APPENDIX R
IMPACT ON OTHER WASTE DISPOSAL PROGRAMS

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IMPACT ON OTHER WASTE DISPOSAL PROGRAMS

This appendix presents the detailed methodology used to evaluate Factor 8. Backup data that were used to calculate the results of this factor analysis are also included.

Data from four TRU waste cementation treatment processes at Rocky Flats were analyzed, and the low-level secondary waste stream volumes were summed for each treatment process. The data analyzed for this factor came from the Rocky Flats Waste Stream and Residue Identification and Characterization report (WSRIC), version 5.0. The following treatment processes were reviewed:

Building 774: Organic and Sludge Immobilization System (OASIS)
Building 774: Miscellaneous Waste Handling
Building 774: Precipitation/Filtration
Building 374: Sludge Solidification

Tables R-1 through R-4 present summaries of secondary waste generation for these processes, all of which involve cementation of TRU waste and occur in gloveboxes. It was assumed that the Rocky Flats data would generally be representative of TRU waste cementation processes at any DOE facility. Several other assumptions were made in assembling and compiling the data:

- All secondary waste characterized as "transuranic (TRU) or low level (LL)" was assumed to be LL, to estimate conservatively the potential impacts on the LL waste program. Likewise, waste characterized as "(TRU mixed (TRUM) or low level mixed (LLM)" was assumed to be LLM, and waste characterized as "LLM or hazardous (HAZ)" was assumed to be LLM.

- Several waste streams listed generation rates as "variable" or "insufficient data." Generation rates for these waste streams were estimated based on other similar processes and wastes. The assumptions used are documented in the tables.

- Most generation rates were provided on a volume basis. Those that were presented on a mass basis were converted to volume basis using assumed densities based on other Rocky Flats data and the Baseline Inventory Report. Assumed densities are included in the tables.

Other TRU waste treatment processes at Rocky Flats that parallel treatment options being evaluated in this study, such as the supercompactor, did not have secondary waste estimates provided in the WSRIC report. Because other data were not readily available, it was assumed that the other waste treatments being evaluated (with the exception of plasma melting) generate similar volumes of secondary low-level waste as the cementation process, on a waste input basis.

The four waste generation rates, calculated as volume of low-level secondary waste generated per volume of cemented (output) waste, were then averaged. This average was 0.3 drums of secondary waste generated per drum of output cemented waste. The percents of the total secondary waste generated as low level waste (LLW) and low level mixed waste (LLMW) were also averaged for the four treatment processes. Table R-5 presents a summary of the secondary

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TABLE R-1

BUILDING 774 OASIS PROCESS
SUMMARY OF SECONDARY WASTE GENERATION

Waste Description	Generation Rate[1]	Assumptions	Waste Category
Solidified oil	600 drums/yr		TRUM or LLM
Leaded glovebox gloves	1 drum/yr		TRUM or LLM
Glovebox filters	4 drums/yr		TRUM or LLM
Line metal	4 drums/yr		TRUM or LLM
Nonline wet combustibles	240 drums/yr		LLM or HAZ
Line wet combustibles	50 drums/yr		TRUM or LLM
Nonline metal	Insufficient data *4 drums/yr*	same as line metal	LLW or nonradioactive
Plastic (PPE)	25 lb/yr *0.1 drum/yr*	combustible drum wt = 212 lb	TRUM or LLM
Dry combustibles	Variable *30 drums/yr*	5% of solidified oil output	LLW

[1]Italic indicates assumed or calculated generation rate.

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TABLE R-2

BUILDING 774 MISCELLANEOUS WASTE-HANDLING PROCESS SUMMARY OF SECONDARY WASTE GENERATION

Waste Description	Generation Rate[1]	Assumptions	Waste Category
Solidified lab waste, nonhazardous	14,000 lb/yr *22 drums/yr*	640 lb/drum (Rocky Flats data)	TRU or LLW
Solidified lab waste, hazardous	Variable *22 drums/yr*	Same as nonhazardous	TRUM or LLM
Leaded glovebox gloves	50 lb/yr *0.2 drum/yr*	300 lb/drum	TRUM or LLM
Glovebox HEPA filters	500 lb/yr *6.3 drums/yr*	79 lb/drum (WTWBIR)	TRU or LLW
Light metal, hazardous	Variable *0.3 drums/yr*	0.6% of total solidified lab waste, same as OASIS	TRUM or LLM
Light metal, nonhazardous	Variable *0.3 drums/yr*	0.6% of total solidified lab waste, same as OASIS	LLW
Dry combustibles	Variable *2.2 drums/yr*	5% of total solidified lab waste	TRU or LLW
Cement	Variable *0 drums/yr*	Minimal generation	TRU or LLW
Line plastic (empty bottles)	Insufficient data *2.2 drums/yr*	5% of total solidified lab waste	TRU or LLW

[1]Italic indicates assumed or calculated generation rate.

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TABLE R-3

BUILDING 774 PRECIPITATION/FILTRATION PROCESS SUMMARY OF SECONDARY WASTE GENERATION

Waste Description	Generation Rate[1]	Assumptions	Waste Category
Cemented sludge	456,000 lb/yr *912 drums/yr*	500 lb/drum (Rocky Flats data)	TRUM or LLM
Line wet combustibles	Insufficient data *46 drums/yr*	5% of cemented sludge	TRUM or LLM
Leaded glovebox gloves	2 drums/yr		TRUM or LLM
Light metal, nonhazardous	3 drums/yr		TRU or LLW
Plenum prefilters	24 to 72 filters/yr *24 drums/yr*	Avg 48 filters/yr 2 filters/drum	LLW
Oil (lube)	4 gal/yr *0.07 drums/yr*		TRUM or LLM
Nonline dry combustibles	50 drums/yr		LLW
Filtrate	Insufficient data *0 drums/yr*	Recycled in process	TRUM or LLM
Glovebox filters	1-2 drums/yr *1.5 drums/yr*	Average	TRU or LLW
Nonline wet combustibles	Variable *46 drums/yr*	5% of cemented sludge	LLW
Light metal, hazardous	3 drums/yr		TRUM or LLM
Plastic (PPE)	25 lb/yr *0.1 drum/yr*	Combustible drum wt = 212 lb	TRUM or LLM

[1]Italic indicates assumed or calculated generation rate.

TABLE R-4

BUILDING 374 SLUDGE SOLIDIFICATION PROCESS SUMMARY OF SECONDARY WASTE GENERATION

Waste Description	Generation Rate[1]	Assumptions	Waste Category
Solidified bypass sludge	5-10 drums/month *90 drums/yr*	Average	TRUM or LLM
Process liquid waste (filtrate)	Variable *0 drums/yr*	Recycled in process	TRUM or LLM
Process liquid waste (supernatant)	Variable *0 drums/yr*	Recycled in process	TRUM or LLM
Wet combustibles	11 gal/month *2.4 drums/yr*		TRUM or LLM
Dry combustibles	11 gal/month *2.4 drums/yr*		TRUM or LLM
Plastic, hazardous	11 gal/month *2.4 drums/yr*		TRUM or LLM
Light metal, hazardous	11 gal/month *2.4 drums/yr*		TRUM or LLM
Absolute drybox filters	Variable *1.5 drums/yr*	Same as 774 precip/filtration (glovebox filters)	TRU or LLW
Light metal, nonhazardous	11 gal/month *2.4 drums/yr*		LLW
Dry combustibles, nonhazardous	11 gal/month *2.4 drums/yr*		LLW
Plastic, nonhazardous	11 gal/month *2.4 drums/yr*		LLW
Insulation, nonhazardous	11 gal/yr *0.2 drums/yr*		LLW
Insulation, hazardous	11 gal/yr *0.2 drums/yr*		TRUM or LLM
Glass, nonhazardous	11 gal/yr *0.2 drums/yr*		LLW
Hypalon glovebox gloves	Variable *0 drum/yr*	Minimal generation	TRU or LLW

[1]Italic indicates assumed or calculated generation rate.

TABLE R-5

WASTE GENERATION RATE SUMMARY

Process	Secondary Waste Generation (drums waste per drum solidified output)	Percentage of LL secondary waste	Percentage of LLM secondary waste
OASIS	0.56	10	90
Misc. Waste Handling	0.26	96	4
Precip/filtration	0.19	71	29
Sludge solidification	0.21	48	52
Averages	0.30	56	44

waste generation and percentages of LLW and LLMW for the four processes. The percentages of LLW and LLMW varied greatly, so an average of approximately 50 percent LLW and 50 percent LLMW was used in the analysis, instead of the calculated averages of 56 percent LLW and 44 percent LLMW.

Because data were not available for other treatment processes, it was assumed that the other waste treatments being evaluated (with the exception of plasma melting) generate similar volumes of secondary low-level waste as the cementation process, on a waste input basis. To convert the cementation data from an output basis to an input basis, the volume increase factor for cementation of 1:2.5 was used (refer to Table 3-73). This waste input basis factor, calculated to be 0.75 drums of secondary waste per drum of input waste, was then applied to each treatment process to calculate the volume of secondary low-level waste generated.

For the plasma melting process, the secondary low-level waste generation was assumed to be zero because the treatment process is designed such that secondary waste is fed back through the plasma melter. The volume reduction achieved in the plasma process for typical secondary wastes such as personal protective equipment, filters, and combustibles, is very high, so the volume of secondary wastes generated from the treatment process will be negligible. However, secondary waste will still be generated in the waste characterization step.

The waste characterization step is shown in the process flow diagrams in Section 3.7.2.1.1. The waste characterization module, as defined in the EMPEIS, includes opening and sorting drum contents, collecting waste samples, and repackaging, if necessary, to remove and stabilize noncompliant waste. This operation, which occurs in a glovebox, is assumed to generate secondary low-level waste at the same rate (input basis) as the treatment processes. The secondary waste generated was calculated only for the portion of the waste inventory that passes through the waste characterization step (assumed to be 30 percent of stored waste and 10 percent of projected waste, as discussed in Section 3.7.2.1.1). Secondary waste generated from waste characterization is the same for the baseline and all engineered alternatives (EA).

Table R-6 shows secondary waste volumes broken down by characterization and treatment steps. The calculated secondary waste generation rates shown in this table were then used to determine impacts on the DOE low-level programs. The calculated generation rates of LLW and LLMW for each EA were compared to current and projected total DOE inventories of LLW and LLMW to determine impact in terms of percentage increase over current levels for each EA. Data for total DOE waste inventories and projections for LLW and LLMW were obtained from the IDB and the MWIR, respectively.

Tables R-7 through R-9 show the secondary waste volumes by site for each configuration and EA. When combined with site-specific waste inventory and generation data, this data could be used to determine impacts on the low-level waste program at each site. A site-specific analysis was outside the scope of this report. Data in these tables were derived from the scaled volumes of sludges, solid organics, and solid inorganics that were used as inputs in the EA cost analysis.

Backup documentation attached to this appendix includes the WSRIC process descriptions for the four processes analyzed and pertinent sections of the IDB.

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TABLE R-6

SECONDARY WASTE VOLUMES
(cubic meters)

Alternative	Secondary Waste Generated (m^3)		
	Waste Char.	Treatment	Total
Baseline	21,848	10,881	32,729
1	21,848	96,192	118,040
6	21,848	96,192	118,040
10	21,848	0	21,848
94	21,848	109,777	131,625

TABLE R-7

TOTAL SECONDARY WASTE GENERATED
DECENTRALIZED ALTERNATIVES
CUBIC METERS

Site	Baseline	1	6	10	94
AMES LAB	0	0	0	0	0
ANL-E	8	15	15	7	32
BT	12	12	12	12	12
ETEC	1	1	1	1	1
HANFORD	7,932	41,079	41,079	4,867	41,082
INEL/ANL-W	12,590	28,853	28,853	9,084	39,369
KAPL	1	1	1	1	1
LANL	6,200	16,315	16,315	3,263	19,124
LBL	1	1	1	1	1
LLNL	185	984	984	120	994
MOUND	59	373	373	59	378
MU	0	0	0	0	0
NTS	138	604	604	138	604
ORNL	202	963	963	202	1,047
PANTEX	0	0	0	0	0
PA	0	0	0	0	0
RFP	1,937	5,174	5,174	628	5,315
SNL/NM	2	2	2	2	2
SRS	3,462	23,662	23,662	3,462	23,662
WIPP	0	0	0	0	0
TOTAL	32,729	118,040	118,040	21,848	131,625

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TABLE R-8

TOTAL SECONDARY WASTE GENERATED
REGIONALIZED ALTERNATIVES
CUBIC METERS

Site	Baseline	1	6	10	94
AMES LAB	0	0	0	0	0
ANL-E	7	7	7	7	7
BT	12	12	12	12	12
ETEC	1	1	1	1	1
HANFORD	7,996	41,943	41,943	4,867	41,955
INEL/ANL-W	12,590	29,319	29,319	9,084	39,835
KAPL	1	1	1	1	1
LANL	6,200	16,315	16,315	3,263	19,124
LBL	1	1	1	1	1
LLNL	120	120	120	120	120
MOUND	59	59	59	59	59
MU	0	0	0	0	0
NTS	138	138	138	138	138
ORNL	202	202	202	202	202
PANTEX	0	0	0	0	0
PA	0	0	0	0	0
RFP	1,937	5,174	5,174	628	5,315
SNL/NM	2	2	2	2	2
SRS	3,464	24,745	24,745	3,462	24,856
WIPP	0	0	0	0	0
TOTAL	32,729	118,040	118,040	21,848	131,629

TABLE R-9

TOTAL SECONDARY WASTE GENERATED
CENTRALIZED ALTERNATIVES
CUBIC METERS

Site	Baseline	1	6	10	94
AMES LAB	0	0	0	0	0
ANL-E	7	7	7	7	7
BT	12	12	12	12	12
ETEC	1	1	1	1	1
HANFORD	4,867	4,867	4,867	4,867	4,867
INEL/ANL-W	9,084	9,084	9,084	9,084	9,084
KAPL	1	1	1	1	1
LANL	3,263	3,263	3,263	3,263	3,263
LBL	1	1	1	1	1
LLNL	120	120	120	120	120
MOUND	59	59	59	59	59
MU	0	0	0	0	0
NTS	138	138	138	138	138
ORNL	202	202	202	202	202
PANTEX	0	0	0	0	0
PA	0	0	0	0	0
RFP	628	628	628	628	628
SNL/NM	2	2	2	2	2
SRS	3,462	3,462	3,462	3,462	3,462
WIPP	10,881	96,192	96,192	0	109,781
TOTAL	32,729	118,040	118,040	21,848	131,629

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ATTACHMENT 1

INTEGRATED DATA BASE REPORT—1993: U.S. SPENT NUCLEAR FUEL AND RADIOACTIVE WASTE INVENTORIES, PROJECTIONS, AND CHARACTERISTICS

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DOE/RW-0006, Rev. 10

December 1994

Integrated Data Base Report—1993: U.S. Spent Nuclear Fuel and Radioactive Waste Inventories, Projections, and Characteristics

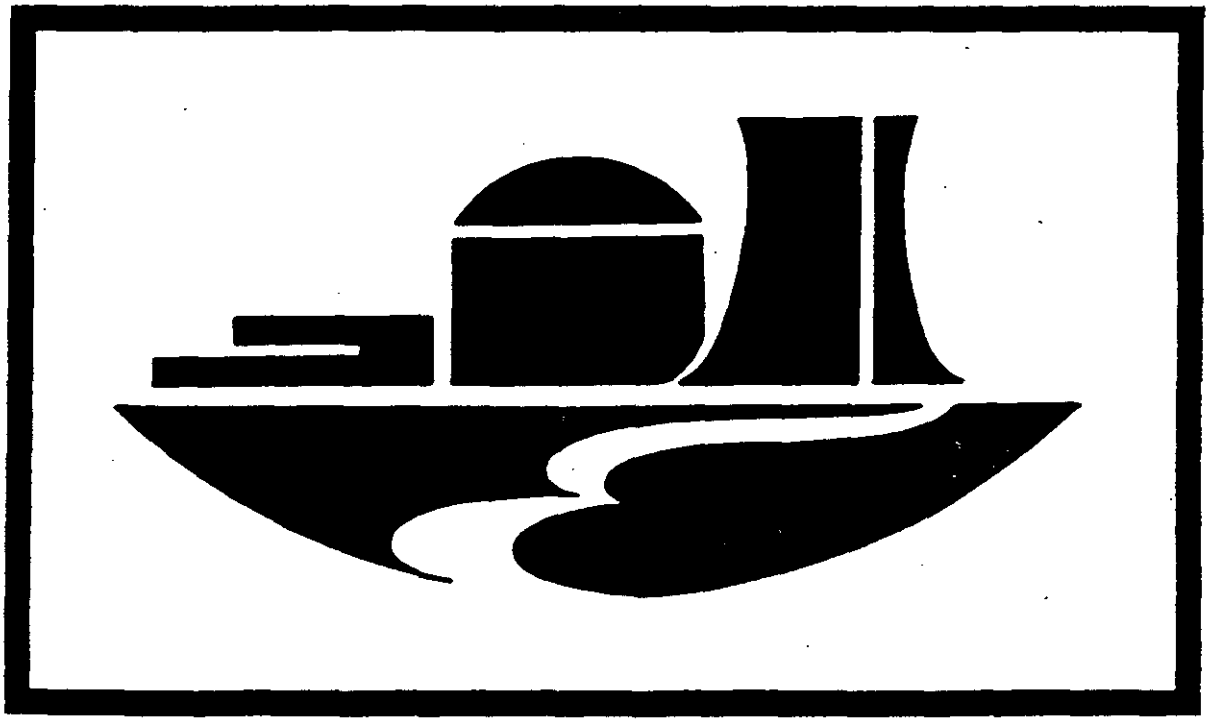

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Table 4.2. Historical and projected volume, radioactivity, and thermal power of buried DOE LLW[a]

End of calendar year	Volume (10^3 m^3)		Radioactivity (10^3 Ci)		Thermal power (W)	
	Annual	Cumulative	Annual	Cumulative[b]	Annual	Cumulative
1990	60.0	2,759	545	13,516	2,013	17,844
1991	53.6	2,812	717	13,277	2,788	18,220
1992	48.3	2,860	1,078	13,401	4,947	20,741
1993	50.5	2,911	894	13,147	3,263	20,398
1994	44.2	2,955	756	12,993	3,073	21,143
1995	44.2	2,999	756	12,906	3,073	22,066
1996	69.3	3,068	757	12,847	3,076	23,009
1997	117.2	3,186	759	12,807	3,080	23,928
1998	131.3	3,317	777	12,796	3,122	24,849
1999	146.2	3,463	769	12,785	3,103	25,708
2000	116.7	3,579	763	12,775	3,089	26,510
2001	131.3	3,710	756	12,765	3,073	27,260
2002	131.3	3,841	759	12,764	3,081	27,983
2003	132.6	3,975	764	12,775	3,091	28,687
2004	44.2	4,019	756	12,780	3,073	29,342
2005	131.3	4,150	756	12,792	3,073	29,974
2006	131.2	4,281	761	12,815	3,084	30,596
2007	88.0	4,368	757	12,838	3,076	31,188
2008	88.0	4,457	756	12,864	3,073	31,757
2009	87.7	4,545	756	12,894	3,073	32,309
2010	57.5	4,602	756	12,927	3,073	32,842
2011	64.3	4,666	756	12,963	3,073	33,359
2012	85.3	4,750	757	13,004	3,074	33,866
2013	131.3	4,885	763	13,055	3,088	34,374
2014	95.9	4,979	758	13,102	3,078	34,858
2015	87.7	5,063	756	13,150	3,073	35,322
2016	131.3	5,197	756	13,199	3,073	35,774
2017	131.3	5,331	756	13,251	3,073	36,216
2018	131.3	5,455	756	13,305	3,073	36,648
2019	87.7	5,550	756	13,358	3,073	37,067
2020	87.7	5,634	756	13,416	3,074	37,480
2021	44.2	5,678	756	13,472	3,073	37,879
2022	44.2	5,722	756	13,531	3,073	38,270
2023	44.2	5,766	756	13,590	3,073	38,652
2024	44.2	5,811	756	13,649	3,073	39,025
2025	44.2	5,855	756	13,709	3,073	39,390
2026	44.2	5,899	756	13,770	3,073	39,748
2027	44.2	5,943	756	13,832	3,073	40,098
2028	44.2	5,987	756	13,893	3,073	40,440
2029	44.2	6,031	756	13,955	3,073	40,775
2030	44.2	6,076	756	14,017	3,073	41,104

[a]Summation of values in Tables 4.16 (buried DOE LLW, except SRS saltstone) and 4.17 (LLW saltstone at SRS).

[b]The radioactivity added each year for each waste type is decayed as described in the footnotes of Tables 4.16 and 4.17.

Table 4.6. Summary of physical characteristics for LLW at DOE sites[a]

Waste type	Physical characteristic[b]	Volume, m³			Activity, Ci		
		1993	Cumulative[c]	1994 (projected)	1993	Total gross[d]	1994 (projected)
Generated on-site	Biological	285	e	317	2,608	e	6,343
	Contaminated equipment	3,531	e	3,347	665,714	e	846,445
	Decontamination debris	4,814	e	5,870	704	e	986
	Dry solids	18,611	e	16,256	76,312	e	87,642
	Solidified sludge	745	e	843	1,657	e	3,673
	Other	13,429	e	7,742	4,168	e	5,235
	Total	41,415	e	34,375	751,163	e	950,324
Stored	Biological	167	939	200	1,361	13,441	3,806
	Contaminated equipment	852	42,248	1,986	109,538	877,888	267,317
	Decontamination debris	2,021	9,164	2,909	607	1,180	852
	Dry solids	4,338	46,332	4,429	20,046	680,334	36,518
	Solidified sludge	639	26,081	738	1,657	1,665	3,583
	Other	6,964	30,902	3,342	213,564	294,664	92,215
	Total	14,981	155,666	13,604	346,773	1,869,172	404,291
Buried	Biological	117	f	122	1,247	f	2,537
	Contaminated equipment	8,783	f	6,324	104,780	f	170,480
	Decontamination debris	7,313	f	10,292	193	f	213
	Dry solids	27,663	f	24,200	785,388	f	579,902
	Solidified sludge	106	f	197	2	f	90
	Other	6,481	f	3,049	2,670	f	2,884
	Total	50,463	2,911,177	44,184	894,280	45,286,174	756,106

[a]Based on DOE site information provided in ref. 1. Totals reported in this table may not equal the sum of component entries because of round-off and truncation of numbers.

[b]Physical characteristics: (1) biological (sewage sludge, animal carcasses, excreta, etc.); (2) contaminated equipment (components, maintenance wastes, etc.); (3) decontamination debris (wastes resulting from decontamination and decommissioning efforts, construction debris, etc.); (4) dry solids (normal plant wastes, blotting paper, combustible materials, etc.); (5) solidified sludge (any wastes solidified from a process sludge such as evaporator bottoms solidification, solidification of precipitated salts, etc.); and (6) other (materials which are outside of the above categories).

[c]From beginning of operations through 1993.

[d]Sum of annual additions without decay.

[e]Not applicable [i.e., generation is taken to be an intensive quantity (amount/year) and is not additive; whereas stored and buried are extensive quantities (amounts) and are additive].

[f]Information not available.

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ATTACHMENT 2

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3

TREATMENT PROCESSES

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3.0 PROCESS 374-3: SLUDGE SOLIDIFICATION

The Sludge Solidification Process, located in Rooms 2804, 3803, and 4805, immobilizes radioactive and hazardous materials from decontamination-precipitation, and neutralization for shipment off site. The slurry waste to be solidified in this process is fed to Tanks D-824 A and B from the clarifier bottoms (Tanks D-815, D-819, and D-823) of the Radioactive Decontamination Process, from Tank D-808 of the Acid Neutralization Process, and acid descaling waste from Tank D-845. Equipment used in this process includes various tanks, conveyors, and drum vacuum filters. Figure 3.1 shows the inputs, process flow, and outputs associated with the Sludge Solidification process.

The Sludge Solidification Process contains an associated subprocess comprised of a vent scrubber system. This system collects and neutralizes fumes from chemical preparation area tanks; waste receiving tanks; reactor, flocculator, and clarifier tanks; the sludge dryer; and GB 118 and GB 120 for the Sludge Solidification Process. The fumes from these areas pass through a variable throat venturi where they contact a basic solution injected through sets of nozzles. A short elbow connects the venturi to the gas absorber, which has eight nozzles below a demister pad. Gases are pulled through the system by one of the two blowers. The scrubbing solution contains parallel pumps which switch automatically when a low liquid flow is detected by a sensor. The solution is cooled in the heat exchanges. A portion of the scrubbing solution is drawn off periodically to maintain proper Ph and solids concentration and is transferred to Tanks D-811 A or B. A level controller in the scrubber sump operates a valve used to replenish the liquid with process water. A manual valve in the caustic supply line allows personnel to replenish the caustic materials when necessary. The scrubber pulls a slight vacuum on the tanks and gloveboxes, which is controlled by the pressure drop across the scrubber, set at 600 millimeters absolute pressure. The scrubber vents to the Building 374 filter plenums, which contain two sets of HEPA filters.

Supernatant from Tanks D-824 A and B (at A, Figure 3.1) is decanted to Tank D-812 in the Radioactive Decontamination Process. The slurry from these tanks is pumped to the rotary drum vacuum filter, FL-802 A (at B, Figure 3.1), which is inside a large glovebox (GB 120). The filter drum is coated with a mixture of diatomite and either water or filtrate; this mixture is prepared in Tank D-848 (at C, Figure 3.1). The slurry is fed into the filter pan, and the filtrate is drawn through the precoat by a vacuum, leaving a sludge of precipitated solids on the surface of the filter media. An advancing blade continuously removes the sludge and a thin layer of precoat. Tanks D-825 A or B (at D, Figure 3.1) collect the filtrate from the rotary drum filter for transfer to the Radioactive Decontamination Process. Two mist tanks are associated with the vacuum pumps on the rotary drum filter. The tanks may receive some filtrate, which is discharged to Sump Tank D-852 (Figure 2.1A).

The sludge is solidified using either the sludge dryer system or the bypass system. In the sludge dryer system, the sludge is dried in a dryer (at E, Figure 3.1). The sludge from the vacuum filters is fed to the dryer feed hopper by a drop chute. The sludge is then conveyed through the dryer in heated flights. The dried sludge overflows directly into the conveying system of the direct cementation sludge hopper. In the direct cementation procedure (at F, Figure 3.1), dried sludge, cement, and water are metered by a computer and mixed using a paddle mixer to produce a cemented waste product. The cement is transferred pneumatically to a cement hopper from outside storage. The sludge, cement, and water are deposited in a 55-gallon drum and allowed to solidify. Filter FL-802B supports the direct cementation, which is not currently in operation.

The bypass system (FL-802A) transfers wet sludge directly from the vacuum filter to a 55-gallon drum via a conveyor system (at G, Figure 3.1). Cement and diatomaceous earth are metered into the drum with the sludge to absorb liquids. Various combustibles, glass (from lights and glassware), metals (from tools and pipes, etc.), plastics, and gloves are used in general cleanup and maintenance of the system.

Cemented drummed solids are put in a 90-day drum storage area WMU 379 or WMU 2005 before being sent to Real Time Radiography (RTR), and storage for eventual off-site storage. Filtrate is stored in Tanks D-804 A, B, C and D (Figure 2.1A) and Tank D-811 for eventual treatment in the Radioactive Decontamination Process. Exhaust fumes are passed to the vent scrubber system and are vented to the building filter plenum. Most hazardous wastes are collected in a 90-day area, WMU 379 or WMU 2005. Sealed containers are sent to the drum assay counter, RTR, then stored for eventual off-site storage. Nonhazardous wastes are collected in 55-gallon drums in Room 3801 or 3810. Sealed containers are sent to the drum assay counters, to RTR, and then to storage for eventual off-site storage.

Filters are assayed at a drum counter and taken to Size Reduction in Building 776. Process Table 374-3 presents the outputs associated with the Sludge Solidification Process and provides their dispositions and hazardous character.

AutoCAD 12, File Name: 374-3 05/04/95

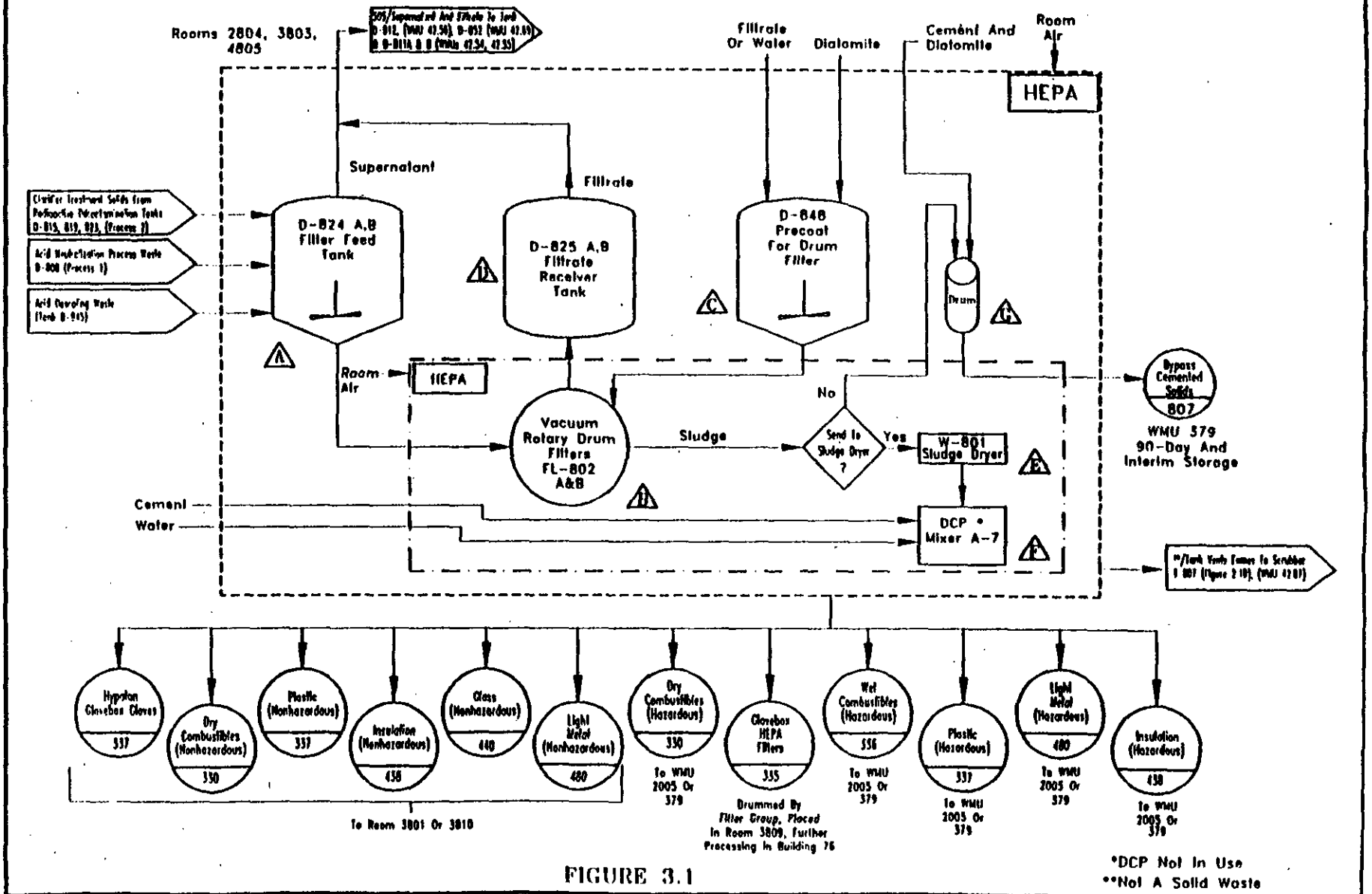

FIGURE 3.1

*DCP Not In Use
**Not A Solid Waste

Rocky Flats Environmental Technology Site	BUILDING 374/PROCESS 3 SLUDGE SOLIDIFICATION	Task	By	Date
Waste Stream & Residue Identification & Characterization		Designed	J. Johnson	11/25/92
		Drawn	B. Crawford	05/04/95
		Checked	J. Joyce	05/04/95

PROCESS 374-3 SLUDGE SOLIDIFICATION

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	BPA Codes
374-3-2	807	BS	00	NA	Solidified Bypass Sludge, Building 374 RCRA Reg. Chemical Constituents: DCP Bypass Sludge Non-RCRA Reg. Chemical Constituents: None	WMU 379 WMU 2005	Yes	Yes	Yes	Waste	F001, F002, F003, F005, F006, F007, F009, F039

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Code
374-3-3	505	IIC96	00	3A	Process Liquid Waste (Filtrate) RCRA Reg. Chemical Constituents: Arsenic, Carbon Tetrachloride, Chlorinated Fluorocarbons, Methylene Chloride, Tetrachloroethylene, Trichloroethylene, 1,1,1-Trichloroethane, 1,1,2-Trichloro, 1,2,2-Trifluoroethane, Toluene, Cadmium, Chromium, Lead, Selenium, Silver; Can Also Contain Acids, Bases, Beryllium, Barium, Denatured Alcohol, Diamond Paste, Ethylene Glycol, Isopropanol, Mercury, Methanol, Mariko, Nickel, Oakite, Penetrate Oil, Spent Emulsifier, Spent Developer, Spent X-ray Developer/Starter And Trim Sol Leachate Non-RCRA Reg. Chemical Constituents: None	WMU 42.54 WMU 42.55 WMU 42.56 WMU 42.69 WMU 42.81 WMU 42.82	Yes	Yes	Yes	Waste	F001 F002 F00? F00? F00(F00 F00? F03?

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
374-3-4	505	HC96	00	3A	Process Liquid Waste (Supernatant) RCRA Reg. Chemical Constituents: Arsenic, Carbon Tetrachloride, Chlorinated Fluorocarbons, Methylene Chloride, Tetrachloroethylene, Trichloroethylene, 1,1,1-Trichloroethane, 1,1,2-Trichloro, 1,2,2-Trifluoroethane, Toluene, Cadmium, Chromium, Lead, Selenium, Silver; Can Also Contain Acids, Bases, Beryllium, Barium, Denatured Alcohol, Diamond Paste, Ethylene Glycol, Isopropanol, Mercury, Methanol, Mariko, Nickel, Oakite, Penetrate Oil, Spent Emulsifier, Spent Developer, Spent X-ray Developer/Starter And Trim Sol Leachate Non-RCRA Reg. Chemical Constituents: None	WMU 42.54 WMU 42.55 WMU 42.56 WMU 42.69	Yes	Yes	Yes	Waste	F001, F002, F003, F005, F006, F007, F009, F039

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EP/ Cod
374-3-6	336	IIC	00	NA	Combustibles, Wet RCRA Reg. Chemical Constituents: Arsenic, Carbon Tetrachloride, Chlorinated Fluorocarbons, Methylene Chloride, Tetrachloroethylene, Trichloroethylene, 1,1,1-Trichloroethane, 1,1,2-Trichloro, 1,2,2-Trifluoroethane, Toluene, Cadmium, Chromium, Lead, Selenium, Silver; Can Also Contain Acids, Bases, Beryllium, Barium, Denatured Alcohol, Diamond Paste, Ethylene Glycol, Isopropanol, Mercury, Methanol, Mariko, Nickel, Oakite, Penetrate Oil, Spent Emulsifier, Spent Developer, Spent X-ray Developer/Starter And Trim Sol Non-RCRA Reg. Chemical Constituents: None	WMU 379 WMU 2005	Yes	Yes	Yes	Waste	F00 F00 F00 F00 F00 F00 F00 F0

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
374-3-7	330	IIC	00	NA	Combustibles, Dry (Hazardous) RCRA Reg. Chemical Constituents: Arsenic, Carbon Tetrachloride, Chlorinated Fluorocarbons, Methylene Chloride, Tetrachloroethylene, Trichloroethylene, 1,1,1-Trichloroethane, 1,1,2-Trichloro, 1,2,2-Trifluoroethane, Toluene, Cadmium, Chromium, Lead, Selenium, Silver; Can Also Contain Acids, Bases, Beryllium, Barium, Denatured Alcohol, Diamond Paste, Ethylene Glycol, Isopropanol, Mercury, Methanol, Mariko, Nickel, Oakite, Penetrate Oil, Spent Emulsifier, Spent Developer, Spent X-ray Developer/Starter And Trim Sol Non-RCRA Reg. Chemical Constituents: None	WMU 379 WMU 2005	Yes	Yes	Yes	Waste	F001, F002, F003, F005, F006, F007, F009, F039

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Cod
374-3-8	337	HC	00	NA	Plastic (Hazardous)(Teflon, PVC, Poly, Etc) RCRA Reg. Chemical Constituents: Arsenic, Carbon Tetrachloride, Chlorinated Fluorocarbons, Methylene Chloride, Tetrachloroethylene, Trichloroethylene, 1,1,1-Trichloroethane, 1,1,2-Trichloro, 1,2,2-Trifluoroethane, Toluene, Cadmium, Chromium, Lead, Selenium, Silver; Can Also Contain Acids, Bases, Beryllium, Barium, Denatured Alcohol, Diamond Paste, Ethylene Glycol, Isopropanol, Mercury, Methanol, Mariko, Nickel, Oakite, Penetrate Oil, Spent Emulsifier, Spent Developer, Spent X-ray Developer/Starter And Trim Sol Non-RCRA Reg. Chemical Constituents: None	WMU 379 WMU 2005	Yes	Yes	Yes	Waste	F00 F00 F00 F00 F00 F00 F00 F03

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
374-3-10	480	HC96	00	NA	Light Metal (Hazardous) RCRA Reg. Chemical Constituents: Arsenic, Carbon Tetrachloride, Chlorinated Fluorocarbons, Methylene Chloride, Tetrachloroethylene, Trichloroethylene, 1,1,1-Trichloroethane, 1,1,2-Trichloro, 1,2,2-Trifluoroethane, Toluene, Cadmium, Chromium, Lead, Selenium, Silver; Can Also Contain Acids, Bases, Beryllium, Barium, Denatured Alcohol, Diamond Paste, Ethylene Glycol, Isopropanol, Mercury, Methanol, Mariko, Nickel, Oakite, Penetrate Oil, Spent Emulsifier, Spent Developer, Spent X-ray Developer/Starter And Trim Sol Leachate Non-RCRA Reg. Chemical Constituents: None	WMU 379 WMU 2005	Yes	Yes	Yes	Waste	F001, F002, F003, F005, F006, F007, F009, F039

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Code
374-3-11	303	00	00	NA	Absolute Drybox Filters(Not Acid Contaminated) RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum, Room 3809	Yes	No	No	Waste	
374-3-13	480	00	00	NA	Light Metal (Nonhazardous) RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum, Room 3801 Or 3810	Yes	No	No	Waste	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
374-3-15	330	00	00	NA	Combustibles, Dry (Nonhazardous) RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum, Room 3801 Or 3810	Yes	No	No	Waste	
374-3-16	337	00	00	NA	Plastic (Nonhazardous) RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum, Room 3801 Or 3810	Yes	No	No	Waste	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Code
374-3-17	438	00	00	NA	Insulation (Nonhazardous) RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum, Room 3801 Or 3810	Yes	No	No	Waste	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
374-3-18	438	HC	00	NA	Insulation (Hazardous) RCRA Reg. Chemical Constituents: Arsenic, Carbon Tetrachloride, Chlorinated Fluorocarbons, Methylene Chloride, Tetrachloroethylene, Trichloroethylene, 1,1,1-Trichloroethane, 1,1,2-Trichloro, 1,2,2-Trifluoroethane, Toluene, Cadmium, Chromium, Lead, Selenium, Silver; Can Also Contain Acids, Bases, Beryllium, Barium, Denatured Alcohol, Diamond Paste, Ethylene Glycol, Isopropanol, Mercury, Methanol, Mariko, Nickel, Oakite, Penetrate Oil, Spent Emulsifier, Spent Developer, Spent X-ray Developer/Starter And Trim Sol Non-RCRA Reg. Chemical Constituents: None	WMU 379 WMU 2005	Yes	Yes	Yes	Waste	F001, F002, F003, F005, F006, F007, F009, F039

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Cod
374-3-19	440	00	00	NA	Glass (Nonhazardous) RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum, Room 3801 Or 3810	Yes	No	No	Waste	
374-3-21	337	00	00	NA	Hypalon Glovebox Gloves RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum, Room 3801 Or 3810	Yes	No	No	Waste	

Process Number: 374-3-2 **Title:** SLUDGE SOLIDIFICATION
IDC: 807 **Description:** Solidified Bypass Sludge, Building 374

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- ■ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- ■ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes:
F001, F002, F003, F005, F006, F007, F009, F039

Description (Material, Type, Size, Color, etc.):
Cemented solids from the bypass system are a mixture of wet sludge, cement, and diatomaceous earth that have been placed into 55-gallon drums. The wet sludge consists of solids that have been precipitated from process waste water and separated from filtrate water by a vacuum drum filter. The cement and diatomaceous earth are metered into the drum with the wet sludge to absorb free liquids.

How the Output is Generated:
Solids Filtered From Slurry

Generation Rate:
5-10, 55-Gallon Drums Monthly

How the Output is Managed:
Cemented solids from the bypass system are brought to a 90-day area WMU 379 or WMU 2005 for storage until sample results are received. Based upon sample results, the containers are taken to WMU 19 if TRU mixed or WMU 24 if LLM.

Chemicals/Contaminants in or on the Output:
Building 374 Process Waste Stream

Characterization Rationale:
This output is characterized using information, based on the same IDC, contained in the Backlog Baseline Book. This output is an F-listed waste because it is derived from the treatment of F-listed wastes. Therefore, this output may be a mixed, transuranic or low-level waste.

Process Number: 374-3-3 **Title:** SLUDGE SOLIDIFICATION
IDC: 505 **Description:** Process Liquid Waste (Filtrate)

● RCRA Hazardous	▫ Product	▫ Fuel Blending
▫ RCRA Nonhazardous	▫ High Content Residue	▫ Uncontained Gas
▫ By Analytical Data	▫ Low Content Residue	▫ RCRA Sample
● By Process Knowledge	■ Transuranic	▫ Recyclable Material
■ LDR Regulated	■ Low-Level	▫ Recycled/Reused
▫ Not LDR Regulated	▫ Nonradioactive	▫ TSCA Reg. Waste
	▫ Source/Special Nuclear Materials	▫ Evaluated in Another Process

EPA Codes:
F001, F002, F003, F005, F006, F007, F009, F039

Description (Material, Type, Size, Color, etc.):
Filtrate from the vacuum filter is the liquid that is separated from precipitated solids by the FL-802 A and B vacuum drum filters. This filtrate is recycled through the filtrate receiver tank, and eventually mixed with Output 374-3-4, supernatant.

How the Output is Generated:
Generated During The Process

Generation Rate:
Combined With Item 4

How the Output is Managed:
Filtrate may be collected in Tank D-812 (WMU 42.56), Tanks D825 A and B (WMUs 42.81, 42.82), Tank D-852 (WMU 42.69), and Tanks D-811 A and B (WMUs 42.54 and 42.55) for treatment in the Radioactive Decontamination Process.

Chemicals/Contaminants in or on the Output:
Building 374 Process Waste

Characterization Rationale:
This output consists of liquids which are nonline generated in a Radioactive Materials Management Area. According to process knowledge, this output may contain F-listed spent solvents, electroplating wastes, and multi-source leachate. This output may be a mixed, transuranic or low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 374-3-4 **Title:** SLUDGE SOLIDIFICATION
IDC: 505 **Description:** Process Liquid Waste (Supernatant)

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes:
F001, F002, F003, F005, F006, F007, F009, F039

Description (Material, Type, Size, Color, etc.):
Supernatant from Tanks D-824 A and B (filter feed tanks) is the decanted liquid from tanks that receive clarifier solids from the Radioactive Decontamination Process.

How the Output is Generated:
Decant Solution

Generation Rate:
Variable

How the Output is Managed:
Supernatant from Tanks D-824 A and B (Filter Feed Tanks) is collected in the feed tank D-812, for the Radioactive Decontamination Process (WMU 42.56), Tank D-852 (WMU 42.69) and Tanks D-811 A and B (WMUs 42.54, 42.55).

Chemicals/Contaminants in or on the Output:
Building 374 Process Waste

Characterization Rationale:
This output consists of liquids which are nonline generated in a Radioactive Materials Management Area. According to process knowledge, this output may contain F-listed spent solvents, electroplating wastes, and multi-source leachate. This output may be a mixed, transuranic or low-level waste.

Process Number: 374-3-6 **Title:** SLUDGE SOLIDIFICATION
IDC: 336 **Description:** Combustibles, Wet

- ● RCRA Hazardous
- ▫ RCRA Nonhazardous
- ▫ By Analytical Data
- ● By Process Knowledge
- ● LDR Regulated
- ▫ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:
F001, F002, F003, F005, F006, F007, F009, F039

Description (Material, Type, Size, Color, etc.):
Wet Combustibles Such As Kimwipes, Surgeon's Gloves And Tyveks Which Have Come In Contact With Waste From The Sludge Solidification Process

How the Output is Generated:
Cleanup Activities In The Sludge Solidification Process And Routine Maintenance

Generation Rate:
11 Gallons Monthly

How the Output is Managed:
Combustibles are collected in a 90-day area, WMU 379 or WMU 2005. Sealed containers are sent to the drum assay counters, RTR, and then storage for eventual offsite storage.

Chemicals/Contaminants in or on the Output:
Waste From The Sludge Solidification Process

Characterization Rationale:
This output is characterized using information, based on the same IDC, contained in the Backlog Baseline Book. This output is contaminated with F-listed spent solvents, electroplating wastes, and multi-source leachate. This output is nonline generated in a Radioactive Materials Management Area and may be a mixed, transuranic or low-level waste.

Process Number: 374-3-7 **Title:** SLUDGE SOLIDIFICATION
IDC: 330 **Description:** Combustibles, Dry (Hazardous)

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes:
F001, F002, F003, F005, F006, F007, F009, F039

Description (Material, Type, Size, Color, etc.):
Dry Combustibles Such As Surgeon's Gloves. Kimwipes, Tyveks, And Wood That Have Been Contaminated With Waste From The Sludge Solidification Process

How the Output is Generated:
Cleanup Activities In The Sludge Solidification Area And Routine Maintenance

Generation Rate:
11 Gallons Monthly

How the Output is Managed:
Dry combustibles are collected in a 90-day area, WMU 379 or WMU 2005. Sealed containers are sent to the drum assay counters, RTR, and then storage for eventual offsite storage.

Chemicals/Contaminants in or on the Output:
Waste From The Radioactive Decontamination Process

Characterization Rationale:
This output is characterized using information, based on the same IDC, contained in the Backlog Baseline Book. This output is contaminated with F-listed spent solvents, electroplating wastes, and multi-source leachate. This output is nonline generated in a Radioactive Materials Management Area and may be a mixed, transuranic or low-level waste.

Process Number: 374-3-8 **Title:** SLUDGE SOLIDIFICATION
IDC: 337 **Description:** Plastic (Hazardous)(Teflon, PVC, Poly, Etc)

- ■ RCRA Hazardous
- ▫ RCRA Nonhazardous
- ▫ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- ▫ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:
F001, F002, F003, F005, F006, F007, F009, F039

Description (Material, Type, Size, Color, etc.):
Plastic (PVC, Teflon, Polyethylene) Wastes Such As Sample Vials, Bottles, Sheets Of Plastic, Bags, Santa Claus Booties, Oak Ridge Booties, And Pump Box Plexiglass

How the Output is Generated:
Cleanup Activities In The Sludge Solidification Area, Replacement Of Pump Box Plexiglas And Routine Repair Of Equipment

Generation Rate:
11 Gallons Monthly

How the Output is Managed:
Plastic waste is collected in a 90-day area, WMU 379 or WMU 2005. Sealed containers are sent to the drum assay counters, RTR, and then storage for eventual offsite storage.

Chemicals/Contaminants in or on the Output:
Waste From The Sludge Solidification Process

Characterization Rationale:
This output is characterized using information, based on the same IDC, contained in the Backlog Baseline Book. This output is contaminated with F-listed spent solvents, electroplating wastes, and multi-source leachate. This output is nonline generated in a Radioactive Materials Management Area and may be a mixed, transuranic or low-level waste.

Process Number: 374-3-10 **Title:** SLUDGE SOLIDIFICATION
IDC: 480 **Description:** Light Metal (Hazardous)

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes:
F001, F002, F003, F005, F006, F007, F009, F039

Description (Material, Type, Size, Color, etc.):
Light metal wastes include carbon steel, stainless steel, aluminum, copper, and steel alloys that are part of the equipment for the sludge solidification process.

How the Output is Generated:
Replacement And Repair Of Equipment Contaminated With Sludge Solidification Waste

Generation Rate:
11 Gallons Monthly

How the Output is Managed:
Light metal wastes are collected in a 90-day area, WMU 379 or WMU 2005. Sealed containers are sent to the drum assay counter, RTR, and storage for eventual offsite storage.

Chemicals/Contaminants in or on the Output:
Sludge Solidification Wastes

Characterization Rationale:
This output is characterized using information, based on the same IDC, contained in the Backlog Baseline Book. This output is contaminated with F-listed spent solvents, electroplating wastes, and multi-source leachate. This output is generated in a Radioactive Materials Management Area and may be a mixed, transuranic or low-level waste.

Process Number: 374-3-11 **Title:** SLUDGE SOLIDIFICATION
IDC: 303 **Description:** Absolute Drybox Filters(Not Acid Contaminated)

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▪ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Glovebox HEPA filters are used as room air intake filters only. The filters are used to remove particulates from incoming air. Glovebox HEPA filters are not changed unless air pressure is below .25 inches of water.

How the Output is Generated:
During Routine Scheduled Filter Replacement

Generation Rate:
Variable

How the Output is Managed:
The filters are packed in 55-gallon drums by the Filter Group, then placed in Room 3809 for staging before being sent to the drum assay counter, RTR, and then Size Reduction in Building 776.

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
According to process knowledge, this output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. This output is nonline generated in a Radioactive Materials Management Area and is therefore characterized as a TRU or low-level, nonhazardous waste.

Process Number: 374-3-13 **Title:** SLUDGE SOLIDIFICATION
IDC: 480 **Description:** Light Metal (Nonhazardous)

▫ RCRA Hazardous	▫ Product	▫ Fuel Blending
▪ RCRA Nonhazardous	▫ High Content Residue	▫ Uncontained Gas
▫ By Analytical Data	▫ Low Content Residue	▫ RCRA Sample
▪ By Process Knowledge	▫ Transuranic	▫ Recyclable Material
▫ LDR Regulated	▪ Low-Level	▫ Recycled/Reused
▪ Not LDR Regulated	▫ Nonradioactive	▫ TSCA Reg. Waste
	▫ Source/Special Nuclear Materials	▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Light metal wastes include carbon steel, stainless steel, aluminum, copper, and steel alloys that are part of the equipment not contaminated with waste from the sludge solidification process.

How the Output is Generated:
Cleanup Of The Sludge Solidification Process And Some Routine Maintenance

Generation Rate:
11 Gallons Monthly

How the Output is Managed:
Nonhazardous light metal is collected in Room 3801 or 3810. Sealed containers are sent to the drum assay counters, RTR, and then storage for evennual offsite storage.

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
According to process knowledge, this output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. This output is nonline generated in a Radioactive Materials Management Area and is therefore characterized as a low-level, nonhazardous waste.

Process Number: 374-3-15 **Title:** SLUDGE SOLIDIFICATION
IDC: 330 **Description:** Combustibles, Dry (Nonhazardous)

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated

- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▫ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials

- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Dry Combustibles Such As Kimwipes, Surgeon's Gloves, Tyveks, And Paper Products That Are Not Contaminated In The Sludge Solidification Process

How the Output is Generated:
Cleanup Activities In The Sludge Solidification Area And Some Routine Maintenance

Generation Rate:
11 Gallons Monthly

How the Output is Managed:
Nonhazardous dry combustibles are collected in Room 3801 or 3810. Sealed containers are sent to the drum assay counter, RTR, and then storage for eventual offsite storage.

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
According to process knowledge, this output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. This output is nonline generated in a Radioactive Materials Management Area and is therefore characterized as a low-level, nonhazardous waste.

Process Number: 374-3-16 **Title:** SLUDGE SOLIDIFICATION
IDC: 337 **Description:** Plastic (Nonhazardous)

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▫ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Plastic (PVC, Teflon, Polyethylene) Wastes Such As Sample Vials, Bottles, Plastic Sheets, Santa Claus Booties, Oak Ridge Booties, Rain Suits, Bags, And Pump Box Plexiglas That Have Not Come In Contact With The Sludge Solidification Process Waste

How the Output is Generated:
Cleanup Activities In The Process Area And Routine Maintenance

Generation Rate:
11 Gallons Monthly

How the Output is Managed:
Nonhazardous plastic is collected in Room 3801 or 3810. Sealed containers are sent to drum assay counter, RTR, and storage pending offsite storage.

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
According to process knowledge, this output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. This output is nonline generated in a Radioactive Materials Management Area and is therefore characterized as a low-level, nonhazardous waste.

Process Number: 374-3-17 **Title:** SLUDGE SOLIDIFICATION
IDC: 438 **Description:** Insulation (Nonhazardous)

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▫ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Insulation Scrap Waste That Is New Or Has Not Been In Contact With Waste From The Sludge Solidification Process

How the Output is Generated:
Cleanup Activities In The Sludge Solidification Area And Routine Maintenance Of Equipment

Generation Rate:
11 Gallons Yearly

How the Output is Managed:
Nonhazardous insulation is collected in Room 3801 or 3810. Sealed containers are sent to the drum assay counter, RTR, and storage pending offsite storage.

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
According to process knowledge, this output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. This output is nonline generated in a Radioactive Materials Management Area and is there characterized as a low-level, nonhazardous waste.

Process Number: 374-3-18 **Title:** SLUDGE SOLIDIFICATION
IDC: 438 **Description:** Insulation (Hazardous)

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes:
F001, F002, F003, F005, F006, F007, F009, F039

Description (Material, Type, Size, Color, etc.):
Insulation That Has Come In Contact With The Liquids From The Sludge Solidification Process

How the Output is Generated:
Cleanup Activities In The Sludge Solidification Area And Routine Maintenance Of Equipment

Generation Rate:
11 Gallons Yearly

How the Output is Managed:
Insulation is collected in a 90-day area, WMU 379 or WMU 2005. Sealed containers are sent to drum assay counter, RTR, then storage pending offsite storage.

Chemicals/Contaminants in or on the Output:
Process Liquid From The Sludge Solidification Process

Characterization Rationale:
This output is characterized using information, based on the same IDC, contained in the Backlog Baseline Book. This output contains listed spent solvents, electroplating wastes, and multi-source leachate. This output is generated in a Radioactive Materials Management Area and may be a mixed, transuranic or low-level waste.

Process Number: 374-3-19 **Title:** SLUDGE SOLIDIFICATION
IDC: 440 **Description:** Glass (Nonhazardous)

- ☐ RCRA Hazardous
- ● RCRA Nonhazardous
- ☐ By Analytical Data
- ■ By Process Knowledge
- ☐ LDR Regulated
- ■ Not LDR Regulated
- ☐ Product
- ☐ High Content Residue
- ☐ Low Content Residue
- ☐ Transuranic
- ■ Low-Level
- ☐ Nonradioactive
- ☐ Source/Special Nuclear Materials
- ☐ Fuel Blending
- ☐ Uncontained Gas
- ☐ RCRA Sample
- ☐ Recyclable Material
- ☐ Recycled/Reused
- ☐ TSCA Reg. Waste
- ☐ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Glass Waste Such As Jars, Sample Vials, Beakers, And Assorted Laboratory Glassware That Has Not Come In Contact With Waste From The Sludge Solidification Process Waste

How the Output is Generated:
Through Breakage And During Routine Process Operations

Generation Rate:
11 Gallons Yearly

How the Output is Managed:
Nonhazardous glass is collected in Room 3801 or 3810. Sealed containers are sent to drum assay counter, RTR, and storage pending offsite storage.

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
According to process knowledge, this output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. This output is nonline generated in a Radioactive Materials Management Area and is therefore characterized as a low-level, nonhazardous waste.

Process Number: 374-3-21 **Title:** SLUDGE SOLIDIFICATION
IDC: 337 **Description:** Hypalon Glovebox Gloves

▫ RCRA Hazardous	▫ Product	▫ Fuel Blending
• RCRA Nonhazardous	▫ High Content Residue	▫ Uncontained Gas
▫ By Analytical Data	▫ Low Content Residue	◘ RCRA Sample
▪ By Process Knowledge	▪ Transuranic	▫ Recyclable Material
▫ LDR Regulated	▪ Low-Level	◘ Recycled/Reused
▪ Not LDR Regulated	▫ Nonradioactive	▫ TSCA Reg. Waste
	▫ Source/Special Nuclear Materials	▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Hypalon glovebox gloves are used for handling process contaminated equipment or materials within a glovebox that encloses the conveyer vacuum drum filter, and cementation process.

How the Output is Generated:
Hypalon glovebox gloves are generated when gloves deteriorate or are scheduled for change.

Generation Rate:
Variable

How the Output is Managed:
Hypalon glovebox gloves are collected in a 55-gallon drum in either Room 3801 Or 3810.

Chemicals/Contaminants in or on the Output:
Incidental Contact With Sludge Solidification Waste

Characterization Rationale:
This output is line generated in a Radioactive Materials Management Area. According to process knowledge, this output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. Therefore, this output may be a nonhazardous, transuranic or low-level waste.

4.0 PROCESS 774-04: PRECIPITATION/FILTRATION

The Precipitation/Filtration Process treats aqueous waste in two stages; removing radioactive contaminants from the waste and solidifying the material as transuranic mixed waste. Building 774 receives transuranic aqueous wastes from production facilities in Building 771. The precipitation process uses various holding tanks, pumps, controllers, valves, heat exchangers, and numerous filters. Figure 4.1 shows the inputs, process flow, and outputs associated with the Precipitation/Filtration Process.

Transfer tanks accumulate the aqueous waste in Building 771. These tanks are sampled for plutonium, americium, and uranium. If the measured levels are below the economic discard limit (EDL) and the nuclear material safety limit (NMSL), the tank contents are transferred into the Building 774 treatment processes.

Sludge from Tank C-1 gravity flows to Tank T-9 (at A, Figure 4.1). Silver recovery effluent and sludge from various tanks in the Basic Liquid Waste Process—Second Stage are pumped to Tank 40 (at B, Figure 4.1). The waste from Tank 40 and Tanks 4L, 4R, and 12 in the Neutralization Process are pumped to Tank 210A (at C, Figure 4.1). Sludge from Tanks T-9 and 210A are then sent to a precoated rotary drum vacuum filter (at D, Figure 4.1) which separates out the solids. The resultant wet sludge is solidified with a mixture of cement and diatomaceous earth at the rotary drum vacuum filter glovebox.

The slurry waste stream is pulled through the filter pad by a vacuum inside the rotating filter drum. A thin layer of filter pad plus solid contaminants from the slurry is continuously scraped from the outside of the filter. The sludge is collected in a 55-gallon drum which contains a rigid polyethylene liner and an inner PVC liner. A Portland cement/diatomite mixture is added to the drum along with the sludge as it collects in the drum. The cement/diatomite is added to the glovebox via a hopper and screw feeder mounted on the outside of the glovebox. The filtrate is recycled back into the first stage precipitation process described in the Basic Liquid Waste Process—First Stage. Gloves, Oil Dri, Kimwipes, towels, and paper coveralls are used for general room cleanup and materials handling. Oil, HEPA filters, valves, pumps, and lines are used for system maintenance.

The resultant solidified sludge is placed in 55-gallon drums and handled as a low-level or transuranic mixed waste; these drums are taken to Room 241. Excess filtrate separated from the solids in the vacuum filter is piped to Tanks 1RF or 1A, to be handled as part of Process 2, Basic Liquid Waste—First Stage. Exhaust air is passed to the building filter plenum system and then to the atmosphere. Nonline dry combustibles, nonline wet combustibles, glovebox gloves, nonhazardous light metal, plenum prefilters, and glovebox filters are put in the appropriate 55-gallon drums. Waste oil is placed in one-gallon plastic jugs and line wet combustibles are placed in 55-gallon drums and sent to the storage unit in Room 241. Hazardous light metal is placed in the appropriate 55-gallon drum. Waste plastic is collected in Room 241, Unit 73. Process Table 774-4 presents the outputs associated with the Precipitation/Filtration process and provides their dispositions and hazardous character.

AutoCAD 12, File Name: 774-4 12/12/94

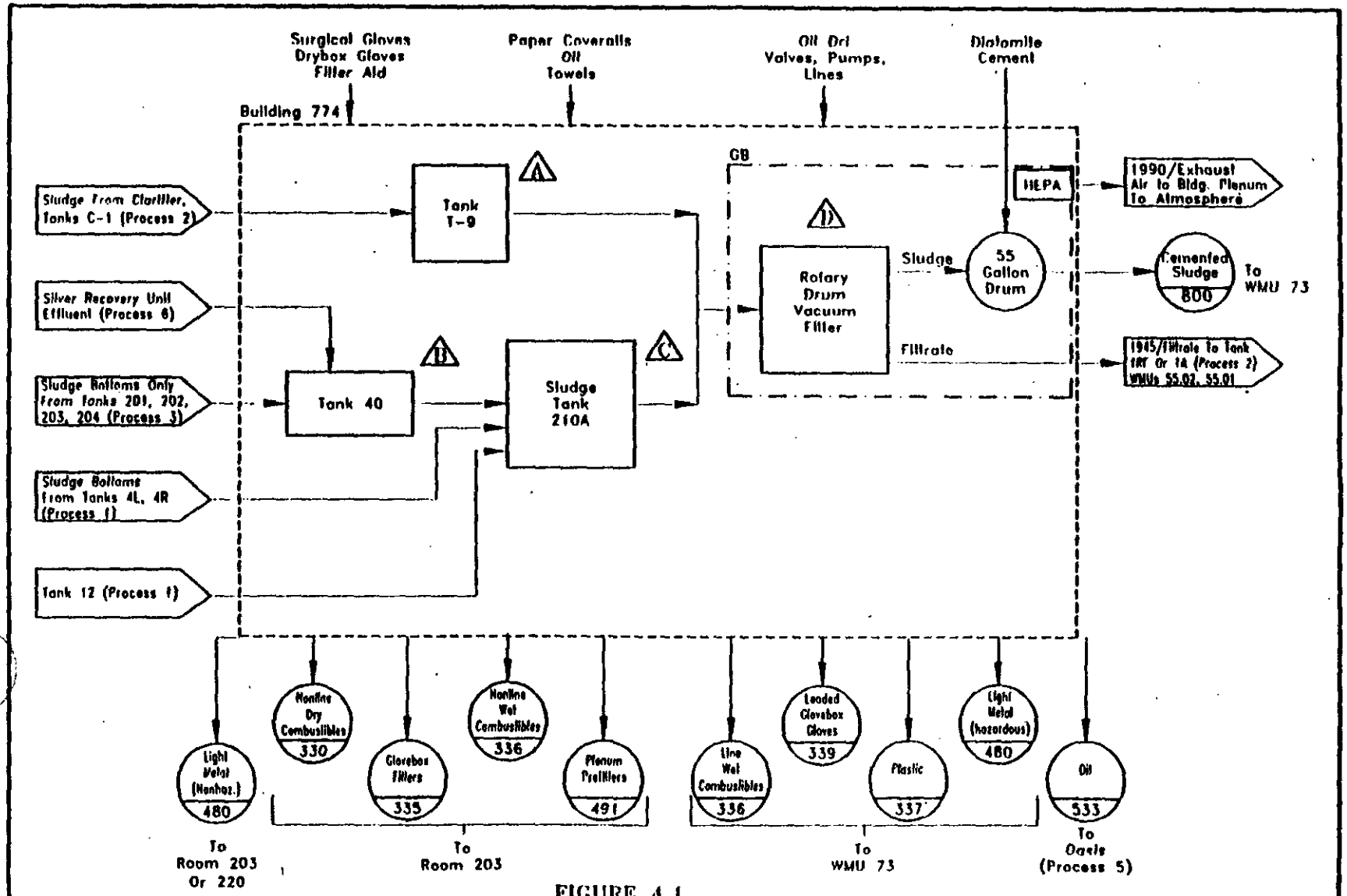

FIGURE 4.1

Rocky Flats Environmental Technology Site Waste Stream & Residue Identification & Characterization	BUILDING 774/PROCESS 4 PRECIPITATION/FILTRATION	Task	By	Date
		Designed	C. Wood	04/23/90
		Drawn	C.B. Grilli	07/14/90
		Checked	T. Horton	12/12/94

PROCESS 774-4 PRECIPITATION/FILTRATION

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-4-1	800	1236	00	NA	Cemented Sludge RCRA Reg. Chemical Constituents: Chromium Silver Non-RCRA Reg. Chemical Constituents: None	WMU 73	YES	YES	YES	Waste	D007, D011
774-4-3	336	1236	00	NA	Line Wet Combustibles RCRA Reg. Chemical Constituents: Chromium Silver Non-RCRA Reg. Chemical Constituents: None	WMU 73	YES	YES	YES	Waste	D007, D011

Process Number	IDC/ WEC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-4.4	339	24	00	NA	Leaded Glovebox Gloves RCRA Reg. Chemical Constituents: *Lead* Non-RCRA Reg. Chemical Constituents: None	WMU 73	YES	YES	YES	Waste	D008
774-4.5	480	00	00	NA	Light Metal (Nonhazardous) RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	Room 203 Or In A Crate In Room 220	YES	NO	NO	DBC	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-4-6	491	00	00	NA	Plenum Prefilters RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	Room 203	YES	NO	NO	Waste	
774-4-7	533	G436	32	4A	Oil RCRA Reg. Chemical Constituents: Corrosive Liquids And Chromium Metal Silver Non-RCRA Reg. Chemical Constituents: Oil (Used)	1-Gallon Plastic Jug WMU 73	YES	YES	YES	Waste	D002, D007, D011

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid. Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-4-8	330	00	00	NA	Nonline Dry Combustibles RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	Room 203	YES	NO	NO	Waste	
774-4-9	1945	G436	00	1A	Filtrate RCRA Reg. Chemical Constituents: Corrosive Liquids And Chromium Metal Silver Non-RCRA Reg. Chemical Constituents: None	WMU 55.01 WMU 55.02	YES	YES	YES	Waste	D002, D007, D011

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical *Constituents*: Non-RCRA Reg. Chemical Constituents:	*Collection*	Solid Waste	RCRA *Hazardous* Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-4-10	335	00	05	NA	Glovebox Filters RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: Base	Drum, Room 203	YES	NO	NO	DBC	
774-4-11	336	00	0205	NA	Nonline Wet Combustibles RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: Acid - General Base	55-Gallon Drum, Room 203	YES	NO	NO	Waste	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-4-13	480	1236	00	NA	Light Metal (Hazardous) RCRA Reg. Chemical Constituents: Chromium Silver Non-RCRA Reg. Chemical Constituents: None	WMU 73	YES	YES	YES	Waste	D007 D011
774-4-14	337	1236	00	NA	Plastic RCRA Reg. Chemical Constituents: Chromium Silver Non-RCRA Reg. Chemical Constituents: None	WMU 73	YES	YES	YES	Waste	D007 D011

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-1 **Title:** PRECIPITATION/FILTRATION
IDC: 800 **Description:** Cemented Sludge

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ● LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: D007, D011

Description (Material, Type, Size, Color, etc.):
Tank Sludge Mixed With Cement And Placed In Plastic Lined 55-Gallon Drums

How the Output is Generated:
Results Of Building 771 Waste Treatment

Generation Rate:
456,000 Pounds Yearly

How the Output is Managed:
The sludge is collected in WMU 73. The drums are sampled then sent to Real Time Radiography (RTR) in Building 664 and evenuually will be shipped offsite for disposal.

Chemicals/Contaminants in or on the Output:
Basic Waste

Characterization Rationale:
This cemented sludge is line generated in a Radioactive Materials Management Area and is always generated as TRU or low-level waste. According to process knowledge, it also exhibits the characteristic of toxicity for chromium and silver. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-3 **Title:** PRECIPITATION/FILTRATION
IDC: 336 **Description:** Line Wet Combustibles

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ● LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: D007, D011

Description (Material, Type, Size, Color, etc.):
Wet Combustibles Include Kimwipes, Rags, And Paper Cloth, And Plastic, These Materials Are Pu Contaminated

How the Output is Generated:
During General Room Cleanup And Materials Handling

Generation Rate:
Insufficient Data

How the Output is Managed:
Line wet combustibles are collected in 55-gallon drums, Room 241, WMU 73, and transferred to the drum counter and RTR.

Chemicals/Contaminants in or on the Output:
Waste, Acids, Or Other Liquids

Characterization Rationale:
These line wet combustibles are line generated in a Radioactive Materials Management Area and are always generated as TRU or low-level waste. According to process knowledge, this output also exhibits the characteristic of toxicity for chromium and silver. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-4 **Title:** PRECIPITATION/FILTRATION
IDC: 339 **Description:** Leaded Glovebox Gloves

■ RCRA Hazardous	▫ Product	▫ Fuel Blending
▫ RCRA Nonhazardous	▫ High Content Residue	▫ Uncontained Gas
■ By Analytical Data	▫ Low Content Residue	▫ RCRA Sample
■ By Process Knowledge	■ Transuranic	▫ Recyclable Material
■ LDR Regulated	■ Low-Level	▫ Recycled/Reused
▫ Not LDR Regulated	▫ Nonradioactive	▫ TSCA Reg. Waste
	▫ Source/Special Nuclear Materials	▫ Evaluated in Another Process

EPA Codes: *D008*

Description (Material, Type, Size, Color, etc.):
Leaded glovebox gloves are used for handling plutonium contaminated equipment. The gloves typically contain up to 50% weight lead.

How the Output is Generated:
These gloves are replaced on a periodic or as-needed basis.

Generation Rate:
2 Drums Yearly

How the Output is Managed:
Glovebox gloves are collected in 55-gallon drums, WMU 73, Room 241, and transferred to the drum counter and RTR.

Chemicals/Contaminants in or on the Output:
Lead

Characterization Rationale:
These leaded glovebox gloves are line generated in a Radioactive Materials Management Area and are always generated as TRU or low-level waste. According to process knowledge, and supported by analytical data (G910049, 93G0191), the gloves also exhibit the characteristics of toxicity for lead. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-5 **Title:** PRECIPITATION/FILTRATION
IDC: 480 **Description:** Light Metal (Nonhazardous)

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▪ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Pumps, Valves, Pipes And Other Materials Require Periodic Replacement

How the Output is Generated:
Replacement Of Pumps, Valves, Pipes And Other Materials

Generation Rate:
3 Drums Yearly

How the Output is Managed:
These materials are collected in 55-gallon drums, in Room 203 or in a crate in room 220, and transferred to the drum counter and RTR.

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
This light metal is line generated in a Radioactive Materials Management Area and is always a transuranic or low-level waste. According to process knowledge, the output has no contact with the RCRA hazardous materials used in this process. Therefore, this output can be a nonhazardous, transuranic or low-level waste. The level of radioactivity will be determined by assay of each collection container.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-6 **Title:** PRECIPITATION/FILTRATION
IDC: 491 **Description:** Plenum Prefilters

▫ RCRA Hazardous	▫ Product	▫ Fuel Blending
■ RCRA Nonhazardous	▫ High Content Residue	▫ Uncontained Gas
▫ By Analytical Data	▫ Low Content Residue	▫ RCRA Sample
■ By Process Knowledge	▫ Transuranic	▫ Recyclable Material
▫ LDR Regulated	■ Low-Level	▫ Recycled/Reused
■ Not LDR Regulated	▫ Nonradioactive	▫ TSCA Reg. Waste
	▫ Source/Special Nuclear Materials	▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Air plenum HEPA prefilters are used in areas with high dust particulate loading in order not to overload building air plenum filters.

How the Output is Generated:
During Plenum Prefilters Replacement

Generation Rate:
24 To 72 Filters Yearly

How the Output is Managed:
Used plenum prefilters are collected and placed in filter 55 gallon drums in Room 203.

Chemicals/Contaminants in or on the Output:
Process Particulates (Building Dust)

Characterization Rationale:
These plenum prefilters are nonline generated in a Radioactive Materials Management Area and can be a low-level waste. According to process knowledge, the output has no contact with the RCRA hazardous materials used in the process. Therefore, it can be a nonhazardous, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-7 **Title:** PRECIPITATION/FILTRATION
IDC: 533 **Description:** Oil

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: D002, D007, D011

Description (Material, Type, Size, Color, etc.):
Small amounts of oil are used by equipment in the Precipitation Process area.

How the Output is Generated:
During Equipment Lubrication

Generation Rate:
4 Gallons Yearly

How the Output is Managed:
Oil is collected in one-gallon plastic jugs and transferred to the OASIS.

Chemicals/Contaminants in or on the Output:
Used Oil

Characterization Rationale:
This oil is line generated in a Radioactive Materials Management Area and is always generated as TRU or low-level waste. According to process knowledge, this output also exhibits the characteristics of corrosivity and toxicity for chromium and silver. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-8 **Title:** PRECIPITATION/FILTRATION
IDC: 330 **Description:** Nonline Dry Combustibles

▫ RCRA Hazardous	▫ Product	▫ Fuel Blending
▪ RCRA Nonhazardous	▫ High Content Residue	▫ Uncontained Gas
▫ By Analytical Data	▫ Low Content Residue	▫ RCRA Sample
▪ By Process Knowledge	▫ Transuranic	▫ Recyclable Material
▫ LDR Regulated	▪ Low-Level	▫ Recycled/Reused
▪ Not LDR Regulated	▫ Nonradioactive	▫ TSCA Reg. Waste
	▫ Source/Special Nuclear Materials	▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Nonline dry combustibles result from the Precipitation/Filtration Process.

How the Output is Generated:
During General Room Cleanup And Materials Handling

Generation Rate:
50 Drums Yearly

How the Output is Managed:
These materials are collected in 55-gallon drums in Room 203, and sent to Room 241.

Chemicals/Contaminants in or on the Output:
Cement And Diatomite

Characterization Rationale:
This output is nonline generated in a Radioactive Materials Management Area, and is known by the generator to always be low-level waste. According to process knowledge, no RCRA hazardous constituents are used in this process, and the output contains no RCRA hazardous constituents, and exhibits no RCRA hazardous characteristics. It is designated as low-level, nonhazardous waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-9 **Title:** PRECIPITATION/FILTRATION
IDC: 1945 **Description:** Filtrate

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: D002, D007, D011

Description (Material, Type, Size, Color, etc.):
The filtrate liquid is the liquid remaining after filtering to remove waste sludge contamination. The filtrate liquid material is recycled back into the first stage Precipitation Process.

How the Output is Generated:
During Waste Sludge Contamination Removal

Generation Rate:
Insufficient Data

How the Output is Managed:
Filtrate is collected in WMU 55.01 and 55.02 and transferred to WMU 55.07.

Chemicals/Contaminants in or on the Output:
Basic Liquid

Characterization Rationale:
This filtrate is line generated in a Radioactive Materials Management Area and is always generated as TRU or low-level waste. According to process knowledge, this output also exhibits the characteristics of corrosivity and toxicity for chromium and silver. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-10 **Title:** PRECIPITATION/FILTRATION
IDC: 335 **Description:** *Glovebox Filters*

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▪ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Air within gloveboxes is vented through high efficiency particulate air filters to remove potential particulate contamination.

How the Output is Generated:
During Glovebox Filters Replacement

Generation Rate:
1-2 Drums Yearly

How the Output is Managed:
Filters are collected in 55-gallon drums, Room 203 and transferred to the drum counter and RTR.

Chemicals/Contaminants in or on the Output:
Process Particulates

Characterization Rationale:
These glovebox filters are a solid form waste contaminated with basic liquid. Although this basic liquid is known to be corrosive under RCRA, it cannot exhibit the characteristic in this case because the waste form is not liquid. Therefore, the output can be a nonhazardous, transuranic or low-level waste, and the level of radioactivity will be determined by assay of each collection container. This output is generated in a Radioactive Materials Management Area.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-11 **Title:** PRECIPITATION/FILTRATION
IDC: 336 **Description:** Nonline Wet Combustibles

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▫ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Nonline Wet Combustibles Include Gloves, Kimwipes, Towels, And Paper Coveralls

How the Output is Generated:
During General Room Cleanup And Materials Handling

Generation Rate:
Variable

How the Output is Managed:
Placed In A 55-Gallon Drum In Room 203, And Sent To Room 241

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
These nonline wet combustibles are a solid form waste contaminated with acids and bases. Although these acids and bases are known to be corrosive liquid under RCRA, they cannot exhibit the characteristic in this case because the waste form is not liquid. This output is generated in a Radioactive Materials Management Area and can be a nonhazardous, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-13 **Title:** PRECIPITATION/FILTRATION
IDC: 480 **Description:** Light Metal (Hazardous)

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: D007, D011

Description (Material, Type, Size, Color, etc.):
Pumps, valves, pipes and other materials require periodic replacement. Contaminated spent parts constitute line light metal.

How the Output is Generated:
Replacement Of Pumps, Valves, Pipes And Other Materials

Generation Rate:
3 Drums Yearly

How the Output is Managed:
These materials are collected in 55-gallon drums, WMU 73, Room 241 and transferred to the drum counter and RTR.

Chemicals/Contaminants in or on the Output:
Corrosive Sludge From Process

Characterization Rationale:
This light metal is line generated in a Radioactive Materials Management Area and is always generated as TRU or low-level waste. According to process knowledge, this output also exhibits the characteristic of toxicity for chromium and silver. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-4-14 **Title:** PRECIPITATION/FILTRATION
IDC: 337 **Description:** Plastic

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: D007, D011

Description (Material, Type, Size, Color, etc.):
Supplied Air Suits, Gloves, Booties

How the Output is Generated:
During Routine Process Operations

Generation Rate:
25 Pounds Yearly

How the Output is Managed:
Placed In A 55-Gallon Drum, Room 241, WMU 73

Chemicals/Contaminants in or on the Output:
Solvents

Characterization Rationale:
This plastic is line generated in a Radioactive Materials Management Area and is always generated as TRU or low-level waste. According to process knowledge, the output also exhibits the characteristic of toxicity for chromium and silver. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

5.0 PROCESS 774-05: OASIS

The Organic and Sludge Immobilization System (OASIS) Process accepts waste oils from any building at the Rocky Flats Environmental Technology Site which contain transuranic material, combines the waste with emulsifier, Envirostone and accelerator, and solidifies the mixture for transport in drums. The waste oil primarily comes from Buildings 707, 776, and 777. The OASIS process uses various holding tanks, pumps, controllers, valves, and mixers. Figure 5.1 shows the inputs, process flow, and outputs associated with the OASIS Process.

Waste oil being transferred from Buildings 707, 776, and 777 is stored in Tanks T-13 and T-14 (at A, Figure 5.1). A third tank, T-374A, has been used in the past to store feed to this system; however, this tank has been tagged out, and there are no plans for future use. From Tanks T-13 and T-14, the waste oil is pumped to the OASIS mixer (at B, Figure 5.1). The pump is enclosed in a small glovebox. Waste oil, water, emulsifier, Envirostone, and accelerator (to speed up the setting process) are mixed in a 55-gallon drum attached to the bottom of the glovebox. The waste is then sampled for plutonium, americium, and uranium. After the mixture has set, the drum is moved to Room 241 for storage. Surgical gloves, Kimwipes, tape, plastic, paper, and coveralls are used for general room cleanup and materials handling.

After a sufficient number of drums have accumulated in Room 241, (including waste drums not associated with the OASIS process), the waste is sent to RTR. Glovebox exhaust is discharged to the main HEPA filter plenum in Room 341. In addition to the solidified waste oil, outputs from the OASIS process include glovebox filters and metal. These wastes are put in the appropriate 55-gallon drums or crates in Rooms 203 or 220, then sent to Building 371 or 776 for counting. Leaded glovebox gloves are collected in a drum in Unit 73. Line and nonline-generated combustibles such as tape, plastic, Kimwipes, paper, and contaminated coveralls are generated throughout the building, collected in a 55-gallon drum, and placed in Rooms 210 or 203. Plastic is accumulated in Unit 73. Sanitary trash (packaging waste) is placed in a dumpster adjacent to the powder shed. Process Table 774-5 presents the outputs associated with OASIS and provides their dispositions and hazardous character.

AutoCAD 12, File Name: 774-5 12/12/94

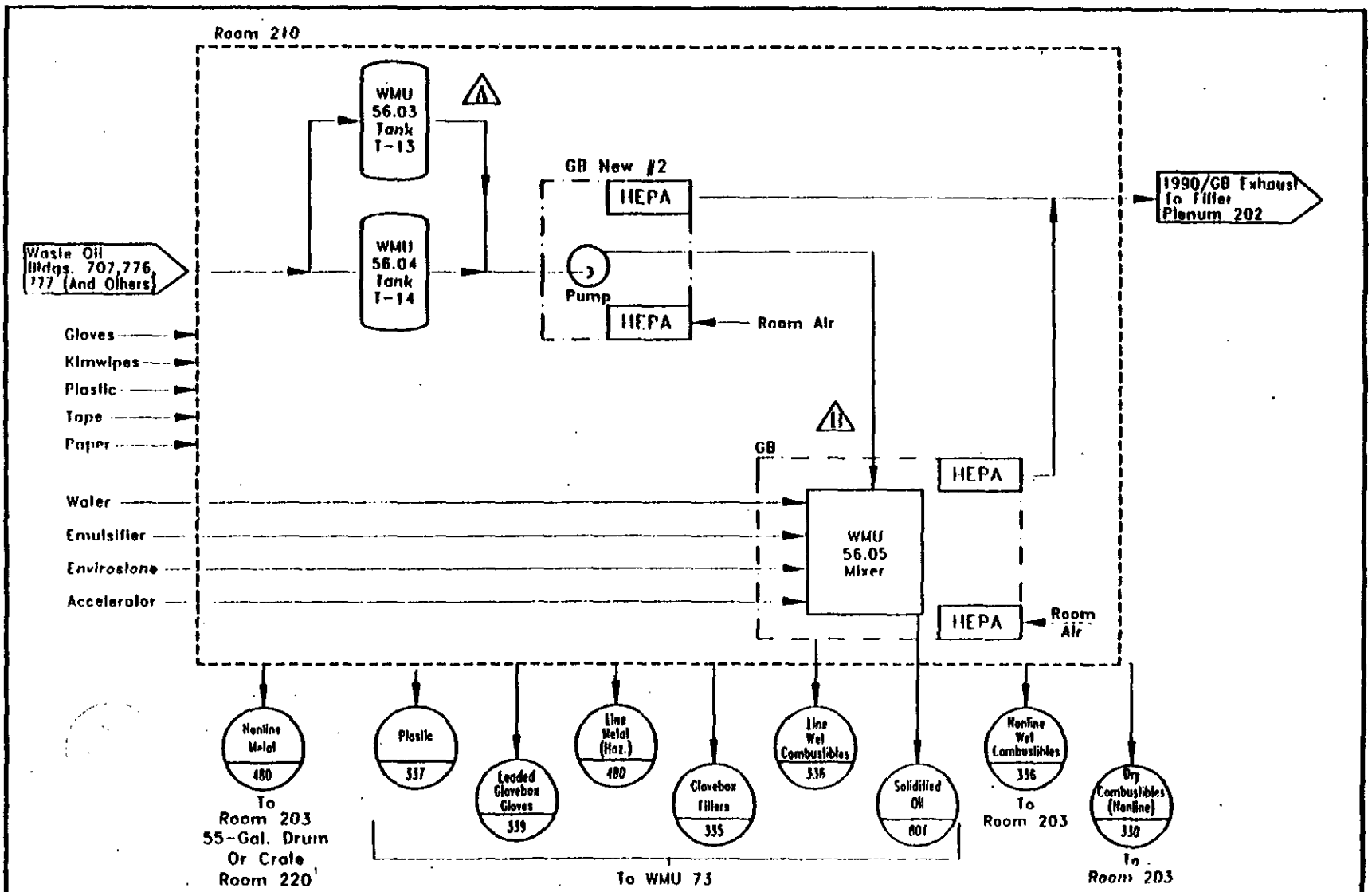

FIGURE 5.1

Rocky Flats Environmental Technology Site Waste Stream & Residue Identification & Characterization	BUILDING 774/PROCESS 5 OASIS	Task		Date
		Designed	D. Gelston	04/19/90
		Drawn	J.D. Sikora	07/19/90
		Checked	T. Horton	12/12/94

PROCESS 774-5 OASIS

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-5-1	801	B1	32	NA	Solidified Oil RCRA Reg. Chemical Constituents: Freon TF, Carbon Tetrachloride, 1,1,1-Trichloroethane, Lead, Chromium, Cadmium Non-RCRA Reg. Chemical Constituents: Oil (Used)	WMU 73	YES	YES	YES	Waste	F001, F002

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-5-2	339	I7	32	NA	Leaded Glovebox Gloves RCRA Reg. Chemical Constituents: OASIS Liquid/Solidified Liquid Containing Oil, Freon TF, Carbon Tetrachloride And 1,1,1-Trichloroethane Non-RCRA Reg. Chemical Constituents: Oil (Used)	WMU 73	YES	YES	YES	Waste	D008, F001, F002
774-5-3	335	B1	32	NA	Glovebox Filters RCRA Reg. Chemical Constituents: Freon TF, Carbon Tetrachloride, 1,1,1-Trichloroethane, Lead, Chromium, Cadmium Non-RCRA Reg. Chemical Constituents: Oil (Used)	WMU 73	YES	YES	YES	Waste	F001, F002

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Code
774-5-4	480	B1	32	NA	Line Metal (Hazardous) RCRA Reg. Chemical Constituents: Freon TF, Carbon Tetrachloride, 1,1,1-Trichloroethane, Lead, Chromium, Cadmium Non-RCRA Reg. Chemical Constituents: Oil (Used)	WMU 73	YES	YES	YES	Waste	F001 F002
774-5-6	336	B1	32	NA	Nonline Wet Combustibles RCRA Reg. Chemical Constituents: Freon TF, Carbon Tetrachloride, 1,1,1-Trichloroethane, Lead, Chromium, Cadmium Non-RCRA Reg. Chemical Constituents: Oil (Used)	WMU 73	YES	YES	YES	Waste	F001 F002

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-5-7	336	BJ	32	NA	Line Wet Combustibles RCRA Reg. Chemical Constituents: Freon TF, Carbon Tetrachloride, 1,1,1-Trichloroethane, Lead, Chromium, Cadmium Non-RCRA Reg. Chemical Constituents: Oil (Used)	WMU 73	YES	YES	YES	Waste	F001, F002
774-5-11	480	00	00	NA	Nonline Metal RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum	YES	NO	NO	Waste	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Code
774-5-12	337	B1	32	NA	Plastic RCRA Reg. Chemical Constituents: Freon TF, Carbon Tetrachloride, 1,1,1-Trichloroethane, Lead, Chromium, Cadmium Non-RCRA Reg. Chemical Constituents: Oil (Used)	WMU 73	YES	YES	YES	Waste	F001 F002
774-5-13	330	00	00	NA	Dry Combustibles RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: *None*	55-Gallon Drum	YES	NO	NO	Waste	

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-5-1 **Title:** OASIS
IDC: 801 **Description:** Solidified Oil

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated

- ■ Product
- ■ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials

- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- ■ Recyclable Material
- ■ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: F001, F002

Description (Material, Type, Size, Color, etc.):
Oils from Buildings 707, 776, and 777 (as well as other buildings) are transferred by pipeline to Tanks T-13 and T-14 and are solidified during the process.

How the Output is Generated:
During OASIS Process

Generation Rate:
600 Drums Yearly

How the Output is Managed:
Solidified oil is collected in 55-gallon drums and stored in Room 241, WMU 73.

Chemicals/Contaminants in or on the Output:
Oil, Emulsifier, Envirostone, And Accelerator

Characterization Rationale:
This solidified oil is nonline generated in a Radioactive Materials Management Area and is always generated as TRU or low-level waste. According to process knowledge, this output contains spent halogenated solvents and therefore the output meets the definition of an F-listed waste. It also exhibits the characteristic of toxicity for carbon tetrachloride. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-5-2 **Title:** OASIS
IDC: 339 **Description:** Leaded Glovebox Gloves

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- ● By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- ◘ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: D008, F001, F002

Description (Material, Type, Size, Color, etc.):
Leaded gloves are used in gloveboxes to handle plutonium contaminated material.

How the Output is Generated:
During Materials Handling For OASIS Process

Generation Rate:
1 Drum Yearly

How the Output is Managed:
Gloves are collected in drums in Room 241, WMU 73.

Chemicals/Contaminants in or on the Output:
Lead

Characterization Rationale:
These leaded glovebox gloves are line generated in a Radioactive Materials Management Area and are never generated as a residue. According to process knowledge, and supported by analytical data (G910049, 93G0191), this output contains lead and exhibits the characteristic of toxicity. The gloves contain Freon TF, carbon tetrachloride, and 1,1,1-trichloroethane, which means the output also meets the definition of an F-listed waste. Therefore, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-5-3 **Title:** OASIS
IDC: 335 **Description:** Glovebox Filters

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ● Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- ■ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: F001, F002

Description (Material, Type, Size, Color, etc.):
High efficiency particulate air filters remove particulates from air exhausted from the glovebox.

How the Output is Generated:
During Filter Replacement

Generation Rate:
4 Drums Yearly

How the Output is Managed:
The used filters are collected in 55-gallon drums (WMU 73) in Room 241.

Chemicals/Contaminants in or on the Output:
Process Particulates

Characterization Rationale:
These glovebox filters are line generated in a Radioactive Materials Management Area and are always generated as TRU or low-level waste. Using information, based on the same IDC, contained in the Backlog Baseline Book (10/21/94), the output contains spent halogenated solvents wastes and therefore the output meets the definition of an F-listed waste. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-5-4 **Title:** OASIS
IDC: 480 **Description:** Line Metal (Hazardous)

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- ■ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: F001, F002

Description (Material, Type, Size, Color, etc.):
Metal includes light metal scraps from glovebox operations and maintenance activities.

How the Output is Generated:
During General Room/Process Maintenance Activities

Generation Rate:
4 Drums Yearly

How the Output is Managed:
Light metal scraps are collected in 55-gallon drums (WMU 73) in Room 241, if generated in the line.

Chemicals/Contaminants in or on the Output:
Oil, Emulsifier, Envirostone, And Accelerator

Characterization Rationale:
This line metal is line generated in a Radioactive Materials Management Area and is always generated as TRU or low-level waste. According to process knowledge, the output contains spent halogenated solvents and therefore the output meets the definition of an F-listed waste. It also exhibits the characteristic of toxicity for carbon tetrachloride. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-5-6 **Title:** OASIS
IDC: 336 **Description:** Nonline Wet Combustibles

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- □ Transuranic
- ■ Low-Level
- ● Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: F001, F002

Description (Material, Type, Size, Color, etc.):
Nonline generated soft waste includes Kimwipes, tape and other materials generated throughout the building.

How the Output is Generated:
During General Cleanup And Working In Glovebox

Generation Rate:
240 Drums Yearly

How the Output is Managed:
Nonline generated soft waste is collected in 55-gallon drums in Room 203.

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
These nonline wet combustibles are nonline generated in a Radioactive Materials Management Area, and are always generated as nonradioactive or low-level waste. According to process knowledge, this output contains spent halogenated solvents and therefore the output meets the definition of an F-listed waste. Consequently, this output is a mixed, low-level or nonradioactive, hazardous waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-5-7 **Title:** OASIS
IDC: 336 **Description:** Line Wet Combustibles

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- ■ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- ■ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: F001, F002

Description (Material, Type, Size, Color, etc.):
Line generated soft waste includes Kimwipes, tape, and other materials generated within the glovebox.

How the Output is Generated:
During OASIS Process And Cleanup

Generation Rate:
50 Drums Yearly

How the Output is Managed:
Line generated soft waste is collected in 55-gallon drums (WMU 73) in Room 241.

Chemicals/Contaminants in or on the Output:
Oil, Emulsifier, Envirostone, And Accelerator

Characterization Rationale:
These line wet combustibles are line generated in a Radioactive Materials Management Area, and are always generated as TRU or low-level waste. According to process knowledge, the output contains spent halogenated solvents and therefore the output meets the definition of an F-listed waste. Consequently, this output is a mixed, transuranic or mixed, low-level waste. The level of radioactivity will be determined by assay of each collection container.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-5-11 **Title:** OASIS
IDC: 480 **Description:** Nonline Metal

- ▫ RCRA Hazardous
- ● RCRA Nonhazardous
- ▫ By Analytical Data
- ■ By Process Knowledge
- ▫ LDR Regulated
- ● Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▫ Transuranic
- ■ Low-Level
- ● Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Nonline Generated Metal

How the Output is Generated:
During Routine Room/Process Maintenance Operations

Generation Rate:
Insufficient Data

How the Output is Managed:
Collected In 55-Gallon Drum In Room 203

Chemicals/Contaminants in or on the Output:
Unknown

Characterization Rationale:
This nonline metal is nonline generated in a Radioactive Materials Management Area and can be a low-level or nonradioactive waste. According to process knowledge, the output has no contact with the RCRA hazardous materials used in the process. Therefore, it can be a nonhazardous, low-level or a nonradioactive waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-5-12 **Title:** OASIS
IDC: 337 **Description:** Plastic

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: F001, F002

Description (Material, Type, Size, Color, etc.):
Supplied Air Suits, Gloves, Booties

How the Output is Generated:
During Routine Process Operations

Generation Rate:
25 Pounds Yearly

How the Output is Managed:
Placed In A 55-Gallon Drum, WMU 73

Chemicals/Contaminants in or on the Output:
Oasis, Solvents

Characterization Rationale:
This plastic is line generated in a Radioactive Materials Management Area, and is always generated as TRU or low-level waste. According to process knowledge, the output contains spent halogenated solvents and therefore the output meets the definition of an F-listed waste. Consequently, this output is a mixed, transuranic or mixed, low-level waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-5-13 **Title:** OASIS
IDC: 330 **Description:** Dry Combustibles

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated

- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▫ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials

- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Kimwipes, Rags, Dry Combustibles

How the Output is Generated:
During Routine Operations

Generation Rate:
Variable

How the Output is Managed:
Placed In A 55-Gallon Drum In Room 203

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
This output is nonline generated in a Radioactive Materials Management Area, and is known by the generator to always be low-level waste. According to process knowledge, no RCRA hazardous constituents are used in this process, and the output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. It is designated as low-level, nonhazardous waste.

9.0 PROCESS 774-09: MISCELLANEOUS WASTE HANDLING

The cementation of aqueous waste is carried out during the Miscellaneous Waste Handling process. Waste is primarily generated through processes in Buildings 559, 771, and 371. Aqueous waste containing complexing agents detrimental to the radioactive decontamination process and containing certain radioactive isotopes or hazardous chemicals undesirable in the regular waste system are entered into the solidification process. The bulk of these wastes are received as package shipments. Figure 9.1 shows the inputs, process flow, and outputs to be associated with the Miscellaneous Waste Handling Process.

Specially prepared waste shipping drums, containing a mixture of Portland cement and an absorbent material, are attached by O-ring drum liner to the solidification glovebox, No. 4. All waste are basic before placement in the drums.

Packaged waste received in plastic bottles are entered via bag-in operations into the glovebox. The bottles containing acid waste are emptied by vacuum into receiver and neutralizer Tank T-7, adjacent to the glovebox. Sodium hydroxide reagent is added until the color indicator shows the contents of the tank to be basic. The neutralized waste is then drained by gravity back into the glovebox. There, a connecting hose directs the waste into the prepared drum. A maximum of 80 liters of basic waste solution can be added to the prepared drum. Solutions are verified basic by checking with pH paper. The cement chemically reacts with the waste solution to form a solid.

Basic bottled waste enters the glovebox to be poured directly into the prepared drum. The empty bottles are discarded into a shipping drum attached to the glovebox. Highly concentrated chloride wastes received from Building 771 Recovery Operations by pipeline into Tank 7 are neutralized (as described earlier) and drained into the prepared drum(s).

The filled shipping drums are separated from the glovebox by the standard bag cut procedure. This generates line plastic, cemented solids, glovebox gloves, dry combustibles and glovebox HEPA filters. The 55-gallon sludge drums containing cemented solids from the Unit 57 glovebox are taken to Room 241, then to the RTR unit to determine if there are any free liquids present. These drums are then stored as transuranic-mixed waste or straight TRU drums. Glovebox HEPA filters are placed in the appropriate 55-gallon drum in Rooms 203 or 241. Plastic bottles are also placed in a 55-gallon drum in Room 203. Light metal (hazardous) is placed in WMU 73, light metal (non hazardous) is placed in a 55-gallon drum, or crate and sent to room 203 or 220. Glovebox gloves are placed in a storage area. Dry combustibles are also sent to Room 203. Glovebox exhaust is vented through the building filter plenum. Process Table 774-9 presents the outputs associated with the Miscellaneous Waste Handling Process and provides their dispositions and hazardous character.

AutoCAD 12, File Name: 774-9 03/14/95

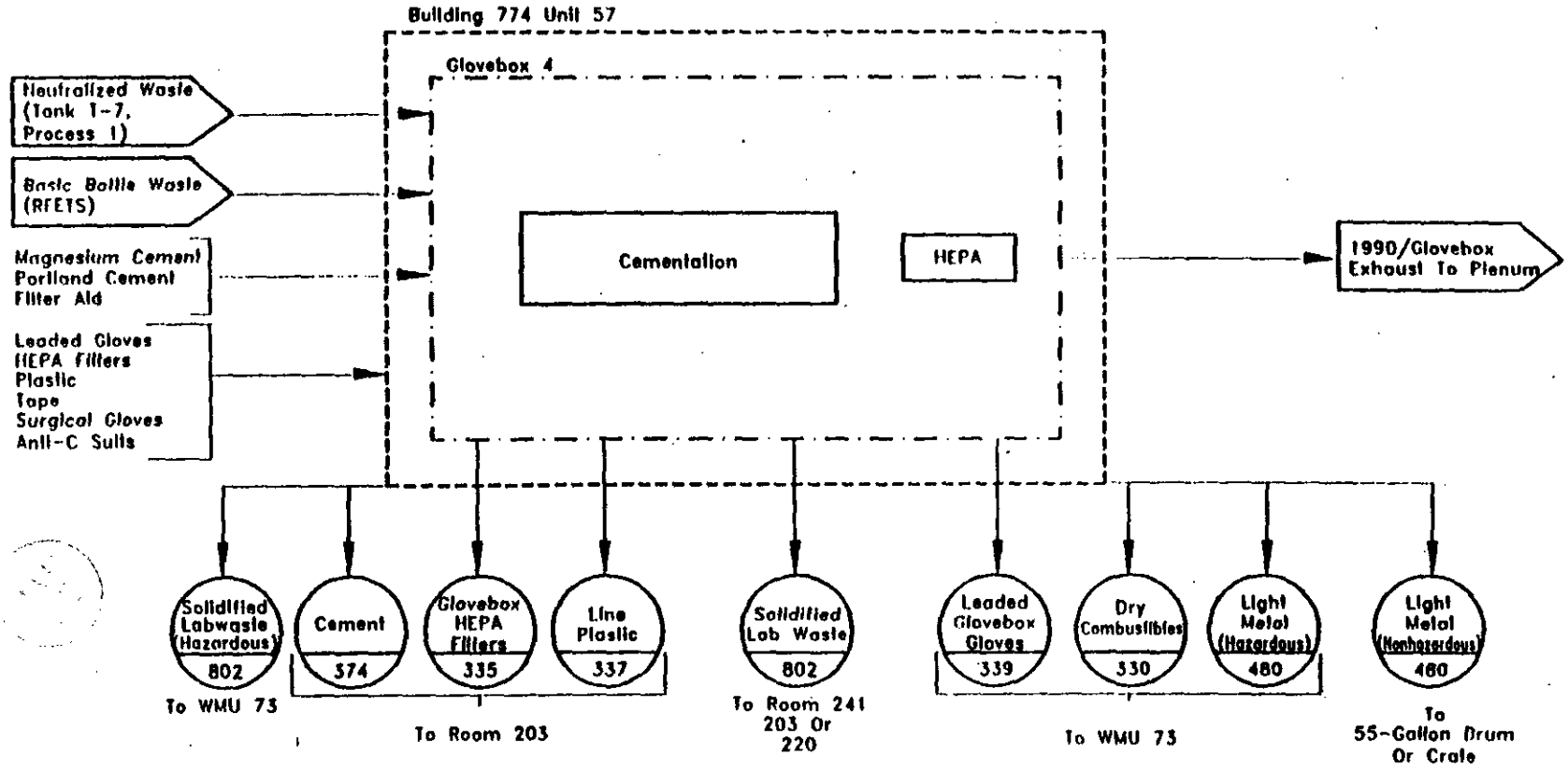

FIGURE 9.1

Rocky Flats Environmental Technology Site Waste Stream & Residue Identification & Characterization	BUILDING 774/PROCESS 9 MISCELLANEOUS WASTE HANDLING	Task	By	Date
		Designed	J. Johnson	08/07/92
		Drawn	B. Crawford	03/14/95
		Checked	J. Joyce	03/14/95

PROCESS 774-9 MISCELLANEOUS WASTE HANDLING

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-9-1	335	00	00	NA	Glovebox HEPA Filters RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum, Room 203	YES	NO	NO	Waste	
774-9-2	337	00	0205	NA	Line Plastic RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: Acid - General Base	55-Gallon Drum, Room 203	YES	NO	NO	Waste	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-9-3	339	24	00	NA	Leaded Glovebox Gloves RCRA Reg. Chemical Constituents: Lead Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum WMU 73	YES	YES	YES	Waste	D008
774-9-4	802	00	00	NA	Solidified Lab Waste (Unit 57) Nonhazardous RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum	YES	NO	NO	Waste	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-9-6	330	00	00	NA	Dry Combustibles RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum, Room 203	YES	NO	NO	Waste	
774-9-8	374	00	00	NA	Cement RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum	YES	NO	NO	Waste	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-9-9	480	1236	00	NA	Light Metal (Hazardous) RCRA Reg. Chemical Constituents: Chromium Silver Non-RCRA Reg. Chemical Constituents: None	WMU 73	YES	YES	YES	Waste	D007, D011
774-9-10	480	00	00	NA	Light Metal (Nonhazardous) RCRA Reg. Chemical Constituents: None Non-RCRA Reg. Chemical Constituents: None	55-Gallon Drum Or Crate In Room 203 Or 220	YES	NO	NO	Waste	

Process Number	IDC/ WFC Number	CCCs RCRA Reg. Const.	CCCs Non-RCRA Reg. Const.	Comp. Codes	Description RCRA Reg. Chemical Constituents: Non-RCRA Reg. Chemical Constituents:	Collection	Solid Waste	RCRA Hazardous Waste	RCRA-Land Disposal Restricted (Part 268)	Output Category	EPA Codes
774-9-11	802	??	00	NA	Solidified Lab Waste (Unit 57)(Hazardous) RCRA Reg. Chemical Constituents: Constituents vary and will be determined on a case-by-case basis. Non-RCRA Reg. Chemical Constituents: None	WMU 73	YES	YES	YES	Waste	See Rationale

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-9-1 **Title:** MISCELLANEOUS WASTE HANDLING
IDC: 335 **Description:** Glovebox HEPA Filters

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▪ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Glovebox HEPA filters are inlet and outlet filters associated with Glovebox Unit 57.

How the Output is Generated:
During Waste Solidification Routine Operations

Generation Rate:
500 Pounds Yearly

How the Output is Managed:
Glovebox filters are placed in 55-gallon drums in Rooms 203 or 241.

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
These HEPA filters are line generated but are always a transuranic or low-level waste. According to process knowledge, the output has no contact with the RCRA hazardous materials used in this process. Therefore, this output can be a nonhazardous, transuranic or low-level waste. The level of radioactivity will be determined by assay of each collection container.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-9-2 **Title:** MISCELLANEOUS WASTE HANDLING
IDC: 337 **Description:** Line Plastic

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▪ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Bottles Which Formerly Contained Basic Or Acid Waste Or Spent Halogenated Solvents

How the Output is Generated:
When Bottles Are Emptied Into Tank T-7 Or Into Glovebox

Generation Rate:
Insufficient Data

How the Output is Managed:
Empty Bottles Are Placed In A 55-Gallon Drum In Room 203

Chemicals/Contaminants in or on the Output:
Traces Of Basic, Acid Waste Solution, Or Spent Halogenated Solvents

Characterization Rationale:
This line plastic is a solid form waste contaminated with bases and acids. Although these liquids are known to be corrosive under RCRA, they cannot exhibit the characteristic in this case because the waste form is not liquid. The output is line generated in a Radioactive Materials Management Area and can, therefore, be a nonhazardous, TRU or low-level waste. The level of radioactivity will be determined by assay of each collection container.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-9-3 **Title:** MISCELLANEOUS WASTE HANDLING
IDC: 339 **Description:** *Leaded Glovebox Gloves*

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- ■ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated

- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ● Low-Level
- ■ Nonradioactive
- □ Source/Special Nuclear Materials

- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: D008

Description (Material, Type, Size, Color, etc.):
Leaded glovebox gloves are used to protect operating personnel.

How the Output is Generated:
During Cementation Of Neutralized Waste Solutions

Generation Rate:
50 Pounds Yearly

How the Output is Managed:
Placed In A 55-Gallon Drum WMU 73, Room 241

Chemicals/Contaminants in or on the Output:
Lead

Characterization Rationale:
These leaded glovebox gloves are line generated in a Radioactive Materials Management Area and are never generated as a residue. According to process knowledge, and supported by analytical data (G910049, 93G0191), this output contains lead and exhibits the characteristic of toxicity. They are therefore, a mixed, transuranic or mixed, low-level waste. The level of radioactivity will be determined by assay of each collection container.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-9-4 **Title:** MISCELLANEOUS WASTE HANDLING
IDC: 802 **Description:** Solidified Lab Waste (Unit 57) Nonhazardous

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▪ By Analytical Data
- ▫ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▪ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Magnesium And Portland Cement, Solidified Sludge

How the Output is Generated:
Produced During Treatment Of Aqueous Waste

Generation Rate:
14000 Pounds Yearly

How the Output is Managed:
Placed In 55-Gallon Drums, Sent To Room 241, Then To RTR To Determine Presence Of Free Liquids

Chemicals/Contaminants in or on the Output:
Aqueous Waste, Magnesium Cement, And Filter Aid

Characterization Rationale:
This solidified lab waste is characterized as nonhazardous per analytical data, sample numbers 94S0227, 94S0228, and 94S0229. This output is line generated in a Radioactive Materials Management Area and can be a low-level or transuranic waste. The level of radioactivity will be determined by assay of each collection container.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-9-6 **Title:** MISCELLANEOUS WASTE HANDLING
IDC: 330 **Description:** Dry Combustibles

- ☐ RCRA Hazardous
- ■ RCRA Nonhazardous
- ☐ By Analytical Data
- ■ By Process Knowledge
- ☐ LDR Regulated
- ■ Not LDR Regulated
- ☐ Product
- ☐ High Content Residue
- ☐ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- ☐ Nonradioactive
- ☐ Source/Special Nuclear Materials
- ☐ Fuel Blending
- ☐ Uncontained Gas
- ☐ RCRA Sample
- ☐ Recyclable Material
- ☐ Recycled/Reused
- ☐ TSCA Reg. Waste
- ☐ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Dry Combustibles

How the Output is Generated:
During Routine Process Cleanup Operations

Generation Rate:
Variable

How the Output is Managed:
Collected In A 55-Gallon Drum In Room 203

Chemicals/Contaminants in or on the Output:
Neutralized Acid/Base Waste, Reagents

Characterization Rationale:
These dry combustibles are nonline generated in a Radioactive Materials Management Area and are always generated as low-level or nonradioactive waste. According to process knowledge, the output has no contact with the RCRA hazardous materials used in this process. Therefore, this output can be a nonhazardous, transuranic or low-level waste. The level of radioactivity will be determined by assay of each collection container.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-9-8 **Title:** MISCELLANEOUS WASTE HANDLING
IDC: 374 **Description:** Cement

▫ RCRA Hazardous	▫ Product	▫ Fuel Blending
• RCRA Nonhazardous	▫ High Content Residue	▫ Uncontained Gas
▫ By Analytical Data	▫ Low Content Residue	▫ RCRA Sample
• By Process Knowledge	▪ Transuranic	▫ Recyclable Material
▫ LDR Regulated	• Low-Level	▫ Recycled/Reused
• Not LDR Regulated	▫ Nonradioactive	▫ TSCA Reg. Waste
	▫ Source/Special Nuclear Materials	▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Cement

How the Output is Generated:
During Solidification Process

Generation Rate:
Variable

How the Output is Managed:
Placed In A 55-Gallon Drum, Then Sent To Room 203

Chemicals/Contaminants in or on the Output:
Cement

Characterization Rationale:
This output is line generated in a Radioactive Materials Management Area, but is never generated as a residue. According to process knowledge, no RCRA hazardous constituents are used in this process, and the output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. Therefore, the output can be a nonhazardous, transuranic or low-level waste. The level of radioactivity will be determined by assay of each collection container.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-9-9 **Title:** MISCELLANEOUS WASTE HANDLING
IDC: 480 **Description:** Light Metal (Hazardous)

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- □ By Analytical Data
- ■ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ● Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: D007, D011

Description (Material, Type, Size, Color, etc.):
Light Metal

How the Output is Generated:
During Routine Operations

Generation Rate:
Variable

How the Output is Managed:
Placed In WMU 73

Chemicals/Contaminants in or on the Output:
Chromium And Silver

Characterization Rationale:
This light metal is line generated in a Radioactive Materials Management Area and is generated as TRU or low level waste. According to process knowledge, the output also exhibits the characteristic of toxicity for chromium and silver. The output is characterized as a mixed, TRU or mixed, low-level waste. The level of radioactivity will be determined by assay of each container.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-9-10 **Title:** MISCELLANEOUS WASTE HANDLING
IDC: 480 **Description:** Light Metal (Nonhazardous)

- ▫ RCRA Hazardous
- ▪ RCRA Nonhazardous
- ▫ By Analytical Data
- ▪ By Process Knowledge
- ▫ LDR Regulated
- ▪ Not LDR Regulated
- ▫ Product
- ▫ High Content Residue
- ▫ Low Content Residue
- ▫ Transuranic
- ▪ Low-Level
- ▫ Nonradioactive
- ▫ Source/Special Nuclear Materials
- ▫ Fuel Blending
- ▫ Uncontained Gas
- ▫ RCRA Sample
- ▫ Recyclable Material
- ▫ Recycled/Reused
- ▫ TSCA Reg. Waste
- ▫ Evaluated in Another Process

EPA Codes:

Description (Material, Type, Size, Color, etc.):
Light Metal

How the Output is Generated:
During Routine Operations

Generation Rate:
Variable

How the Output is Managed:
Placed In A 55-Gallon Drum Or Crate And Stored In Room 203 Or In 220

Chemicals/Contaminants in or on the Output:
None

Characterization Rationale:
This output is nonline generated in a Radioactive Materials Management Area, and is known by the generator to always be low-level waste. According to process knowledge, no RCRA hazardous constituents are used in this process, and the output contains no RCRA hazardous constituents and exhibits no RCRA hazardous characteristics. It is designated as low-level, nonhazardous waste.

WASTE STREAM AND RESIDUE DESCRIPTION AND CHARACTERIZATION

Process Number: 774-9-11 **Title:** MISCELLANEOUS WASTE HANDLING
IDC: 802 **Description:** Solidified Lab Waste (Unit 57) (Hazardous)

- ■ RCRA Hazardous
- □ RCRA Nonhazardous
- ■ By Analytical Data
- □ By Process Knowledge
- ■ LDR Regulated
- □ Not LDR Regulated
- □ Product
- □ High Content Residue
- □ Low Content Residue
- ■ Transuranic
- ■ Low-Level
- □ Nonradioactive
- □ Source/Special Nuclear Materials
- □ Fuel Blending
- □ Uncontained Gas
- □ RCRA Sample
- □ Recyclable Material
- □ Recycled/Reused
- □ TSCA Reg. Waste
- □ Evaluated in Another Process

EPA Codes: See Rationale

Description (Material, Type, Size, Color, etc.):
Magnesium And Portland Cement - Solidified Sludge

How the Output is Generated:
Produced During Treatment Of Aqueous Waste

Generation Rate:
Variable

How the Output is Managed:
Placed In 55-Gallon Drums, In Room 241, 203, 220

Chemicals/Contaminants in or on the Output:
Aqueous Waste

Characterization Rationale:
This solidified lab waste is characterized as hazardous. The EPA codes have not been identified because the chemicals involved in this process vary considerably in composition and characteristics; therefore, the appropriate codes will be assigned on a case-by-case basis, depending on analytical data. The chemical constituent code (??) is to be replaced by the acnual numeric or alphanumeric constituent code on the drum traveler. This output is line generated in a Radioactive Materials Management Area and can be a low level or TRU, mixed waste.