



## Department of Energy

Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

JUN 21 1990

Mr. Timothy L. Nord, Hanford Project Manager  
State of Washington  
Department of Ecology  
Mail Stop PV-11  
Olympia, Washington 98504-8711

Dear Mr. Nord:

REVISION TO THE DANGEROUS WASTE PART A PERMIT APPLICATION FOR THE SIMULATED HIGH LEVEL WASTE SLURRY TREATMENT/STORAGE UNIT (WA7890008967)

Enclosed is the Dangerous Waste Part A Permit Application Form 3, Revision 1, for the Simulated High Level Waste Slurry (SHLWS) Treatment/Storage facility. The facility was used to store simulated high level waste and to treat the waste using a grout/stabilization process.

The Form 3, Revision 1, for the SHLWS has been revised to incorporate additional information. The need for this information was identified during review of the closure plan by the Washington Department of Ecology and Pacific Northwest Laboratory. Revisions include the additional designation of the slurry as an extremely hazardous waste mixture, a revised process description reflecting the grouting process employed in treating the waste, and further definition of the low level of radioactivity present in the slurry.

If you have any questions regarding the enclosed permit application revision, please contact Mr. C. E. Clark of the U.S. Department of Energy, Richland Operations Office on (509) 376-9333 or Mr. H. W. Slater, Pacific Northwest Laboratory on (509) 376-0575.

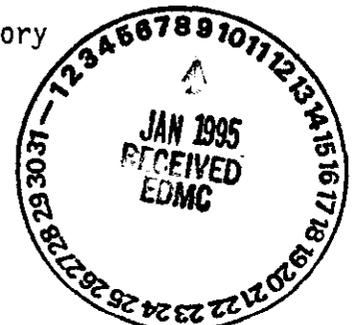
Sincerely,

R. D. Izatt, Director  
Environmental Restoration Division  
Richland Operations Office

T. D. Chikalla, Director  
Facilities and Operations  
Pacific Northwest Laboratory

Enclosures: Dangerous Waste Part A  
Permit Application for the  
Simulated High Level Waste  
Slurry Treatment/Storage Unit

cc w/encl: P. T. Day, EPA  
D. L. Duncan, EPA  
J. L. McElroy, PNL



*(Type in the unshaded areas only. Boxes are shaded for data type, i.e., 12 characters/mcni)*

# DANGEROUS WASTE PERMIT APPLICATION

I. EPA/STATE I.D. NUMBER

WA 7 8 9 0 0 0 8 9 6 7

FORM 3

**OFFICIAL USE ONLY**

APPLICATION APPROVED	DATE RECEIVED (mo. day, yr.)	COMMENTS

**II. FIRST OR REVISED APPLICATION**

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA/STATE I.D. Number, or if this is a revised application, enter your facility's EPA/STATE I.D. Number in Section I above.

**A. FIRST APPLICATION (place an "X" below and provide the appropriate date)**

1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)

2. NEW FACILITY (Complete item below.)

MO	DAY	YR

FOR EXISTING FACILITIES, PROVIDE THE DATE (mo., day, & yr.) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the date in the cell)

MO	DAY	YR

FOR NEW FACILITIES, PROVIDE THE DATE (mo., day, & yr.) OPERATION BEGAN OR IS EXPECTED TO BEGIN

**B. REVISED APPLICATION (place an "X" below and complete Section I above)**

1. FACILITY HAS AN INTERIM STATUS PERMIT

2. FACILITY HAS A FINAL PERMIT

**III. PROCESSES -- CODES AND DESIGN CAPACITIES**

**A. PROCESS CODE** -- Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the (Section III-C).

**B. PROCESS DESIGN CAPACITY** -- For each code entered in column A enter the capacity of the process.

1. AMOUNT -- Enter the amount.

2. UNIT OF MEASURE -- For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
<b>Storage:</b>			<b>Treatment:</b>		
CONTAINER (barrel, drum, etc.)	501	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
TANK	502	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
WASTE PILE	503	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
LAND IMPOUNDMENT	504	GALLONS OR LITERS	OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Section III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY
INJECTION WELL	080	GALLONS OR LITERS			
LANDFILL	001	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	082	ACRES OR HECTARES			
OCEAN DISPOSAL	083	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	004	GALLONS OR LITERS			
<b>UNIT OF MEASURE</b>	<b>UNIT OF MEASURE CODE</b>	<b>UNIT OF MEASURE</b>	<b>UNIT OF MEASURE CODE</b>	<b>UNIT OF MEASURE</b>	<b>UNIT OF MEASURE CODE</b>
GALLONS	Q	LITERS PER DAY	Y	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	G
GALLONS PER DAY	U	LITERS PER HOUR	H		

**EXAMPLE FOR COMPLETING SECTION III (shown in line numbers X-1 and X-2 below):** A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PROCESS CODE			B. PROCESS DESIGN CAPACITY			FOR OFFICIAL USE ONLY
	1	2	3	1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	3. UNIT OF MEASURE (enter code)	
X-1	S	0	2	600	G		
X-2	T	0	3	20	E		
1	S	0	1	20,000	G		
2	T	0	4	550	U		
3							
4							

Continued from the front

**II. PROCESSES (continued)**

SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

T04, S01--This permit covered a one-time proposal to immobilize approximately 200 55-gallon drums of a simulated high level waste slurry (formerly known as "PW-0" and "PW7/7A" material). The program that originally procured this specialty chemical was eliminated before the material was used for R&D purposes. Although the material had been used intermittently, all remaining material with no future use was treated.

The treatment process consisted of neutralization and mixing with a grout within lined 55-gallon, DOT 17H containers. The treatment eliminated the characteristics of ignitability, corrosivity and EP Toxicity. Photographs of the treatment equipment and area are attached.

The grouted slurry was stored in drums at the site of treatment (1100 Area, see attached drawing) until tests (EP Toxicity, Acute Fish and Rat Toxicity) were completed. These tests verified that the treated waste exhibits no dangerous waste characteristics.

**V. DESCRIPTION OF DANGEROUS WASTES**

- A. **DANGEROUS WASTE NUMBER** — Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describes the characteristics and/or the toxic contaminants of those dangerous wastes.
- B. **ESTIMATED ANNUAL QUANTITY** — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.
- C. **UNIT OF MEASURE** — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

**D. PROCESSES**

**1. PROCESS CODES:**

For listed dangerous waste: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.  
 For non-listed dangerous waste: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.  
 Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

**2. PROCESS DESCRIPTION:** If a code is not listed for a process that will be used, describe the process in the space provided on the form.

**NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER** — Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

1. Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "Included with above" and make no other entries on that line.
3. Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

**EXAMPLE FOR COMPLETING SECTION IV (shown in line numbers X-1, X-2, X-3, and X-4 below)** — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. DANGEROUS WASTE NO. (enter 4-digit)				B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter 3-digit)	D. PROCESSES		
							1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))	
X-1	K	0	5	4	900	P	T 0 3	D 8 0	
X-2	D	0	0	2	200	P	T 0 3	D 8 0	
X-3	D	0	0	1	100	P	T 0 3	D 8 0	
X-4	D	0	0	2			T 0 3	D 8 0	included with above

Continued from page 2.

NOTE: Precede the zeros before completing if you have more than 25 wastes to list.

10. NUMBER (enter from page 1)

W 7 8 9 0 0 0 0 8 9 6 7

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

L I N E N O. C.	A. DANGEROUS WASTE NO. (owner code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEAS- SURE (owner code)	D. PROCESSES	
				1. PROCESS CODES (owner)	2. PROCESS DESCRIPTION (If a code is not assigned use D11)
1	D 0 0 1	150,000		P S O 1 T O 4	Storage/Treatment
2	D 0 0 2	Includes the above			
3	D 0 0 5				
4	D 0 0 6				
5	D 0 0 7				
6	D 0 1 1				
7	W T O 1				
8					
9					
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26					

Continued from the front

**IV. DESCRIPTION OF DANGEROUS WASTES (continued)**

2. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM SECTION 0(1) ON PAGE 3.

Material to be treated was designated as ignitable (D001); corrosive (D002) due to pH  $\leq 2.0$  and EP Toxic due to barium (D005), cadmium (D006), chromium (D007), and silver (D011), and was also slightly radioactive ( $< 2000\text{pCi/g}$ ) due to naturally-occurring elements present. (This level of natural occurring radiation is not sufficient to designate the material as radioactive mixed waste [RMW].) The waste slurries were designated as extremely hazardous waste (EHW) toxic mixtures (WT01). This designation was due to the concentration and toxicity of nitric acid and metallic nitrate salts (i.e., silver nitrate, ferric nitrate) present in the wastes.

**V. FACILITY DRAWING**

All existing facilities must include in the space provided on Page 5 a scale drawing of the facility (see instructions for more detail).

**VI. PHOTOGRAPHS \* This information appears on the attached drawing and photographs.**

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

**VII. FACILITY GEOGRAPHIC LOCATION This information is provided on attached drawings and photos**

LATITUDE (degrees, minutes, & seconds)

LONGITUDE (degrees, minutes, & seconds)

**VIII. FACILITY OWNER**

A. If the facility owner is also the facility operator as listed in Section VII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER

2. PHONE NO. (area code & no.)

3. STREET OR P.O. BOX

4. CITY OR TOWN

5. ST

6. ZIP CODE

**IX. OWNER CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME (print or type) Michael J. Lawrence  
Manager, Richland Operations  
United States Department of Energy

SIGNATURE  
*Michael J. Lawrence*

DATE SIGNED  
6-21-90

**X. OPERATOR CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME (print or type)

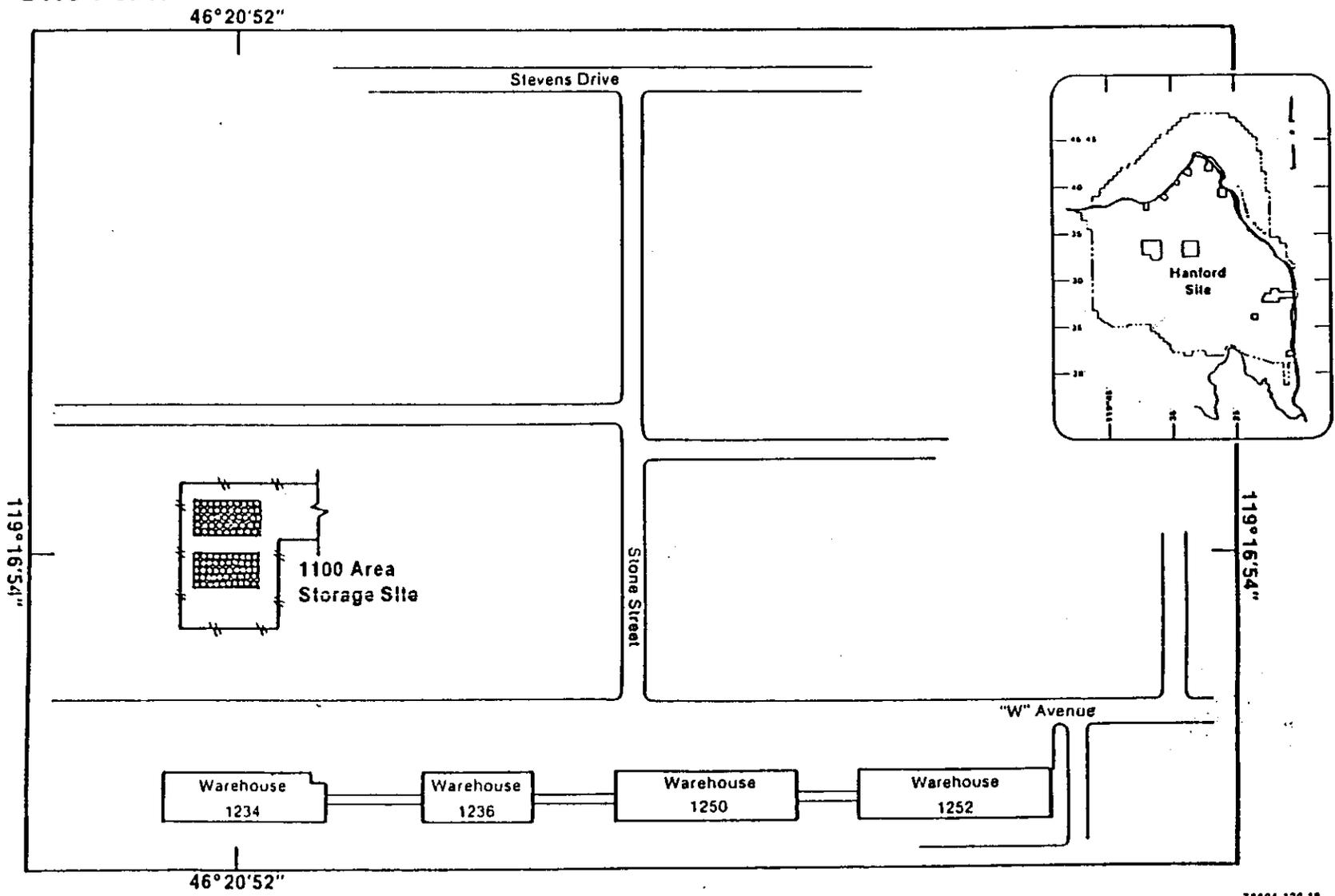
SIGNATURE

DATE SIGNED

SEE ATTACHMENT



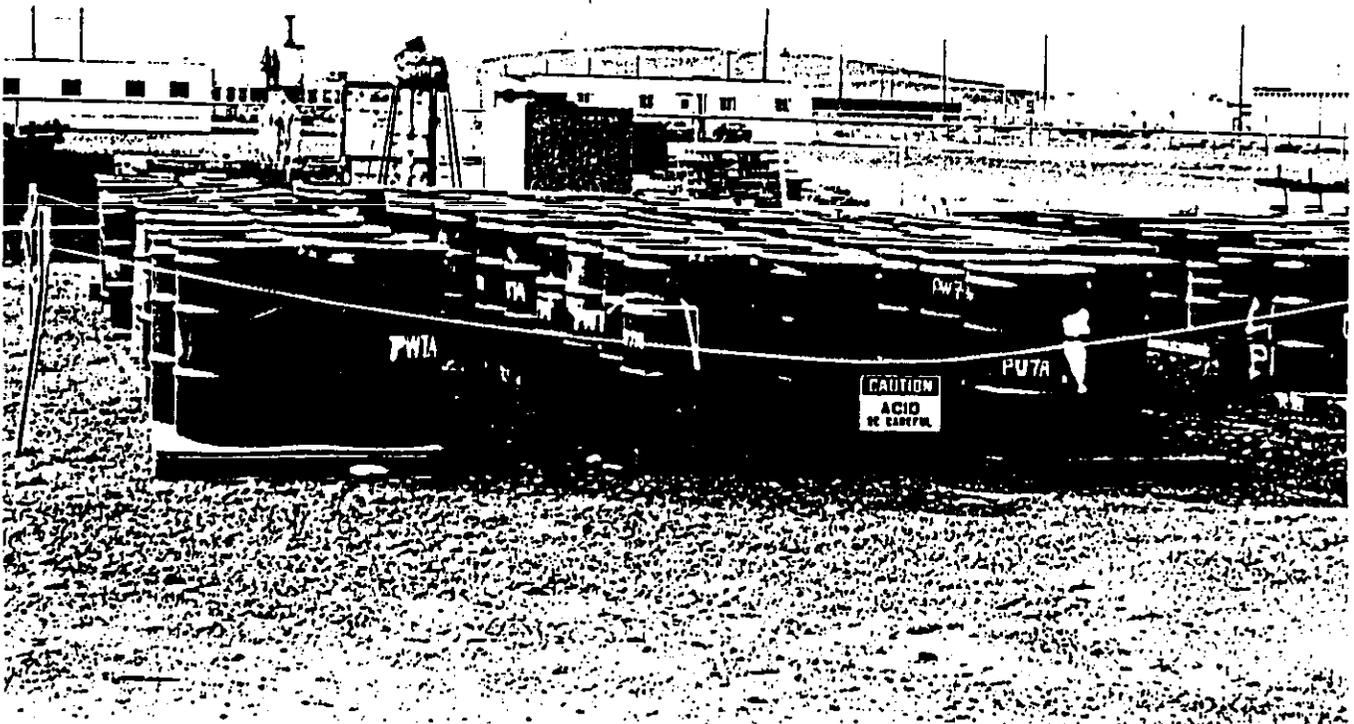
# Simulated High-Level Waste Slurry Treatment/Storage Site Plan



78804-120.10

WA7890008967

# Simulated High-Level Waste Slurry Treatment/Storage



Longitude 119° 16' 54"

Latitude 46° 20' 52"

8801374-2CN

Photo Taken 1988