SOLID WASTE MANAGEMENT UNIT ASSESSMENT REPORT FOR THE PIT 39 NEWLY IDENTIFIED AREA OF CONCERN

INTRODUCTION

On January 4, 2013, the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) notified the New Mexico Environment Department (NMED) of a newly identified area of concern (AOC), Pit 39.

DOE/LANS recently performed an extent-of-condition review regarding bulk low-level waste (LLW) disposal operations at Technical Area 54 (TA-54). During this review, waste characterization and disposal records were evaluated to determine if any mixed wastes that would be subject to regulation under the March 2005 Compliance Order on Consent (the Consent Order) may have been disposed of in Pit 39. This review identified two potentially mixed LLW (MLLW) packages that were disposed of in Pit 39 in 1997. Specifically, one 55-gal. drum of the waste generated during the excavation of a water pump at TA-50 that was potentially characteristically hazardous for mercury and/or chromium was disposed of in Pit 39. Also, a secondary containment pallet that may have absorbed waste characteristically hazardous for lead was disposed of in Pit 39. These potentially mixed wastes disposed of in Pit 39 were from the same waste stream as those disposed of in Pit 38.

Based on this finding, DOE/LANS have conservatively identified Pit 39 as an AOC as defined in Section III.B of the Consent Order. This report includes the location and description of the unit, dates of operation, identification of all wastes that have been managed at or in each unit, and information pertaining to any release of contaminants. Thereby, this solid waste management unit (SWMU) assessment report for Pit 39 is complete in accordance with Section V.C of the Consent Order.

PIT 39 LOCATION AND DESCRIPTION

Pit 39 is one of the disposal units at Los Alamos National Laboratory (the Laboratory) that DOE/LANS use for the permanent disposal of LLW. Pit 39 is located within Area G at TA-54, which is situated on Mesita del Buey, an east-west trending mesa bounded by Pajarito Canyon to the south and Cañada del Buey to the north. Figure 1 is a topographic map showing the location of Pit 39.

Disposal Unit Dimensions and Structural Description

Since 1957, approximately 65 acres of TA-54 have been used for radioactive waste disposal. The site has served as the primary LLW disposal site for the Laboratory since 1959. The development of disposal units has progressed generally from east to west in accordance with the pit- and shaft-construction guidelines in effect at the time of construction, resulting in 35 disposal pits and more than 200 shafts (Figure 1).

Pit 39 is an irregularly shaped pit measuring 88 m × 69 m × 14 m (length × width × depth). Its field measured pit volume is 2.9E+04 m^3. Figure 2 provides a plan and cross-sectional view of Pit 39.

DATES OF OPERATION

Disposal of LLW in Pit 39 began in August 1993 and continues through the present.

WASTE SUMMARY

The existing LLW inventory in Pit 39 includes laboratory trash, contaminated soil, building debris, and scrap metal. DOE/LANS reviewed a waste inventory summary prepared in 2009 that included all waste profile forms and associated documentation for all wastes placed in Pit 39 through 2009. This review determined that two potentially MLLW packages from one waste stream that was originally characterized as LLW may have been a mixed waste. One 55-gal. drum of waste and one secondary containment pallet were disposed of in Pit 39 in 1997.

This waste stream was generated when a water pump was excavated at TA-50. The waste profile form states the waste stream contained the pump as well as plastic, soil, cement, personal protective equipment, and absorbent generated during the excavation of the pump. Further review of the analytical data attached to the original waste profile form indicated total mercury and total chromium were detected at concentrations greater than the "twenty times rule of thumb" for assessing whether a metal could potentially leach above the applicable toxicity characteristic regulatory level in Table 1 of Title 40 of the Code of Federal Regulations Subpart 261.24. The total mercury concentration was 45 ppm, which is above 4 ppm (i.e., 20 times the regulatory level of 0.2 ppm). The total chromium concentration was 180 ppm, which is above 100 ppm (i.e., 20 times the regulatory level of 5.0 ppm). Because a toxicity characteristic leaching procedure (TCLP) analysis was not performed on a representative sample of this waste, DOE/LANS cannot rule out the possibility that this waste stream was a mixed waste. The relevant documentation for this waste stream is provided in Appendix A.

In 1997, a secondary containment pallet that may have absorbed a characteristically hazardous waste was also disposed of in Pit 39. The waste profile form for the pallet indicates the pallet collected material from a leaking drum, was emptied, and the remaining absorbent was disposed of. The reported analytical data, showing lead concentrations at 116 ppm (i.e., 23 times the regulatory level of 5.0 ppm), was from the leaking drum's waste profile form, and no representative samples were taken of the pallet. Because a TCLP analysis was not performed on a representative sample of this waste, DOE/LANS cannot rule out the possibility that this waste stream was a mixed waste. The relevant documentation for this waste stream is provided in Appendix A.

AVAILABLE INFORMATION PERTAINING TO ANY RELEASE OF CONTAMINANTS FROM PIT 39

The Material Disposal Area (MDA) G corrective measures evaluation (CME) report (LANL 2011, 206324) identified two potential transport pathways to groundwater: leaching of water-soluble contaminants and vapor-phase transport of volatile organic compounds (VOCs). As a result, the CME proposed two remedies to minimize these pathways. An evapotranspiration (ET) cover was recommended as a protective remedy to address the uncertainty related to potential leachate production from the unlined pits and shafts at MDA G. Soil-vapor extraction (SVE) was the proposed remedy to remove VOCs within target locations with vapor concentrations that exceed screening criteria developed in the CME.

The September 2005 MDA G investigation report (LANL 2005, 090513) summarizes the results of the Consent Order field investigation. Thirty-nine boreholes were drilled to collect soil, rock, and pore-gas samples to determine the nature and extent of any releases of contaminants from the MDA G pits and shafts. The organic constituents detected in soil were trace levels of several dioxin and furan congeners. Inorganic constituents that were detected above background values next to the base of the disposal pits, trenches, and shafts were at concentrations less than 5 times the background value.

Infiltration rates, thickness of the unsaturated zone, and geochemical properties affect the transport of soluble contaminants by leaching. The CME identified future risk associated with this pathway to be very low because infiltration rates through the mesa are low and the depth to groundwater is large (~900 to 1000 ft). Average travel times for water flowing through the unsaturated zone from the pits to the regional aquifer of several hundred years to several thousand years are predicted under disturbed (e.g., pits that remain open to precipitation, paved areas) and undisturbed conditions (natural vegetated mesa top), respectively. Contaminants will generally travel more slowly than the infiltrating pore water. Contaminants must dissolve into water to be transported by leaching. Waste containers can limit dissolution of waste. In addition, soluble species like some inorganic chemicals (e.g., nitrate, perchlorate, salts) will readily dissolve, while insoluble species (e.g., metals, asphalt) have limited solubility. Adsorption onto soils also affects transport rates, with nonsorbing species (e.g., nitrate and perchlorate salts) transporting at a rate similar to the water and adsorbing species (e.g., metals, polycyclic aromatic hydrocarbons) transporting more slowly. Although the future risk from the transport of leachate is considered to be very low, the CME recommends an ET cover as a protective remedy to address uncertainty related to potential leachate production from the unlined pits and shafts at MDA G. An ET cover will help restore infiltration rates in disturbed zones back to levels present in native undisturbed zones.

The potentially MLLW stream from TA-50 contained no hazardous constituents other than those previously identified in the September 2005 MDA G investigation report (LANL 2005, 090513) as being above background values next to the base of the disposal pits, trenches, and shafts. Because these wastes did not introduce any new contaminants to Pit 39, no additional investigation or change in the proposed remedy is warranted with respect to leaching of water-soluble constituents from Pit 39.

CONCLUSIONS

Although findings from their review of bulk LLW operations at TA-54 led DOE/LANS to identify Pit 39 as an AOC, neither of the two potentially mixed waste packages placed in Pit 39 in 1997 contained any hazardous constituents other than those previously identified in the September 2005 MDA G investigation report. Therefore, no additional investigation or change in the remedy proposed in the MDA G CME is warranted with respect to water soluble contaminants or VOCs near Pit 39.

REFERENCES

LANL (Los Alamos National Laboratory), September 2005. “Investigation Report for Material Disposal Area G, Consolidated Unit 54-013(b)-99, at Technical Area 54,” Los Alamos National Laboratory document LA-UR-05-6398, Los Alamos, New Mexico. (LANL 2005, 090513)

LANL (Los Alamos National Laboratory), September 2011. “Corrective Measures Evaluation Report for Material Disposal Area G, Solid Waste Management Unit 54-013(b)-99, at Technical Area 54, Revision 3,” Los Alamos National Laboratory document LA-UR-11-4910, Los Alamos, New Mexico. (LANL 2011, 206324)

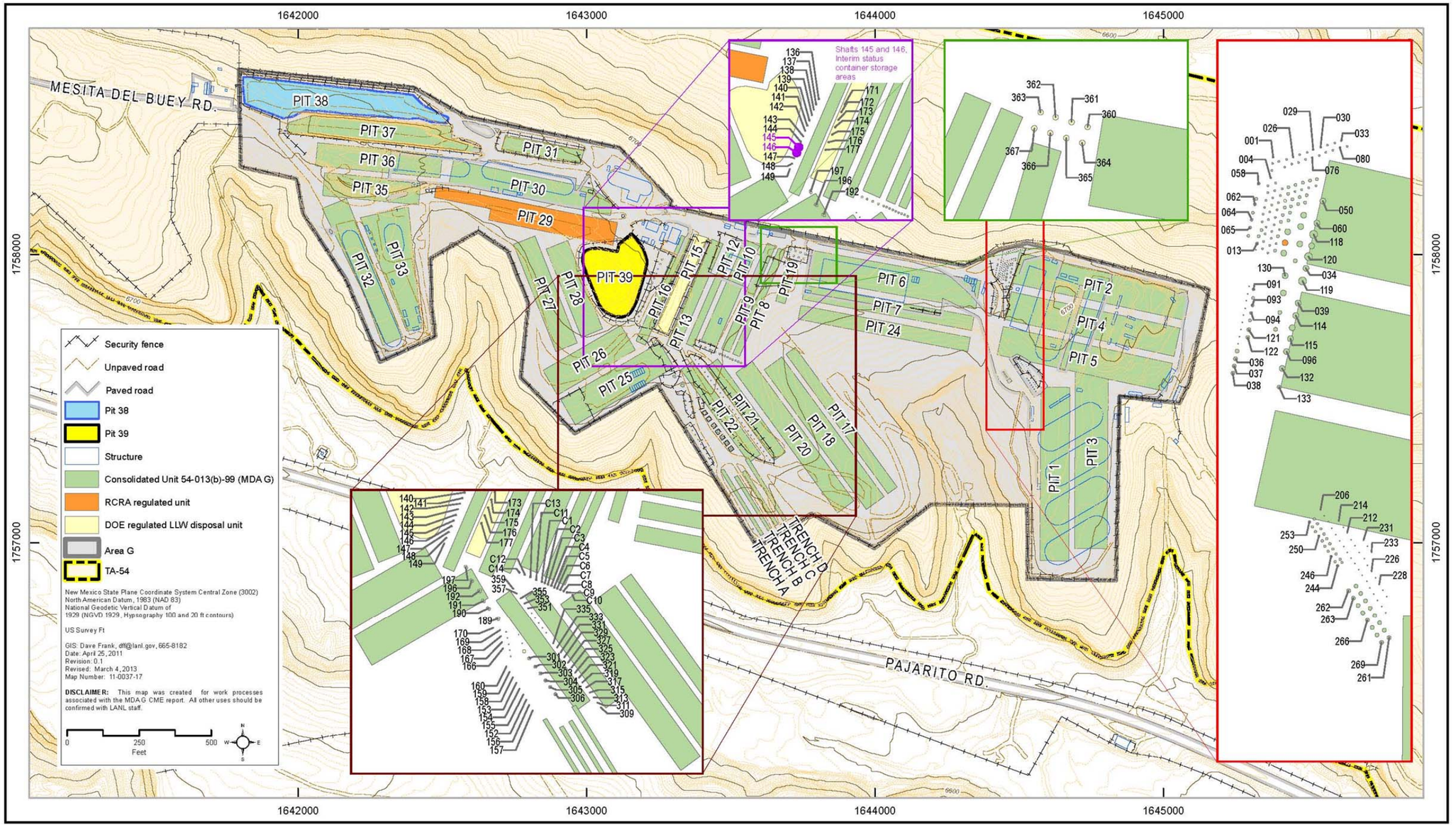

Figure 1 Area G with location of Pit 39

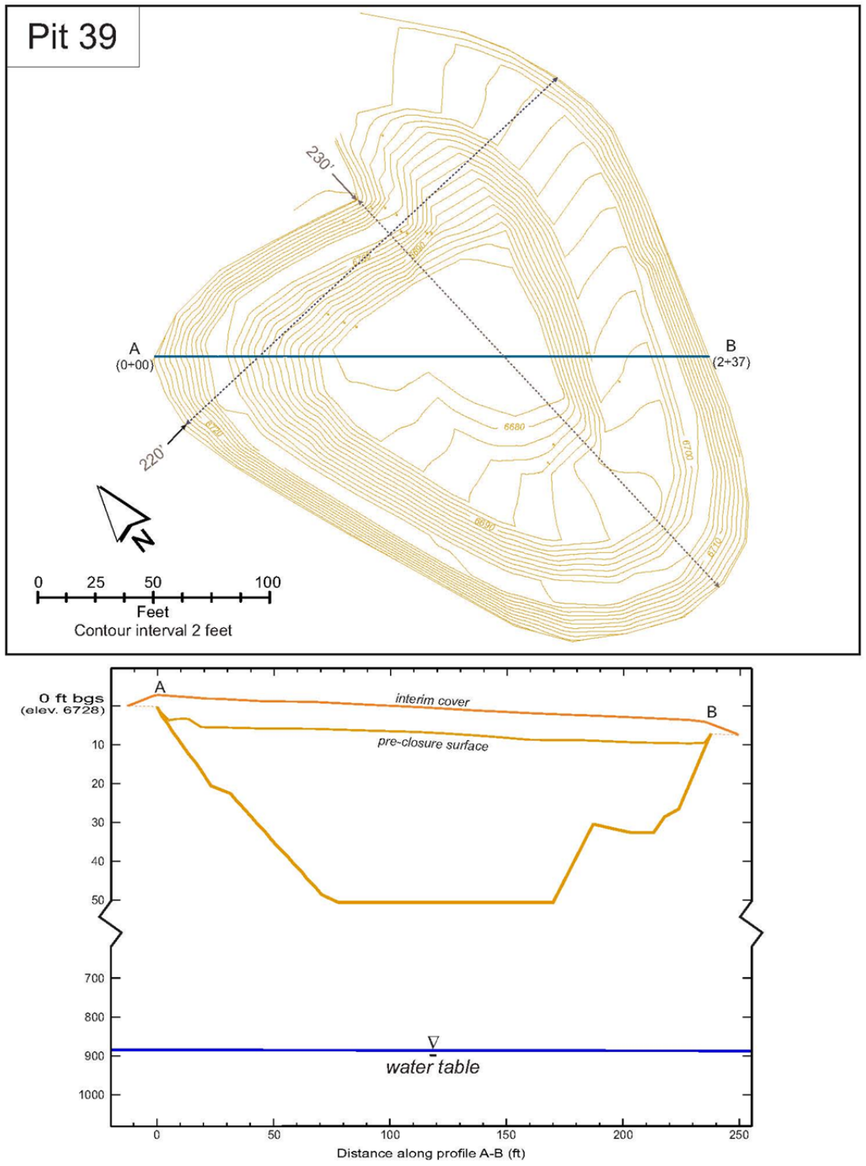

Figure 2 Pit 39 plan and cross-section

Appendix A

Supporting Waste Characterization Information for Pit 39

LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM

WPF #: 23547

14-Apr-2009 05:20 PM (Version: 2) p.1

Generator :	BOND, ALAN J	MS :	E506	PH :	74301	Z#:	109254
WMC :	ALEXANDER, RICK	MS :	E518	PH :	5056657020	Z#:	114624
Contact :							
RCRA Rev :	HARRIS JOE G JR	MS :	J496	PH :	5056670104	Z#:	111580
Status :	VOID	Activation Date :	04/12/1996		Expiration Date:		04/12/1998
Group :	CST13	TA :	50	Bldg :	000002	Room :	25

You are required to keep a copy of the WPF(s) in your files for at least three years. This WPF(s) is valid for one year or as long as the composition of the waste you have characterized remains the same. Should your waste change, please submit a new WPF to Waste Acceptance Group.

Waste Accumu : **None of the Above Site ID#**

Method of Char : Analysis/Documents Attached

Waste Type : **Process Waste/Spent Chemical/Other**

Waste Classes: RCA Waste - **Not RCA Waste**

RAD Waste - **Radioactive-LL**

Waste Category: **Not Applicable**

Waste Sources : **Construction/Upgrades**

Waste Matrix : **Solid**

Matrix Type : **Heterogeneous**

Process Desc :

ADDITIONAL SAMPLE # 95.15654, 95.15655, 95.12010, 95.12006, 95.76363, 95.76364 PUMP-SOIL-CEMENT-PPE-ABSORBENT-PLASTIC

Waste Desc : N/A

Ignitability : **Not Ignitable**

Corrosivity : **Non-aqueous**

Reactivity : **Non-reactive**

Boiling Point : **Not applicable**

Toxicity Characteristic Metals:

Contaminant	Method	Limit	Min	Max	Unit
ARSENIC		Y			ppm
BARIUM		Y			ppm
CADMIUM		Y			ppm
CHROMIUM		Y			ppm
LEAD		Y			ppm
MERCURY		Y			ppm
SILVER		Y			ppm

Toxicity Characteristic Organic Compounds:

Contaminant	Method	Limit	Min	Max	Unit
HEXACHLOROBUTADIENE	TOTA		0	1.7	PPM

Additional Chemical Constituents and Contaminants:

CAS NO	Constituent	MIN	MAX	UOM
	PUMP	0	5	%
	SOIL	40	60	%
	CEMENT	15	25	%
	PPE	25	60	%
	ABSORBENT	5	10	%
	PLASTIC	10	25	%
	ACETONE	.54	1	PPM
	2-BUTANONE	.15	.27	PPM

Radiological Characteristics :

Radionuclide	Min	Max	Unit
GRALPH	.000000000001	.00000000006	CIG
GRBETA	.0000000000000[illegible]	.00000000003	CIG
GAMMA	0	.00000000002	CIG
AM241	0	.0000000000157	CIG
PU238	0	.000000000009	CIG
PU239	0	.0000000000157	CIG
U235	0	.0000000000045	CIG

WASTE CHARACTERIZATION INFORMATION

Radioactivity Category : **RADIOACTIVE-LL**

RCRA Category : **NON-HAZARDOUS WASTE**

Secondary Info : N/A

Waste Classification : **LOW LEVEL RADIOACTIVE WASTE**

Waste Acceptances :

EPA Hazardous Waste Code : N/A

LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM

WPF #: 23547

GWCP Information

Section 1 - Waste Prevention/Minimization (answer all questions)

Can hazard segregation, elimination, or material substitution be used?	☐ Yes*	☐ No	
Can any of the materials in the waste stream be recycled or reused	☐ Yes*	☐ No	
Has waste minimization been incorporated into procedures or other process controls?	☐ Yes	☐ No	
Can this waste be generated outside a RCA?	☐ Yes*	☐ No	☐ N/A

*Provide Comment

Section 6 - Work Control Documentation (answer all questions)

Do the procedures for this process cover how to manage this waste?	☐ Yes	☐ No (Provide comments)
Do the procedures for this process cover controls to prevent changes to waste constituents and concentrations or addition or removal of waste?	☐ Yes	☐ No (Provide comments)

Section 7 - Package and Storage Control

Describe how the waste will be packaged in according to the applicable WAC:

Identify the storage management controls that will be used for this waste stream: (check all that apply)

- ☐ Tamper indication devices
- ☐ Limited use locks with log-in for waste
- ☐ Locked cabinet or building
- ☐ Other (describe)

Section 8 - Waste Certification Statements (check only one)

- ☐ Waste appears to meet WAC chapter for.
- ☐ Waste needs exception/exemption for treatment, storage, or disposal at
- ☐ Waste does not meet the criteria for any known TSDF. (DOE approval is required. Contact the Waste Management Program Office for assistance.)

Estimated Annual Volume (m3):

Los Alamos
National Laboratory

WASTE PROFILE FORM

RECEIVED APR 9 1998

ORIGINAL

Account Information: 8313 M3597240

For rapid processing, complete all sections in black or blue ink and mail this form to Waste Services Group at MS J579

Reference Number: 23547

Waste Generator's Name (Print)	Znumber	Waste Management Coordinator's Name (Print)	Znumber
Alan Bond	109254	Rick Alexander	114624

Generator's Group	Generator's Telephone	Generator's Mail Stop	Waste Stream Technical Area	Building	Room
CST-13	7-4301	E518	TA-50	WM-2	25K

Waste Accumulation Check as many as apply.

- ☐ Satellite accumulation area → site no.: _____
- ☐ Less than 90 day accumulation area → site no.: _____
- ☐ Radioactive Materials Management Area (RMMA) → site no.: _____
- ☒ None of the above

Method of Characterization Check as many as apply.

- ☐ Acceptable Knowledge (AK)
- ☒ Analysis attached → sample/request no. _____
- ☐ MSDS attached
- ☐ Request for analysis

Section 1- Chemical and Physical Characteristics

For help in completing this section of the form, call 5-WAST or 5-4000.

Waste Type Check only one.

- ☐ Unused/unspent chemical — Check Waste Classes and Associated Documentation Only
- ☒ Process waste/spent chemical — Complete all of Section 1.

Waste Classes Check as many as apply.

- ☒ On-going generation
- ☐ One-time generation
- ☒ Radioactive (complete Sec. 2)
- ☐ Non-radioactive
- ☐ Wastewater (complete Sec. 3)
- ☐ Classified/Sensitive

Associated Documentation Check as many as apply.

- ☐ Process SOP → no.:
- ☐ ____
- ☐ RMMA OP → no.:
- ☐ ____
- ☐ WM SOP → no.:

Waste Category Check as many as apply.

- ☐ Solvent
- ☐ Degreaser
- ☐ Dioxin
- ☐ Electroplating
- ☐ Treated hazardous waste residue
- ☐ Explosive process waste
- ☐ Infectious/biological waste
- ☐ Beryllium
- ☐ Asbestos-friable
- ☐ Asbestos-nonfriable
- ☐ Empty containers
- ☐ PCB (<50 ppm)
  - ☐ PCB (50 - 500 ppm)
  - ☐ PCB (> 500 ppm)
  - → id. no.: _____
- ☒ Not applicable → describe below

Waste Sources Check as many as apply.

- ☐ Research and development
- ☐ Maintenance
- ☒ Construction
- ☐ Material processing
- ☒ Decon/decom
- ☐ Investigation derived
- ☐ Remediation
- ☐ UST - petroleum
- ☐ UST - non-petroleum
- ☐ Generator treatment
- ☐ Interim/permitted treatment
- ☐ Industrial sludge
- ☐ Sanitary sludge
- ☐ Abatement

Waste Matrix Check only one.

Gas
- ☐ ≤ 1.5 Atmospheres
- ☐ > 1.5 Atmospheres

Liquid
- ☐ Aqueous
- ☐ Organic
- ☐ Inorganic

Solid
- ☐ Powder/ash
- ☒ Solid
- ☐ Absorbed liquid

Matrix Type Check only one.

- ☐ Homogeneous
- ☒ Heterogeneous → describe below

Waste/Process Description

Additional Samples # 95.15654, 95.15655, 95.12010, 95.12006, 95.763163, 95.763164

pump - soil - cement - PPE - absorbent - plastic

Section 1- Chemical and Physical Characteristics (continued)

Ignitability (degrees F.) Check only one.

- ☐ < 73
- ☐ 73-99
- ☐ 100-139
- ☐ 140-200
- ☐ > 200
- ☐ Ignitable solid
- ☐ DOT oxidizer
- ☒ Not ignitable

Corrosivity (pH) Check only one.

- ☐ ≤ 2.0
- ☐ 2.1-4.0
- ☐ 4.1-6.0
- ☐ 6.1-9.0
- ☐ 9.1-12.4
- ☐ ≥ 12.5
- ☐ Liquid corrosive to steel
- ☒ Not aqueous

Reactivity Check as many as apply.

- ☐ Unstable
- ☐ Water reactive
- ☐ Pyrophoric
- ☐ Cyanide bearing
- ☐ Sulfide bearing
- ☐ Shock sensitive
- ☐ Explosive - class _____
- ☒ Non-reactive

Boiling Point (degrees F.) Check only one.

- ☐ ≤ 95
- ☐ > 95
- ☒ Not applicable

Identify presence of contaminants.			Minimum	Maximum	Unit (ppm or % only)	Analytical method
Toxicity Characteristic Metals						
Arsenic	☐ None	☒ < 5.0 ppm				☐ TCLP ☐ Total
Barium	☐ None	☒ < 100.0 ppm				☐ TCLP ☐ Total
Cadmium	☐ None	☒ < 1.0 ppm				☐ TCLP ☐ Total
Chromium	☐ None	☒ < 5.0 ppm				☐ TCLP ☐ Total
Lead	☐ None	☒ < 5.0 ppm				☐ TCLP ☐ Total
Mercury	☐ None	☒ < 0.2 ppm				☐ TCLP ☐ Total
Selenium	☒ None	☐ < 1.0 ppm				☐ TCLP ☐ Total
Silver	☐ None	☒ < 5.0 ppm				☐ TCLP ☐ Total
Toxicity Characteristic Organic Compounds						
Benzene	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
Carbon tetrachloride	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
Chlorobenzene	☒ None	☐ < 100.0 ppm				☐ TCLP ☐ Total
Chloroform	☒ None	☐ < 6.0 ppm				☐ TCLP ☐ Total
Cresol	☒ None	☐ < 200.0 ppm				☐ TCLP ☐ Total
1,4-dichlorobenzene	☒ None	☐ < 7.5 ppm				☐ TCLP ☐ Total
1,2-Dichloroethane	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
1,1-Dichloroethylene	☒ None	☐ < 0.7 ppm				☐ TCLP ☐ Total
2,4-Dinitrotoluene	☒ None	☐ < 0.13 ppm				☐ TCLP ☐ Total
Hexachlorobenzene	☒ None	☐ < 0.13 ppm				☐ TCLP ☐ Total
Hexachlorobutadiene	☐ None	☐ < 0.5 ppm	0	1.7	ppm	☐ TCLP ☐ Total
Hexachloroethane	☒ None	☐ < 3.0 ppm				☐ TCLP ☐ Total
Methyl ethyl ketone	☒ None	☐ < 200.0 ppm				☐ TCLP ☐ Total
Nitrobenzene	☒ None	☐ < 2.0 ppm				☐ TCLP ☐ Total
Pentachlorophenol	☒ None	☐ < 100.0 ppm				☐ TCLP ☐ Total
Pyridine	☒ None	☐ < 5.0 ppm				☐ TCLP ☐ Total
Perchloroethylene or tetrachloroethylene	☒ None	☐ < 0.7 ppm				☐ TCLP ☐ Total
Trichloroethylene	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
2,4,5-Trichlorophenol	☒ None	☐ < 400.0 ppm				☐ TCLP ☐ Total
2,4,6-Trichlorophenol	☒ None	☐ < 2.0 ppm				☐ TCLP ☐ Total
Vinyl chloride	☒ None	☐ < 0.2 ppm				☐ TCLP ☐ Total

Additional Chemical Constituents and Contaminants (for hazardous constituents, see AR 10-3, Appendix A)
List all other constituents (including inerts) not identified above and attach any applicable analyses.

Name of constituent	Cas no.(optional)	Minimum	Maximum	Unit (ppm or % only)
Pump		0	5	%
Soil		40	60	%
Cement		15	25	%
PPE		25	60	%
Absorbant		5	10	%
Plastic		10	25	%
Acetone		.54	1	ppm
2-Butanone		.15	.27	ppm

Section 2- Radiological Characteristics

For help in completing this section of the form, call S-WAST or S-4000.

	Range minimum	Range maximum	Unit (Ci/g or Ci)
General			
☐ Alpha	1.0 -12	60 -12	Ci/g
☒ Beta	8.7 -14	3.7 -7	Ci/g
☒ Gamma	D	20 -12	Ci/g
TRU radionuclides			
☒ None present			
☐ Am-241	____ to	____	____
☐ Am-243	____ to	____	____
☐ Cf-249	____ to	____	____
☐ Cf-251	____ to	____	____
☐ Cm-243	____ to	____	____
☐ Cm-245	____ to	____	____
☐ Cm-247	____ to	____	____
☐ Pu-238	____ to	____	____
☐ Pu-239	____ to	____	____
☐ Pu-240	____ to	____	____
☐ Pu-242	____ to	____	____
Fission products			
☒ None present			
☐ Ba-140	____ to	____	____
☐ Ce-144	____ to	____	____
☐ Cs-134	____ to	____	____
☐ Cs-137	____ to	____	____
☐ I-129	____ to	____	____
☐ I-133	____ to	____	____
☐ Kr-85	____ to	____	____
☐ Nb-95	____ to	____	____
☐ Ru-106	____ to	____	____
☐ Sb-125	____ to	____	____
☐ Sr-90	____ to	____	____
☐ Tc-99	____ to	____	____
☐ Zr-93	____ to	____	____
☐ Zr-95	____ to	____	____
Activation products			
☒ None present			
☐ As-74	____ to	____	____
☐ Be-7	____ to	____	____
☐ C-14	____ to	____	____
☐ Co-56	____ to	____	____
☐ Co-57	____ to	____	____
☐ Co-58	____ to	____	____
☐ Co-60	____ to	____	____
☐ Cr-51	____ to	____	____
☐ Eu-152	____ to	____	____
☐ Mn-52	____ to	____	____
☐ Mn-54	____ to	____	____
☐ Nb-94	____ to	____	____
☐ Ni-59	____ to	____	____
☐ Ni-63	____ to	____	____
☐ Rb-83	____ to	____	____
☐ Rb-84	____ to	____	____
☐ Se-75	____ to	____	____
☐ Sr-82	____ to	____	____
☐ Sr-85	____ to	____	____
☐ V-48	____ to	____	____
☐ Y-88	____ to	____	____
☐ Zn-65	____ to	____	____
☐ Zr-88	____ to	____	____

	Range minimum	Range maximum	Unit (Ci/g or Ci)
Other			
☒ None present			
☐ Am-242	____ to	____	____
☐ Bi-207	____ to	____	____
☐ Bi-210	____ to	____	____
☐ Cf-250	____ to	____	____
☐ Cf-252	____ to	____	____
☐ Cm-244	____ to	____	____
☐ H-3	____ to	____	____
☐ Pa-231	____ to	____	____
☐ Pb-210	____ to	____	____
☐ Po-210	____ to	____	____
☐ Pu-238	____ to	____	____
☐ Pu-241	____ to	____	____
☐ Ra-226	____ to	____	____
☐ Ra-228	____ to	____	____
☐ Th-230	____ to	____	____
☐ Th-232	____ to	____	____
☐ U-232	____ to	____	____
☐ U-233	____ to	____	____
☐ U-234	____ to	____	____
☐ U-235	____ to	____	____
☐ U-236	____ to	____	____
☐ U-238	____ to	____	____
Add'l radionuclides			
☒ No additional radionuclides present			
____	____ to	____	____
____	____ to	____	____
____	____ to	____	____
____	____ to	____	____
____	____ to	____	____
____	____ to	____	____
____	____ to	____	____
____	____ to	____	____
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____	____ to	____	____
____	____ to	____	____
____	____ to	____	____
____	____ to	____	____
____	____ to	____	____

Contamination Type: *Check as many as apply.*

☑ Volume Contamination

☑ Surface Contamination

4/11/96 per WMC

Section 3 - Wastewater Characteristics

For help in completing this section of the form, call 7-4301.

Identify presence of contaminants			Minimum	Maximum	Unit (ppm or % only)	Analytical method
Aluminum	☐ None	☐ < 5.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Boron	☐ None	☐ < 5.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Cobalt	☐ None	☐ < 1.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Copper	☐ None	☐ < 1.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Vanadium	☐ None	☐ < 0.10 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Zinc	☐ None	☐ < 95.4 ppm	_____ to	_____	_____	☐ TCLP ☐ Total

Maximum daily flow when discharge occurs: _____ ☐ Gallon ☐ Liters

Average daily flow when discharge occurs: _____ ☐ Gallon ☐ Liters

Estimated number of days per year that discharge will occur: _____

Estimated total volume per year discharged to the Radioactive Liquid Waste Collection System at TA-50-1: _____ ☐ Gallon ☐ Liters

For TA-55 use only. Wastewater will be discharged through one of the following:

☐ Acid line ☐ Caustic line ☐ Industrial waste line

Section 4 - Additional Information

If additional information is available on the chemical, physical, or radiological character of the waste not covered on this form, provide it below:

WASTE GENERATOR CERTIFICATION: *Based on my knowledge of the waste and/or chemical/physical analysis, I certify that the information on this form is correct. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.*

Signature: Alan Bond

Date: 4-8-96

Los Alamos
NATIONAL LABORATORY

NOTIFICATION CHECKLIST

GENERAL

Date	Time	Location	Source(s) or nuclide(s)
7-27-95	1000	TA-50 South Side WM2	

Description: Water Pump Found While Digging On South Side of WM2. Plastic Found In Same Area Also Contaminated. Alpha 1680 dpm and Beta 189.8 dpm Removable

Reported by	Group	RCT	Method of detection
Dominic Martinez	JC1	Hardy Martinez	Direct Frisk/Smear

PERSONNEL INVOLVED

INSTRUCTIONS:
1. *All readings in dpm should be reported per 100 square centimeters except for nose swipes.*
2. *For nose swipes, show values for each nostril.*
3. *Check the boxes in the column headings to indicate units used and radiation type (alpha or beta-gamma).*
4. *Show nuclides above in "GENERAL."*

	NAME	Z NUMBER	GROUP	CONTAMINATION ☐α or ☐β–γ: Facial ☐dpm or ☐mrem/hr	Nose swipe (dpm)	Wound count (nCi)	Skin ☐dpm or ☐mrem/hr	Personal/company clothing ☐dpm or ☐mrem/hr	Protective clothing ☐dpm or ☐mrem/hr	Tritium bioassay (μCi/L)	EXTERNAL EXPOSURE: Deep (mrem)	Shallow (mrem)	Neutron (mrem)	Extremity (mrem)
1.	Roger N Montoya	092712	JC1	NDA	NDA	N/A	NDA	NDA	N/A	N/A	N/A	→	→	N/A
2.	Dominic F Martinez	108632	JC1	NDA	NDA	N/A	NDA	NDA	N/A	N/A	N/A	→	→	N/A
3.					/									
4.					/									
5.					/									
6.					/									

AIRBORNE RADIOACTIVITY

☐False CAM alarm ☐True CAM alarm; results:_____ μCi/ml ☐Fixed Air Sample results:_____ μCi/ml ☐Atmospheric release results:_____ μCi/ml

AREA CONTAMINATION

Direct survey results:_____ ☐dpm/100 cm² ☐α or ☐β–γ ;or ☐mrem/hr Smear survey results:_____ dpm/100 cm² ☐tritium, ☐α, or ☐β–γ

NOTIFICATIONS (Complete the appropriate boxes for each organization for INITIAL and FOLLOW-UP notifications)

	Initial date	Time	Person notified	Follow-up date	Time	Person notified
Line or Facility Mgr Phone:_____ FAX:	7-27-95	1000	Alan Bond			
ESH-1 Group Office Phone: 7-7171 FAX: 7-6118	7-7137	1120	Kathy			
ESH-7 Group Office Phone: 5-0033 FAX: 5-6977						
ESH-12 Dose Assess. Phone:7-5296 FAX: 7-9726						

Notifications completed by (print name): Signature: Date:

Form 1555 (5/25/94) THIS FORM CONTAINS PERSONAL INFORMATION

REPORT NUMBER: 37705

********** CST ANALYTICAL REPORT **********

Prepared by: BRL on 18-Aug-1995

REQUEST NUMBER: 22294 MATRIX: C ANALYST: AAS PROGRAM CODE: N371

OWNER: Dave Salazar GROUP: CST-12 MAIL-STOP: E518 PHONE: 7-6904

NOTEBOOK: CST9002 PAGE: 68

CUSTOMER SAMPLES:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	ANALYTICAL TECHNIQUE	ANALYTICAL RESULT	ANALYTICAL UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
WM-29507.10	95.12010	AS	ETVAA	5.	1.	UG/G	8/18/95	
WM-29507.10	95.12010	HG	CVAA	21.	2.	UG/G	7/20/95	
WM-29507.10	95.12010	SE	ETVAA	< 0.5		UG/G	8/18/95	

CUSTOMER SAMPLE DUPLICATES:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	ANALYTICAL TECHNIQUE	ANALYTICAL RESULT	ANALYTICAL UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
WM-29507.10	95.12010	AS	ETVAA	5.	1.	UG/G	8/18/95	
WM-29507.10	95.12010	HG	CVAA	45.	5.	UG/G	7/20/95	
WM-29507.10	95.12010	HG	CVAA	20.	2.	UG/G	7/20/95	
WM-29507.10	95.12010	SE	ETVAA	< 0.5		UG/G	8/18/95	

MATRIX SPIKES:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	ANALYTICAL TECHNIQUE	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT
WM-29507.10	95.12010	AS	ETVAA	6.	1.	UG/G	8/18/95	
WM-29507.10	95.12010	SE	ETVAA	< 0.5		UG/G	8/18/95	

REPORT NUMBER: 37706 (continued)

********** CST QUALITY ASSURANCE REPORT **********

Prepared by: BRL on 18-Aug-1995

REQUEST NUMBER: 22294 MATRIX: ANALYST: AAS PROGRAM CODE:

OWNER: GROUP: MAIL-STOP: PHONE:

NOTEBOOK: PAGE:

SUMMARY OF CONTROL STATUS OF OPEN (NON-BLIND) QC SAMPLES RUN WITH THIS BATCH

SUMMARY OF CONTROL STATUS OF BLIND QC SAMPLES RUN WITH THIS BATCH

There were no blind Quality Control materials run with the samples reported above for one of the following reasons:

___ Only qualitative data requested

___ Only Open (non-blind) QC samples run with this sample batch.

___ No QC samples run with this sample batch.

___ No QC samples for this constituent and matrix type available within CST

REPORT NUMBER: 37706	Analyst	Reviewer	Team Leader	QA Officer
	BRL	BRL		mag
	8/18/95	8/18/95	9/8/95	9/11/95
	Date	Date	Date	Date

No Sample Discrepancies Noted by Sample Management Section

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1992,' LA-12790-MS, Vol. I, pp. 19-20.

****

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

To: Dave Salazar

Date: November 29, 1995

From: Martin Koby, CST-9

Mail Stop/Phone: E518/7-9998

Subject: Trace metal results - Request Number 22878

This analytical request consisted of two samples from TA-50, WM-2. One sample was aqueous while the other was described as a miscellaneous solid. Both samples were analyzed in duplicate as well as spiked with known concentrations of target analytes. Duplicate analyses were generally in close agreement with the exception of chromium and lead. Chromium results for the solid sample, 95.15655, exhibited the greatest level of variability; note the spike recovery data.

You should also observe that two QC results have been flagged as out of control limits. The cause for this can be attributed to aged standard reference materials. No additional anomalies were observed.

Do not hesitate to contact me if you have questions regarding these results.

REPORT NUMBER: 38685

********** CST ANALYTICAL REPORT **********

Prepared by: PEC on 16-Oct-1995

REQUEST NUMBER: 22678 MATRIX: W ANALYST: AAS PROGRAM CODE: G63P

OWNER: Dave Salazar GROUP: CST-12 MAIL-STOP: E518 PHONE: 7-6904

NOTEBOOK: CST9002 PAGE: 82

CUSTOMER SAMPLES:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	ANALYTICAL TECHNIQUE	ANALYTICAL RESULT	ANALYTICAL UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
95-76428	95.15654	AS	ETVAA	32.	6.	UG/L	10/12/95	
95-76428	95.15654	HG	CVAA	21.	2.	UG/L	10/16/95	
95-76428	95.15654	SE	ETVAA	< 2.		UG/L	10/12/95	
95-76408	95.15655	AS	ETVAA	2.	0.5	UG/G	10/12/95	
95-76408	95.15655	HG	CVAA	0.04	0.01	UG/G	10/12/95	
95-76408	95.15655	SE	ETVAA	< 0.1		UG/G	10/12/95	

CUSTOMER SAMPLE DUPLICATES:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	ANALYTICAL TECHNIQUE	ANALYTICAL RESULT	ANALYTICAL UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
95-76428	95.15654	AS	ETVAA	33.	7.	UG/L	10/12/95	
95-76428	95.15654	HG	CVAA	23.	2.	UG/L	10/16/95	
95-76428	95.15654	SE	ETVAA	< 2.		UG/L	10/12/95	
95-76408	95.15655	AS	ETVAA	2.	0.5	UG/G	10/12/95	
95-76408	95.15655	HG	CVAA	0.01	0.01	UG/G	10/16/95	
95-76408	95.15655	HG	CVAA	< 0.01		UG/G	10/16/95	
95-76408	95.15655	SE	ETVAA	< 0.1		UG/G	10/12/95	

MATRIX SPIKES:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	ANALYTICAL TECHNIQUE	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT
95-76408	95.15655	AS	ETVAA	10.		UG/G	10/12/95	
95-76408	95.15655	SE	ETVAA	10.	1.4	UG/G	10/12/95	

****

REPORT NUMBER: 38685 (continued)

********** CST QUALITY ASSURANCE REPORT **********

Prepared by: PEC on 16-Oct-1995

REQUEST NUMBER: 22678 MATRIX: W ANALYST: AAS PROGRAM CODE: C63P

OWNER: Dave Salazar GROUP: CST-12 MAIL-STOP: E518 PHONE: 7-6904

NOTEBOOK: CST9002 PAGE: 82

SUMMARY OF CONTROL STATUS OF OPEN (NON-BLIND) QC SAMPLES RUN WITH THIS BATCH

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

___ Only qualitative data requested

___ Only Blind QC samples run with this sample batch.

✓ No QC samples run with this sample batch.

___ No QC samples for this constituent and matrix type available within CST

SUMMARY OF CONTROL STATUS OF BLIND QC SAMPLES RUN WITH THIS BATCH

There were no blind Quality Control materials run with the samples reported above for one of the following reasons:

___ Only qualitative data requested

___ Only Open (non-blind) QC samples run with this sample batch.

✓ No QC samples run with this sample batch.

___ No QC samples for this constituent and matrix type available within CST

REPORT NUMBER: 38685	PEC	PEC	KLDam	mag
	Analyst	Reviewer	Team Leader	QA Officer
	10/16/95	10/16/95	11/29/95	11/30/95
	Date	Date	Date	Date

REPORT NUMBER: 39101

********** CST ANALYTICAL REPORT **********

Prepared by: MCOBY on 28-Nov-1995

REQUEST NUMBER: 22678 MATRIX: W ANALYST: OES PROGRAM CODE: C63P

OWNER: Dave Salazar GROUP: CST-12 MAIL-STOP: E518 PHONE: 7-6904

NOTEBOOK: Y3725 PAGE: 221

CUSTOMER SAMPLES:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	ANALYTICAL TECHNIQUE	ANALYTICAL RESULT	ANALYTICAL UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
95-76428	95.15654	AG	ICPES	0.019	0.015	MG/L	11/27/95	
95-76428	95.15654	BA	ICPES	1.	0.15	MG/L	11/27/95	
95-76428	95.15654	CD	ICPES	0.012	0.002	MG/L	11/27/95	
95-76428	95.15654	CR	ICPES	0.3	0.04	MG/L	11/27/95	
95-76428	95.15654	PB	ICPES	0.98	0.16	MG/L	11/27/95	
95-76408	95.15655	AG	ICPES	0.9	0.2	UG/G	11/28/95	
95-76408	95.15655	BA	ICPES	110.	10.	UG/G	11/28/95	
95-76408	95.15655	CD	ICPES	0.56	0.25	UG/G	11/28/95	
95-76408	95.15655	CR	ICPES	46.	4.	UG/G	11/28/95	
95-76408	95.15655	PB	ICPES	4.	1.	UG/G	11/28/95	

CUSTOMER SAMPLE DUPLICATES:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	ANALYTICAL TECHNIQUE	ANALYTICAL RESULT	ANALYTICAL UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
95-76428	95.15654	AG	ICPES	0.017	0.015	MG/L	11/27/95	
95-76428	95.15654	BA	ICPES	1.	0.15	MG/L	11/27/95	
95-76428	95.15654	CD	ICPES	0.013	0.002	MG/L	11/27/95	
95-76428	95.15654	CR	ICPES	0.3	0.04	MG/L	11/27/95	
95-76428	95.15654	PB	ICPES	0.99	0.16	MG/L	11/27/95	
95-76408	95.15655	AG	ICPES	1.1	0.1	UG/G	11/28/95	
95-76408	95.15655	BA	ICPES	110.	10.	UG/G	11/28/95	
95-76408	95.15655	CD	ICPES	0.63	0.25	UG/G	11/28/95	
95-76408	95.15655	CR	ICPES	180.	20.	UG/G	11/28/95	
95-76408	95.15655	PB	ICPES	24.	4.	UG/G	11/28/95	

MATRIX SPIKES:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	ANALYTICAL TECHNIQUE	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT
95-76428	95.15654	AG	ICPES	1.	0.23	MG/L	11/27/95	
95-76428	95.15654	BA	ICPES	4.	3.4	MG/L	11/27/95	
95-76428	95.15654	CD	ICPES	4.	3.7	MG/L	11/27/95	

95-76428	95.15654 CR	ICPES	4.	3.5	MG/L	11/27/95	
95-76428	95.15654 PB	ICPES	0.8	0.32	MG/L	11/27/95	
95-76408	95.15655 AG	ICPES	97.	81.	UG/G	11/28/95	
95-76408	95.15655 BA	ICPES	777.	770.	UG/G	11/28/95	
95-76408	95.15655 CD	ICPES	777.	710.	UG/G	11/28/95	
95-76408	95.15655 CR	ICPES	777.	2454.	UG/G	11/28/95	HETEROGENEITY
95-76408	95.15655 PB	ICPES	78.	73.5	UG/G	11/28/95	

LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM

WPF #: 23547

Generator :	BOND, ALAN J	MS :	E506	PH :	74301	Z#:	109254
WMC :	ALEXANDER, RICK	MS :	E518	PH :	5056657020	Z#:	114624
Contact :							
RCRA Rev :	HARRIS JOE G JR	MS :	J496	PH :	5056670104	Z#:	111580
Status :	VOID	Activation Date :	04/12/1996		Expiration Date:		04/12/1998
Group :	CST13	TA :	50	Bldg :	000002	Room :	25

You are required to keep a copy of the WPF(s) in your files for at least three years. This WPF(s) is valid for one year or as long as the composition of the waste you have characterized remains the same. Should your waste change, please submit a new WPF to Waste Acceptance Group.

Waste Accumu : **None of the Above Site ID#**

Method of Char : Analysis/Documents Attached

Waste Type : **Process Waste/Spent Chemical/Other**

Waste Classes: RCA Waste - **Not RCA Waste**
RAD Waste - **Radioactive-LL**

Waste Category: **Not Applicable**

Waste Sources : **Construction/Upgrades**

Waste Matrix : **Solid**

Matrix Type : **Heterogeneous**

Process Desc :

ADDITIONAL SAMPLE # 95.15654, 95.15655, 95.12010, 95.12006, 95.76363, 95.76364 PUMP-SOIL-CEMENT-PPE-ABSORBENT-PLASTIC

Waste Desc : N/A

Ignitability : **Not ignitable**

Corrosivity : **Non-aqueous**

Reactivity : **Non-reactive**

Boiling Point : **Not applicable**

Toxicity Characteristic Metals:

Contaminant	Method	Limit	Min	Max	Unit
ARSENIC		Y			ppm
BARIUM		Y			ppm
CADMIUM		Y			ppm
CHROMIUM		Y			ppm
LEAD		Y			ppm
MERCURY		Y			ppm
SILVER		Y			ppm

Toxicity Characteristic Organic Compounds:

Contaminant	Method	Limit	Min	Max	Unit
HEXACHLOROBUTADIENE	**TOTA**		**0**	**1.7**	**PPM**

Additional Chemical Constituents and Contaminants:

RECEIVED AUG 1 5 1997

ORIGINAL

Los Alamos
National Laboratory

WASTE PROFILE FORM

Account Information		Reference Number
-	For rapid processing, complete all sections in black or blue ink and mail this form to Waste Services Group at MS J579	26971

Waste Generator's Name (Print)	Znumber	Waste Management Coordinator's Name (Print)	Znumber
Kathie Jung	112383	Mary Jane Winch	114734

Generator's Group	Generator's Telephone	Generator's Mail Stop	Waste Stream Technical Area	Building	Room
EMSWO	5-7775	J595	54	49	—

Waste Accumulation
Check as many as apply.

- ☐ Satellite accumulation area --> site no.: _____
- ☐ Less than 90 day accumulation area --> site no.: _____
- ☒ ~~Radioactive Materials Management Area (RMMA)~~ RSA --> site no.: _____
- ☐ None of the above

Method of Characterization
Check as many as apply.

- ☒ Acceptable Knowledge (AK)
- ☐ Analysis attached --> sample/request no. _____
- ☒ MSDS attached
- ☐ Request for analysis

Section 1- Chemical and Physical Characteristics

For help in completing this section of the form, call 5-WAST or 5-4000.

Waste Type
Check only one.

- ☐ Unused/unspent chemical
  Check Waste Classes and Associated Documentation Only
- ☒ Process waste/spent chemical
  Complete all of Section 1

Waste Classes
Check as many as apply.

- ☐ On-going generation
- ☒ One-time generation
- ☒ Radioactive (complete Sec. 2)
- ☐ Non-radioactive
- ☐ Wastewater (complete Sec. 3)
- ☐ Classified/Sensitive

Associated Documentation
Check as many as apply.

- ☐ Process SOP --> no.: _____
- ☐ RMMA OP --> no.: _____
- ☐ WM SOP --> no.: _____
- ☐ Other --> _____
- ☒ None --> describe below

Waste Category
Check as many as apply.

- ☐ Solvent
- ☐ Degreaser
- ☐ Dioxin
- ☐ Electroplating
- ☐ Treated hazardous waste residue
- ☐ Explosive process waste
- ☐ Infectious/biological waste
- ☐ Beryllium
- ☐ Asbestos-friable
- ☐ Asbestos-nonfriable
- ☐ Empty containers
- ☐ PCB (<50 ppm)
  - ☐ PCB (50 - 500 ppm)
  - ☐ PCB (> 500 ppm)
  - → Id. no.: _____
- ☒ Not applicable --> describe below

Waste Sources
Check as many as apply.

- ☐ Research and development
- ☐ Maintenance
- ☐ Construction
- ☐ Material processing
- ☒ Decon/decom
- ☐ Investigation derived
- ☐ Remediation
- ☐ UST - petroleum
- ☐ UST - non-petroleum
- ☐ Generator treatment
- ☐ Interim/permitted treatment
- ☐ Industrial sludge
- ☐ Sanitary sludge
- ☐ Abatement

Waste Matrix
Check only one.

Gas
- ☐ ≤ 1.5 Atmospheres
- ☐ > 1.5 Atmospheres

Liquid
- ☐ Aqueous
- ☐ Organic
- ☐ Inorganic

Solid
- ☐ Powder/ash
- ☐ Solid
- ☒ Absorbed liquid

Matrix Type
Check only one.

- ☒ Homogeneous
- ☐ Heterogeneous --> describe below

Waste/Process Description

Material from WPF # 23413 leaked while in storage in Dome 49. Secondary containment ~~profile~~ fine pallet collected material from the leaking drum. The pallet was emptied in accordance with 261.7 (<3% wt, <1% remaining). Waste profiled on this form is the absorbed residue that was contained in the pallet after it was pumped and is exempt from the hazardous waste regulations.

ORIGINAL

Section 1- Chemical and Physical Characteristics (continued)

Ignitability (degrees F.) Check only one.

- ☐ < 73
- ☐ 73-99
- ☐ 100-139
- ☐ 140-200
- ☐ > 200
- ☐ Ignitable solid
- ☐ DOT oxidizer
- ☒ Not ignitable

Corrosivity (pH) Check only one.

- ☐ ≤ 2.0
- ☐ 2.1-4.0
- ☐ 4.1-6.0
- ☐ 6.1-9.0
- ☐ 9.1-12.4
- ☐ ≥ 12.5
- ☐ Liquid corrosive to steel
- ☒ Not aqueous

Reactivity Check as many as apply.

- ☐ Unstable
- ☐ Water reactive
- ☐ Pyrophoric
- ☐ Cyanide bearing
- ☐ Sulfide bearing
- ☐ Shock sensitive
- ☐ Explosive - class _____
- ☒ Non-reactive

Boiling Point (degrees F.) Check only one.

- ☐ ≤ 95
- ☐ > 95
- ☒ Not applicable

Identify presence of contaminants.			Minimum	Maximum	Unit (ppm or % only)	Analytical method
Toxicity Characteristic Metals						
Arsenic	☐ None	☒ < 5.0 ppm	0	2.75	ppm	☒ TCLP ☐ Total
Barium	☐ None	☒ < 100.0 ppm				☐ TCLP ☐ Total
Cadmium	☐ None	☐ < 1.0 ppm	8	72.9		☐ TCLP ☐ Total
Chromium	☐ None	☐ < 5.0 ppm		16.3		☐ TCLP ☐ Total
Lead	☐ None	☐ < 5.0 ppm	8	1140		☐ TCLP ☐ Total
Mercury	☐ None	☒ < 0.2 ppm				☐ TCLP ☐ Total
Selenium	☐ None	☐ < 1.0 ppm	8	3.9		☐ TCLP ☐ Total
Silver	☐ None	☐ < 5.0 ppm	8	5.8		☒ TCLP ☐ Total
Toxicity Characteristic Organic Compounds						
Benzene	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
Carbon tetrachloride	☐ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
Chlorobenzene	☐ None	☐ < 100.0 ppm				☐ TCLP ☐ Total
Chloroform	☐ None	☐ < 6.0 ppm				☐ TCLP ☐ Total
Cresol	☐ None	☐ < 200.0 ppm				☐ TCLP ☐ Total
1,4-Dichlorobenzene	☐ None	☐ < 7.5 ppm				☐ TCLP ☐ Total
1,2-Dichloroethane	☐ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
1,1-Dichloroethylene	☐ None	☐ < 0.7 ppm				☐ TCLP ☐ Total
2,4-Dinitrotoluene	☐ None	☐ < 0.13 ppm				☐ TCLP ☐ Total
Hexachlorobenzene	☐ None	☐ < 0.13 ppm				☐ TCLP ☐ Total
Hexachlorobutadiene	☐ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
Hexachloroethane	☐ None	☐ < 3.0 ppm				☐ TCLP ☐ Total
Methyl ethyl ketone	☐ None	☐ < 200.0 ppm				☐ TCLP ☐ Total
Nitrobenzene	☐ None	☐ < 2.0 ppm				☐ TCLP ☐ Total
Pentachlorophenol	☐ None	☐ < 100.0 ppm				☐ TCLP ☐ Total
Pyridine	☐ None	☐ < 5.0 ppm				☐ TCLP ☐ Total
Tetrachloroethylene or tetrachloroethylene	☐ None	☐ < 0.7 ppm				☐ TCLP ☐ Total
Trichloroethylene	☐ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
2,4,5-Trichlorophenol	☐ None	☐ < 400.0 ppm				☐ TCLP ☐ Total
2,4,6-Trichlorophenol	☐ None	☐ < 2.0 ppm				☐ TCLP ☐ Total
Vinyl chloride	☒ None	☐ < 0.2 ppm				☐ TCLP ☐ Total

Additional Chemical Constituents and Contaminants (for hazardous constituents, see AR 10-3, Appendix A)
List all other constituents (including inerts) not identified above and attach any applicable analyses.

Name of constituent	Cas no. (optional)	Minimum	Maximum	Unit (ppm or % only)
Water		0	1	%
Absorbant (corncobs)		99	100	%
Nickel		0	4.8	ppm

Section 2- Radiological Characteristics

For help in completing this section of the form, call S-WAST or S-4000.

	Range minimum		Range maximum	Unit (Ci/g or Ci/l)
General				
☐ Alpha		to		
☐ Beta		to		
☐ Gamma		to		
TRU radionuclides				
☐ None present				
☒ Am-241	0	to	$1.43e^{-10}$	Ci/g
☒ Am-243	0	to	$5.1e^{-15}$	
☐ Cf-249		to		
☐ Cf-251		to		
☐ Cm-243		to		
☐ Cm-246		to		
☐ Cm-247		to		
☒ Pu-238	0	to	$3e^{-13}$	
☒ Pu-239	0	to	$3.6e^{-8}$	
☐ Pu-240		to		
☐ Pu-242		to		
Fission products				
☐ None present				
☒ Ba-140	0	to	$7e^{-12}$	Ci/g
☒ Ce-144	0	to	$1.16e^{-12}$	
☒ Cs-134	0	to	$3.5e^{-14}$	
☒ Cs-137	0	to	$1.31e^{-13}$	
☐ I-129		to		
☐ I-133		to		
☐ Kr-85		to		
☐ Nb-95		to		
☒ Ru-106	0	to	$6.7e^{-13}$	
☐ Sb-125		to		
☒ Sr-90	0	to	$9.3e^{-13}$	
☐ Tc-99		to		
☐ Zr-93		to		
☐ Zr-95		to		
Activation products				
☐ None present				
☐ As -74		to		
☐ Be-7		to		
☐ C 14		to		
☐ Co-58		to		
☒ Co-57	0	to	$1.3e^{-15}$	Ci/g
☐ Co-58		to		
☒ Co-60	0	to	$5.7e^{-13}$	
☐ Cr-51		to		
☒ Eu-152	0	to	$8.3e^{-13}$	
☐ Mn-52		to		
☒ Mn-54	0	to	$2.6e^{-14}$	
☐ Nb-94		to		
☐ Ni-59		to		
☐ Ni-63		to		
☐ Rb-83		to		
☐ Rb-84		to		
☐ Se-75		to		
☐ Sr-82		to		
☐ Sr-85		to		
☐ V-48		to		
☐ Y-88		to		
☒ Zn-65	0	to	$2.4e^{-14}$	Ci/g
☒ Zr-88	0	to	$8e^{-10}$	

	Range minimum		Range maximum	Unit (Ci/g or Ci/l)
Other				
☐ None present				
☐ Ath-242		to		
☐ Bi-207		to		
☐ Bi-210		to		
☐ Cl-250		to		
☐ Cl-252		to		
☐ Cm-244		to		
☒ H-3	0	to	$7.1e^{-9}$	Ci/g
☐ Pa-231	0	to	$1.8e^{-14}$	
☒ Pb-210	0	to	$1.3e^{-13}$	
☐ Po-210		to		
☐ Pu-236		to		
☐ Pu-241		to		
☒ Ra-225	0	to	$1.2e^{-11}$	
☐ Ra-228		to		
☒ Th-230	0	to	$4e^{-12}$	
☐ Th-232		to		
☐ U-232		to		
☐ U-233		to		
☒ U-234	0	to	$1.9e^{-9}$	
☒ U-235	0	to	$9.4e^{-11}$	
☐ U-236		to		
☒ U-238	0	to	$5.2e^{-9}$	
Bi 212	0	to	$3.6e^{-10}$	
Pb 211	0	to	$3e^{-13}$	N
Rn 219	0	to	$9.27e^{-8}$	
Add'l radionuclides				
☐ No additional radionuclides present				
Ba 133	0	to	$1.15e^{-13}$	Ci/g
Bi 211		to	$2.58e^{-5}$	
Bi 214		to	$7.7e^{-15}$	
Ce 141		to	$2.49e^{-14}$	
K 40		to	$5.6e^{-14}$	
Na 22		to	$1.7e^{-15}$	
NP 237		to	$3.2e^{-15}$	
Pa 234		to	$1.8e^{-12}$	
Pb 212		to	$5.6e^{-15}$	
Pb 214		to	$1.7e^{-15}$	
Th 228		to	$3.7e^{-14}$	
Th 232		to	$1.1e^{-17}$	
Th 234		to	$1.5e^{-13}$	
Ra 224		to	$1.23e^{-14}$	
Ac 228		to	$5.59e^{-15}$	
Tl 208		to	$4.3e^{-15}$	

Contamination Type: Check as many as apply.

☒ Volume Contamination

☐ Surface Contamination

Section 3 - Wastewater Characteristics

For help in completing this section of the form, call 7-4301

Identify presence of contaminants			Minimum	Maximum	Unit (ppm or % only)	Analytical method
Aluminum	☐ None	☐ < 5.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Boron	☐ None	☐ < 5.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Cobalt	☐ None	☐ < 1.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Copper	☐ None	☐ < 1.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Vanadium	☐ None	☐ < 5.10 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Zinc	☐ None	☐ < 85.4 ppm	_____ to	_____	_____	☐ TCLP ☐ Total

Maximum daily flow when discharge occurs: _____ ☐ Gallons ☐ Liters

Average daily flow when discharge occurs: _____ ☐ Gallons ☐ Liters

Estimated number of days per year that discharge will occur: _____

Estimated total volume per year discharged to the Radioactive Liquid Waste Collection System at TA-50-1: _____ ☐ Gallons ☐ Liters

For TA-55 use only. Wastewater will be discharged through one of the following:

☐ Acid line ☐ Caustic line ☐ Industrial waste line

Section 4 - Additional Information

If additional information is available on the chemical, physical, or radiological character of the waste not covered on this form, provide it below:

Concentrations reported on this profile are those that were reported on 23413 (water concentration prior to absorption

WASTE GENERATOR CERTIFICATION: *Based on my knowledge of the waste and/or chemical/physical analysis, I certify that the information on this form is correct. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.*

Signature: Kathie A. Jung

Date: 8/12/97

81

81

JANUARY 1989

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Ap
OMB No

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
Mt. Pulaski Products, Inc.	217-792-3211
ADDRESS (Number, Street, City, State, and ZIP Code) POB 100 904 N. Vine St., Mt Pulaski, IL 62548	
CHEMICAL NAME AND SYNONYMS Corn Cobs	TRADE NAME AND SYNONYMS Corn Cob Grit, Meal or Flour
CHEMICAL FAMILY	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%
PIGMENTS	0		BASE METAL	0
CATALYST	0		ALLOYS	0
VEHICLE	0		METALLIC COATINGS	0
SOLVENTS	0		FILLER METAL PLUS COATING OR CORE FLUX	0
ADDITIVES	0		OTHERS	0
OTHERS	0			

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES %

CornCob fractions are classified as nuisance dust under OSHA regulations. Nuisance Dust has a long history of little adverse effect on lungs and does produce significant organic disease or toxic effect when exposures are kept under reasonable control.

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	n/a	SPECIFIC GRAVITY (H_2O=1)	
VAPOR PRESSURE (mm Hg.)	none	PERCENT, VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)	none	EVAPORATION RATE (_____ =1)	
SOLUBILITY IN WATER	7.1%		
APPEARANCE AND ODOR	Light brown, buff colored grit/flour with slight corn odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	350°F open cup	FLAMMABLE LIMITS	LEL
		230°F max serv.	

EXTINGUISHING MEDIA water

SPECIAL FIRE FIGHTING PROCEDURES none

UNUSUAL FIRE AND EXPLOSION HAZARDS none

SECTION V · HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
OSHA PEL-TWA=15MG/M^3 ACGIH 1986-87 TLV-TWA=10MG/M^3

EFFECTS OF OVEREXPOSURE Coughing, unpleasant deposits in eyes and throat

EMERGENCY AND FIRST AID PROCEDURES Inhalation-remove from exposure to fresh air, r
eyes with water, rinse skin well with water, none for ingestion.

SECTION VI · REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		
	STABLE	X	

INCOMPATABILITY (Materials to avoid) none

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII · SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED no special precaution requ...

WASTE DISPOSAL METHOD no special waste disposal procedures are required, howeve
material will take on the characteristics of any material it absorbs.(eg. c

SECTION VIII · SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)* OSHA approved respirator for nuisance dust

VENTILATION			
	LOCAL EXHAUST	not necessary	SPECIAL
	MECHANICAL *(General)*	not necessary	OTHER

PROTECTIVE GLOVES not necessary EYE PROTECTION std. dust goggles

OTHER PROTECTIVE EQUIPMENT none

SECTION IX · SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Normal fire considerations fo
cellulose product

OTHER PRECAUTIONS none

GPO 934-190

Los Alamos
National Laboratory

DATABASE UPDATE FORM

REQUESTED ACTION: ADD ☐ CORRECT DATA ☒
REPACK ☐ (See page 2)

Explanation/Justification of Changes: CORRECTION TO WAF FOR ACCURATE CHARACTERIZATION

Original CWDR#:
Original Container #:
Item ID #:
Waste Profile Form#: 26971

(to be supplied by Data Entry)
New Container #:
New Item ID #:

NEW DATA

Shipping Container:
Volume/Unit:
Tare Weight/Unit:
Waste Volume/Unit:
Waste Weight/Unit:

DESCRIPTION

THE ACTIVITY FOR ZN 65 WAS INCORRECTLY ENTERED INTO DATA BASE.

RAD DATA

Compactable/NonCompactable:
Surface Reading (mR/hr):
Alpha (dpm/100 sq cm):
Beta/Gamma (dpm/100 sq cm):

Radionuclides	Amount(uCi/g or uCi/l)	Uncertainty
Zn65	2.92 E-14 CIG	1.21 E-14

WASTE TYPE

Normal/Off Normal (to be included by reviewer):
Waste Codes (to be included by reviewer):
Physical State (S, L, or G):

EPA Code(s) (to be included by reviewer):

Notes:

REPACKS

New Containers #	Old Container #	Item ID #

Waste Stream Coordinator Signature		Date: 3/25/98
Waste Reviewer Signature		Date: 3/25/98
Storage Team Leader Signature		Date: 3/25/98

LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM
WPF #: 26971

Generator :	JUNG, KATHIE A	MS :	J595	PH :	57775	Z#:	112383
WMC :	WINCH, MARYJANE	MS :	J593	PH :	75905	Z#:	114734
Contact :							
CSR :	STAFFORD, DARRIK	MS :	J595	PH :	71638	Z#:	110010
Status :	ACTIVE	Activation Date :	20-AUG-97		Expiration Date:		20-AUG-98
Group :	EMSWO	TA :	54	Bldg :	000049	Room:	0

You are required to keep a copy of the WPF(s) in your files for at least three years. This WPF(s) is valid for one year or as long as the composition of the waste you have characterized remains the same and the generator remains the same. Should your waste or generator change, please submit a new WPF to EM-SWO Customer Service, and attach a copy of the WPF which is being replaced.

RMMA : **RADIOACTIVE MATERIALS MANAGEMENT AREA (RMMA)**
Waste Accumu : **None of the Above Site ID#**
Method of Char : **Knowledge of Process**
MSDS

Waste Type : **Process Waste/Spent Chemical/Other**
Waste Classes: RCA Waste - **Not RCA Waste**
RAD Waste - **Radioactive-LL**

Waste Category: **Not Applicable**

Waste Sources : **DECON/DECOM**

Waste Matrix : **Absorbed Liquid**

Matrix Type : **Homogeneous**

Waste/Proc Desc : MATERIAL FROM WPF#23413 LEAKED WHILE IN STORAGE IN DOME 49. SECONDARY CONTAINMENT PALLET COLLECTED MATERIAL FROM THE LEAKING DRUM. THE PALLET WAS EMPTIED IN ACCORDANCE WITH 261.7(<3% WT, <1% REAMINING). WASTE PROFILED ON THIS FORM IS THE ABSORBED RESIDUE THAT WAS CONTAINED IN THE PALLET AFTER IS WAS PUMPED AND IS EXEMPT FROM THE HAZARDOUS WASTE REGULATIONS.

Ignitability : **Not Ignitable**

Corrosivity : **Non-aqueous**

Reactivity : **Non-reactive**

Boiling Point : **Not applicable**

Toxicity Characteristic Metals :

Contaminant	Method	Limit	Min	Max	Unit
ARSENIC	**TCLP**	**Y**	**0**	**2.75**	**PPM**
BARIUM	**TCLP**	**Y**			**ppm**
CADMIUM	**TCLP**		**0**	**40.9**	**PPM**
CHROMIUM	**TCLP**		**0**	**16.3**	**PPM**
LEAD	**TCLP**		**0**	**1160**	**PPM**
SELENIUM	**TCLP**		**0**	**2.9**	**PPM**
SILVER	**TCLP**		**0**	**5.8**	**PPM**
MERCURY		**Y**			**ppm**

Toxicity Characteristic Organic Compounds: N/A

Additional Chemical Constituents and Contaminants :

CAS NO	Constituent	MIN	MAX	UOM
	WATER	**0**	**1**	**%**
	ABSORBENT (CORN COBS)	**99**	**100**	**%**
	NICKEL	**0**	**4.8**	**PPM**

Additional Information: CONCENTRATIONS REPORTED ON THIS PROFILE ARE THOSE THAT WERE REPORTED ON 23413 (WATER CONCENTRATION PRIOR TO ABSORBTION

Radiological Characteristics :

Radionuclide	Min	Max	Unit
AM241	0.000E+00	1.430E-10	CIG
AM243	0.000E+00	5.100E-15	CIG
PU238	0.000E+00	3.000E-13	CIG
PU239	0.000E+00	3.600E-08	CIG
BA140	0.000E+00	7.700E-12	CIG
CE144	0.000E+00	1.160E-12	CIG
CS134	0.000E+00	3.500E-14	CIG
CS137	0.000E+00	1.210E-13	CIG
RU106	0.000E+00	6.700E-13	CIG
SR90	0.000E+00	9.200E-13	CIG
CO57	0.000E+00	1.300E-15	CIG
CO60	0.000E+00	8.900E-13	CIG
EU152	0.000E+00	8.300E-15	CIG
MN54	0.000E+00	2.600E-16	CIG
ZN65	0.000E+00	2.420E-14	CIG
ZR88	0.000E+00	8.000E-10	CIG
H3	0.000E+00	7.100E-09	CIG
PA231	0.000E+00	1.800E-14	CIG
PB210	0.000E+00	1.300E-13	CIG
RA226	0.000E+00	1.200E-04	CIG
TH230	0.000E+00	6.000E-12	CIG
U234	0.000E+00	1.900E-14	CIG
U235	0.000E+00	9.400E-16	CIG
U238	0.000E+00	5.200E-12	CIG
BI212	0.000E+00	8.600E-14	CIG
PB211	0.000E+00	3.000E-13	CIG
RN219	0.000E+00	9.270E-15	CIG
BA133	0.000E+00	1.150E-13	CIG
BI211	0.000E+00	7.580E-15	CIG
BI214	0.000E+00	7.700E-15	CIG
CE141	0.000E+00	2.490E-14	CIG
K40	0.000E+00	5.600E-14	CIG
NA22	0.000E+00	1.700E-15	CIG
NP237	0.000E+00	3.200E-15	CIG
PA234	0.000E+00	1.800E-16	CIG
PB212	0.000E+00	5.600E-15	CIG
PB214	0.000E+00	1.700E-15	CIG
TH228	0.000E+00	3.700E-14	CIG
TH232	0.000E+00	1.400E-14	CIG
TH234	0.000E+00	1.500E-13	CIG

RA224	0.000E+00	1.230E-14	CIG
AC228	0.000E+00	5.590E-15	CIG
TL208	0.000E+00	4.300E-15	CIG

Rad Contamination Type : **VOLUME CONTAMINATION**

WASTE CHARACTERIZATION INFORMATION

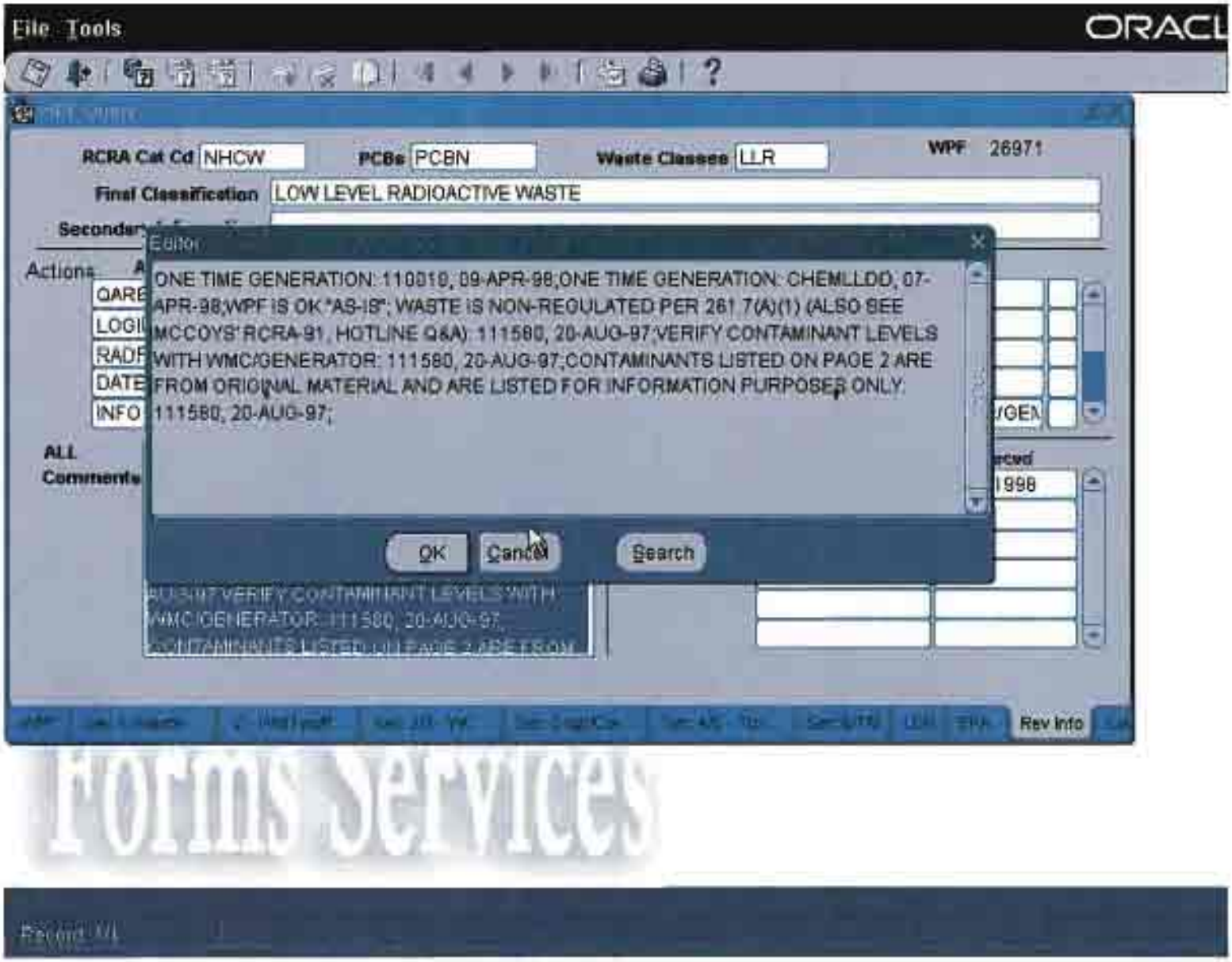
Radioactivity Category : **RADIOACTIVE-LL**

RCRA Category : **NON-HAZARDOUS WASTE**

Misc. Category : N/A

Waste Classification : **LOW LEVEL RADIOACTIVE WASTE**

EPA Hazardous Waste Code : N/A



Forms Services

Record: 1/1

LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM
WPF #: 26971

28-May-1998 03:09 PM (Version: 1) p.1

Generator :	JUNG, KATHIE A	MS :	J595	PH :	57775	Z#:	112383
WMC :	WINCH, MARYJANE	MS :	J593	PH :	75905	Z#:	114734
Contact :							
CSR :	STAFFORD, DARRIK	MS :	J595	PH :	71638	Z#:	110010
Status :	ACTIVE	Activation Date :	20-AUG-97		Expiration Date:		20-AUG-98
Group :	EMSWO	TA :	54	Bldg :	000049	Room:	0

You are required to keep a copy of the WPF(s) in your files for at least three years. This WPF(s) is valid for one year or as long as the composition of the waste you have characterized remains the same and the generator remains the same. Should your waste or generator change, please submit a new WPF to EM-SWO Customer Service, and attach a copy of the WPF which is being replaced.

RMMA : **RADIOACTIVE MATERIALS MANAGEMENT AREA (RMMA)**
Waste Accumm : **None of the Above Site ID#**
Method of Char : **Knowledge of Process**
MSDS

Waste Type : **Process Waste/Spent Chemical/Other**
Waste Classes: **RCA Waste - Not RCA Waste**
RAD Waste - Radioactive-LL

Waste Category: **Not Applicable**

Waste Sources : **DECON/DECOM**

Waste Matrix : **Absorbed Liquid**

Matrix Type : **Homogeneous**

Waste/Proc Desc : MATERIAL FROM WPF#23413 LEAKED WHILE IN STORAGE IN DOME 49. SECONDARY CONTAINMENT PALLET COLLECTED MATERIAL FROM THE LEAKING DRUM. THE PALLET WAS EMPTIED IN ACCORDANCE WITH 261.7(<3% WT, <1% REAMINING). WASTE PROFILED ON THIS FORM IS THE ABSORBED RESIDUE THAT WAS CONTAINED IN THE PALLET AFTER IS WAS PUMPED AND IS EXEMPT FROM THE HAZARDOUS WASTE REGULATIONS.

Ignitability : **Not ignitable**

Corrosivity : **Non-aqueous**

Reactivity : **Non-reactive**

Boiling Point : **Not applicable**

Toxicity Characteristic Metals :

Contaminant	Method	Limit	Min	Max	Unit
ARSENIC	TCLP	Y	0	2.75	PPM
BARIUM	TCLP	Y			ppm
CADMIUM	TCLP		0	40.9	PPM
CHROMIUM	TCLP		0	16.3	PPM
LEAD	TCLP		0	1160	PPM
SELENIUM	TCLP		0	2.9	PPM
SILVER	TCLP		0	5.8	PPM
MERCURY		Y			ppm

Toxicity Characteristic Organic Compounds: N/A

Additional Chemical Constituents and Contaminants :

CAS NO	Constituent	MIN	MAX	UOM
	WATER	**0**	**1**	**%**
	ABSORBENT (CORN COBS)	**99**	**100**	**%**
	NICKEL	**0**	**4.8**	**PPM**

Additional Information: CONCENTRATIONS REPORTED ON THIS PROFILE ARE THOSE THAT WERE REPORTED ON 23413 (WATER CONCENTRATION PRIOR TO ABSORBTION

Radiological Characteristics:

Radionuclide	Min	Max	Unit
AM241	0.000E+00	1.430E-10	CIG
AM243	0.000E+00	5.100E-15	CIG
PU238	0.000E+00	3.000E-13	CIG
PU239	0.000E+00	3.600E-08	CIG
BA140	0.000E+00	7.700E-12	CIG
CE144	0.000E+00	1.160E-12	CIG
CS134	0.000E+00	3.500E-14	CIG
CS137	0.000E+00	1.210E-13	CIG
RU106	0.000E+00	6.700E-13	CIG
SR90	0.000E+00	9.200E-13	CIG
CO57	0.000E+00	1.300E-15	CIG
CO60	0.000E+00	8.900E-13	CIG
EU152	0.000E+00	8.300E-15	CIG
MN54	0.000E+00	2.600E-16	CIG
ZN65	0.000E+00	2.420E-14	CIG
ZR88	0.000E+00	8.000E-10	CIG
H3	0.000E+00	7.100E-09	CIG
PA231	0.000E+00	1.800E-14	CIG
PB210	0.000E+00	1.300E-13	CIG
RA226	0.000E+00	1.200E-04	CIG
TH230	0.000E+00	6.000E-12	CIG
U234	0.000E+00	1.900E-14	CIG
U235	0.000E+00	9.400E-16	CIG
U238	0.000E+00	5.200E-12	CIG
BI212	0.000E+00	8.600E-14	CIG
PB211	0.000E+00	3.000E-13	CIG
RN219	0.000E+00	9.270E-15	CIG
BA133	0.000E+00	1.150E-13	CIG
BI211	0.000E+00	7.580E-15	CIG
BI214	0.000E+00	7.700E-15	CIG
CE141	0.000E+00	2.490E-14	CIG
K40	0.000E+00	5.600E-14	CIG
NA22	0.000E+00	1.700E-15	CIG
NP237	0.000E+00	3.200E-15	CIG
PA234	0.000E+00	1.800E-16	CIG
PB212	0.000E+00	5.600E-15	CIG
PB214	0.000E+00	1.700E-15	CIG
TH228	0.000E+00	3.700E-14	CIG
TH232	0.000E+00	1.400E-14	CIG
TH234	0.000E+00	1.500E-13	CIG

RA224	0.000E+00	1.230E-14	CIG
AC228	0.000E+00	5.590E-15	CIG
TL208	0.000E+00	4.300E-15	CIG

Rad Contamination Type : **VOLUME CONTAMINATION**

WASTE CHARACTERIZATION INFORMATION

Radioactivity Category : **RADIOACTIVE-LL**

RCRA Category : **NON-HAZARDOUS WASTE**

Misc. Category : N/A

Waste Classification : **LOW LEVEL RADIOACTIVE WASTE**

EPA Hazardous Waste Code : N/A

Los Alamos
National Laboratory

WASTE PROFILE FORM

6A Part 1

Account Information

For rapid processing, complete all sections in black or blue ink and mail this form to Waste Services Group at MS J579

Reference Number 23413

Waste Generator's Name (Print)	Znumber	Waste Management Coordinator's Name (Print)	Znumber
CRAIG S. LEASURE	107384	MICHAEL G. WILLIAMS	103922

Generator's Group	Generator's Telephone	Generator's Mail Stop	Waste Stream Technical Area	Building	Room
CST-15	7-0672	E531	TA-35	128	104

Waste Accumulation
Check as many as apply.

- ☐ Satellite accumulation area → site no.: _____
- ☒ Less than 90 day accumulation area → site no.: 1427
- ☐ Radioactive Materials Management Area (RMMA) → site no.: _____
- ☐ None of the above

Method of Characterization
Check as many as apply.

- ☐ Acceptable Knowledge (AK)
- ☒ Analysis attached → sample/request no. _____
- ☐ MSDS attached
- ☐ Request for analysis

Section 1- Chemical and Physical Characteristics

For help in completing this section of the form, call 5-WAST or 5-4000.

Waste Type
Check only one.

- ☐ Unused/unspent chemical
  Check Waste Classes and Associated Documentation Only
- ☒ Process waste/spent chemical
  Complete all of Section 1.

Waste Classes
Check as many as apply.

- ☒ On-going generation
- ☐ One-time generation
- ☒ Radioactive (complete Sec. 2)
- ☐ Non-radioactive
- ☐ Wastewater (complete Sec. 3)
- ☐ Classified/Sensitive

Associated Documentation
Check as many as apply.

- ☐ Process SOP → no.: _____
- ☐ RMMA OP → no.: _____
- ☐ WM SOP → no.: _____
- ☐ Other → _____
- ☒ None → describe below

Waste Category
Check as many as apply.

- ☐ Solvent
- ☐ Degreaser
- ☐ Dioxin
- ☐ Electroplating
- ☐ Treated hazardous waste residue
- ☐ Explosive process waste
- ☐ Infectious/biological waste
- ☐ Beryllium
- ☐ Asbestos-friable
- ☐ Asbestos-nonfriable
- ☐ Empty containers
- ☐ PCB (<50 ppm)
  - ☐ PCB (50 - 500 ppm)
  - ☐ PCB (> 500 ppm)
  - → id. no.: _____
- ☒ Not applicable → describe below

Waste Sources
Check as many as apply.

- ☐ Research and development
- ☐ Maintenance
- ☐ Construction
- ☒ Material processing
- ☐ Decon/decom
- ☐ Investigation derived
- ☐ Remediation
- ☐ UST - petroleum
- ☐ UST - non-petroleum
- ☐ Generator treatment
- ☐ Interim/permitted treatment
- ☐ Industrial sludge
- ☐ Sanitary sludge
- ☐ Abatement

Waste Matrix
Check only one.

Gas
- ☐ ≤ 1.5 Atmospheres
- ☐ > 1.5 Atmospheres

Liquid
- ☒ Aqueous per C. Leasure
- ☒ Organic — GM 3/17/97
- ☐ Inorganic

Solid
- ☐ Powder/ash
- ☐ Solid
- ☐ Absorbed liquid

Matrix Type
Check only one.

- ☒ Homogeneous
- ☐ Heterogeneous → describe below

Waste/Process Description

(WATERS) WATERS WITH TOXIC METALS, RAD

Form 1348 (1/96)

Section 1- Chemical and Physical Characteristics (continued)

Ignitability (degrees F.)
Check only one.

- ☐ < 73
- ☐ 73-99
- ☐ 100-139
- ☐ 140-200
- ☐ > 200
- ☐ Ignitable solid
- ☐ DOT oxidizer
- ☒ Not ignitable

Corrosivity (pH)
Check only one.

- ☐ ≤ 2.0
- ☐ 2.1-4.0
- ☐ 4.1-6.0
- ☒ 6.1-9.0 per C. Leasure GH 3/17/97
- ☐ 9.1-12.4
- ☐ ≥ 12.5
- ☐ Liquid corrosive to steel
- ☒ ~~Not aqueous~~

Reactivity
Check as many as apply.

- ☐ Unstable
- ☐ Water reactive
- ☐ Pyrophoric
- ☐ Cyanide bearing
- ☐ Sulfide bearing
- ☐ Shock sensitive
- ☐ Explosive - class _____
- ☒ Non-reactive

Boiling Point (degrees F.)
Check only one.

- ☐ ≤ 95
- ☐ > 95
- ☒ Not applicable

Identify presence of contaminants.			Minimum	Maximum	Unit (ppm or % only)	Analytical method
Toxicity Characteristic Metals						
Arsenic	☐ None	☒ < 5.0 ppm	0	2.75	ppm	☒ TCLP ☐ Total
Barium	☐ None	☒ < 100.0 ppm				☒ TCLP ☐ Total
Cadmium SE 3/14/97	☐ None	☐ < 1.0 ppm	0	40.9	ppm	☒ TCLP ☐ Total
Chromium	☐ None	☐ < 5.0 ppm	8	16.3	ppm	☒ TCLP ☐ Total
Lead	☐ None	☐ < 5.0 ppm	8	1160.0	ppm	☒ TCLP ☐ Total
Mercury	☐ None	☒ < 0.2 ppm				☒ TCLP ☐ Total
Selenium	☐ None	☐ < 1.0 ppm	8	2.9	ppm	☒ TCLP ☐ Total
Silver	☐ None	☐ < 5.0 ppm	8	5.8	ppm	☒ TCLP ☐ Total
Toxicity Characteristic Organic Compounds						
Benzene	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
Carbon tetrachloride	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
Chlorobenzene	☒ None	☐ < 100.0 ppm				☐ TCLP ☐ Total
Chloroform	☒ None	☐ < 6.0 ppm				☐ TCLP ☐ Total
Cresol	☒ None	☐ < 200.0 ppm				☐ TCLP ☐ Total
1,4-dichlorobenzene	☒ None	☐ < 7.5 ppm				☐ TCLP ☐ Total
1,2-Dichloroethane	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
1,1-Dichloroethylene	☒ None	☐ < 0.7 ppm				☐ TCLP ☐ Total
2,4-Dinitrotoluene	☒ None	☐ < 0.13 ppm				☐ TCLP ☐ Total
Hexachlorobenzene	☒ None	☐ < 0.13 ppm				☐ TCLP ☐ Total
Hexachlorobutadiene	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
Hexachloroethane	☒ None	☐ < 3.0 ppm				☐ TCLP ☐ Total
Methyl ethyl ketone	☒ None	☐ < 200.0 ppm				☐ TCLP ☐ Total
Nitrobenzene	☒ None	☐ < 2.0 ppm				☐ TCLP ☐ Total
Pentachlorophenol	☒ None	☐ < 100.0 ppm				☐ TCLP ☐ Total
Pyridine	☒ None	☐ < 5.0 ppm				☐ TCLP ☐ Total
Perchloroethylene or tetrachloroethylene	☒ None	☐ < 0.7 ppm				☐ TCLP ☐ Total
Trichloroethylene	☒ None	☐ < 0.5 ppm				☐ TCLP ☐ Total
2,4,5-Trichlorophenol	☒ None	☐ < 400.0 ppm				☐ TCLP ☐ Total
2,4,6-Trichlorophenol	☒ None	☐ < 2.0 ppm				☐ TCLP ☐ Total
Vinyl chloride	☒ None	☐ < 0.2 ppm				☐ TCLP ☐ Total

Additional Chemical Constituents and Contaminants (for hazardous constituents, see AR 10-3, Appendix A)
List all other constituents (including inerts) not identified above and attach any applicable analyses.

Name of constituent	Cas no.(optional)	Minimum	Maximum	(ppm or %)
~~SEE ATTACHED ANALYSIS~~				
WATERS		100	100	%
~~ITEMS ON ATTACHED Sheet~~				

Form 1346 (1/95)

Section 2- Radiological Characteristics

For help in completing this section of the form, call 5-WAST or 5-4000.

	Range minimum	Range maximum	Unit (Ci/g or Ci/l)
General			
☒ Alpha	0	7.2E-12	Ci/g
☒ Beta	0	6.4E-11	Ci/g
☒ Gamma	0	2.1E-11	Ci/g
TRU radionuclides			
☐ None present			
☒ Am-241	0	1.43E-10	Ci/g
☒ Am-243	0	5.1E-15	Ci/g
☐ Cf-249			
☐ Cf-251			
☐ Cm-243			
☐ Cm-245			
☐ Cm-247			
☒ Pu-238	0	3.0E-13	Ci/g
☒ Pu-239	0	3.6E-08	Ci/g
☐ Pu-240			
☐ Pu-242			
Fission products			
☐ None present			
☒ Ba-140	0	7.7E-12	Ci/g
☒ Ce-144	0	1.16E-12	Ci/g
☒ Cs-134	0	3.5E-14	Ci/g
☒ Cs-137	0	1.21E-13	Ci/g
☐ I-129			
☐ I-133			
☐ Kr-85			
☐ Nb-95			
☒ Ru-106	0	6.7E-13	Ci/g
☐ Sb-125			
☒ Sr-90	0	9.2E-13	Ci/g
☐ Tc-99			
☐ Zr-93			
☐ Zr-95			
Activation products			
☐ None present			
☐ As-74			
☐ Be-7			
☐ C-14			
☐ Co-56			
☒ Co-57	0	1.3E-15	Ci/g
☒ Co-58 MW			
☒ Co-60	0	5.9E-13	Ci/g
☐ Cr-51			
☒ Eu-152	~~0~~ MW	~~8.3E-15~~ MW	~~Ci/g~~ MW
☐ Mn-52	0	8.3E-15	Ci/g
☒ Mn-54			
☐ Nb-94	0	2.6E-16	Ci/g
☐ Ni-59			
☐ Ni-63			
☐ Rb-83			
☐ Rb-84			
☐ Se-75			
☐ Sr-82			
☐ Sr-85			
☐ V-48			
☐ Y-88			
☒ Zn-65	0	2.4E-~~08~~ MW	Ci/g
☒ Zr-88	0	8.0E-10	Ci/g

	Range minimum	Range maximum	Unit (Ci/g or Ci/l)
Other			
☐ None present			
☐ Am-242			
☐ Bi-207			
☐ Bi-210			
☐ Cf-250			
☐ Cf-252			
☐ Cm-244			
☒ H-3	0	7.1E-09	Ci/g
☒ Pa-231	0	1.8E-14	Ci/g
☒ Pb-210	0	1.3E-13	Ci/g
☐ Po-210			
☐ Pu-238			
☐ Pu-241			
☒ Ra-226	0	1.2E-11	Ci/g
☐ Ra-228			
☒ Th-230	0	6.0E-12	Ci/g
☒ Th-232	0	1.44E-14	Ci/g
☐ U-232			
☐ U-233			
☒ U-234	0	1.9E-14	Ci/g
☒ U-235	0	9.4E-16	Ci/g
☐ U-236			
☒ U-238	0	5.2E-12	Ci/g
Add'l radionuclides			
☐ No additional radionuclides present			
BA-133	0	1.15E-13	Ci/g
BI-211	0	7.58E-15	Ci/g
BI-212	0	8.6E-14	Ci/g
BI-214	0	7.7E-15	Ci/g
CE-141	0	2.49E-14	Ci/g
K-40	0	5.6E-14	Ci/g
NA-22	0	1.7E-15	Ci/g
NP-237	0	3.2E-15	Ci/g
PA-234	0	1.8E-16	Ci/g
PB-211	0	3.0E-13	Ci/g
PB-212	0	5.6E-15	Ci/g
PB-214	0	1.7E-15	Ci/g
~~RA-226~~ MW			
TH-228	0	3.7E-14	Ci/g
TH-232	0	1.4E-14	Ci/g
TH-234	0	1.5E-13	Ci/g

Contamination Type: *Check as many as apply.*

☒ Volume Contamination

☐ Surface Contamination

Form 1346 (1/95)

Section 3 - Wastewater Characteristics

For help in completing this section of the form, call 7-4301.

Identify presence of contaminants			Minimum	Maximum	Unit (ppm or % only)	Analytical method
Aluminum	☐ None	☐ < 5.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Boron	☐ None	☐ < 5.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Cobalt	☐ None	☐ < 1.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Copper	☐ None	☐ < 1.0 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Vanadium	☐ None	☐ < 0.10 ppm	_____ to	_____	_____	☐ TCLP ☐ Total
Zinc	☐ None	☐ < 95.4 ppm	_____ to	_____	_____	☐ TCLP ☐ Total

Maximum daily flow when discharge occurs: _____ ☐ Gallon ☐ Liters

Average daily flow when discharge occurs: _____ ☐ Gallon ☐ Liters

Estimated number of days per year that discharge will occur: _____

Estimated total volume per year discharged to the Radioactive Liquid Waste Collection System at TA-50-1: _____ ☐ Gallon ☐ Liters

For TA-55 use only. Wastewater will be discharged through one of the following:

☐ Acid line ☐ Caustic line ☐ Industrial waste line

Section 4 - Additional Information

If additional information is available on the chemical, physical, or radiological character of the waste not covered on this form, provide it below:

RA-224 - 0 to 1.23E-14 ci/g
RN-219 - 0 to 9.27E-15 ci/g
AC-228 - 0 to 5.59E-15 ci/g
TL-208 - 0 to 4.3E-15 ci/g

WASTE GENERATOR CERTIFICATION: *Based on my knowledge of the waste and/or chemical/physical analysis, I certify that the information on this form is correct. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.*

Signature _____ Date 3/26/96

Form 1346 (1/95)

Report Section III.

Highest Concentrations for Each Analyte Found Anywhere Above

Each analysis with the Largest Activity will be printed out.
Analyses with sample number starting with QC. are not evaluated and they are always printed out.
Samples which have Units which could not be converted to PPM or NCI/G will not be evaluated and will always be printed out.

AC-228	94.25478	20096	55.9000E-07	NCI/G
~~AG SILVER~~	00.29398	00000	12.0000E-01	PPM
AG	00.29398	00000	12.0000E-01	PPM
AG	00.31651	00000	15.0000E-03	PPM
~~AG~~	~~94.73904~~	~~09999~~	~~99.99999E 99~~	~~INVALID~~
~~AG~~	~~94.73904~~	~~09999~~	~~99.99999E 99~~	~~INVALID~~
AG	92.24855	13318	58.0000E-01	PPM
ALPHA	94.73904	9999	15.0000E 01	NCI/G
ALPHA,RV	93.23009	16257	72.0000E-04	NCI/G
AM-241	94.73904	9999	23.0000E 00	NCI/G
AM-241,RV	94.05358	18054	14.3220E-02	NCI/G
AM-243T	92.30481	13705	50.9000E-07	NCI/G
AS ~~ARSENIC~~	00.29398	00000	27.5000E-01	PPM
AS	00.29398	00000	27.5000E-01	PPM
AS	00.31651	00000	10.0000E-02	PPM
AS	94.29954	20172	10.0000E 01	PPM
BA ~~BARIUM~~	00.29398	00000	48.1000E-01	PPM
BA	00.29398	00000	48.1000E-01	PPM
BA	94.29954	20172	18.7000E 01	PPM
BA-133	93.25154	16304	11.5000E-05	NCI/G
BA-140	94.06851	19923	77.2000E-04	NCI/G
BA-140,RV	94.07016	17936	14.2060E-04	NCI/G
BETA	93.06117	14475	64.0000E-03	NCI/G
BETA,RV	95.08036	21851	28.0770E-02	NCI/G
BI-211	94.25478	20096	75.8000E-07	NCI/G
BI-212 BISMUTH	94.25478	20096	86.0000E-06	NCI/G
BI-214	94.25478	20096	77.0000E-07	NCI/G
CD	00.29398	00000	10.0000E-02	PPM
CD	00.29398	00000	10.0000E-02	PPM
CD	00.31651	00000	25.0000E-03	PPM
~~CD CADMIUM~~	94.29954	20172	40.9000E 00	PPM
CE-141	94.22349	19914	24.9800E-06	NCI/G
CE-144	93.13904	15139	11.6000E-04	NCI/G
CE-144,RV	94.05358	18054	16.8180E-02	NCI/G
CO-57	94.25478	20096	13.3000E-07	NCI/G
CO-60 COBALT	93.25157	16304	59.2000E-05	NCI/G
CO-60,RV	94.07348	17947	42.0110E-05	NCI/G
~~CR CHROMIUM~~	00.29398	00000	24.9000E-01	PPM
CR	00.29398	00000	24.9000E-01	PPM
CR	00.31651	00000	00.0000E 00	PPM
~~CR~~	~~94.73904~~	~~09999~~	~~99.99999E 99~~	~~INVALID~~
~~CR~~	~~94.73904~~	~~09999~~	~~99.99999E 99~~	~~INVALID~~
CR	94.29954	20172	16.3000E 00	PPM
CS-134	93.25154	16304	35.2000E-06	NCI/G
CS-137	00.27981	00000	12.1900E-05	NCI/G
CS-137	00.27981	00000	12.1900E-05	NCI/G
CS-137	00.27982	00000	11.5800E-05	NCI/G
CS-137	00.27983	00000	18.2900E-05	NCI/G
CS-137	00.27985	00000	48.7700E-05	NCI/G
CS-137	93.25157	16304	76.7000E-05	NCI/G
CS-137,RV	94.06371	17966	26.0650E-04	NCI/G

EU-152	94.25555	19463	83.1300E-07	NCI/G
EU-152,RV	94.05358	18054	54.3890E-02	NCI/G
GAMMA	93.06117	14475	21.0000E-03	NCI/G
GAMMA,RV	93.23006	16257	32.0000E-04	NCI/G
H-3	94.10763	18566	00.0000E 00	INVALID
H-3	94.10763	18566	00.0000E 00	INVALID
H-3	95.08195	21873	71.2000E-01	NCI/G
H-3,RV	95.01546	22085	19.0000E-04	NCI/G
HG	94.29955	20172	19.0000E-02	PPM
K-40	94.25478	20096	56.1000E-06	NCI/G
MN-54	94.25478	20096	26.8000E-08	NCI/G
NA-22	94.13398	19166	17.6700E-07	NCI/G
NA-22,RV	94.08890	17949	44.3280E-05	NCI/G
NI NICKEL	00.29398	00000	48.0000E-01	PPM
NI	00.29398	00000	48.0000E-01	PPM
NI	00.31651	00000	95.0000E-03	PPM
NI	94.73904	09999	00.0000E 00	INVALID
NI	94.73904	09999	00.0000E 00	INVALID
NI	94.29954	20172	15.8000E 00	PPM
NP-237	94.25555	19463	32.2500E-07	NCI/G
NP-237,RV	94.05358	18054	36.4130E-02	NCI/G
PA-231	94.25478	20096	18.5000E-06	NCI/G
PA-234	94.25478	20096	18.0000E-08	NCI/G
PA-234M	94.25478	20096	54.9000E-05	NCI/G
PB LEAD	00.29398	00000	11.1000E-01	PPM
PB	00.29398	00000	11.1000E-01	PPM
PB	00.31651	00000	60.0000E-03	PPM
PB	94.73904	09999	00.0000E 00	INVALID
PB	94.73904	09999	00.0000E 00	INVALID
PB	94.29954	20172	11.6000E 02	PPM
PB-210	94.25478	20096	13.4000E-05	NCI/G
PB-211	94.25478	20096	30.6000E-05	NCI/G
PB-212	94.25478	20096	56.9000E-07	NCI/G
PB-214	94.25478	20096	17.3000E-07	NCI/G
PU-238	94.23255	19150	30.0000E-05	NCI/G
PU-239	94.73904	9999	36.0000E 00	NCI/G
RA-224	94.25478	20096	12.3000E-06	NCI/G
RA-226	94.27421	20635	12.1600E-03	NCI/G
RN-219	94.25478	20096	92.7000E-07	NCI/G
RU-106	93.13904	15139	67.9000E-05	NCI/G
RU-106,RV	94.13312	17941	19.0550E-04	NCI/G
SE	00.29398	00000	29.0000E-01	PPM
SE	00.29398	00000	29.0000E-01	PPM
SE	00.31651	00000	15.0000E-03	PPM
SE SELENIUM	92.29607	13357	91.1000E-01	PPM
SR-90	94.21022	19811	92.0000E-05	NCI/G
TH-228	94.22349	19914	37.0700E-06	NCI/G
TH-230	94.27418	20635	60.3500E-04	NCI/G
TH-232	93.23011	16155	14.4000E-08	NCI/G
TH-234	94.25478	20096	15.2000E-05	NCI/G
TL	00.29398	00000	50.0000E-01	PPM
TL	00.29398	00000	50.0000E-01	PPM
TL	00.31651	00000	55.0000E-03	PPM
TL	94.73904	09999	00.0000E 00	INVALID
TL	94.73904	09999	00.0000E 00	INVALID
TL	92.24964	13293	27.0000E 00	PPM
TL-208	94.25478	20096	43.3000E-07	NCI/G
U	95.15467	22664	33.7900E-06	NCI/G
U-234	00.23562	00000	19.8400E-06	NCI/G
U-234	94.27418	20635	53.7000E-04	NCI/G

SR-90	<=	2.0 nCi/g	ALPHA & BETA	(	10.0000E-06 NCI/G)	RN 20635
TH-230	<=	2.0 nCi/g	ALPHA	(	58.6700E-04 NCI/G)	RN 20635
TH-230	<=	2.0 nCi/g	ALPHA	(	21.0000E-08 NCI/G)	RN 20635
U-234	<=	2.0 nCi/g	ALPHA	(	17.3000E-06 NCI/G)	RN 20635
U-234	<=	2.0 nCi/g	ALPHA	(	47.4000E-04 NCI/G)	RN 20635
U-235	<=	2.0 nCi/g	ALPHA	(	65.0000E-08 NCI/G)	RN 20635
U-235	<=	2.0 nCi/g	ALPHA	(	21.0000E-05 NCI/G)	RN 20635
U-238	<=	2.0 nCi/g	ALPHA	(	46.0000E-04 NCI/G)	RN 20635
U-238	<=	2.0 nCi/g	ALPHA	(	16.5500E-06 NCI/G)	RN 20635

SAMPLE NUMBER: 94.27564 ; MATRIX: Waters

IV. Radioactivity

GAMMA	<=	2.0 nCi/g	GAMMA	(	15.0000E-04 NCI/G)	RN 19726

SAMPLE NUMBER: 94.27671 ; MATRIX: Waters

IV. Radioactivity

AM-241	<=	2.0 nCi/g	ALPHA	(	45.6000E-09 NCI/G)	RN 20200
CS-137	<=	2.0 nCi/g	GAMMA	(	13.8000E-07 NCI/G)	RN 20200
PU-238	<=	2.0 nCi/g	ALPHA	(	15.2000E-08 NCI/G)	RN 20200
PU-239	<=	2.0 nCi/g	ALPHA	(	11.3000E-09 NCI/G)	RN 20200
SR-90	<=	2.0 nCi/g	ALPHA & BETA	(	29.3000E-07 NCI/G)	RN 20200

SAMPLE NUMBER: 94.28642 ; MATRIX: Waters

IV. Radioactivity

AM-241	<=	2.0 nCi/g	ALPHA	(	41.1000E-09 NCI/G)	RN 20202
PU-238	<=	2.0 nCi/g	ALPHA	(	10.0000E-08 NCI/G)	RN 20202
SR-90	<=	2.0 nCi/g	ALPHA & BETA	(	54.6000E-07 NCI/G)	RN 20202

SAMPLE NUMBER: 94.29085 ; MATRIX: Waters

IV. Radioactivity

AM-241	<=	2.0 nCi/g	ALPHA	(	12.4000E-09 NCI/G)	RN 20201
CS-137	<=	2.0 nCi/g	GAMMA	(	24.9000E-07 NCI/G)	RN 20201
PU-238	<=	2.0 nCi/g	ALPHA	(	33.4000E-09 NCI/G)	RN 20201
SR-90	<=	2.0 nCi/g	ALPHA & BETA	(	44.2000E-07 NCI/G)	RN 20201

SAMPLE NUMBER: 94.29753 ; MATRIX: Waters

I. D-Listed Contaminants

A. Toxic Metals

HG	<	0.2000 PPM	D009	RN 20104

SAMPLE NUMBER: 94.29954 ; MATRIX: Silicates

I. D-Listed Contaminants

A. Toxic Metals

AG	<	5.0000 PPM	D011	RN 20172
AS	>=	5.0000 PPM	D004	RN 20172
BA	>=	100.0000 PPM	D005	RN 20172
CD	>=	1.0000 PPM	D006	RN 20172
CR	>=	5.0000 PPM	D007	RN 20172
NI	<	134.0000 PPM		RN 20172
PB	>=	5.0000 PPM	D008	RN 20172
SE	>=	1.0000 PPM	D010	RN 20172

SAMPLE NUMBER: 94.29955 ; MATRIX: Silicates

I. D-Listed Contaminants

A. Toxic Metals

HG	<	0.2000 PPM	D009	RN 20172

SAMPLE NUMBER: 94.30060 ; MATRIX: Misc. Materials

I. D-Listed Contaminants

A. Toxic Metals

94.25557 Waters Radioactivity;
94.25557 Waters Radioactivity;
94.26036 Waters NOT_HAZARDOUS
94.26657 Waters Radioactivity;
94.26658 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27160 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27161 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27162 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27163 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27206 Waters Radioactivity;
94.27207 Waters Radioactivity;
94.27208 Waters Radioactivity;
94.27209 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27285 Silicates Toxic_Metals (D-Listed);
94.27285 Silicates Toxic_Metals (D-Listed);
94.27416 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27417 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27418 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27420 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27421 Waters Toxic_Metals (D-Listed); Radioactivity;
94.27564 Waters Radioactivity;
94.27578 Waters NOT_HAZARDOUS
94.27671 Waters Radioactivity;
94.28508 Waters NOT_HAZARDOUS
94.28642 Waters Radioactivity;
94.29085 Waters Radioactivity;
94.29753 Waters Toxic_Metals (D-Listed);
94.29808 Waters NOT_HAZARDOUS
94.29808 Waters NOT_HAZARDOUS
94.29954 Silicates Toxic_Metals (D-Listed);
94.29955 Silicates Toxic_Metals (D-Listed);
94.30060 Misc. Materials Toxic_Metals (D-Listed);
94.30061 Waters Toxic_Metals (D-Listed);
94.30262 Waters Toxic_Metals (D-Listed); Radioactivity;
94.30263 Waters Toxic_Metals (D-Listed); Radioactivity;
94.30349 Misc. Materials Toxic_Metals (D-Listed);
94.30349 Misc. Materials Toxic_Metals (D-Listed);
94.30350 Misc. Materials Toxic_Metals (D-Listed);
94.31246 Waters Toxic_Metals (D-Listed);
94.31525 Waters Radioactivity;
94.31858 Waters NOT_HAZARDOUS
94.31870 Waters Radioactivity;
94.32234 Waters Toxic_Metals (D-Listed); Radioactivity;
94.32553 Misc. Materials Toxic_Metals (D-Listed);
94.32761 Waters Radioactivity;
94.32762 Waters Radioactivity;
94.32853 Waters NOT_HAZARDOUS
94.73904 Sludge Toxic_Metals (D-Listed); Radioactivity;
94.73904 Sludge Toxic_Metals (D-Listed); Radioactivity; Other Potentially Hazardous Constituents.
95.00900 Misc. Materials Toxic_Metals (D-Listed);
95.00913 Waters Radioactivity;
95.00914 Waters Radioactivity;
95.00915 Waters NOT_HAZARDOUS
95.00916 Waters NOT_HAZARDOUS
95.01216 Waters Radioactivity;
95.01217 Waters Radioactivity;
95.01217 Waters Radioactivity;
95.01544 Waters Toxic_Metals (D-Listed); Radioactivity;

95.01547 Waters Toxic_Metals (D-Listed); Radioactivity;