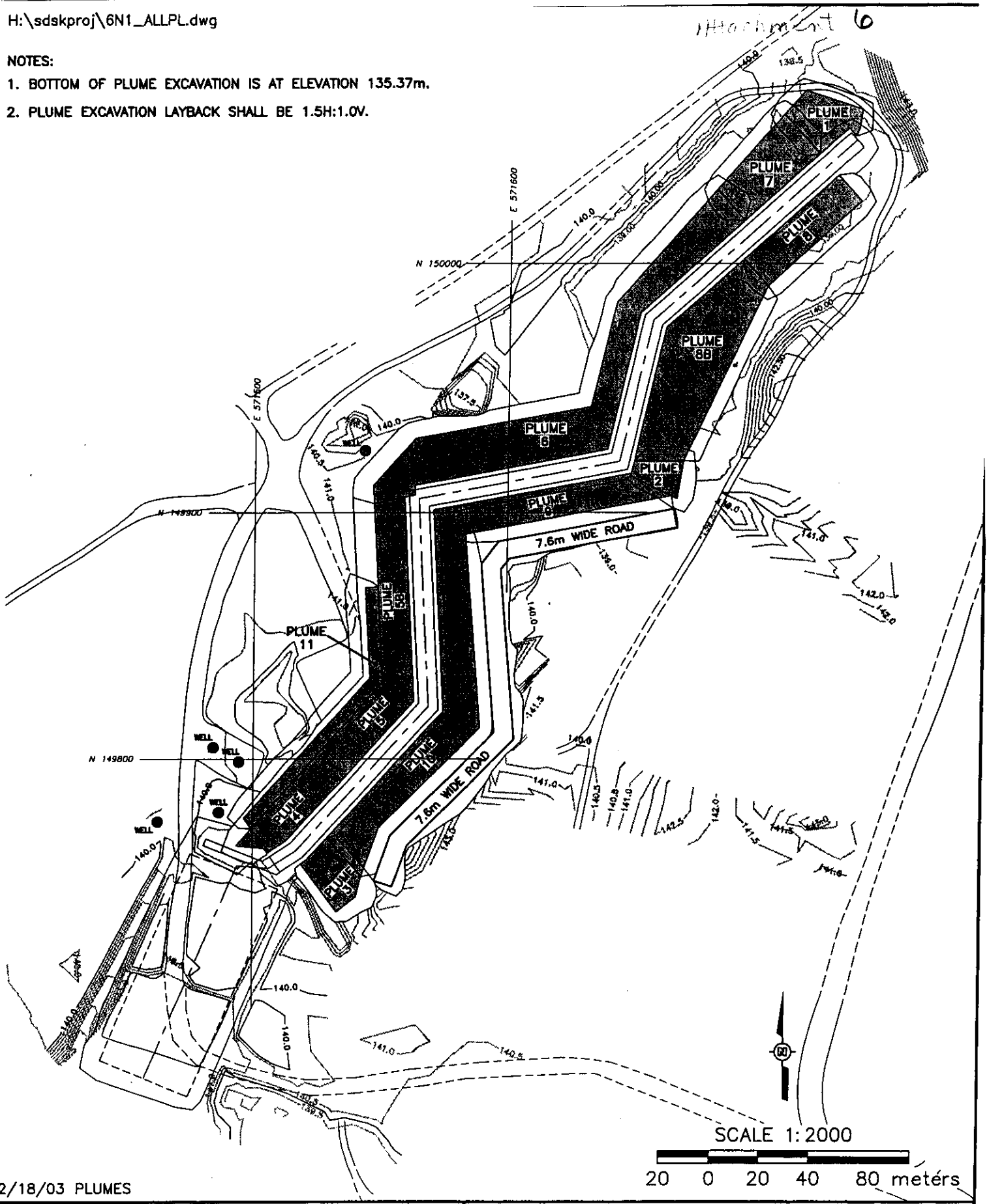
Attachment #6

H:\sdskproj\6N1_ALLPL.dwg

Attachment 6

NOTES:

1. BOTTOM OF PLUME EXCAVATION IS AT ELEVATION 135.37m.
2. PLUME EXCAVATION LAYBACK SHALL BE 1.5H:1.0V.



02/18/03 PLUMES

U.S DEPARTMENT OF ENERGY
DOE FIELD OFFICE, RICHLAND
HANFORD ENVIRONMENTAL RESTORATION PROGRAM

100 N AREA
116-N-1 TRENCH
PLUME LOCATIONS

Attachment #7

Attachment 7

AIR MONITORING PLAN FOR 100-N AREA ANCILLARY FACILITY DECONTAMINATION AND DECOMMISSIONING

1.0 INTRODUCTION

The decontamination and decommissioning (D&D) of the 100-N Area Ancillary Facilities has the potential-to-emit (PTE) radionuclides. This activity is being conducted as part of a non-time-critical *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) removal action under an Action Memorandum (Ecology 1999) signed by the Washington State Department of Ecology (Ecology) and the U.S. Department of Energy (DOE). Methods and activities to disposition the 100-N Area Ancillary Facilities are discussed in the *Removal Action Work Plan for 100-N Area Ancillary Facilities* (DOE-RL 2002).

Quantification of radioactive emissions, implementing best available radionuclide control technology (BARCT), and air monitoring have been identified as substantive requirements (i.e., applicable or relevant and appropriate requirements) for the removal action. A BARCT compliance demonstration is determined by the regulatory agency on a case-by-case basis. This plan is prepared to demonstrate compliance with these substantive requirements in accordance with *Washington Administrative Code* (WAC) 246-247-040. This plan is also written to meet the substantive requirements of 40 *Code of Federal Regulations* (CFR) 61.

1.1 FACILITY DESCRIPTIONS

There are 46 ancillary facilities in 100-N Area that will be characterized (if necessary) and decontaminated and decommissioned starting in fiscal year (FY) 2003. The facilities are listed in Table 1.

As shown in Table 1, the facilities are grouped into three categories according to their contamination levels: facilities with no radioactive contamination, facilities with no appreciable radioactive contamination, and facilities with appreciable radioactive contamination. The categorization is based on information provided in various references, as indicated in Table 1. Facilities with no appreciable radioactive contamination contain only minor amounts of surface contamination (BHI 2001), have radionuclide inventories that are many orders of magnitude smaller than the appreciably contaminated facilities, and, consequently, contribute negligibly to the total effective dose equivalent (TEDE).

The inventories of the six appreciably contaminated facilities bound the potential to emit and will determine the TEDE for the D&D of all of the ancillary facilities.

Table 1. Ancillary Facilities in the 100-N Area.

Fac. Number	Facility Name	Ref.	Fac. Number	Facility Name	Ref.
Facilities with no radioactive contamination			**Facilities with no appreciable radioactive contamination**		
11-N	Change Room	BHI 2001	13-N	Storage Building	BHI 2001
105-ND	Remote Air Intake	BHI 2001	105-NA	Emergency Diesel Enclosure	BHI 2001
184-NC	Air Handler Annex Facility	BHI 2001	105-N/107-N	Pipe Trench[b]	BHI 1998b
184-NE	Compressed Gas Shed	BHI 2001	108-N	Chemical Unloading Facility	BHI 2001
1112-NA	Microwave Tower[a]	BHI 1995	116-N	Stack	BHI 1995
1605-NE	Guard Tower at 181-N	BHI 1995	117-N	Filter Building	BHI 1995
1707-N	Boat House	BHI 1995	117-NVH	Valve Control House	BHI 2001
1714-NB	Warehouse	BHI 1995	119-N	Air Sampling and Monitoring Building	BHI 2001
1724-N	Nitrogen Electrical Control	BHI 2001	119-NA	Air Sampling and Monitoring	BHI 2001
Facilities with appreciable radioactive contamination			163-N	Demineralizer Plant	BHI 2001
105-NE	Fission Product Trap	BHI 1997	166-N	Oil Storage Building	BHI 2001
107-N	Basin Recirculation Facility	BHI 1998b	181-N	River Pumphouse	BHI 2001
1303-N	Dummy Burial Facility, Fuel Spacer Silo	BHI 2001	181-NA	Pumphouse/Guard Tower	BHI 2001
1304-N	Emergency Dump Tank	BHI 2001	181-NB	#3 Diesel Enclosure	BHI 2001
1310-N	Radioactive Chemical Waste Storage	BHI 1998a	182-N	High Lift Pumphouse	BHI 2001
1314-N	Liquid Waste Disposal Station	BHI 1998a	184-N	Power House	BHI 2001
			184-NA	Power House Annex Building	BHI 2001
			184-NB	Air Handler Main Building	BHI 2001
			184-NF	Chemical Injection House	BHI 2001
			1300-N	Emergency Dump Basin	BHI 1998c
			1312-N	Liquid Effluent Retention Facility	BHI 2001
			1313-N	Change and Control Room	BHI 2001
			1322-N	Waste Treatment Pilot Facility	BHI 2001
			1322-NA	Effluent Water Pilot Plant	BHI 2001
			1322-NB	Crib Effluent Iodine Monitoring Facility	BHI 2001
			1322-NC	Crib Sample Pump Pit (Sample Pit)	BHI 2001
			1712-N	Insulation Shop.	BHI 2001
			1722-N	Storage Building/Machine Shop	BHI 2001
			1802-N	Overhead Lines/Pipe Trestle	BHI 2001
			1900-N	Water Supply Tanks	BHI 2001
			1908-N	Outfall Structure, Seal Well	BHI 2001

[a] Currently active.

[b] Lines were drained by gravity into the 107-N Basin Recirculation Facility vessels when 105-N was deactivated. The function of the processes in 107-N was to concentrate contamination in the water coming from the 105-N Basin. The inventory in the 105-N/107-N transfer piping and any leaks from those lines into the pipe trench, are assumed to be negligible compared with the inventory in the 107-N vessels.

The D&D operations are expected to require a total of 5 years to complete; however, for conservatism, the TEDE is calculated by assuming that all facilities are demolished in 1 year. A description of each of the appreciably contaminated facilities is provided below.

105-NE Fission Products Trap (1305-N Facility). The 105-NE Fission Products Trap, also known as the 1305-N Facility, is a below-grade structure, of about 1.4 m^2 (15 ft^2). The reinforced concrete structure provided an approximately 9-m (30-ft)-deep, U-shaped loop or trap for drain piping. Valves and drain pipes were attached to the bottom of each trap to allow for the drain-off of trapped solids. The intent was to trap fission products from the 100-N Reactor radioactive drain systems for disposal rather than for direct disposal to the 1301-N and 1325-N Cribs.

107-N Basin Recirculation Cooling Building (Recirculation Cooling Building). The 107-N Basin Recirculation Cooling Building is a 704-m^2 (7,569-ft^2) reinforced concrete building that was designed to cool and filter the irradiated fuel storage basin water. The building was designed to reduce or eliminate the need to discharge water to the crib areas associated with 100-N Reactor operations. The facility operated from 1985 to early 1991. The facility used and stored miscellaneous chemicals and oils.

1303-N Spacer Silos (Radioactive Dummy Burial Facility). The 1303-N Spacer Silos are three buried spacer silos, two of which are corrugated, galvanized-steel silos, 10.67 m (35 ft) long by 5.18 m (17 ft) in diameter, and extend 9.1 m (30 ft) below grade. The third silo is a reinforced-concrete culvert section measuring 7.62 m (25 ft) long by 3.96 m (13 ft) in diameter, and 0.3 m (1 ft) in thickness. All silos are standing vertically on end with the top 1.5 m (5 ft) above grade and a concrete cover of 0.3 m (1 ft). The silos received and stored irradiated fuel spacers during reactor operation. Spacers were removed from the silos in 1995, and residual contamination was fixed in place with paint. Most of the contamination is located in several feet of waste in the bottoms of the silos.

1304-N Emergency Dump Tank (100-N-57). The 1304-N EDT, which is a 1,900,000-L (500,000-gal) insulated tank, was designed to contain the entire volume of the radioactive primary reactor coolant and was maintained half full of water so it could act as a quenching system for steam released in case of a reactor emergency. The EDT was also used to receive radioactive secondary system water for the purpose of maintaining inventory control and, therefore, is radiologically contaminated. Piping to the tank is wrapped with asbestos insulation materials. The radiological dose rate of the tank was reduced approximately 97% in 1995 during the 1304-N Decontamination Project, which consisted of piping and debris removal. D&D of the EDT will be carried out in conjunction with D&D of the 1300-N Emergency Dump Basin (EDB). The 1300-N EDB is a large, open, steel-lined basin designed to contain the radioactive primary coolant from the 100-N Reactor in case of a reactor emergency. Although the EDB was never used for that purpose, it was used as a holding basin for radioactive-contaminated water that was periodically generated during the 100-N Reactor steam generator blowdown. Radioactive contamination remains in and around the basin structure.

1310-N Radioactive Liquid and Waste Treatment Facility (116-N-2) (1310-N Golf Ball Facility). The 1310-N Radioactive Liquid and Waste Treatment Facility includes a 3,200,000-L (900,000-gal) liquid waste storage and neutralization tank that is spherical in shape (referred to as the "Golf Ball"), and a reinforced-concrete, 12.2-m (40-ft) silo that housed valve and pumping facilities. The facility is bordered on three sides by a raised earthen shielding and containment berm to reduce dose rates to workers. The berm is open to the 1301-N Crib area, which was an acceptable release area in case of an accident. The facility periodically received radioactive/ hazardous decontamination effluent from the reactor's primary coolant system. These radioactive effluents contained detergents and acids used to perform decontamination; the tank was designed to hold the acidic effluent until it could be neutralized.

1314-N Liquid Disposal Building (Liquid-Waste Loadout Building). The 1314-N Liquid Disposal Building is a 167-m^2 (1,800-ft^2), pre-engineered, single-story, metal-frame construction building at grade, supported on a reinforced-concrete foundation. The facility was used to store and load the liquid waste (i.e., radioactive, neutralized decontamination solutions from the reactor primary coolant system) into rail tank cars for shipment to the 200 Areas for disposal in underground storage tanks. The building has steel and earthen shield walls constructed outside the perimeter of the facility to reduce dose rates to area workers.

1.2 PLANNED ACTIVITIES

The removal action work scope includes characterization sampling; decontamination; removal of accessible radiological and hazardous waste, removal of residual water; demolition of structures; contaminated soil excavation; treatment if needed (e.g., grouting) to meet waste acceptance criteria; and handling, loading, and transportation of waste for disposal.

Decontamination methods may include wiping or applying fixatives to stabilize contamination, scabbling, abrasive blasting, and vacuuming. Portable ventilation units and glovebags may be used during these activities.

Residual water in the facilities will be pumped, filtered, and stored prior to being transferred to a tanker truck for shipment.

Demolition methods will be selected based on the structural elements to be demolished and will use conventional equipment, which will include the following:

- Excavator with a hoe-ram
- Hydraulic shears with steel shear jaws
- Concrete pulverizer jaws or breaker jaws
- Crane with wrecking ball
- Pneumatic hammers
- Controlled explosives
- Crane to remove and size reduce materials

- Mechanical/power saws
- Cutting torch.

It is assumed that a portion of concrete demolition work will make use of a high-efficiency particulate air (HEPA)-filtered vacuum cleaner. Portable ventilation filter units may also be used. Standard construction equipment will be used for excavation, loading, and hauling. If extensive soil contamination is found in adjacent and underlying soils, work will be deferred to the Remedial Action/Waste Disposal Project, with approval from the lead regulatory agency.

Equipment (e.g., haul trucks, containers) used in D&D activities will also be decontaminated, as necessary. Conventional methods (e.g., brushing or wiping, water wash, or HEPA-filtered vacuum cleaners) will be used. More aggressive equipment decontamination methods (e.g., grinding or wet grit blasting) may be used for equipment decontamination if other methods fail.

Wastewater will be sent to the Effluent Treatment Facility (ETF) for subsequent treatment and disposal. Demolition material will be sent primarily to the Environmental Restoration Disposal Facility (ERDF) for disposal. On a case-by-case basis, other approved disposal facilities may be used based on the specific waste stream designation.

Specific D&D methods used for each of the six appreciably contaminated facilities are outlined below. The other facilities will use the techniques that are described above.

105-NE Fission Products Trap (1305-N Facility). The radioactive inventory is contained in piping, vessels, and residual water. Piping will be cut into 2-m (6-ft) sections with a torch, wrapped in plastic if necessary, and removed. Residual water will be pumped out, filtered, and shipped to the Hanford Site's ETF or treated to meet the acceptance criteria of the receiving facility. The building structure will be demolished by conventional techniques.

107-N Basin Recirculation Cooling Building (Recirculation Cooling Building). Vessels will be grouted and removed, and the building structure will be demolished by conventional techniques.

1300-N Emergency Dump Basin. The 1300-N EDB will be demolished using conventional techniques. See the discussion of the 1304-N EDT below.

1303-N Spacer Silos (Radioactive Dummy Burial Facility). The upper 5 m (15 ft) of each silo will be removed. Torch cutting will be used to remove the upper portions of the two steel silos, and conventional demolition techniques will be used to remove the upper portion of the concrete silo. The residual contamination on the remaining structures will remain fixed in place. The silos will be covered with a weather protective cover (similar to what is presently in place) in the interim between the end of decommissioning work and the start of any subsequent remediation of the silos.

1304-N Emergency Dump Tank (100-N-57). The 1304-N EDT will be sectioned with shears, and the tank base/foundation will be demolished using conventional techniques.

1310-N Radioactive Liquid and Waste Treatment Facility (116-N-2) (1310-N Golf Ball Facility). Holes will be cut in the steel structure to allow access for sheers to section the steel. Sixteen lineal meters (52 lineal ft) will be cut with a torch to allow access for shears to section the remainder of the structure. The tank base/foundation will be demolished by conventional techniques.

1314-N Liquid Disposal Building (Liquid-Waste Loadout Building). The structure will be demolished using conventional techniques.

2.0 AIRBORNE SOURCE INFORMATION

The potential exists for particulate and gaseous radioactive airborne emissions resulting from the D&D activities that were previously described. The following sections discuss the radiological inventory of the six appreciably contaminated facilities, and the subsequent PTE and resulting TEDE to the maximally exposed individual (MEI). The TEDE to the MEI from the six appreciably contaminated facilities bounds the PTE from all 46 of the facilities undergoing D&D.

2.1 INVENTORY

105-NE Fission Products Trap (1305-N Facility). The inventory is contained in piping and vessels. The inventory is provided in BHI (1997).

107-N Basin Recirculation Cooling Building (Recirculation Cooling Building). The inventory is located inside process vessels (e.g., filters, ion-exchange columns). The inventory is provided in BHI (1998b).

1300-N Emergency Dump Basin. The 1300-N EDB has no appreciable inventory (BHI 1998c). See the discussion of the 1304-N EDT below.

1303-N Spacer Silos (Radioactive Dummy Burial Facility). Most of the contamination is located in several feet of waste in the bottoms of the silos. However, for conservatism, the contamination is assumed to be uniformly distributed between the three silos and on the walls, floor, and top of each silo. The inventory is provided in BHI (2001).

1304-N Emergency Dump Tank (100-N-57). The interior of the 1304-N EDT is contaminated. The inventory is provided in BHI (2001).

1310-N Radioactive Liquid and Waste Treatment Facility (116-N-2) (1310-N Golf Ball Facility). The interior of the 1304-N EDT is contaminated. The inventory is provided in BHI (1998a).

1314-N Liquid Disposal Building (Liquid-Waste Loadout Building). The contamination is in the form of surface contamination on the surfaces of the facility. The inventory is provided in BHI (1998a).

Soil. Any residual contamination in soils removed during D&D of structures has been accounted for in the assumed inventory for that structure. If extensive contamination is found, remediation will be deferred to the Remedial Action and Waste Disposal Project, with regulatory approval.

Except for tritium (and other activities noted below), it is conservatively assumed that the entire radioactive inventory is in the form of contaminated particulates. The release fraction for particulates and liquids is 1E-03. Tritium is conservatively assumed to be released as a gas, with a release fraction of 1 (WAC 246-247-030[21]).

Where cutting torches are used, it is conservatively assumed that the inventory impacted by the torch exceeds the boiling point of all radionuclides and the release fraction is 1 (WAC 246-247-030[21]).

Portions of concrete demolition and equipment decontamination may make use of a HEPA-filtered vacuum cleaner. It is assumed that 0.25% of the annual possession quantity (APQ) will be collected in the HEPA-filtered vacuum cleaners. The HEPA-filtered vacuum cleaner has a release fraction of 1 (DOH 1994).

The CAP-88-PC, Version 2.0, model was used to determine the TEDE (or annual unabated offsite dose) to the MEI. The calculation made the conservative assumption that all D&D activities will be completed in 1 year. However, the D&D activities will actually be conducted over 5 years. The PTE (Ci/yr) were used for the input for the computer model, and the model generated the annual unabated dose. The distance to the MEI used in the model was 9,030 m west-northwest. The maximum TEDE to the MEI from the D&D activities of the 100-N Area Ancillary Facilities is 3.06E-1 mrem/yr.

The radionuclide APQ and subsequent PTE and TEDE calculations for the 100-N Ancillary Facilities are documented in *TEDE Calculation for D&D of 100-N Ancillary Facilities* (BHI 2002). Summary results are shown in the attachment.

3.0 BEST AVAILABLE RADIONUCLIDE CONTROL TECHNOLOGY

The D&D activities have the potential to release radioactive emissions to the atmosphere. Implementing BARCT for these radioactive emissions has been identified as an applicable or relevant and appropriate requirement.

The use of wiping or applying fixatives is an as low as reasonably achievable control that has been accepted as BARCT for fugitive particulate radionuclide air emissions, particularly when

the potential offsite dose is low. Glovebags may also be used to reduce potential emissions. For vacuuming and the use of portable ventilation units, HEPA filters are used to collect generated dust. The use of HEPA filters has been generally accepted as BARCT. Because structure demolition may be a source of radioactive fugitive emissions, dust suppressants (e.g., water and fixatives) will be used and are considered BARCT for demolition. When using water, quantities used will be minimized to prevent water accumulation, puddles, and runoff within the area where the water is being used.

Because D&D activities may be a source of radioactive fugitive emissions, the following controls will be implemented and are also considered BARCT:

- Water will be applied during demolition, excavation, container loading, and backfilling processes to minimize airborne releases.

- Fixatives will be applied to any contaminated debris or soils that are being stockpiled (e.g., for reuse) that will be inactive for more than 24 hours.

- Fixatives will be applied to contaminated soils and debris that will be inactive less than 24 hours at the end of work operations, if the sustained wind speed is predicted overnight to be greater than 32 km/h (20 mph), based on the Hanford Meteorological Station morning forecast. This will allow for enough time, if necessary, to prepare for the application of dust control measures. If a soil fixative has already been applied and the soil and/or debris will remain undisturbed, further uses of fixatives will not be reapplied, unless needed. The fixatives or other controls will not be applied when the contaminated soils and/or debris are frozen or it is raining, snowing, or other freezing precipitation is falling at the end of work operations.

- An entry will be made in the project logbook (or equivalent) when the forecasts predict sustained wind speeds greater than 32 km/h (20 mph), and dust control is to be applied at the end of the work shift.

Haul trucks transporting bulk materials will be covered to contain the materials while in transit to the ERDF.

4.0 MONITORING

Existing air monitors (i.e., N102, N103, N106) will be used for the 100-N Area Ancillary Facility D&D to monitor emissions from the D&D activities. Monitoring activities will also consist of continued operations of five existing thermoluminescent dosimeters (6, 7, 26, 29, and 31) in the 100-N Area. The locations of the near-facility air monitors and thermoluminescent dosimeters are shown in Figure 1.

The operation of these monitors will follow the protocol established for near-facility monitors on the Hanford Site. The air samples will be changed every 2 weeks and analyzed for total alpha and total beta. The samples will be composited semiannually, and analyzed for gamma energy-emitting radionuclides (i.e., strontium-90, isotopic uranium, isotopic plutonium). The data results will then be entered into the Automated Bar Coding of Air Samples at Hanford database for record keeping and reporting. The data from these monitors will be included in the annual reports prepared for the Hanford Site.

5.0 REFERENCES

40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," *Code of Federal Regulations*, as amended.

BHI, 1995, *N Reactor Deactivation Program Plan*, BHI-00075, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

BHI, 1997, *105-NE Fission Products Trap and 1305-N Piping Preliminary Hazard Classification*, BHI-01110, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

BHI, 1998a, *Auditable Safety Analysis and Final Hazard Classification for Buildings 1310-N and 1314-N*, BHI-01037, Rev. 1, Bechtel Hanford, Inc., Richland, Washington.

BHI, 1998b, *Final Hazard Classification and Auditable Safety Analysis for Building 107-N*, BHI-01095, Rev. 2, Bechtel Hanford, Inc., Richland, Washington.

BHI, 1998c, *Hazard Classification and Auditable Safety Analysis for the 1300-N Emergency Dump Basin*, BHI-00853, Rev. 1, Bechtel Hanford, Inc., Richland, Washington.

BHI, 2001, *100-N Ancillary Facilities Preliminary Hazard Classification*, CCN 095435, dated December 18, 2001, Bechtel Hanford, Inc., Richland, Washington.

BHI, 2002, *TEDE Calculation for D&D of 100-N Ancillary Facilities*, 0100N-CA-V0064, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 601, et seq.

DOE-RL, 2002, *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70, Draft A, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOH, 1994, letter from A. W. Conklin to S. H. Wisness, AIR 94-802, dated August 1, 1994, Washington State Department of Health, Olympia, Washington.

Ecology, 1999, *Action Memorandum for the 100-N Area Ancillary Facilities*, CCN 064829, from M. A. Wilson to L. Piper, U.S. Department of Energy, Richland Operations Office, dated January 6, 1999, Washington State Department of Ecology, Richland, Washington.

WAC 246-247, "Radiation Protection – Air Emissions," *Washington Administrative Code,* as amended.

Concurrence:

R. S. Acselrod — Date: 1/14/03
Washington State Department of Health

F. W. Bond — Date: 1/17/03
Washington State Department of Ecology

D. C. Smith — Date: 1/14/03
U.S. Department of Energy,
Richland Operations Office

M. F. Jarvis — Date: Jan 14, 2003
U.S. Department of Energy
Richland Operations Office

ATTACHMENT

Potential-to-Emit Values for the Decontamination and Decommissioning of the 100-N Ancillary Facilities.

Isotope	Total APQ[a], Ci	Torch Cutting and HEPA Vacuuming			Crushing (etc.)			Total Potential to Emit, Ci/yr	Unabated TEDE to the MEI[b], mrem/yr
		APQ	Release Fraction	Potential to Emit, Ci/yr	APQ	Release Fraction	Potential Emit, Ci/yr		
Am-241	2.54E+00	7.39E-03	1.00E+00	7.39E-03	2.54E+00	1.00E-03	2.54E-03	9.92E-03	1.39E-01
Ce-144	2.66E-02	1.52E-04	1.00E+00	1.52E-04	2.65E-02	1.00E-03	2.65E-05	1.78E-04	2.37E-06
Co-60	4.23E+01	2.18E+01	1.00E+00	2.18E+01	4.22E+01	1.00E-03	4.22E-02	2.18E+01	3.24E-02
Cs-134	1.78E-01	1.47E-01	1.00E+00	1.47E-01	1.78E-01	1.00E-03	1.78E-04	1.47E-01	5.59E-05
Cs-137	1.39E+01	9.23E+00	1.00E+00	9.23E+00	1.39E+01	1.00E-03	1.39E-02	9.24E+00	2.40E-03
Eu-152	5.04E-01	4.29E-01	1.00E+00	4.29E-01	5.04E-01	1.00E-03	5.04E-04	4.30E-01	2.70E-04
Eu-153[c]	6.46E-02	1.68E-04	1.00E+00	1.68E-04	6.45E-02	1.00E-03	6.45E-05	2.32E-04	(3)
Eu-154	5.00E-01	4.06E-01	1.00E+00	4.06E-01	4.99E-01	1.00E-03	4.99E-04	4.07E-01	2.29E-04
Eu-155	3.69E-01	3.16E-01	1.00E+00	3.16E-01	3.68E-01	1.00E-03	3.68E-04	3.17E-01	7.96E-06
H-3	6.92E-02	6.92E-02	1.00E+00	6.92E-02	6.92E-02	1.00E+00	6.92E-02	1.38E-01	2.71E-06
Ni-63	1.41E-05	1.41E-05	1.00E+00	1.41E-05	1.41E-05	1.00E-03	1.41E-08	1.41E-05	1.60E-11
Np-237	3.17E-04	7.93E-07	1.00E+00	7.93E-07	3.16E-04	1.00E-03	3.16E-07	1.11E-06	1.42E-05
Pu-238	4.62E-01	3.78E-01	1.00E+00	3.78E-01	4.61E-01	1.00E-03	4.61E-04	3.79E-01	1.58E-02
Pu-239	2.85E+00	2.19E+00	1.00E+00	2.19E+00	2.85E+00	1.00E-03	2.85E-03	2.20E+00	1.09E-01
Pu-240	5.47E-04	1.37E-06	1.00E+00	1.37E-06	5.46E-04	1.00E-03	5.46E-07	1.91E-06	1.73E-05
Pu-241	2.76E+00	1.57E-02	1.00E+00	1.57E-02	2.74E+00	1.00E-03	2.74E-03	1.85E-02	2.64E-03
Ra-226	3.70E-01	9.59E-04	1.00E+00	9.59E-04	3.69E-01	1.00E-03	3.69E-04	1.33E-03	6.65E-04
Ru-106	1.41E-02	8.01E-05	1.00E+00	8.01E-05	1.40E-02	1.00E-03	1.40E-05	9.41E-05	1.63E-06
Sb-125	1.12E-04	2.80E-07	1.00E+00	2.80E-07	1.12E-04	1.00E-03	1.12E-07	3.92E-07	6.27E-09
Sr-90	6.48E+00	3.44E+00	1.00E+00	3.44E+00	6.47E+00	1.00E-03	6.47E-03	3.44E+00	3.42E-03
Tc-99	1.26E-01	1.20E-01	1.00E+00	1.20E-01	1.26E-01	1.00E-03	1.26E-04	1.20E-01	9.98E-06
Th-232	7.65E-05	1.77E-06	1.00E+00	1.77E-06	7.63E-05	1.00E-03	7.63E-08	1.84E-06	2.37E-06
U-234	1.05E-02	9.04E-03	1.00E+00	9.04E-03	1.05E-02	1.00E-03	1.05E-05	9.05E-03	1.31E-04
U-235	3.85E-04	2.29E-04	1.00E+00	2.29E-04	3.84E-04	1.00E-03	3.84E-07	2.29E-04	5.19E-06
U-238	5.32E-03	4.52E-03	1.00E+00	4.52E-03	5.32E-03	1.00E-03	5.32E-06	4.53E-03	6.04E-05
Y-90	6.48E+00	3.44E+00	1.00E+00	3.44E+00	6.47E+00	1.00E-03	6.47E-03	3.44E+00	7.47E-06
Ba-137m	1.31E+01	8.73E+00	1.00E+00	8.73E+00	1.31E+01	1.00E-03	1.31E-02	8.74E+00	6.82E-11
Total									3.06E-01

[a] Radionuclide annual possession quantities are presented in Environmental Restoration Contractor Calculation No. 0100N-CA-V0064, *TEDE Calculation for D&D of Facilities 100-N Ancillary*, Rev. 0, December 2002.

[b] The annual unabated dose was determined using the CAP88-PC, Version 2, model. The potential to emit (Ci/yr) was input to the model, and the model generated the annual unabated dose. The distance to the MEI from the 100-N Ancillary Facilities is 9,030 m west-northwest at the site boundary. The CAP88-PC model summary and synopsis are presented in ERC Calculation No. 0100N-CA-V0064, *TEDE Calculation for D&D of Facilities 100-N Ancillary Facilities 100-N Ancillary*, Rev. 0, December 2002.

[c] Europium-153 is not included in the CAP88-PC database; therefore, no TEDE for europium-153 was calculated.

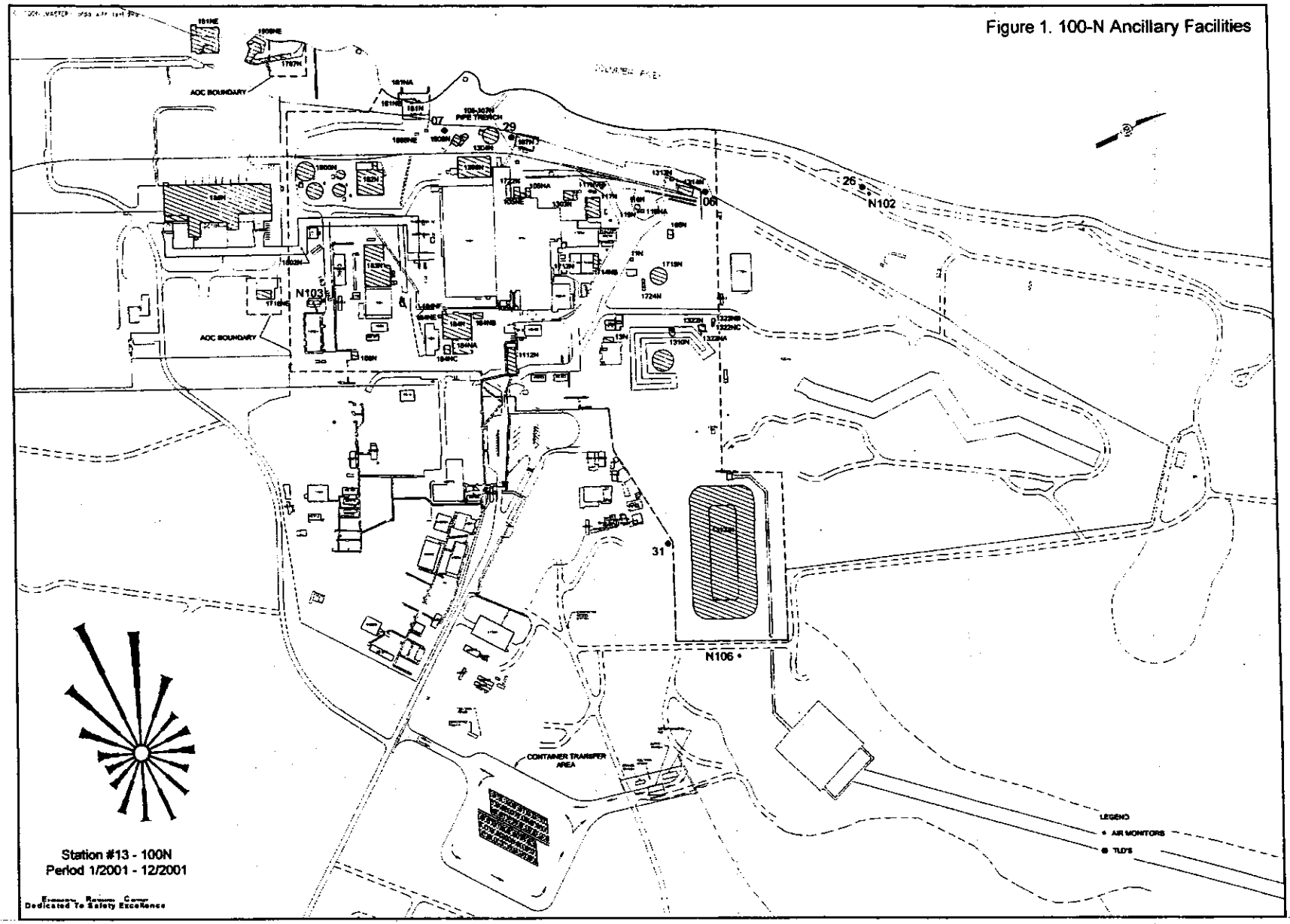
APQ = Annual possession quantity

HEPA = High efficiency particulate air (filter)

MEI = Maximally exposed individual

TEDE = Total effective dose equivalent

Figure 1. 100-N Ancillary Facilities



Attachment #8

Attachment 8

Clarification of Scope

In calendar year 2003, Bechtel Hanford, Inc. will remove approximately 600 cubic yards of additional low-level radioactive, asbestos waste from the 109N roof clean air intake ductwork. The signatures below show agreement with Bechtel Hanford, Inc. that the work to be conducted in calendar year of 2003 is similar to the 109-N roof waste disposal activity conducted in 1999 and can be considered to be "within the scope" of the earlier activity.

Agreeing that the 2003 activity is within the scope of the 105-N/ 109-N Roofing Materials Waste Disposition project enables the use of the earlier documents for this activity and allows the disposal of the waste at ERDF.

Chris Smith, U.S. Department of Energy

Rick Bond, Washington Department of Ecology

David Einan, U.S. EPA

Golden, James W

From: Einan, David R
Sent: Tuesday, December 10, 2002 4:27 PM
To: Bond, Rick; Golden, James W; Einan, David R
Cc: Smith, Douglas C (Chris)
Subject: RE: 109N roof waste.

I, too, am OK with this.

Dave
-----Original Message-----
From: Bond, Rick (ECY) [mailto:FBON461@ECY.WA.GOV]
Sent: Tuesday, December 10, 2002 1:38 PM
To: 'Golden, James W'; Einan, David R
Cc: Smith, Douglas C (Chris)
Subject: RE: 109N roof waste.

Sounds good to me.

-----Original Message-----
From: Golden, James W [mailto:jwgolden@mail.bhi-erc.com]
Sent: Tuesday, December 10, 2002 11:20 AM
To: Bond, Rick (ECY); Einan, David R
Cc: Smith, Douglas C (Chris); Golden, James W
Subject: FW: 109N roof waste.

Rick/ Dave:

Attached to this message is a approval sheet, I prepared to document the agreement to dispose of the 109N roof waste at ERDF. The email correspondence on this subject is written below. Absent any comments from the two of you, I will walk this document around for signature next week.

Thanks,
Jim Golden

<< File: Clarification of 109Scoperev2.doc >>

-----Original Message-----
From: Smith, Douglas C (Chris)
Sent: Tuesday, December 10, 2002 9:42 AM
To: Golden, James W
Subject: RE: 109N roof waste.

No, that is fine.

Chris

-----Original Message-----
From: Golden, James W
Sent: Tuesday, December 10, 2002 8:08 AM

To: Smith, Douglas C (Chris)
Subject: RE: 109N roof waste.

Chris:

I've been informed that there will not be a 100 area Unit Managers meeting this month. We would like to send out the request for proposal (RFP) for this project. Do you mind if I share the attached with Dave Einan and Rick Bond, then hand carry the document for signature(s)? I'll still make certain that the documents approval is documented in the January 100 area Unit Managers meeting minutes.

Jim

<< File: Clarification of 109Scoperev2.doc >>

-----Original Message-----
From: Smith, Douglas C (Chris)
Sent: Wednesday, November 20, 2002 12:40 PM
To: Golden, James W
Subject: RE: 109N roof waste.

OK

-----Original Message-----
From: Golden, James W
Sent: Wednesday, November 20, 2002 12:37 PM
To: Smith, Douglas C (Chris)
Subject: RE: 109N roof waste.

Sounds good. Can shoot for next months meeting?

Jim

-----Original Message-----
From: Smith, Douglas C (Chris)
Sent: Wednesday, November 20, 2002 12:39 PM
To: Golden, James W
Subject: RE: 109N roof waste.

looks ok, but I will be out of town tomorrow and not in attendance at UMM. We'll have to get it signed some other time.

Chris

-----Original Message-----
From: Golden, James W
Sent: Wednesday, November 20, 2002 12:31 PM
To: Smith, Douglas C (Chris)
Cc: Golden, James W
Subject: FW: 109N roof waste.

Chris:

Attached an approval document, which I'd like to have signed by Dave Einan, Rick Bond, and yourself, to document the approval to send the 2003 109N roof waste to the ERDF. Jack Donnely recommended we have this signed at the unit managers meeting so the decision is documented in the Administrative Record.

Okay?
Jim

<< File: Clarification of 109Scoperev2.doc >>

-----Original Message-----
From: Smith, Douglas C (Chris)
Sent: Tuesday, November 12, 2002 10:40 AM
To: Golden, James W
Subject: FW: 109N roof waste.

-----Original Message-----
From: Bond, Rick (ECY) [mailto:FBON461@ECY.WA.GOV]
Sent: Tuesday, November 12, 2002 10:36 AM
To: 'Douglas_C_Chris_Smith@RL.gov'
Subject: RE: 109N roof waste.

Fine with me. I sent you this last week.

Chris,

This proposal sounds good to me.

Rick Bond
Facility Transition Project Manager
WA Dept of Ecology

-----Original Message-----
From: Douglas_C_Chris_Smith@RL.gov [<mailto:Douglas_C_Chris_Smith@RL.gov>]
Sent: Tuesday, November 12, 2002 10:28 AM
To: David_R_Einan@rl.gov; Bond, Rick (ECY)
Subject: RE: 109N roof waste.

Rick, are you OK with this?

Chris

-----Original Message-----
From: Einan, David R
Sent: Tuesday, November 05, 2002 7:48 AM
To: Smith, Douglas C (Chris); Bond, Rick

Subject: RE: 109N roof waste.

Rick and Chris--

I'm OK with this proposal.

Dave

-----Original Message-----
From: Smith, Douglas C (Chris)
Sent: Monday, November 04, 2002 10:24 AM
To: Bond, Rick; Einan, David R
Subject: 109N roof waste.

Rick/Dave: Please review BHI's proposal and comment/concur.

Thanks

Chris

-----Original Message-----
From: Golden, James W
Sent: Friday, November 01, 2002 6:45 AM
To: Smith, Douglas C (Chris)
Subject: FW: FW: Draft Email to Chris Smith regarding the 109N roof waste.

-----Original Message-----
From: Golden, James W
Sent: Wednesday, October 30, 2002 8:38 AM
To: 'Douglas_C_Smith@rl.gov'
Cc: Golden, James W
Subject: FW: FW: Draft Email to Chris Smith regarding the 109N roof waste.

Chris:

Here's the email regarding the 109N roof waste. Sorry it took so long, but I wanted to make sure the email received the appropriate review before I sent it to you. Let me know if the format is off...I'm sending this from home. My wife had a baby Friday, so I haven't been on site since!

Thanks for your help on this matter,
Jim

> > Chris:
> >
> > Per our phone conversation....BHI has work scheduled in March of
> > 2003, to remove ~600 cubic yards of low-level radioactive asbestos waste from the building 109N roof clean intake ductwork. An internal meeting was held within BHI, to determine whether (or not) this work would logically fit within the scope of the Ancillary Facilities Action memorandum. The conclusion of the internal BHI meeting, is that it does. The work is similar to the work under the action memo in performed in

1999. In addition, the CERCLA documentation developed for the 1999 waste, could adequately be used in support of the 2003 project. We just need to ensure we get "buy in" from DOE and the Regulators (Dave Einan whom is the EPA Project Manager of ERDF, and the Ecology Project Manager of the N

Area). It has been suggested that we draft something that could be approved at the Unit Managers Meeting?

One other note worthy of mention is that the 1999 project used their asbestos abatement workplan as a removal action workplan

equivilent, because it contains the same type of data. I have reviewed this document, and nothing being performed in 2003, conflicts with the data in the 1999 workplan; therefore, there wouldn't be any need/ desire to modify this document.

Just in case the proposed plan is not acceptable an alternate plan was investigated, disposal at the Low Level Waste Burial Grounds. The difficulty with shipping bulk LL waste to LLBG is that LLBG normally receives this type of waste in wood boxes (LLBG handles very little

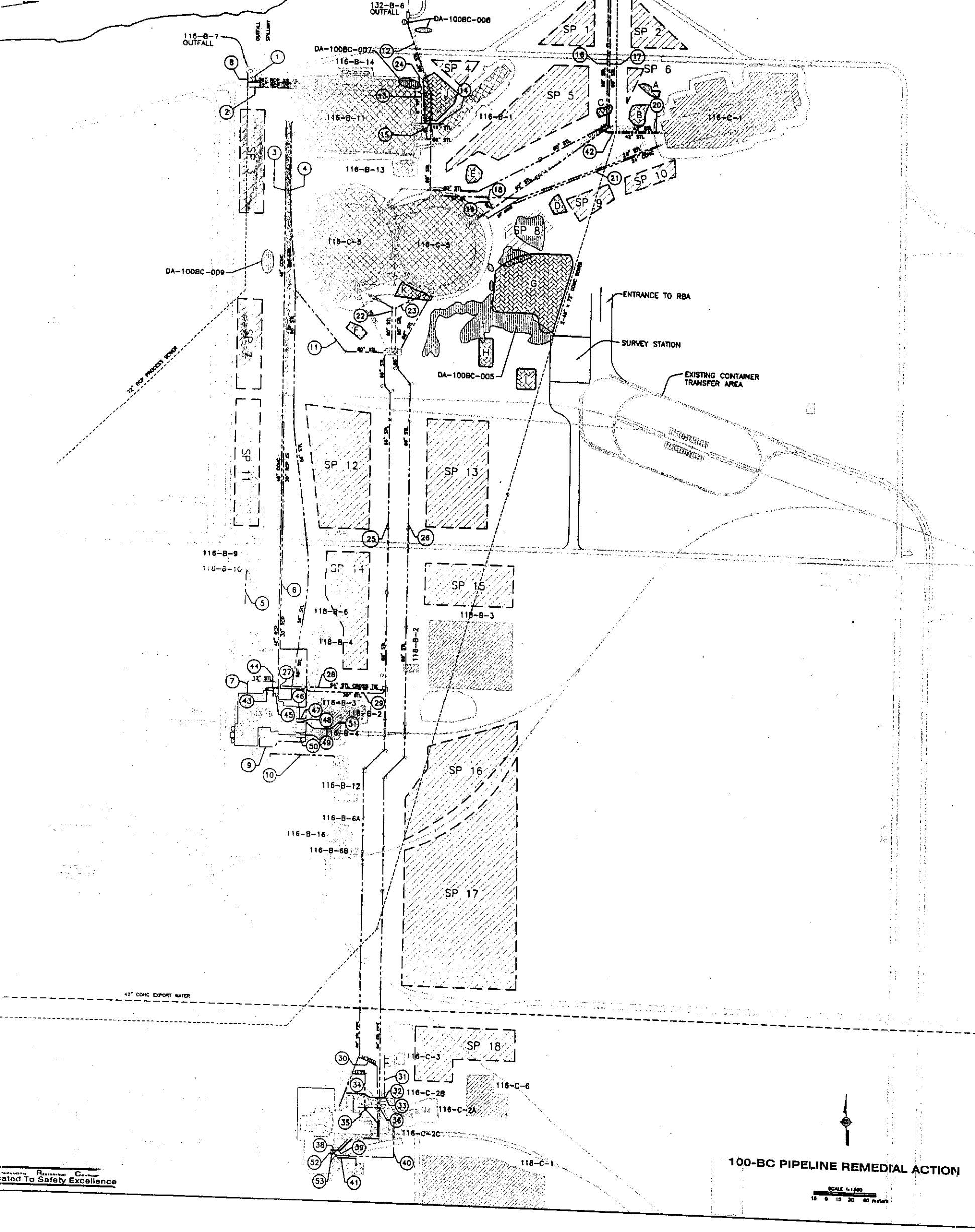
waste shipped in bulk). Packaging the waste in boxes will add approximately $60K to the cost of performing this work ($1K per box * 60). Discussions and meetings have been held with FHI and BHI personnel to discuss alternate methods of shipping. Since the roll-off boxes

are contractually "tied" to the ERDF, we cannot use them to ship waste to the LLBG. We can't rent rolloffs to move LL Waste unless we're prepared to buy them. One option currently being pursued is to use (currently on site) dump trucks to transport the waste to LLBG; this would result in approximately two shipments per day over a 30 day period. Again, the concern is that FH may have difficulties in supporting these shipments, which may cause delays, that could result in contractors and equipment "sitting," while the issue is resolved.

> >
> >
> > Thanks for your help on this,
> > Jim Golden
> > 376-3283
> >
> >
> >
> >

> >
> >
> >
> >

Attachment #9



Dedicated To Safety Excellence

G:\100BC\100902A.dwg, 10/09/2002 09:07:00 AM

Attachment #10

Attachment 10

Addendum
118-C-4 Horizontal Rod Cave Characterization Plan

February 19, 2003

1.0 Introduction

This document has been prepared as an addendum to the *118-C-4 Horizontal Rod Cave Characterization Plan* (DOE/RL 1997) and will be implemented by Decommissioning Projects upon DOE and EPA approval.

2.0 Background

The decontamination and decommissioning (D&D) of the 118-C-4 Horizontal Rod Cave is currently scheduled to commence in March 2003. The rod cave is located on the south side of the 105-C Reactor within the fence line and operated from 1950 to 1969. It consists of two U-shaped steel sections, cut in half and placed cut-side down on a concrete pad between two concrete retaining walls. This configuration was covered with soil/gravel and coated with asphalt emulsion for protection. The concrete ends are equipped with steel doors sealed to prevent entry. The caves were used for temporary storage of activated reactor control rods to allow radioactive decay prior to disposal. The north cave is empty but the south cave contains two horizontal control rod tips. French drains in the center of the concrete slab receive precipitation percolating through the gravel that covers the caves so that rain and snow water are diverted away from the steel tubes holding the control rods. Overall dimensions of the structure are 70-ft. long by 2-ft wide by 7-ft high (including a 4-ft thick mound of soil/gravel covering).

The Action Memorandum (EPA 1997) for this facility requires the submittal of waste designation sampling plans for EPA approval prior to shipping waste for disposal. It also requires the submittal of verification sampling plans for EPA approval.

Data Quality Objectives (DQO) were developed in preparation for characterization and closure sampling (BHI 1997a), and a Characterization Plan (DOE/RL 1997) was subsequently prepared to describe the waste characterization sampling for waste designation. Waste characterization sampling activities were conducted in December 1996 and August 1997, and the results were documented in a Characterization Report (BHI 1998). According to stakeholder input during the DQO process (BHI 1997b), closure sampling associated with the underlying soils is to be performed in accordance with the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL 2001a).

3.0 Discussion

Due to the passage of time since these documents were originally prepared and characterization performed, this Addendum has been prepared to document the issues and

subsequent actions the project intends to take regarding additional waste characterization and soil closure sampling and waste management activities associated with this removal action.

3.1 Removal Action Work Plan

The Action Memorandum (EPA 1997) does not require the submittal of a removal action work plan to EPA, nor does Section 7.2.4 of the Tri-Party Agreement. The general scope of work involved in the removal of the Rod Cave will be identical to those described in the existing Reactor Removal Action Work Plans (DOE/RL 2002a; DOE/RL 2002b) and includes the following activities:

- Removing hazardous substances (chemical and radiological)
- Removing facility equipment
- Dismantling the facility structure
- Performing verification sampling
- Preparing the project closeout report
- Preparing the cleanup verification package

Existing work plans (DOE/RL 2002a; DOE/RL 2002b) will be implemented to establish the means and methods to perform the removal action functions. Requirements in BHI procedures will be used to perform and control the facility removal and disposal actions.

3.2 Waste Management Plan

Similar to the work plan issue, there is no existing waste management plan that describes the specific waste management practices for the 118-C-4 Horizontal Rod Cave. In conducting the removal activities, various waste streams will be generated that will require specific processing and disposal. The various waste streams, that may be generated during the removal activities, may include the following:

- Solid Waste
- Low-level radioactive waste
- Mixed waste (waste that is both low-level radioactive waste and hazardous waste)
- Hazardous, dangerous and PCB wastes

Waste management, transportation and disposal requirements within the existing work plans (DOE/RL 2002a; DOE/RL 2002b) will be implemented during this removal action. A site-specific waste management instruction (SSWMI) will be prepared to support the management of waste that is generated during removal activities. The SSWMI will be prepared in accordance with BHI-EE-10, *Waste Management Plan,* Procedure 19.0, "Site-Specific Waste Management Instructions." The SSWMI will address waste storage, transportation, packaging, handling, and labeling as they specifically apply to the waste streams.

Waste storage areas will be established in the on-site area to accumulate and store waste. These areas are shown in Figure 1.

3.3 Waste Characterization Sampling

Review of the characterization report and recent facility inspections indicate some unanticipated waste streams that will require additional characterization. The proposed sample locations, description of sample material, number of samples and contaminants of concern (COCs) are summarized in Table 1.

All sample collection, documentation, handling, packaging, and shipping will be performed in accordance with applicable procedures in BHI-EE-01, *Environmental Investigations Procedures* (BHI-EE-01) and BHI-EE-05, *Field Screening Procedures* (BHI-EE-05).

3.4 Soil Closure Sampling

Closure sampling of the underlying soils will follow the closeout approach described in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL 2001a). The project shall address the requirements of the SAP by implementing the excavation, field measurements and sampling methodology described in the *Instruction Guide for Remediation of the 100 Area Waste Sites* (0100X-IG-G0001-00-01).

3.5 Document Approval

There is documentation showing EPA's comment and review of the original characterization plan (DOE/RL 1997). However, there is no apparent record of EPA's written approval. Accordingly, EPA approval of this Addendum will also constitute approval of the original characterization plan.

Table 1. Proposed Waste Characterization Sample Locations, Methods, Frequency, and Associated COCs.

Sample Location	Sample Media/ Number of Samples Sample Method	Constituents of Concern (COCs) / Analytical Methods
Structural steel framework and steel doors	**Paint** One paint sample will be obtained from the entire surface of the steel doors. Due to the volume of material needed, most of the paint from all accessible painted surfaces will be collected.	**PCBs** (EPA 8082), **Lead** (EPA 1311/6010)
Roof Structure	**Coal Tar Enamel** One grab sample will be collected from the coal tar enamel applied to the roof structure. It is assumed that the entire matrix of coal tar enamel is homogenous, therefore the sample location will be selected at the discretion of the characterization lead.	**PCBs**, (EPA 8082), **VOA** (EPA 8260) **SVOAs** (EPA 8270A)
QA Sampling	One duplicate sample will be collected from the coal tar enamel.	**PCBs**, (EPA 8082), **VOA** (EPA 8260) **SVOAs** (EPA 8270A)

4.0 References

BHI-EE-01, *Environmental Investigations Procedures*, Bechtel Hanford, Incorporated, Richland, Washington.

BHI-EE-05, *Field Screening Procedures*, Bechtel Hanford, Incorporated, Richland, Washington.

BHI-EE-10, *Waste Management Plan*, Bechtel Hanford, Incorporated, Richland, Washington.

BHI, 1997a, *118-C-4 Rod Cave SAP Planning Documentation*, CCN 048578, R. W. Ovink to Distribution, Bechtel Hanford, Inc., Richland, Washington.

BHI, 1997b, *118-C-4 Horizontal Control Rod Caves Meeting Minutes*, CCN 041971, S. G. Weiss to Distribution, Bechtel Hanford, Inc., Richland, Washington.

BHI, 1998, *118-C-4 Horizontal Control Rod Cave Characterization Report*, BHI-01154, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

DOE/RL, 1997, *118-C-4 Horizontal Rod Cave Characterization Plan*, DOE/RL-97-33, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL, 2001, *100 Area Remedial Action Sampling and Analysis Plan*, DOE/RL-96-22, Rev. 3, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL, 2002a, *Removal Action Work Plan for 105-DR and 105-F Building Interim Safe Storage Projects and Ancillary Buildings*, DOE/RL-98-37, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL, 2002b, *Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings*, DOE/RL-2000-57, Rev. 2, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

EPA, 1997, *Approved Action Memorandum for the 100 B/C Area Ancillary Facilities and the 108-F Building Removal Action*, CCN 042276, letter from D. A. Faulk to J. M. Bruggerman, U.S. Environmental Protection Agency, Richland, Washington.

5.0 Approvals

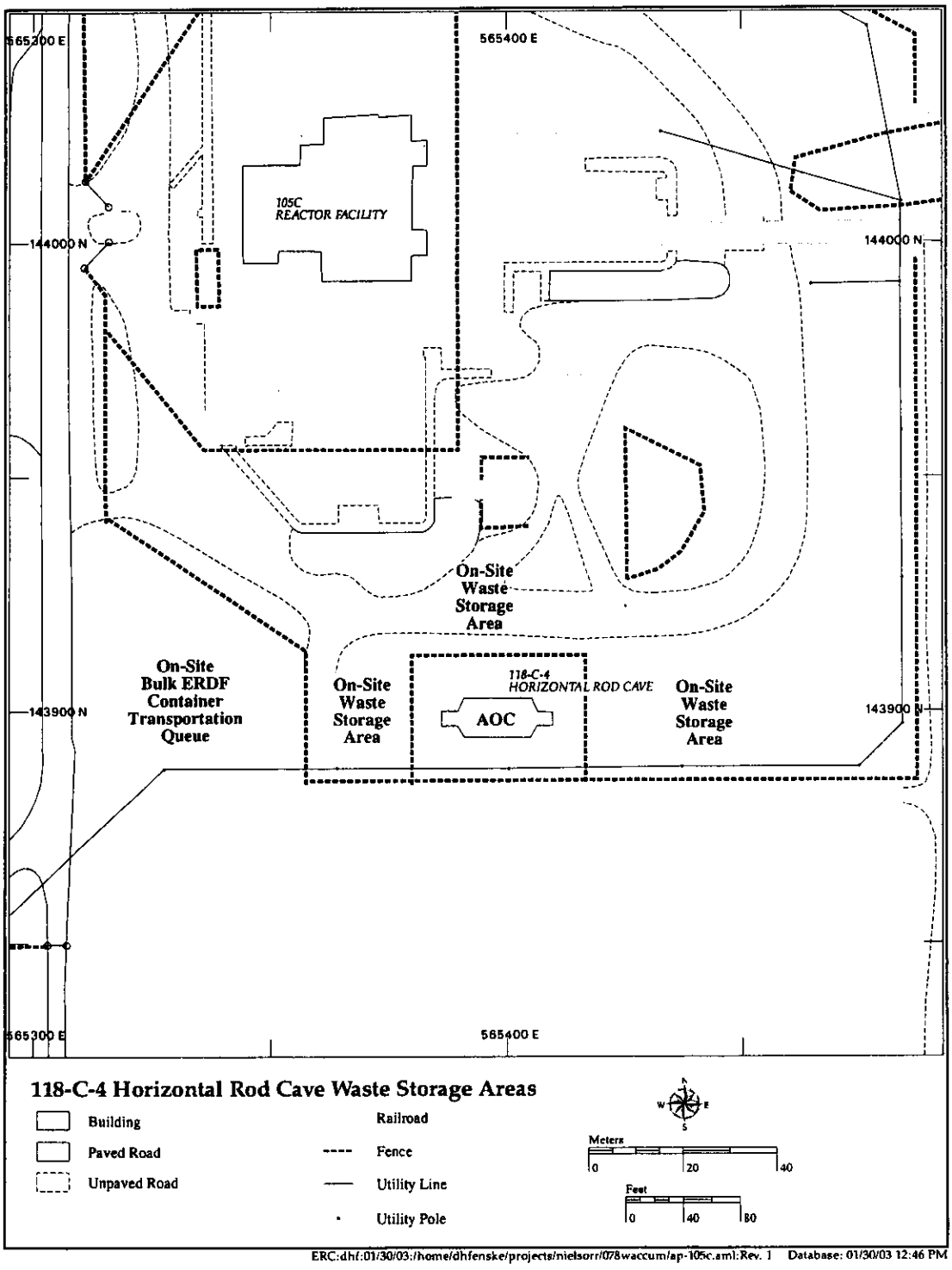
D. C. Smith, Project Manager, Environmental Restoration Division — Date
U. S. Department of Energy

2/10/03

D. A. Faulk, Project Manager, 100Area Clean-up — Date
U. S. Environmental Protection Agency

2-19-03

Figure-1. 118-C-4 Horizontal Rod Cave Waste Storage Areas.



Attachment #11

Attachment 1 105241

Environmental Restoration Contractor **ERC Team**

Interoffice Memorandum

Job No. 22192
Written Response Required: NO
Due Date: N/A
Actionee: N/A
Closes CCN: N/A
OU:
TSD:
ERA:
Subject Code:

TO: L. R. Miller X3-40

DATE: January 16, 2003

COPIES: See Below
Document and Info Services H0-09

FROM: D. N. Strom DNS
100-BC Remedial Action
X3-40/373-5519

SUBJECT: **118-B-2 BURIAL GROUND**

Introduction to the 118-B-2 Burial Ground

The 118-B-2 Burial Ground was in operation from 1952 to 1956. It received an estimated 100 cubic meters of dry waste from the 107-B Basin repairs and from the 115-B Gas Recirculation Facility alterations. The site dimensions are: 18.3 meters (60 ft) by 9.1 meters (30 ft) by 3 meters (10 ft) in depth, with 1.2 meters (4 ft) of cover material on the surface to prevent wind erosion.

A Geophysical Investigation of the site was performed in 2001. Ground Penetrating Radar (GPR) was used at the site to help identify the location of debris and potential underground hazards prior to excavating. The data showed no anomalous features typically associated with burial grounds at the coordinates identified within WIDS for 118-B-2.

It was determined that a test pit or trench was needed to confirm the GPR results. One trench down the center on the Burial Ground would offer the best probability to locate the debris field. In total, the trench was 18.3 meters long, 1 meter wide, and 4.5 meters deep. No debris was found.

An aerial photo from 1955 was found that suggests an alternate location for the 118-B-2 Burial Ground. Together with the GPR results and the trenching operation, it is documented that the 118-B-2 Burial Ground does not exist at the current coordinates identified by WIDS.

Based on the 100-BC Pipeline Remediation Project's scope of work, the 118-B-2 Burial Ground is a proximity site, and if not encountered, it is no longer within the scope of the project. The remediation of the 118-B-2 Burial Ground now falls within the future Burial Ground's scope of work.

118-B-2 Burial Ground Background

The 118-B-2 Burial Ground was in operation from 1952 to 1956. It received an estimated 100 cubic meters of dry waste from the 107-B Basin repairs and from the 115-B Gas Recirculation Facility alterations. The potential contaminants are: Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Sr-90, Chromium, Cr+6, Lead, Mercury, and PCBs.

The site dimensions are: 18.3 meters (60 ft) by 9.1 meters (30 ft) by 3 meters (10 ft) in depth, with 1.2 meters (4 ft) of cover material on the surface to prevent wind erosion.

The WIDS site coordinates suggested that the western end of this site is located over one of the 66" steel effluent lines from C-Reactor. This seemed unlikely. At this location. approximately 2 meters of soil covers the effluent line. The effluent line was also constructed in 1952.

An aerial photograph #3309 dated January 20, 1955, shows an open north-south burial ground east of the stated WIDS location. See Figure 1, 1 of 2 pages. This photo was registered to Washington Sate Plan coordinates and superimposed onto a 100-BC area Waste Sites drawing. See Figure 1, 2 of 2 pages. This validates the theory that the 118-B-2 burial ground is contained with in the footprint of the 118-B-3 Burial Ground.

118-B-3 Burial Ground Background

The 118-B-3 Burial Ground was in operation from the summer of 1956 until 1960. It was used for the disposal of solid waste from effluent pipeline modifications and reactor modifications. The potential contaminants are: Co-60, Cs-137, Eu-152. Eu-154, Eu-155, Ni-63. Pu-238, Pu-239/240, Sr-90, Chromium, Lead, Mercury and PCBs. This list is inclusive of the 118-B-2 site with exception of Cr^{+6}.

The site dimensions are : 106.7 m (350 ft) by 83.8 m (275 ft) by 6.1 m (20 ft) in depth. covered by 1.2 m (2 ft) of clean fill material for stabilization.

118-B-2 Burial Ground Field Activities

Geophysical Survey

A Geophysical Investigation of the site was performed in 2001, *Results of the Geophysical Investigations Conducted at 100 B/C Sites, 118-B-2, 118-B-4, 118-B-5, 118-B-6, 118-B-10, 118-C-1, 118-C-2, and 600-33*, CCN 088954 (118-B-3 site is also addressed within this report). Ground Penetrating Radar was used at the site to help identify the location of debris and potential underground hazards prior to excavating. The data showed no anomalous features typically associated with burial grounds at the coordinates identified within WIDS for 118-B-2. Figure 2 shows the geophysical survey results of this area.

Approximately 12 meters directly east of the suspected 118-B-2 site, within the boundaries of 118-B-3 Burial Ground. GPR locates a debris field consistent the characteristics of the 118-B-2 Burial Ground. A field visit confirms there is a mound of soil covering the localized area; which, may suggest a burial ground is beneath. It is likely that this debris field may be the 118-B-2 Burial Ground. The GPR results comfirm the 1955 burial ground photo.

Test Pitting/Trenching

Test pitting/trenching excavation activities commenced on November 6, 2002, and were completed on November 6, 2002. The trench location is shown on Figure 3.

It was decided that one trench down the center on the Burial Ground would offer the best probability to locate the debris field. The trench was excavated using a Hitachi EX300 track-mounted excavator. Information from WIDS suggested there would be 1.2 meters of stabilization soil coving the site. Undisturbed native soils were identified within the first meter of soil. Figure 4 shows the soil column exposed during the trenching operation.

In total, the trench was 18.3 meters long, 1 meter wide, and 4.5 meters deep. No debris was found; therefore, no samples were taken. The Radiological Control Technician (RCT) surveyed approximately 30% of excavated material and determined the soil surveyed was not above the established background for the 100-BC Area. The trenching activities are documented in Logbook EL-1557-1, pages 9 and 10.

The trench was excavated and backfilled in a manner that minimized the generation of dust and in accordance with BHI-EE-01, *Environmental Investigation Procedures*, Procedure 5.2, "Test Pit Excavation in Contaminated Areas." Water was sprayed over the site before and after the activity to control dust.

Additional reference documents:

- 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE-RL 2001)
- Radiological Work Permit, RWP No. 100BC-02-021, Rev. 6
- Excavation Permit, #DAN-1667

Conclusion and Path Forward for 118-B-2 Burial Ground

Based on the aerial photo, GPR results, and the trenching operation conducted on 11-06-02, it is concluded that the 118-B-2 Burial Ground does not exist at the current coordinates identified by WIDS. WIDS will be notified of the current developments.

A likely location for the 118-B-2 Burial Ground is within the boundaries of the 118-B-3 Burial Ground.

Based on the 100-BC Pipeline Remediation Project's scope of work, the 118-B-2 Burial Ground is a

Figure 1:

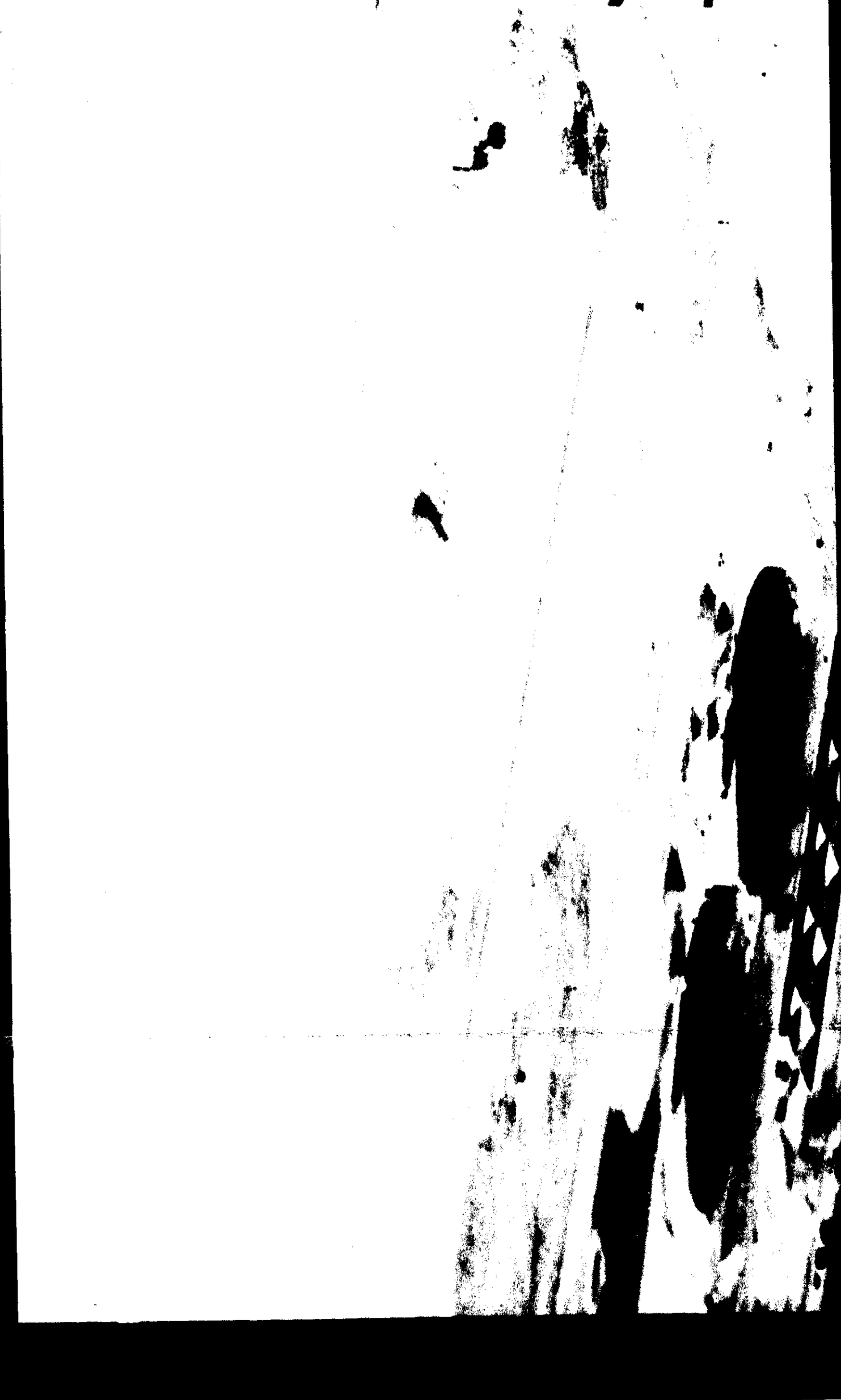
Aerial Photo from 1955 (2 pages)

proximity site, and it was not encountered; therefore, it is no longer within the scope of the project. The remediation of the 118-B-2 Burial Ground now falls within the future Burial Ground's scope of work. The addition of Cr^{+6} to the 118-B-3 potential contaminants list within the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan should be considered to ensure complete COC coverage of the entire site.

DNS:mrc

Attachments: Figure 1: Aerial Photo from 1955
Figure 2: Geophysical Survey Results for 118-B-2 Burial Grounds (4 pages)
Figure 2: Trench Location for 118-B-2 Burial Ground
Figure 3: Exposed Soil Column During Trenching Operation at 118-B-2 Burial Ground

Cc:
R. D. Belden X3-40
K. E. Cook H9-02
J. D. Ludowise H9-01
F. M Corpuz H0-17
R. A. Carlson H0-17
M. R. Schwab H0-20
L. A. Dietz H0-20
J. W. Donnelly H0-17
BC Project Files X3-40
WIDS A0-21



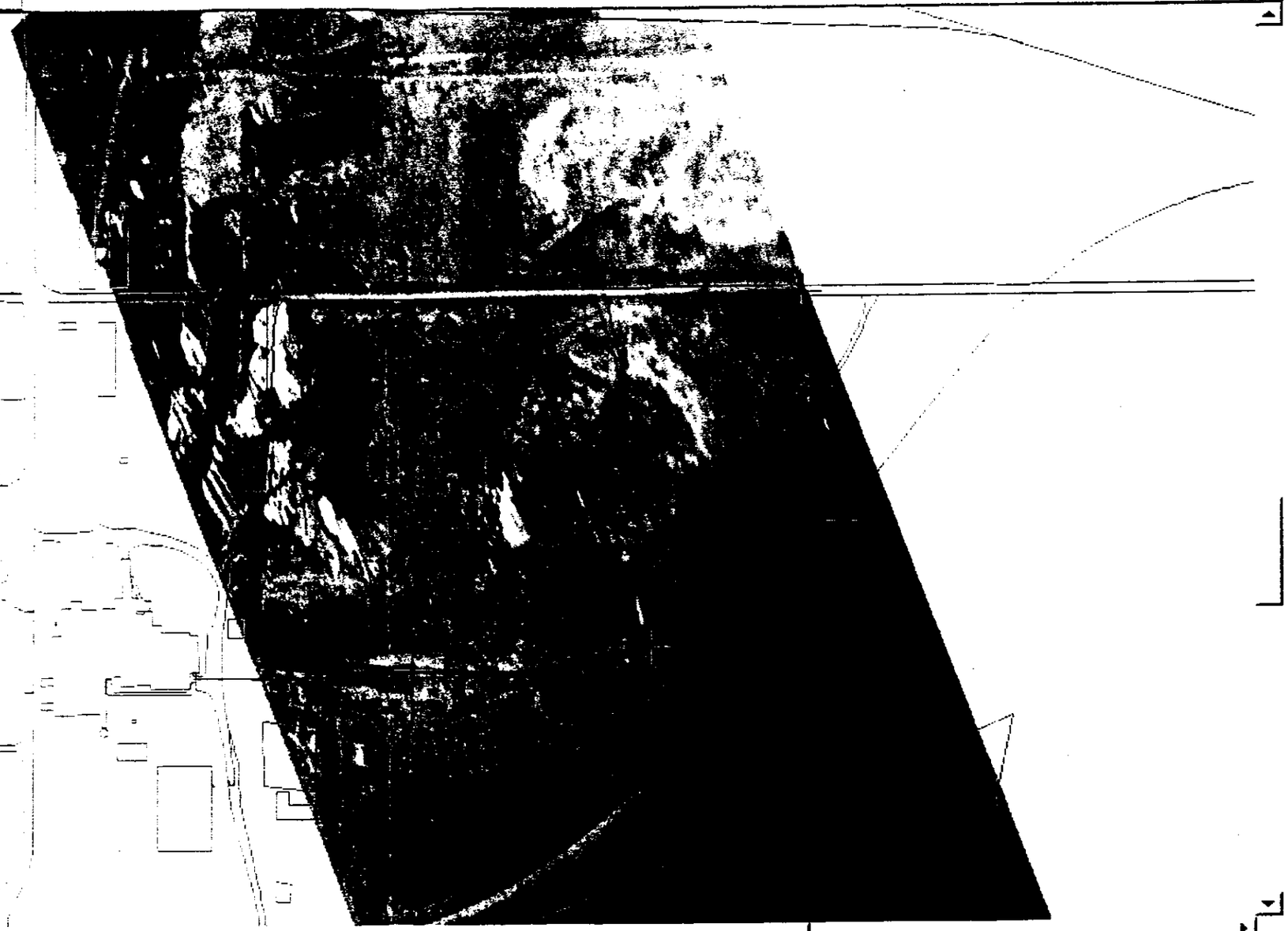
led - ArcMap - ArcInfo

View Insert Selection Tools Window Help

1:3,347 | Georeferencing | Layer: rectifybc-extract.tif

Task: Create New Feature | Target:

Layers
- trans arc
- wids1bc_pl polygon
- rectifybc-extract.tif
  - Value
  - High : 255
  - Low : 0



Source

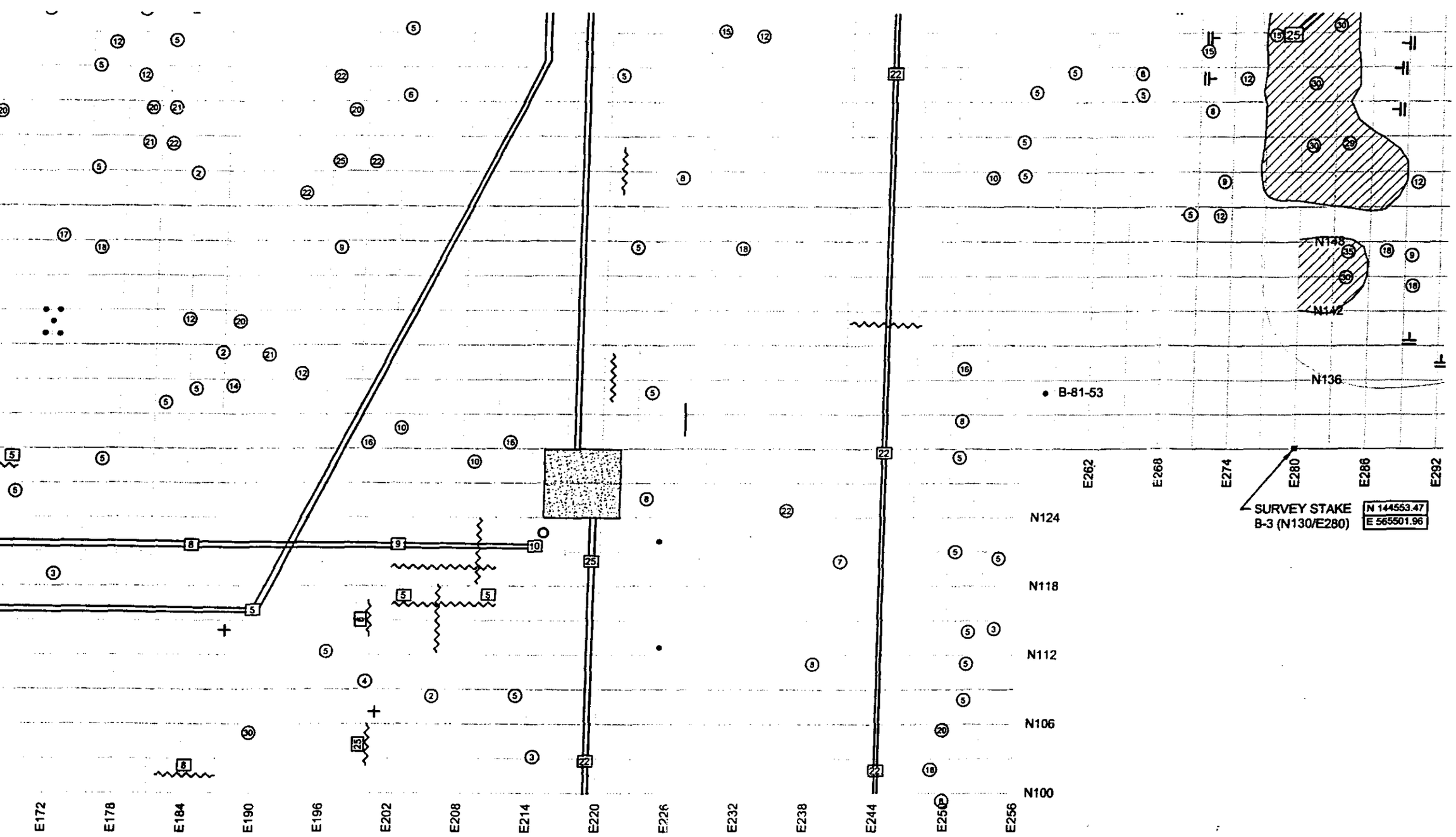
Arial | 10 | B I U | Spatial Analyst | Layer:

565574.99 144748.72 Meters

Coordinate Transformation | Waste Information Data ... | Untitled - ArcMap - Ar... | Microsoft Excel | 11:31 AM

Figure 2:

Geophysical Survey Results for 118-B-2 Burial Grounds(4 pages)



ALL DEPTHS ARE POSTED IN DECIMETERS (1 METER = 10 DECIMETERS)

f buried material and/or undifferentiated debris
asking utilities etc.

ly with depth posted in the circle

with depth posted in the square box

ation boundary

ion of buiried debris

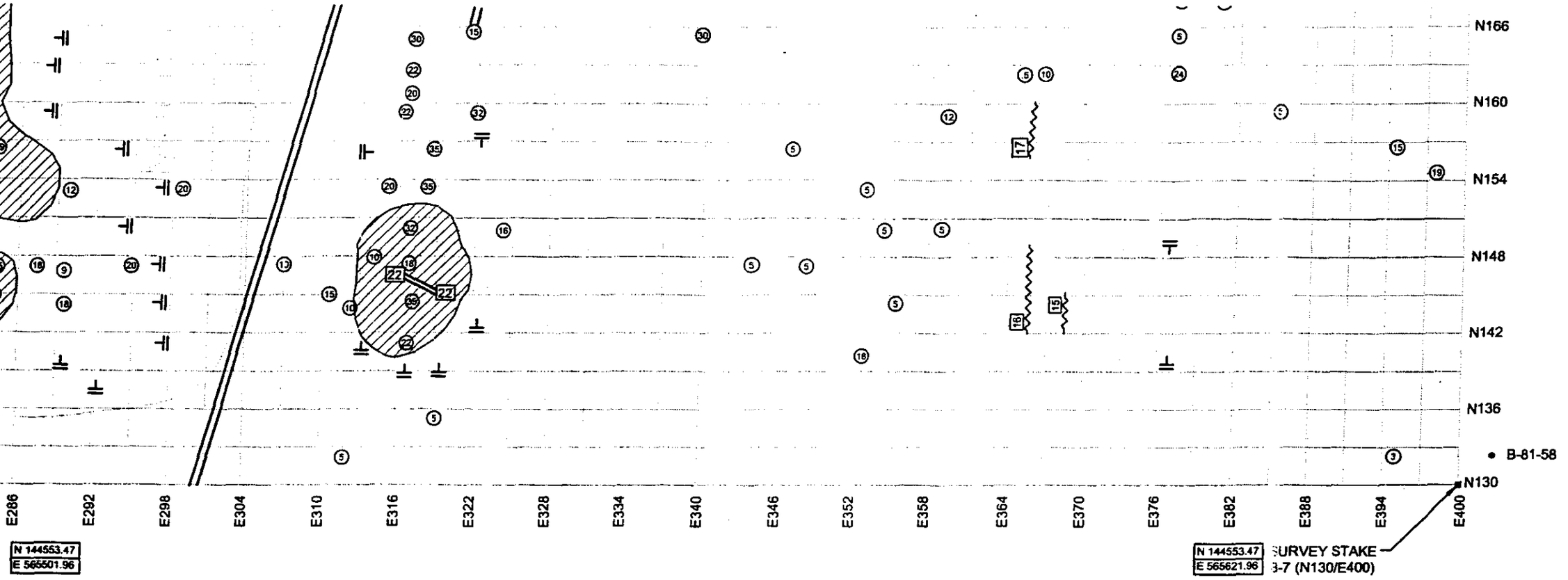
Concrete surface feature

SCALE 1:400

0 4 8 16 meters

U.S DEPARTMENT OF ENERGY
DOE FIELD OFFICE, RICHLAND

Geophysical Investigation Results
100 B/C Area



ALL DEPTHS ARE POSTED IN DECIMETERS (1 METER = 10 DECIMETERS)

f buried material and/or undifferentiated debris
isking utilities etc.

ly with depth posted in the circle

with depth posted in the square box

ition boundary

on of buiried debris

SCALE 1:400

U.S DEPARTMENT OF ENERGY
DOE FIELD OFFICE, RICHLAND

Geophysical Investigation Results
100 B/C Area

ALL DEPTHS ARE POSTED IN DECIMETERS (1 METER = 10 DECIMETERS)

N 144643.47
E 565621.96
SURVEY STAKE
B-20 (N220/E400)

E286 E292 E298 E304 E310 E316 E322 E328 E334 E340 E346 E352 E358 E364 E370 E376 E382 E388 E394 E400

N220
B-81-61
N214
N208
N202
N196
N190
N184
N178
N172
N166
N160
N154

SURVEY STAKE
B-10 (N160/E400)
N 144583.47
E 565621.96

of buried material and/or undifferentiated debris
asking utilities etc.

aly with depth posted in the circle

y with depth posted in the square box

ration boundary

tion of buried debris

SCALE 1:400

U.S DEPARTMENT OF ENERGY
DOE FIELD OFFICE, RICHLAND

Geophysical Investigation Results
100 B/C Area

ALL DEPTHS ARE POSTED IN DECIMETERS (1 METER = 10 DECIMETERS)

20/E160) E 565381.96

E172 E178 E184 E190 E196 E202 E208 E214 E220 E226 E232 E238 E244 E250 E256 E262 E268 E274 E280 E286 E292 E298 E304

B-81-66

f buried material and/or undifferentiated debris
isking utilities etc.

ly with depth posted in the circle

with depth posted in the square box

ition boundary

on of buried debris

SCALE 1:400

U.S DEPARTMENT OF ENERGY
DOE FIELD OFFICE, RICHLAND

Geophysical Investigation Results
100 B/C Area

Figure 3:

Trench Location for 118-B-2 Burial Ground

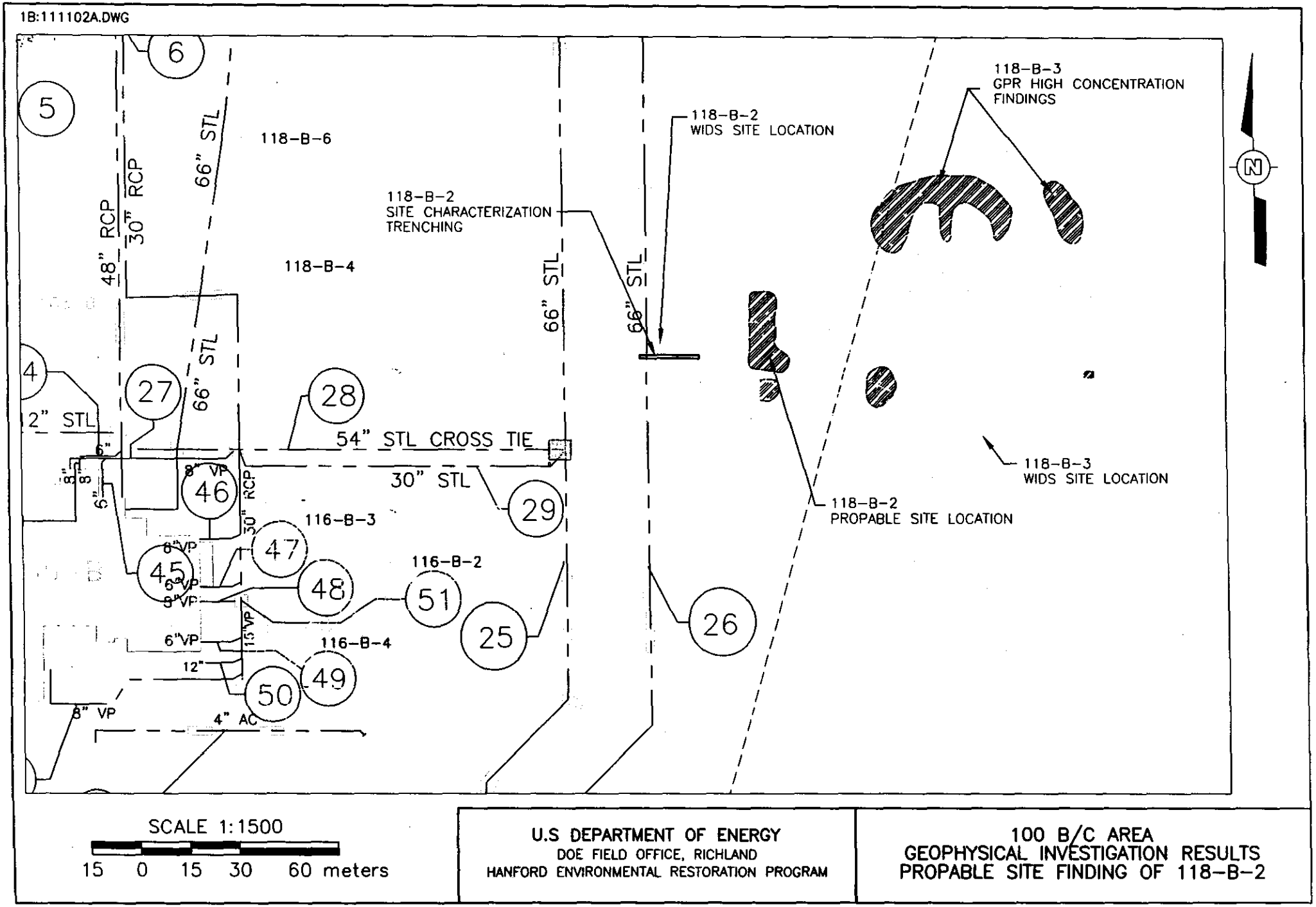

1B:111102A.DWG
6
5
4
118-B-6
118-B-4
66" STL
48" RCP
30" RCP
118-B-2
SITE CHARACTERIZATION
TRENCHING
118-B-2
WIDS SITE LOCATION
118-B-3
GPR HIGH CONCENTRATION
FINDINGS
N
27
28
54" STL CROSS TIE
30" STL
29
46
47
45
48
51
25
26
116-B-3
116-B-2
116-B-4
49
50
118-B-3
WIDS SITE LOCATION
118-B-2
PROPABLE SITE LOCATION
2" STL
8" VP
6" VP
9" VP
15" VP
12"
4" AC
SCALE 1:1500
15 0 15 30 60 meters
U.S DEPARTMENT OF ENERGY
DOE FIELD OFFICE, RICHLAND
HANFORD ENVIRONMENTAL RESTORATION PROGRAM
100 B/C AREA
GEOPHYSICAL INVESTIGATION RESULTS
PROPABLE SITE FINDING OF 118-B-2

Figure 4:

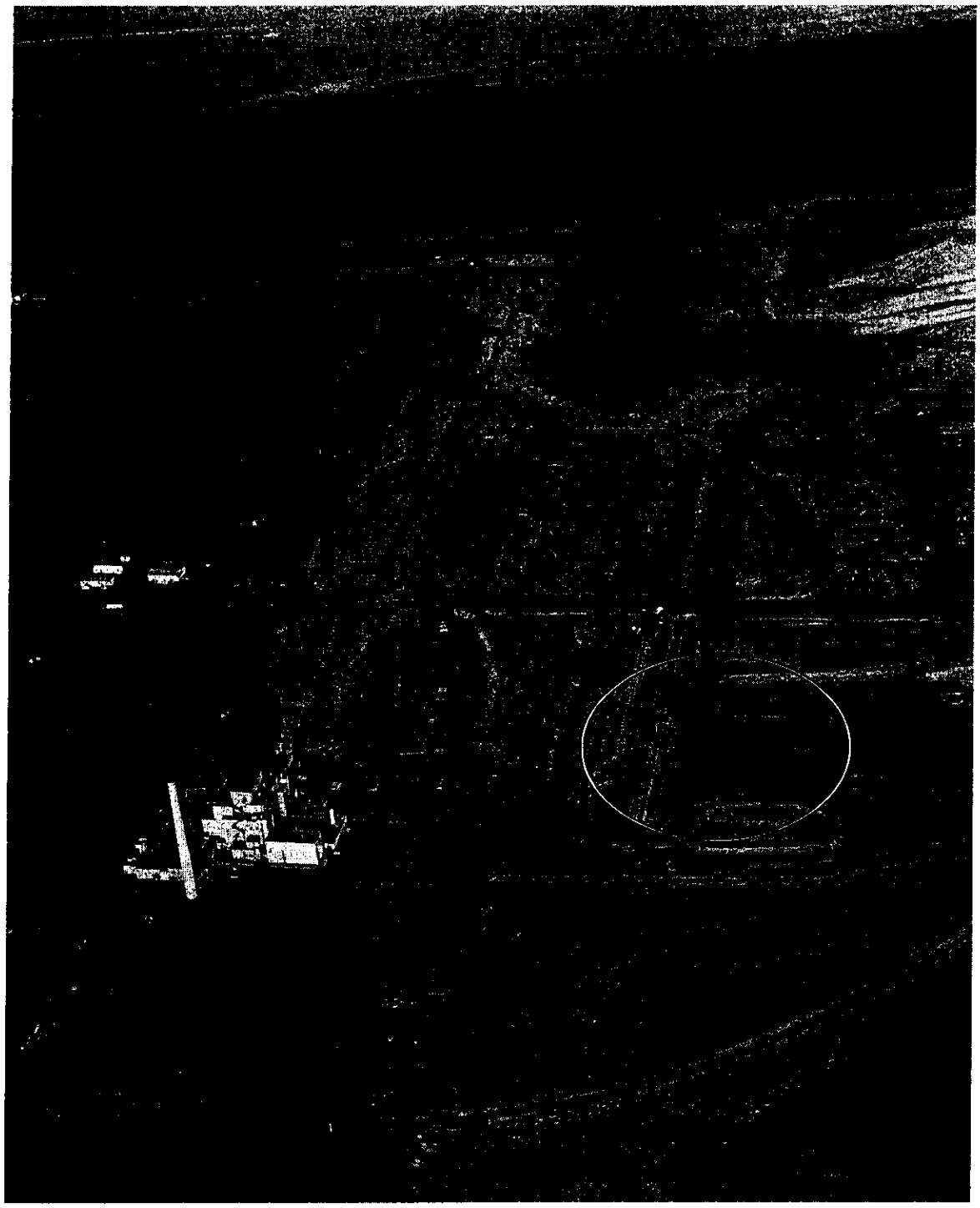
Exposed Soil Column During Trenching Operation at 118-B-2 Burial Ground

Attachment #12

118-B-2 Burial Ground

February 20, 2003

100-BC Aerial Photo (11-26-02)



Background

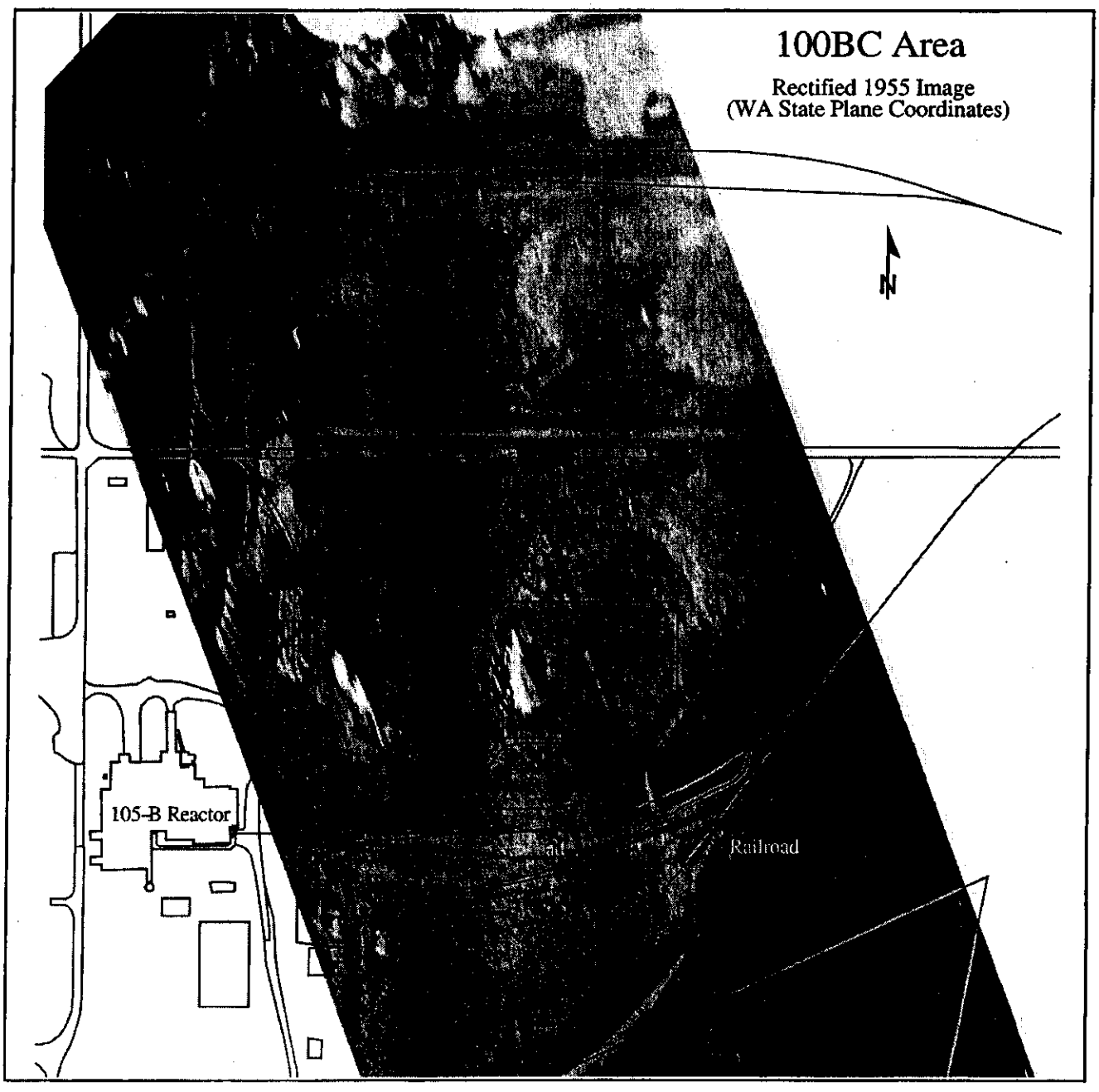
- Operation from 1952 to 1956.

- Receiving estimated 100 cubic meters of dry waste from the 107-B Basin repairs and the 115-B Gas Re-circulation Facility alterations.

Background (cont.)

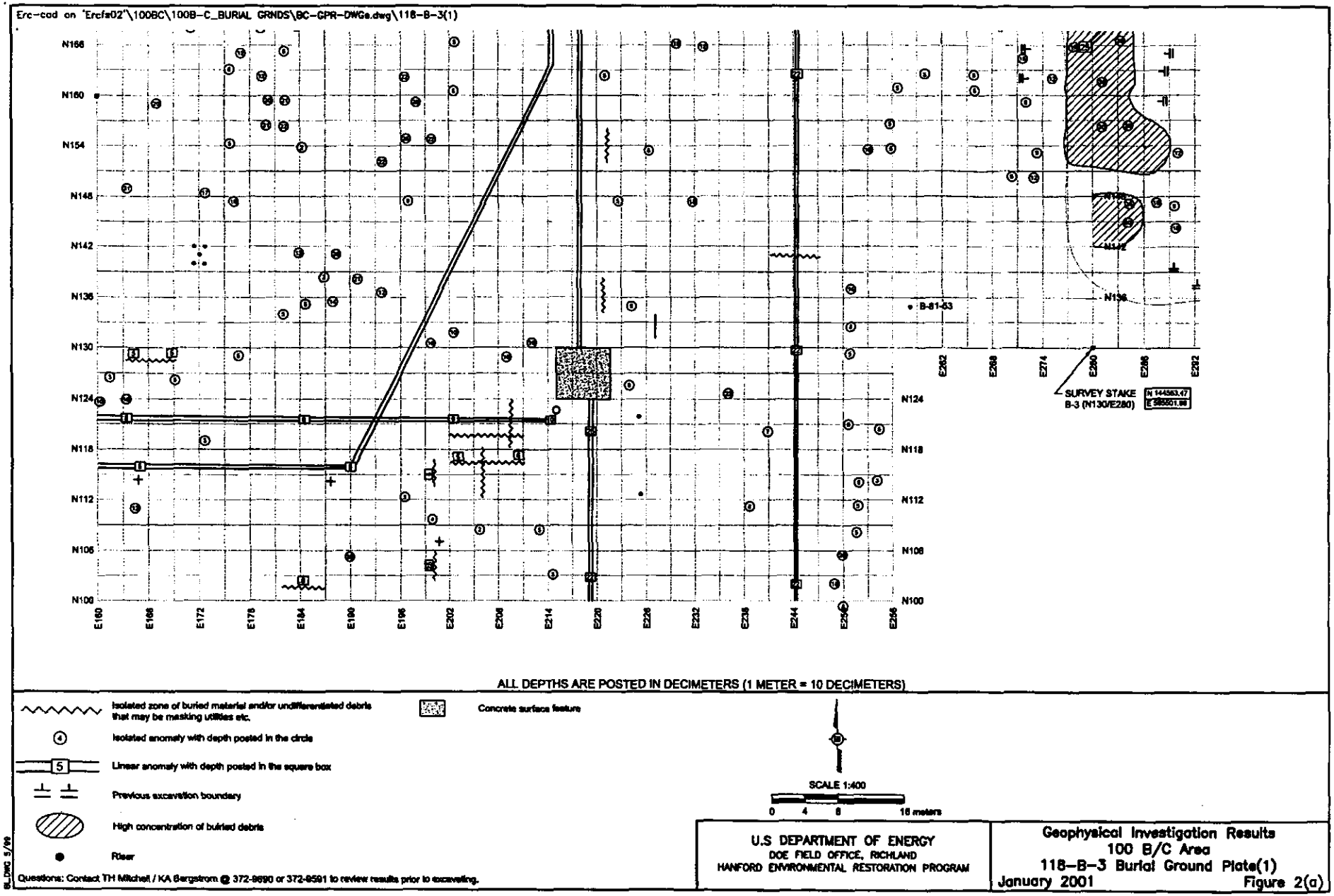
- Site Dimensions: 18.3 meters (60 ft) x 9.1 meters (30 ft) by 3 meters (10 ft) in depth, with 1.2 meters (4 ft) of cover material on the surface to prevent wind erosion.

- An aerial photo from 1955 was found that suggests an alternate location for the 118-B-2 BG.


100BC Area
Rectified 1955 Image
(WA State Plane Coordinates)
N
105-B Reactor
Railroad

Field Activities

- Geophysical Investigation performed in 2001
  - *Results of the Geophysical Investigations Conducted at 100 B/C sites, 118-B-2, 118-B-4, 118-B-6, 118-B-10, 118-C-1, 118-C-2, and 600-33*, CCN 088954

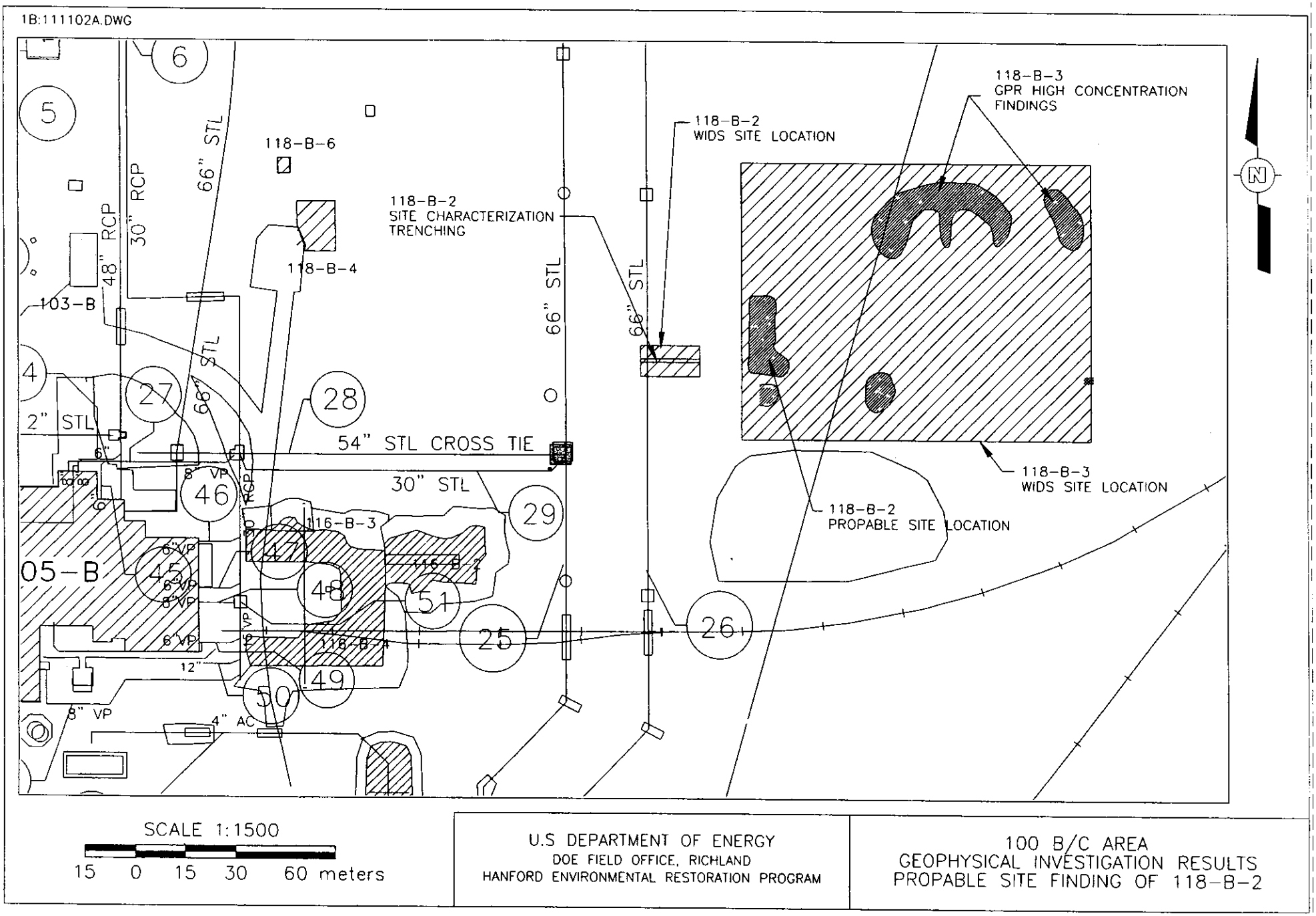

Erc-cad on 'Ercfs02'\100BC\100B-C_BURIAL GRNDS\BC-GPR-DWGs.dwg\118-B-3(1)
N166
N160
N154
N148
N142
N136
N130
N124
N118
N112
N106
N100
E160
E166
E172
E178
E184
E190
E196
E202
E208
E214
E220
E226
E232
E238
E244
E250
E256
E262
E268
E274
E280
E286
E292
B-81-53
SURVEY STAKE
B-3 (N130/E280)
N 144563.47
E 585501.98
ALL DEPTHS ARE POSTED IN DECIMETERS (1 METER = 10 DECIMETERS)
Isolated zone of buried material and/or undifferentiated debris that may be masking utilities etc.
Concrete surface feature
Isolated anomaly with depth posted in the circle
Linear anomaly with depth posted in the square box
Previous excavation boundary
High concentration of buried debris
Riser
Questions: Contact TH Mitchell / KA Bergstrom @ 372-9690 or 372-9591 to review results prior to excavating.
SCALE 1:400
0 4 8 16 meters
U.S DEPARTMENT OF ENERGY
DOE FIELD OFFICE, RICHLAND
HANFORD ENVIRONMENTAL RESTORATION PROGRAM
Geophysical Investigation Results
100 B/C Area
118-B-3 Burial Ground Plate(1)
January 2001
Figure 2(a)
BL_DWG 5/99

Field Activities (cont.)

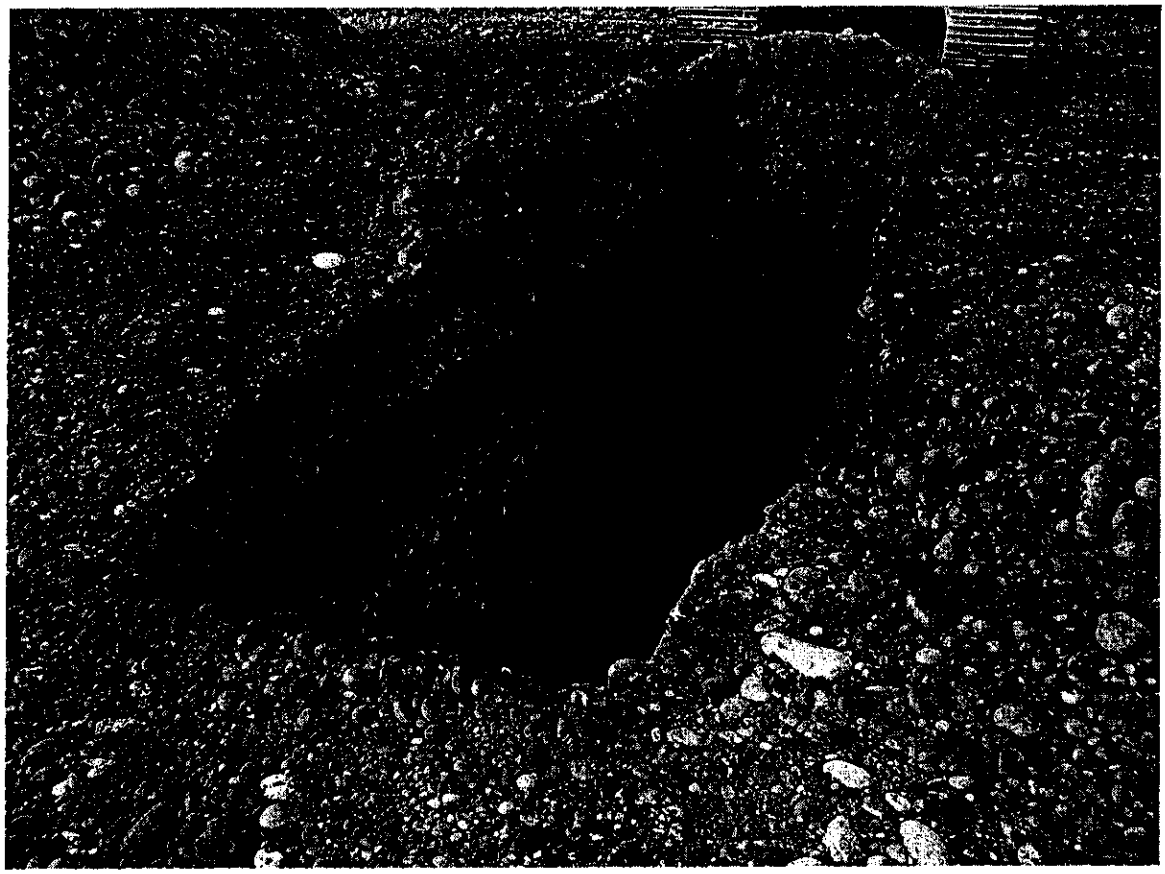
- Ground Penetrating Radar (GPR) used identifying locations of debris and hazards.
  - No anomalous features were identified.
  - Around 12 m directly east, a debris field is found.
    - Consistent with characteristics of 118-B-2 BG.
    - Within the boundaries of 118-B-3 BG.
    - GPR results confirm 1955 BG photo.

Trenching

- Trench confirming the GPR results.
  - The trench was 18.3 m long, 1 m wide, and 4.5 m in depth, located down the center of the BG.


1B:111102A.DWG
118-B-3
GPR HIGH CONCENTRATION
FINDINGS
118-B-2
WIDS SITE LOCATION
118-B-6
118-B-2
SITE CHARACTERIZATION
TRENCHING
118-B-4
66" STL
30" RCP
48" RCP
103-B
54" STL CROSS TIE
30" STL
2" STL
118-B-3
WIDS SITE LOCATION
118-B-2
PROPABLE SITE LOCATION
116-B-3
116-B-7
116-B-4
05-B
8" VP
6" VP
12"
4" AC
N
SCALE 1:1500
15 0 15 30 60 meters
U.S DEPARTMENT OF ENERGY
DOE FIELD OFFICE, RICHLAND
HANFORD ENVIRONMENTAL RESTORATION PROGRAM
100 B/C AREA
GEOPHYSICAL INVESTIGATION RESULTS
PROPABLE SITE FINDING OF 118-B-2

Trenching (11-06-02)



Conclusion

- 118-B-2 BG does not exist.
  - WIDS will be notified.
- Suspected location within 118-B-3 BG.
  - Add Cr^{+6} to the 118-B-3 BG potential contaminants list to ensure complete COC coverage.
- 118-B-2 BG is a proximity site, and it was not encountered.
  - No longer within the scope of the project.