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006324

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

DEC 26 1989

JAN 24 1990

Mr. Roger F. Stanley, Project Manager
State of Washington
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504-8711

Dear Mr. Stanley:

WITHDRAWAL OF PART A PERMIT APPLICATIONS (MILESTONE M-20-45)

As requested in your August 17, 1989, letter to Messrs. Izatt, Lerch, and Chikalla, attached is the U.S. Department of Energy, Richland Operations Office (DOE-RL) and the Westinghouse Hanford Company (WHC) response for the 221-T Containment Systems Test Facility for your review. A complete description of the documentation covering designation based on lead contamination, the designation of generated wastes (including metal wastes tests), an accurate waste treatment tank flow diagram and analytical results of wastes generated, treated or stored at the unit are included.

Submittal of this information supports the Hanford Federal Facility Agreement and Consent Order Milestone M-23-02.

If you have any questions regarding the content of the attachment, please contact Mr. D. L. Duncan of DOE-RL on (509) 376-9333, or Ms. C. J. Geier of WHC on (509) 376-2237.

Sincerely,

M. J. Anthony for
R. D. Izatt, Director
Environmental Restoration Division
Richland Operations Office

ERD:DLD

R E Lerch
R. E. Lerch, Manager
Environmental Division
Westinghouse Hanford Company

Attachment
221-T Containment Systems Test Facility

cc w/att:
P. J. Day, EPA
[redacted]
M. Gearheard, EPA

JAN 1990
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ADDITIONAL INFORMATION REQUESTED FOR 221-T WITHDRAWAL REQUEST

As requested in the Washington State Department of Ecology letter dated August 17, 1989, the following additional information is provided to support the Part A permit application withdrawal for the 221-T Containment Systems Test Facility (CSTF). Responses to specific requests are summarized below.

Request 1: Documentation covering designation based on lead contamination.

Currently, there are two identified sources of lead associated with the CSTF. One source of lead, which was recently discovered, was due to use in the 1960's of a lead base primer paint in the large containment vessel. This vessel was recently sandblasted prior to repainting. Analysis of the sandblast grit (Figure 1) indicated the presence of lead above EP TOX limits. The second source of lead is from the lithium-lead tests conducted in the intermediate containment vessel. Documentation of the designation and disposal of the initial lithium-lead waste is contained in Figures 2 and 3. The remaining potentially lead contaminated materials resulting from subsequent lithium tests (Table 1) are currently being held awaiting completion of the related test programs.

Request 2: Documentation on the designation of generated wastes (particularly metal waste tests).

No metal waste tests were performed at the CSTF. The testing performed involves the characteristics of alkali and other metals as related to release into containment associated with postulated reactor accidents. These tests have historically involved pool fires, spray fires, filter evaluations, and water injection scenarios. Wastes generated from the tests were primarily liquid wastes. These wastes are summarized in Tables 1, 2, and 3. The information contained in the tables is primarily from the CSTF effluent log which covers operation from 1976 to the present. Additional information on material associated with the tests was obtained from the final test reports and test logs. All log books are available for inspection by the Washington State Department of Ecology.

Request 3: A more accurate flow diagram to include the waste treatment tank.

The process configurations for the large and intermediate containment vessel are shown in Figures 4 and 5 respectivly. The intermediate containment vessel was installed in 1986 and does not have any direct discharges. There has been no documented waste treatment at the CSTF except for a one time neutralization that was effected in a 55 gallon drum and referenced in the Table 3 entry for the AA13/AA14 Test.

Request 4: Any analytical results on waste generated, treated or stored at the unit.

Analytical results of lead contamination were identified above and are contained in Figures 1, 2, and 3. Tables 1, 2 and 3 reflect a summary of information available for the generated waste water. The data contained in Table 2 represents the history associated with the sodium and lithium tests in the large containment vessel between the initial facility startup in 1976 and operation to 1985. Beginning in 1985 the testing at CSTF was focused in two areas, aerosol testing using cesium, hydrogen iodide, and manganese in the large containment vessel (summarized in Table 3), and lithium testing in the intermediate containment vessel (summarized in Table 1).

Tables 2 and 3 are organized in general agreement with the facility log book (available for inspection by the Washington State Department of Ecology) entries. This log's primary purpose is to track the analyses of the waste water in support of test data gathering. Each test is designated by a alpha-numeric designator starting with the first test in 1977, AB1. The quantity and type of material associated with the test is shown to provide an understanding of the nature of the test. As indicated in the tables, the pH of the liquid was recorded sporadically up to 1985. After 1985 the majority of the log entries indicates the pH was "OK" with the criteria being "<12.5." Due to the nature of the process these fluids would not be below a pH of 2.

The destination of the solutions, if indicated in the logs, refers to the 216-T-1 ditch or to Cell 5, 271-T, located in the other end of T-Plant. Fluids transferred to Cell 5, 271-T were used to neutralize acid solutions external to CSTF. The remaining solutions were pumped to the drain line where it was combined with CSTF cooling water and steam condensate and discharged to the 216-T-1 ditch.

HANFORD ENVIRONMENTAL
HEALTH FOUNDATION

August 7, 1989 CO 14216

Westinghouse Hanford Company
MSIN: L4-55

Attn: W. O. Greenbaugh

LEAD ANALYSIS OF SANDBLASTING MATERIAL.

Five samples, reportedly sandblasting material from the 221-T Building/ 200 Area, were received June 27, 1989. EP toxic lead was determined by acetic acid buffer extraction (USEPA Method 1310, SW-846, 3rd. Ed.) followed by flame atomic absorption analysis of the resulting extracts.
The results of these analyses are reported below.

Sample Description	Lead, mg/L
#1/#2 *	12.6
#3/#3A *	12.8
#4/#5 *	12.2
#6/#6A *	15.5
#7	0.3

* As was discussed by phone with M. K. Hamilton, some sample compositing was done to reduce the number of analyses required. Samples were combined based on physical appearance.

The samples are being returned for disposal.

If you have any questions, please contact Environmental Health Sciences.

M. L. Zabel
Environmental Health Sciences

sc

Figure 1. Analyses of the Sandblast Grit

P. O. BOX 100, RICHLAND, WASHINGTON 99352

Figure 2. Waste Shipping Summary Table

ANALYSIS NO: WHC-25-562
DESTINATION: 616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY/600 AREA
MANIFEST NO: (WHC) 25562

CELL LEGEND:
1A = Flammable 1A
1B = Flammable 1B
C = Combustible
CS = Caustic
D = Acid
O = Oxidizer

ITEM NO.	DOT HAZARD CLASS	DOT PROPER SHIPPING NAME	WASTE NO.	USDOT ID NO.	DOT/EPA LABELS	CONTAINERS QTY.	CONTAINERS TYPE	TOTAL WASTE QUANTITY	STORAGE CELL
1	ORM-E	RQ, Hazardous Waste, Solid, n.o.s. (D008) (land ban: D008) (lithium lead alloy: lead 77% steel 23% lithium .6% (non reactive))	WT01 D008 (EHW)	NA9189	EPA Hazardous Waste	1	DOT 17H 55 gal	264 K	Any cell
2	ORM-E	RQ, Hazardous Waste, Solid, n.o.s. (D008) (land ban: D008) (lead contaminated equipment: arsenic .43 ppm barium 1.81 ppm lead 134 ppm selenium .18 ppm silver .02 ppm)	WT01 D008 (EHW)	NA9189	EPA Hazardous Waste	1	DOT 17H 55 gal	68 K	Any cell

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: WA7890008972 Manifest Document No: 25562
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Department of Energy, Richland Operations 221-T HE/200W
P. O. Box 5501, 2401 Stevens Dr., Richland, WA 99352 (211-T)
4. Generator's Phone (509) 373-2464 ATTENTION: J. W. Biglin

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Westinghouse Hanford Company
6. US EPA ID Number: WA7890008967
C. State Transporter's ID
D. Transporter's Phone: 376-1420

7. Transporter 2 Company Name: N/A
8. US EPA ID Number: N/A
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
616 Nonradioactive Dangerous Waste Storage Facility
616 Building/600 Area
10. US EPA ID Number: WA7890008967
G. State Facility's ID
H. Facility's Phone: 373-5013

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	Hazardous Waste Solid, n.o.s. (~~[illegible]~~) ORM-E NA9189 (land ban: D008) (D008)	RQ	1	DM	264	K	WT01 D008 (EHW)
b.	Hazardous Waste Solid, n.o.s. (~~[illegible]~~) ORM-E NA9189 (land ban: D008) (D008)	RQ	1	DM	68	K	WT01 D008 (EHW)
c.							
d.							

J. Additional Descriptions for Materials Listed Above
11.a and 11.b are 55 gallon drums

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Materials were not used in a radiation zone - ALL materials used were clean directly from stores or manufacturer. JWB

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. Accepted for D.L. Dyas 8-31-89

GENERATOR

Printed/Typed Name	Signature	Month Day Year
JOHN W BIGLIN	John W Biglin	8 29 89

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
B. Heredo	B. Heredo	8 29 89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
R. W. Brown	R W Brown	08 29 89

Style F15 REV-6 LABELMASTER, Div of AMERICAN LABELMARK CO., CHICAGO, IL 60646

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete

Figure 3. Hazardous Waste Manifest

ORIGINAL-RETURN TO GENERATOR

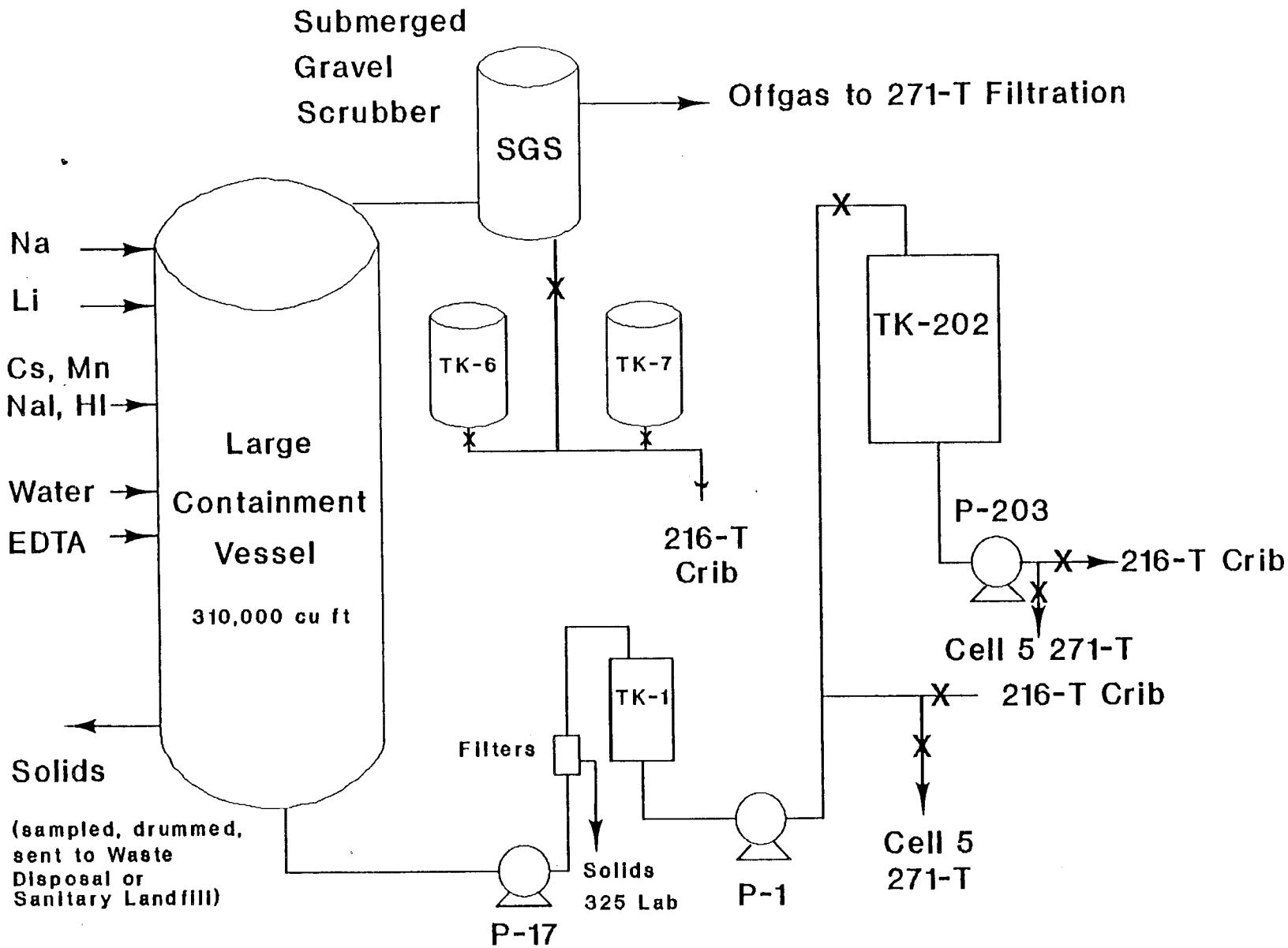

Figure 4. Waste Discharge From Large Containment Vessel

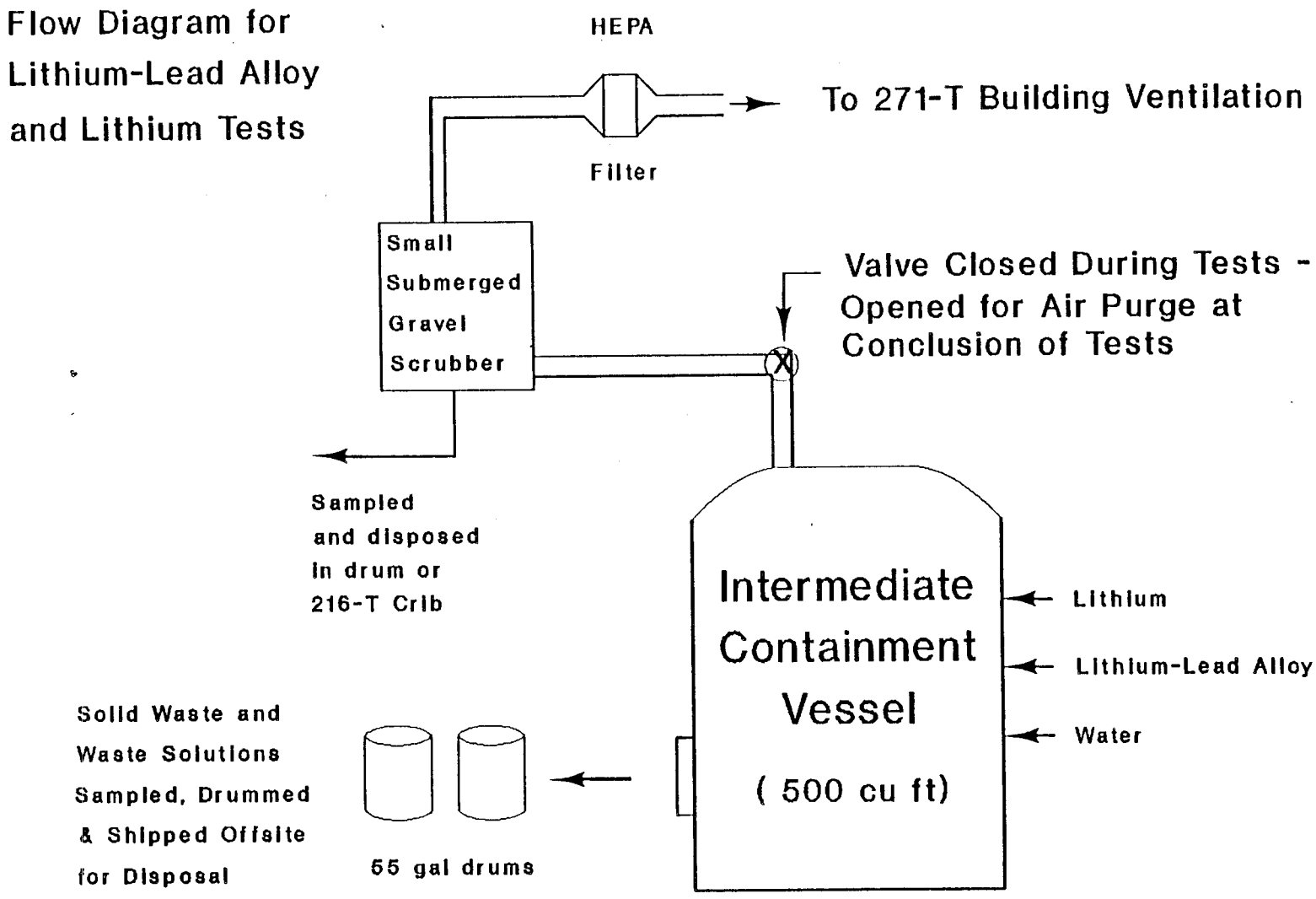

Figure 5. Waste Discharge From Intermediate Containment Vessel

TABLE 1

ITERMEDIATE CONTAINMENT VESSEL TESTS

Test	Date	Test Residuals
WIL1/WIA1	04-24-87 to 05-07-87	Solid residue total of 440 lbs of depleted lead-lithium alloy drummed into 55-gal drums and sent to offsite disposal via 616 Facility (see attachments 2 & 3)
LPS1	02-02-88	Material stored pending completion of test report and final analysis. Offsite disposal of material anticipated when no longer required to support test report. Residual lead contamination anticipated due to residuals from previous WIL1/WIA1 tests. 2 drums-insulation 1 drum-solid reaction products, 10 kg lithium as lithium hydroxide 1 drum, 262 lbs liquid, 31 gal, pH >12.5
LSS1	04-26-88	Material stored pending completion of test report and final analysis. Offsite disposal of material anticipated when no longer required to support test report. Residual lead contamination anticipated due to residuals from previous tests. 1 drum-reaction product, insulation, and piping (1 kg lithium as lithium hydroxide) 1 drum-reservoir 2 drums, 28 gal each, pH >12.5

TABLE 2

Test	Mass of Test Material Used	Date	Volume at Collection Point TK-1	Sampled	Solution pH	Routing Disposition
Facility Clean-up		09-23-76 to 06-15-77	113 gal 1,461 gal 1,493 gal	Y Y Y		Cell 5 271-T 216-T-1 Ditch not identified
AB1	410 kg Na	10-06-77 to 11-13-77	4,812 gal	Y		216-T-1 Ditch (372 kg Na transported to 105DR for disposal)
AB2	472 kg Na	11-16-77 to 01-11-78	6,323 gal	Y		not identified (429 kg Na transported to 105DR for disposal)
AB3	48 kg Na	01-30-78 to 02-01-78	4,419 gal	Y		not identified
NT1	82 kg Na	06-05-78 to 06-07-78	3,376 gal	Y		216-T-1 Ditch
Vessel Flush		02-12-79	222 gal	Y		not identified
AC1	704 kg Na	02-20-79 to 02-26-79	4,386 gal 440 gal	Y		216-T-1 Ditch not identified
AC2	768 kg Na	04-24-79 to 05-02-79	8,857 gal 3,302 gal 154 gal (approx 480 gal)	Y Y Y Not Recorded		216-T-1 Ditch Cell 5, 271-T not identified 216-T-1 Ditch

TABLE 2
(Continued)

Test	Mass of Test Material Used	Date	Volume at Collection Point TK-1	Sampled	Solution pH	Routing Disposition
AC3	474 kg Na 704 g NaI	06-11-79 to 06-20-79	10,935 gal 531 gal	Y Y		216-T-1 Ditch not identified
AC4	743 kg Na ? g NaI	09-18-79 to 10-02-79	8,175 gal 1,800 gal 445 gal	Y Y		216-T-1 Ditch Cell 5, 271-T not identified
AC5	1220 kg Na	12-27-79 to 01-04-80	6,795 gal	Y		216-T-1 Ditch
AC6	1125 kg Na	03-24-80 to 03-28-80	5,686 gal 841 gal	Y Y		216-T-1 Ditch Cell 5, 271-T
AC7	1210 kg Na	06-18-80 to 06-25-80	7,923 gal	Y		216-T-1 Ditch
AC8	1239 kg Na	09-16-80 to 10-02-80	9,836 gal 308 gal (approx 480 gal)	Y Y		216-T-1 Ditch Cell 5, 271-T
AC9	887 kg Na	11-18-80 to 12-16-80	9,069 gal	Y		216-T-1 Ditch
AC10	1198 kg Na	02-09-81 to 02-19-81	5,176 gal	Y		216-T-1 Ditch

TABLE 2
(Continued)

Test	Mass of Test Material Used	Date	Volume at Collection Point TK-1	Sampled	Solution pH	Routing Disposition
LA4	26.4 kg Li	04-14-81 to 04-21-81	4,571 gal	Y		216-T-1 Ditch (22.8 kg Li solid Li products transported to 105DR for disposal)
LA5	100 kg Li	06-04-81 to 06-04-81	5,450 gal	Y		216-T-1 Ditch (93.3 kg Li solid Li products transported to 105DR for disposal)
AB4	47.6 kg Na	07-02-81 to 07-08-81	5,590 gal	Y		216-T-1 Ditch
AB5	223 kg Na	09-21-82 to 10-04-82	5,002 gal 3,819 gal	Y Y	12.5-13.7 11.7-12.4	216-T-1 Ditch 216-T-1 Ditch
AB6	205 kg Na 416 g NaI	07-26-83 to 08-03-83	4,829 gal 884 gal	Y Y	12.5-13.5 11.6-11.8	TK-202, not identified TK-202, not identified
SA1	650 kg Na	08-02-84 to 08-24-84	7,835 gal	Y		TK-202, not identified
AB7	6.4 kg Na 3.02 kg NaOH 355 g NaI		not recorded			

TABLE 3

Test	Mass of Test Material Used	Date	Volume at Collection and Sampling Point TK-1 (gal)	TK-7 (gal)	Wash Pad (gal)	TK-202 (gal)	SGS (gal)	Equ. Wash (gal)	Mass Solids (g)	Solution pH	Destination
LA1	1.9 kg Cs 4.3 kg Mn 2.1 kg CsOH 5.6 kg MnO	11-11-85 to 11-20-85				5798				7.3	216-T-1 Ditch
LA2	2.2 kg CsOH 6.2 kg MnO	02-27-86 to 05-27-86		197		approx 7751				OK	Cell 5, 271T
										OK	Cell 5, 271T
							12,430			OK	Cell 5, 271T
							5,170			OK	not identifie
				394							
									1622		not identifie
							2,880				not identifie
							2,520				not identifie
								96.9			Cell 5, 271T
LA3A	480 kg CsOH 7164 kg MnO							136.5			not identifie
LA3B	448 kg CsOH 7387 kg MnO										not identifie
LA3C	2476 kg CsOH 5728 kg MnO										not identifie

TABLE 3
(Continued)

Test	Mass of Test Material Used	Date	Volume at Collection and Sampling Point TK-1 (gal)	TK-7 (gal)	Wash Pad (gal)	TK-202 (gal)	SGS (gal)	Equ. Wash (gal)	Mass Solids (g)	Solution pH	Destination
LA4	3.0 kg CsOH	08-28-86				1855.5				OK	216-T-1 Ditch
	6.9 kg MnO	to							3217		not identifie
		09-17-86		1055						OK	216-T-1 Ditch
			7969							OK	216-T-1 Ditch
								385			not identifie
							700				not identifie
									25 filters		to 325 lab
LA5	14 kg ZnO	01-05-87				1465				OK	Cell 5, 271T
	276 kg	to			148					OK	216-T-1 Ditch
	Li_2SO_4	01-14-87					679			OK	216-T-1 Ditch
									20 filters		to 325 lab
LA6	1.4 kg CsOH	02-10-87	8640							OK	216-T-1 Ditch
	4.4 kg MnO	to		720.5						OK	216-T-1 Ditch
		04-16-87		360						OK	216-T-1 Ditch
							695			OK	216-T-1 Ditch
									12.6		to 325 lab
									25 filters		to 325 lab
AA1/	2 kg Cs	04-05-88	3673							OK	216-T-1 Ditch
AA2	2 kg Mn	04-18-88		253						OK	216-T-1 Ditch
	0.3 kg HI				36.6		602			OK	216-T-1 Ditch
									18 filters		to 325 lab
									TK6 25"	OK	216-T-1 Ditch
AA3/	2.3 kg CsOH	05-16-88	3591							OK	216-T-1 Ditch
AA4	2.6 kg MnO	06-01-88			18.4					OK	216-T-1 Ditch
	0.3 kg HI						638			OK	216-T-1 Ditch
									TK6 210 gal	OK	216-T-1 Ditch
									8 filters		to 325 lab
									279 g		to 325 lab

TABLE 3
(Continued)

Test	Mass of Test Material Used	Date	Volume at Collection and Sampling Point TK-1	TK-7	Wash Pad	TK-202	SGS	Equ. Wash	Mass Solids	Solution pH	Destination
			(gal)	(gal)	(gal)	(gal)	(gal)	(gal)	(g)		
AA5/	2.3 kg CsOH	07-05-88	1670							OK	216-T-1 Ditch
AA6	2.6 kg MnO	to			60.4					OK	216-T-1 Ditch
	0.3 kg HI	07-18-88		120.7						OK	216-T-1 Ditch
							509			OK	216-T-1 Ditch
									9 filters		to 325 lab
									44 g		to 325 lab
AA7/	2.3 kg CsOH	08-01-88	2232							OK	216-T-1 Ditch
AA8	2.6 kg MnO	to		93						OK	216-T-1 Ditch
	0.3 kg HI	08-08-88			38.3					OK	216-T-1 Ditch
							657			OK	216-T-1 Ditch
									TK6 264 gal	OK	216-T-1 Ditch
									9 filters		to 325 lab
							603				
AA9/	2.3 kg CsOH	09-06-88	3438							OK	216-T-1 Ditch
AA10	2.6 kg MnO	to		119						OK	216-T-1 Ditch
	0.3 kg HI	09-13-88			33.4					OK	216-T-1 Ditch
							655			OK	216-T-1 Ditch
									TK6 197 gal	OK	216-T-1 Ditch
									6 filters		to 325 lab
									20.4 kg		to sanitary landfill
AA11/	2.3 kg CsOH	10-14-88									
AA12	2.6 kg MnO	to	3518							OK	216-T-1 Ditch
	0.3 kg HI	11-01-88		76						OK	216-T-1 Ditch
					27.1					OK	216-T-1 Ditch
							598			OK	216-T-1 Ditch
									TK6 278 gal	OK	216-T-1 Ditch
									9 filters		to 325 lab
									1009 grams		not identifi

TABLE 3
(Continued)

Test	Mass of Test Material Used	Date	Volume at Collection and Sampling Point TK-1 (gal)	TK-7 (gal)	Wash Pad (gal)	TK-202 (gal)	SGS (gal)	Equ. Wash (gal)	Mass Solids (g)	Solution pH	Destination
AA13/	2.3 kg CsOH	03-17-89									
AA14	2.6 kg MnO	to	625							<12.0	216-T-1 Ditch
	0.3 kg HI	04-07-89		117							216-T-1 Ditch
					33.4					5.6	216-T-1 Ditch
							613			8.5	216-T-1 Ditch
								TK6 172 gal		7.8	
									9 filters		to 325 lab
									Bed Cond Final		
									(113.5 lbs liquid)		(neutralized
									(pH 13.5)	8.5	in 55 gal drum
									(Final 8.5)		to 216-T Ditch)
AA15/	2.3 kg CsOH	05-15-89	55.5							OK	216-T-1 Ditch
AA16	2.6 kg MnO	07-12-89		131.5						OK	216-T-1 Ditch
	0.3 kg HI				53.8					OK	216-T-1 Ditch
									From 325 29.9 gal	OK	
									sand bed crust		
									5776 g		
									4 filters		
									102.8 gal		
AA17/	2.3 kg CsOH										
AA18	2.6 kg MnO										
	0.3 kg HI										
AA19/	2.3 kg CsOH	07-20-89		549						OK	216-T-1 Ditch
AA20	2.6 kg MnO	07-24-89					605			9.4	216-T-1 Ditch
	0.3 kg HI							TK6 437 gal		OK	216-T-1 Ditch
									CSTF Sand Blast		
									Material = 23,027 lbs sand		