BHI-01269
Rev. 0

Final Report for Interim Stabilization of PUREX Contamination Areas

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Environmental Restoration

Submitted by: Bechtel Hanford, Inc.

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ERA: N/A

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Approval: P. J. Woods, Task Lead

P. J. Woods — 3-18-99

Signature — Date

J. J. McGuire, Project Manager,
S&M/Transition Projects

3/18/99

Signature — Date

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Bechtel Hanford, Inc.

Date Published

March 1999

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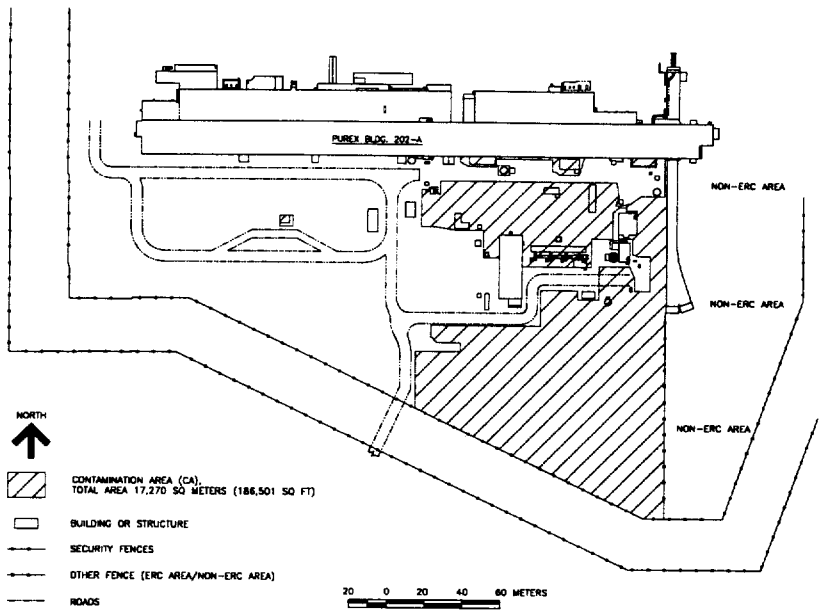
1.0 INTRODUCTION

The 202-A Plutonium Uranium Extraction (PUREX) facility is located in the 200 East area of the Hanford Site. Large contamination areas (CA) were located south of the 202-A building within the inner security fence. The CAs covered approximately 17,270 m^2 (186,500 ft^2 [4.3 acres]) as shown in Figure 1. The Environmental Restoration Contract (ERC) is not responsible for management of the area east of the PUREX railroad tunnel and fence that extends south from the tunnel to the inner security fence. This non-ERC area is also shown in Figure 1 although CAs in that area are not shown.

Interim stabilization objectives were to reduce risk to workers, simplify ongoing surveillance and maintenance at the site, and transform the site to a safer and more stable configuration while awaiting the identification and implementation of final remediation actions. Interim stabilization actions were intended to permit downposting of the CAs to underground radioactive material (URM) areas. Decontamination of equipment and structures within the CAs was not in the scope of the interim stabilization.

Figure 1. Location of ERC Contamination Areas at PUREX.



2.0 SITE PREPARATION

The site was walked down by multiple project disciplines to aid in planning. The walkdown also served to confirm that areas where vehicles are prohibited were clearly identified by barricades and signs. Cultural and biological resource evaluations were also performed. Drawings were examined to identify utilities in the vicinity.

A total of 3,058 m^3 (4,000 yd^3) of 1.9 cm (-0.75 in.) crushed rock was delivered and stockpiled in the borrow pit located south of the outer PUREX facility security fence. Earth-moving equipment was mobilized to the site.

Washington State Department of Health has determined there is no need to apply for a notice of construction for routine radiation area remedial action stabilization activities.

3.0 INTERIM STABILIZATION

The CA located closest to the southern inner security fence was stabilized first. During the stabilization, water was sprayed on the area for dust suppression. Earth-moving equipment was used to place the crushed rock over the contaminated material and was able to operate in most of this area. The crushed rock was graded with a bulldozer and road grader to obtain a 15-cm (6-in.) thick layer. The layer of crushed rock was thicker in some locations due to ruts and minor depressions in the existing CA surface. The crushed rock was placed manually in areas that were inaccessible to equipment. The CA was downposted to a URM after it was covered with the crushed rock.

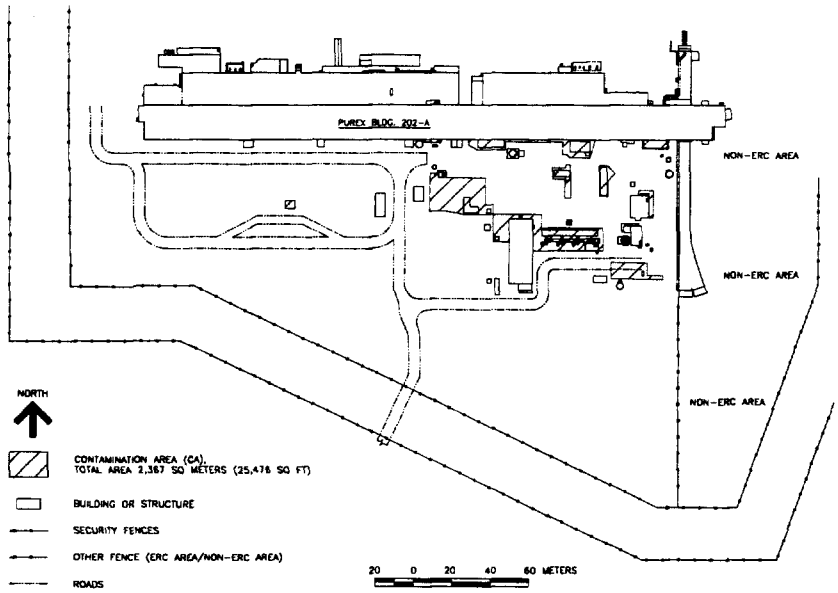
Stabilization of the southern CA required more crushed rock than predicted. An additional 1,147 m^3 (1,500 yd^3) of 1.9 cm (-0.75) crushed rock was delivered to the borrow pit located south of the outer PUREX facility security fence. The crushed rock was delivered during the job. There were no delays to the stabilization work.

The CAs closer to the 202-A building were stabilized next. Many of the CAs located nearer the 202-A building were not accessible to vehicles. In such cases, equipment placed the crushed rock as close to the work area as possible and then the material was placed manually if practicable. The crushed rock was not placed if it would prevent future access to buildings or structures within the CA or if decontamination of equipment and structures within the CA would have been necessary to downpost the area. The CAs that were covered with crushed rock were then downposted to URMs.

The total area stabilized is approximately 14,900 m^2 (161,020 ft^2 [3.7 acres]). Figure 2 shows the area after interim stabilization and the remaining CAs. Approximately 2,370 m^2 (25,480 ft^2 [0.6 acres]) was not stabilized. These CAs were either inaccessible, contained equipment or structures that would have required decontamination to allow downposting, or were not stabilized to allow access to buildings or structures.

No equipment decontamination was required or performed in support of the interim stabilization.

Figure 2. ERC Contamination Areas at PUREX after Interim Stabilization.



4.0 COST AND SCHEDULE

Fieldwork began on January 4, 1999 and was completed on February 4, 1999. A total of 21 working days were required. The cost of the project through March 11, 1999 was $181,200, which included planning, fieldwork, and preparation of the final report. The costs are summarized in Table 1. Table 2 provides details of the hours and costs for manual and nonmanual labor.

Table 1. Cost Summary (Burdened).

Manual labor	$66,600
Nonmanual labor	13,300
Materials	61,400
Equipment	39,900
Total Costs	181,200

Table 2. Labor Hours and Costs (Burdened).

Labor	Hours	Costs
Heavy Equipment Operator (manual)	365	$17,800
Decontamination & Decommissioning Worker (manual)	344	16,000
Heavy Driver (manual)	417	19,000
Material Coordinator (manual)	1	<100
Radiation Control Technician (manual)	209	13,800
Regulatory Support (nonmanual)	3	100
Design Engineer (nonmanual)	1	<100
Procurement (nonmanual)	6	300
Field Support Engineer (nonmanual)	157	8,700
Industrial Safety (nonmanual)	31	1,800
Radiation Control Supervisor (nonmanual)	11	800
Radiation Control Engineer (nonmanual)	19	1,400
Totals	1564	79,900

The work was performed under Eagle Package 19981005002.

5.0 LESSONS LEARNED

There were no lessons learned from this project.

6.0 BIBLIOGRAPHY

BHI, 1998, *Plant Forces Work Review* (CCN 058790 to J. J. McGuire, May 15), Bechtel Hanford, Inc., Richland, Washington.

APPENDIX A

COST BREAKDOWN

BECHTEL HANFORD INC.
FY99 - HEAVY EQUIPMENT - JANUARY RECOVERY

Cls	Number	Description	Code	Activity	Start	Return	Shift Rate	Hour Rate	Use/Shift	Use/Hour	Recovery
68A	3564	1994 TRUCK	E216U1	2W14	12/31/98		$166.40	$20.80	11		$1,830.40
68A	3565	1994 TRUCK	E216U1	2W14	12/31/98		$166.40	$20.80	13		$2,163.20
68A	3566	1994 TRUCK	E216U1	2W14	12/31/98		$166.40	$20.80	11		$1,830.40
062	4221	1989 TRACT	E216U1	2W14	12/31/98		$173.87	$21.73	11		$1,912.57
074	5081	1991 GENE	E216U1	2W14	12/31/98		$19.50	$2.44	14		$273.00
063	5578	1985 CRAW	E216U1	2W14	12/31/98		$340.56	$42.57	14		$4,767.84
033	5594	1988 MOTO	E216U1	2W14	12/31/98		$140.23	$17.53	11		$1,542.53
062	6083	1996 FRONT	E216U1	2W14	12/31/98		$173.87	$21.73	13		$2,260.31
68C	6428	WATER TRU	E216U1	2W14	12/31/98	1/4/99	$219.46	$27.43	2		$438.92
68C	6428	WATER TRU	E216U1	2W14	1/12/99		$219.46	$27.43	6		$1,316.76
										TOTAL	$18,335.93

FY99 - HEAVY EQUIPMENT - FEBRUARY RECOVERY (1/23/99 - 2/22/99)

Cls	Number	Description	Code	Activity	Start	Return	Shift Rate	Hour Rate	Use/Shift	Use/Hour	Recovery
033	5594	1988 MOTO	E216U1	2W14	12/31/98	2/8/99	$288.70	$36.09	10		$2,887.00
062	4221	1989 TRACT	E216U1	2W14	12/31/98	2/8/99	$193.36	$24.17	13		$2,513.68
062	6083	1996 FRONT	E216U1	2W14	12/31/98	2/8/99	$193.36	$24.17	10		$1,933.60
063	5578	1985 CRAW	E216U1	2W14	12/31/98	2/8/99	$135.82	$16.98	10		$1,358.20
064	5184	TRIALER, W	E216U1	2W14	2/9/99	2/9/99	$7.46	N/A	1		$7.46
064	6063	TRAILER, L	E216U1	2W14			$7.46	N/A	1		$7.46
68A	3564	1994 TRUCK	E216U1	2W14	12/31/98	2/8/99	$173.46	$21.68	5		$867.30
68A	3565	1994 TRUCK	E216U1	2W14	12/31/98	2/4/99	$173.46	$21.68	9		$1,561.14
68A	3566	1994 TRUCK	E216U1	2W14	12/31/98	2/8/99	$173.46	$21.68	5		$867.30
68B	4633	1993 TRUCK	E216U1	2W14	2/9/99	2/9/99	$111.42	$13.93		2	$27.86
68C	6428	WATER TRU	E216U1	2W14	1/12/99	2/8/99	$126.68	$15.84	5		$633.40
68E	4603	TRUCK TRA	E216U1	2W14	12/9/99	2/9/99	$162.12	$20.27		2	$40.54
68H	3559	1992 REFUS	E216U1	2W14	1/26/99	2/17/99	$112.78	$14.10	15		$1,691.70
074	5081	1991 GENE	E216U1	2W14	12/31/98	2/8/99	$25.71	$3.21	10		$257.10
										TOTAL	$14,653.74

GRAND TOTAL $32,989.67

PARADE (R)

PROJECT NAME: SM34
COMPANY NAME:

FORECAST EXPENDITURE PLAN

REPORT DATE: 1MAR99
STATUS DATE: 1MAR99
REPORT PERIOD: 4
PAGE 1 OF 2

OBS Level 6 :E-216U1-2-W-1-4 FOREX CONTAMINATED AREA STABILIZATION

		PREVIOUS TOTAL	OCT98	NOV98	DEC98	JAN99	FEB99	MAR99	APR99	MAY99	JUN99	JUL99	AUG99	SEP99	TO COMPLETE	AT COMPLETION
DIRECT LABOR (HRS)																
9910713	BHI HEAVY EQUIPMENT OPER	.0	.0	.0	.0	292.0	73.0	.0	.0	.0	.0	.0	.0	.0	.0	365.0
9910715	BHI D & D WORKERS	.0	.0	.0	.0	290.0	54.0	.0	.0	.0	.0	.0	.0	.0	.0	344.0
9910718	BHI HEAVY DRIVERS	.0	.0	.0	.0	344.0	73.0	.0	.0	.0	.0	.0	.0	.0	.0	417.0
9910723	BHI MATERIAL COORDINATOR	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
9910729	BHI PAINTERS	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9910725	THI RAD CON TECHNICIANS	.0	.0	.0	9.0	155.0	45.0	.0	.0	.0	.0	.0	.0	.0	.0	209.0
9931750	BHI ENVIRONMENTAL LEADS	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9931752	BHI ENVIRONMENTAL SPECIA	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9931754	BHI REGULATORY SUPPORT	.0	.0	.0	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0
9932721	BHI DESIGN ENG-ENGINEERS	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
9941700	BHI PROCUREMENT	.0	.0	4.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.0
9953720	BHI FIELD SUPPORT ENGINE	.0	4.0	16.0	.0	61.0	19.0	36.0	.0	.0	.0	.0	.0	.0	.0	136.0
9958733	BHI S&H INDUSTRIAL SAFET	.0	.0	5.0	.0	24.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	31.0
9958T21	THI S&H RADCON SUPERVISO	.0	.0	.0	.0	10.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	11.0
9958T22	THI S&H RADCON ENGINEERS	.0	.0	13.0	.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	19.0
DIRECT LABOR		.0	4.0	40.0	10.0	1186.0	267.0	36.0	.0	.0	.0	.0	.0	.0	.0	1543.0
CUMULATIVE LABOR		.0	4.0	44.0	54.0	1240.0	1507.0	1543.0	1543.0	1543.0	1543.0	1543.0	1543.0	1543.0	.0	1543.0
SHM		.0	.0	.2	.1	6.9	1.9	.3	.0	.0	.0	.0	.0	.0	.0	9.4
CUMULATIVE SHM		.0	.0	.3	.4	7.2	9.2	9.4	9.4	9.4	9.4	9.4	9.4	9.4	.0	9.4
DIRECT LABOR COSTS																
9910713	BHI HEAVY EQUIPMENT OPER	.0	.0	.0	.0	14.7	3.1	.0	.0	.0	.0	.0	.0	.0	.0	17.9
9910715	BHI D & D WORKERS	.0	.0	.0	.0	13.9	2.1	.0	.0	.0	.0	.0	.0	.0	.0	16.1
9910718	BHI HEAVY DRIVERS	.0	.0	.0	.0	16.2	2.8	.0	.0	.0	.0	.0	.0	.0	.0	19.1
9910723	BHI MATERIAL COORDINATOR	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9910729	BHI PAINTERS	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9910725	THI RAD CON TECHNICIANS	.0	.0	.0	.6	10.6	2.6	.0	.0	.0	.0	.0	.0	.0	.0	13.8
9931750	BHI ENVIRONMENTAL LEADS	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9931752	BHI ENVIRONMENTAL SPECIA	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9931754	BHI REGULATORY SUPPORT	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
9932721	BHI DESIGN ENG-ENGINEERS	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9941700	BHI PROCUREMENT	.0	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
9953720	BHI FIELD SUPPORT ENGINE	.0	.3	1.1	.0	3.9	1.0	2.4	.0	.0	.0	.0	.0	.0	.0	8.7
9958733	BHI S&H INDUSTRIAL SAFET	.0	.0	.3	.0	1.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.8
9958T21	THI S&H RADCON SUPERVISO	.0	.0	.0	.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8
9958T22	THI S&H RADCON ENGINEERS	.0	.0	.9	.0	.4	-.1	.0	.0	.0	.0	.0	.0	.0	.0	1.3
DIRECT LABOR COSTS		.0	.3	2.5	.6	62.3	11.7	2.4	.0	.0	.0	.0	.0	.0	.0	79.9
OVERHEAD ON LABOR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
G & A ON LABOR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
BURDENED LABOR COSTS		.0	.3	2.5	.6	62.3	11.7	2.4	.0	.0	.0	.0	.0	.0	.0	79.9
CUMULATIVE BURDENED LABOR COSTS		.0	.3	2.8	3.5	65.8	77.5	79.9	79.9	79.9	79.9	79.9	79.9	79.9	.0	79.9
DIRECT MATERIAL COSTS																
99MTRL7	BHI MATERIAL	.0	.0	.0	29.8	3.7	16.7	.0	.0	.0	.0	.0	.0	.0	.0	50.1

PARADE (R)

PROJECT NAME: SM34
COMPANY NAME:

FORECAST EXPENDITURE PLAN

REPORT DATE: 15MAR99
STATUS DATE: 1MAR99
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PAGE 2 OF 2

OBS Level 6 :E-216U1-2-W-1-4 FUREX CONTAMINATED AREA STABILIZATION

	PREVIOUS TOTAL	OCT98	NOV98	DEC98	JAN99	FEB99	MAR99	APR99	MAY99	JUN99	JUL99	AUG99	SEP99	TO COMPLETE	AT COMPLETION
DIRECT MATERIAL COSTS	.0	.0	.0	29.8	3.7	16.7	.0	.0	.0	.0	.0	.0	.0	.0	50.1
OVERHEAD ON MATERIAL	.0	.0	.0	7.0	.9	3.4	.0	.0	.0	.0	.0	.0	.0	.0	11.3
G & A ON MATERIAL	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
BURDENED MATERIAL COSTS	.0	.0	.0	36.8	4.5	20.0	.0	.0	.0	.0	.0	.0	.0	.0	61.4
CUMULATIVE BURDENED MATERIAL COSTS	.0	.0	.0	36.8	41.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	.0	61.4
OTHER DIRECT COSTS (ODC)															
99EUSG7 BHI EQUIPMENT USAGE COST	.0	.0	.0	.0	18.3	13.5	.0	.0	.0	.0	.0	.0	.0	.0	31.8
99MTRL7 BHI MATERIAL	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
99PSSAT	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.4
99SUBF7 FDH (FLUOR DANIEL HANFOR	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
OTHER DIRECT COSTS	.0	.0	.0	.0	18.6	13.9	.0	.0	.0	.0	.0	.0	.0	.0	32.5
OVERHEAD ON ODC	.0	.0	.0	.0	4.4	3.0	.0	.0	.0	.0	.0	.0	.0	.0	7.4
G & A ON ODC	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
BURDENED ODC	.0	.0	.0	.0	22.9	16.9	.0	.0	.0	.0	.0	.0	.0	.0	39.9
CUMULATIVE OTHER BURDENED COSTS	.0	.0	.0	.0	22.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	.0	39.9
TOTAL LABOR AND OTHER COSTS	.0	.3	2.5	37.5	59.8	48.7	2.4	.0	.0	.0	.0	.0	.0	.0	181.1
CUMULATIVE COSTS	.0	.3	2.8	40.3	130.1	178.8	181.1	181.1	181.1	181.1	181.1	181.1	181.1	.0	181.1

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