

**DON'T SAY IT --- Write It!**DATE August 12, 1996to Greta DavisFROM Ellen Mattlin 

Attached is information requested by the Washington State Department of Ecology (Ecology) during their inspection of the 324 Sodium Removal Pilot Plant (Pilot Plant) and the 332 Storage Facility (332) on August 8, 1996. The inspection was intended to verify the units' inactive status for purposes of pursuing procedural closure under §6.3.3 of the Tri-Party Agreement.

Itemized responses to the information request are as follows.

1. Records of last shipments from 332, March-April 1989: Shipping documentation has not yet been located. It will be provided when it is located.
2. Any report of release from 332: The operating log was reviewed, and the RL off-normal events database was consulted. No record of any such releases was found. Records were found which noted spills contained within storage cabinets. Other records noted flooded conditions in the sump, but the conditions were due to rainwater and no release from accumulated waste had contaminated the rainwater.
3. RL/PNNL response to Ecology finding of 90-day limit exceedances: The operating log was reviewed. Evidently the finding of 90-day limit exceedances was the result of internal, weekly inspections. Operating staff had no recollection of an Ecology noncompliance finding or any response. It was standard practice to notify RL of such noncompliances.
4. Rev. 0 and Rev. 1 of Pilot Plant Part A, Form 3: Rev. 0 is attached. No record of Rev. 1 has been found. No waste code or quantity differences are evident between Rev. 0 and Rev. 2 of the Form 3.
5. Documentation of TBG (elementary neutralization) of Pilot Plant effluent, or condition of effluent transmitted to Radioactive Liquid Waste System (RLWS): Discussion with staff responsible for Pilot Plant indicates that no such treatment ever took place. The sodium hydroxide resulting from the decontamination of the sodium-wetted parts in Pilot Plant was diluted by the rinsing and flushing of the equipment after each use of the pilot plant, per procedure. The resulting solution was then discharged to the RLWS without further adjustment. In addition, no indication of any treatment is found in the operating log for Pilot Plant.
6. WHC/PNL consolidation agreement: This document is still being located. We will contact you as soon as it is available for your review. (A copy was not requested.)
7. Documentation of disposition of 324 sodium equipment: An approved disposal request for the treatment tank and related equipment is attached. The tank was utilized as the container for piping and other equipment. Other, nonradioactive components of Pilot Plant were excessed and disposed of as scrap metal.
8. 1987 Annual DW Report information for Pilot Plant: The 1987 report was reviewed. No information specific to Pilot Plant is given in the report, which tends to corroborate our position that no waste was managed in the unit. It is likely that the dilute sodium hydroxide which was the product of Pilot Plant operations is included in the entries given for either 204-AR and/or Double Shell Tanks units. Copies of those two reports are attached.



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DATE August 12, 1996to Greta DavisFROM Ellen Mattlin

A brief elaboration on the use of the solution conditioning tank from Pilot Plant, which you had requested at the Project Managers Meeting of August 1, is also attached. A formal certification from RL and PNNL, also requested at that meeting, is still pending.

If you have any questions concerning these items, please contact me or Harold Tilden of PNNL.

cc: Administrative Record (2 copies) -- 324 Sodium Removal Pilot Plant (T-3-3), 332 Storage Facility (S-3-4)  
MA Barnard, SV Moore, HT Tilden (96050)

8613458-0914

<b>FORM</b> <b>3</b>	<b>DANGEROUS WASTE PERMIT APPLICATION</b>	<b>I. EPA/STATE I.D. NUMBER</b> WA 7 8 9 0 0 0 8 9
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<b>FOR OFFICIAL USE ONLY</b>	<b>COMMENTS</b>
APPLICATION APPROVED _____	DATE RECEIVED (mo. day & yr.) _____

**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)

FOR EXISTING FACILITIES, PROVIDE THE DATE (mo. day & yr.) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left)

MO	DAY	YE	
		79	

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

MO	DAY	YE	

**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.)	S01	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
TANK	S02	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
SURFACE IMPOUNDMENT	S04	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
<b>Disposal:</b>					
INJECTION WELL	D80	GALLONS OR LITERS			
LANDFILL	D81	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	D82	ACRES OR HECTARES			
OCEAN DISPOSAL	D83	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	D84	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	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	O
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.

N U M B E R	A. PRO-CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY	N U M B E R	A. PRO-CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY
		1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)				1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	T 0 1	20	V		7				
2					8				
3					9				
4					10				

III. PROCESSES (continued)

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

IV. 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 code 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 wastes: 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 line 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 sludges 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 code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 015 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	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

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Continued from page 2

NOTE: Photocopy this page before completing if you have more than 26 wastes to list

ID NUMBER (enter from page 1)	
WA 7890008967	

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered - D1)
1	D001	7000	K	T01	
2	D003	Included with above			
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

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

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

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

LATITUDE (degrees, minutes, & seconds)

LONGITUDE (degrees, minutes, & seconds)

46 22 00 7

119 16 02 2

VIII. FACILITY OWNER

[X] 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)

SIGNATURE

DATE SIGNED

T.R. FITZSIMMONS, ASST. MANAGER

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)

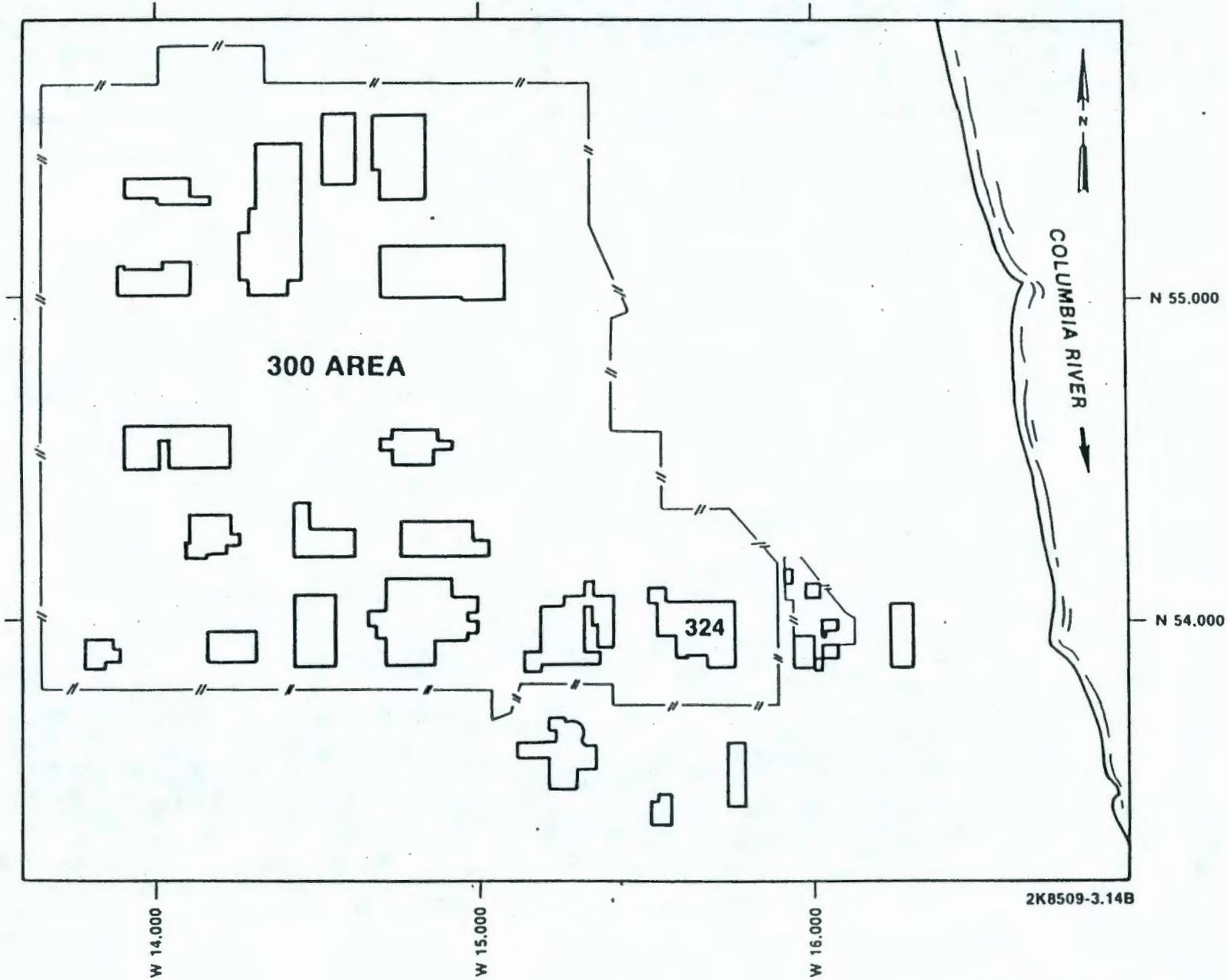
SIGNATURE

DATE SIGNED

T.R. FITZSIMMONS, ASST. MANAGER

SECTION V - FACILITY DRAWINGS

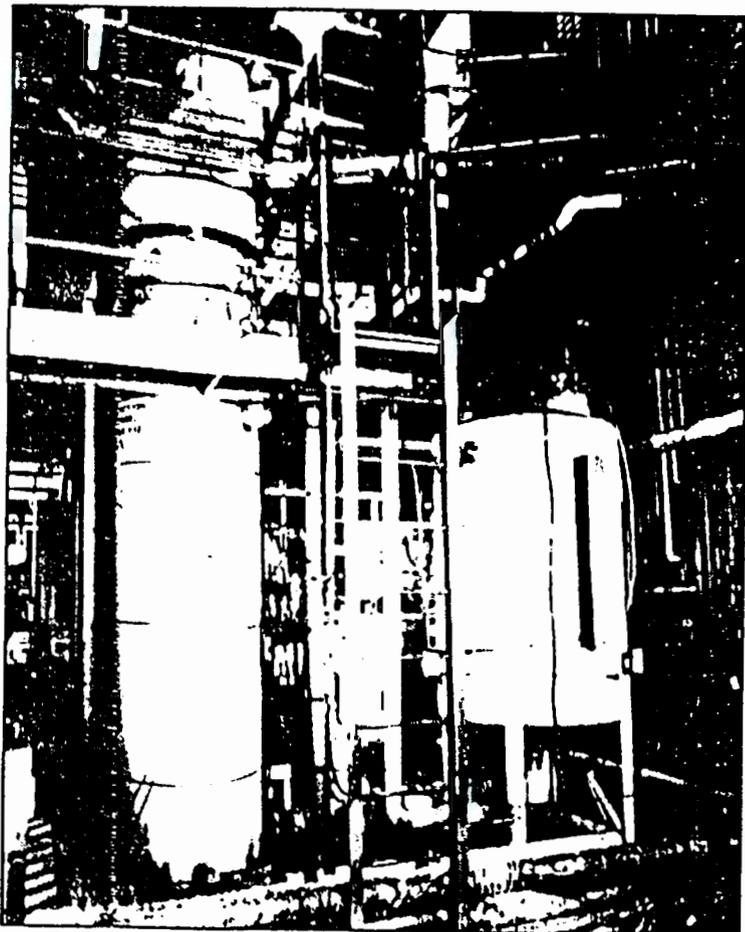
# 324/300 AREA SODIUM REMOVAL PILOT PLANT



2K8509-3.14B

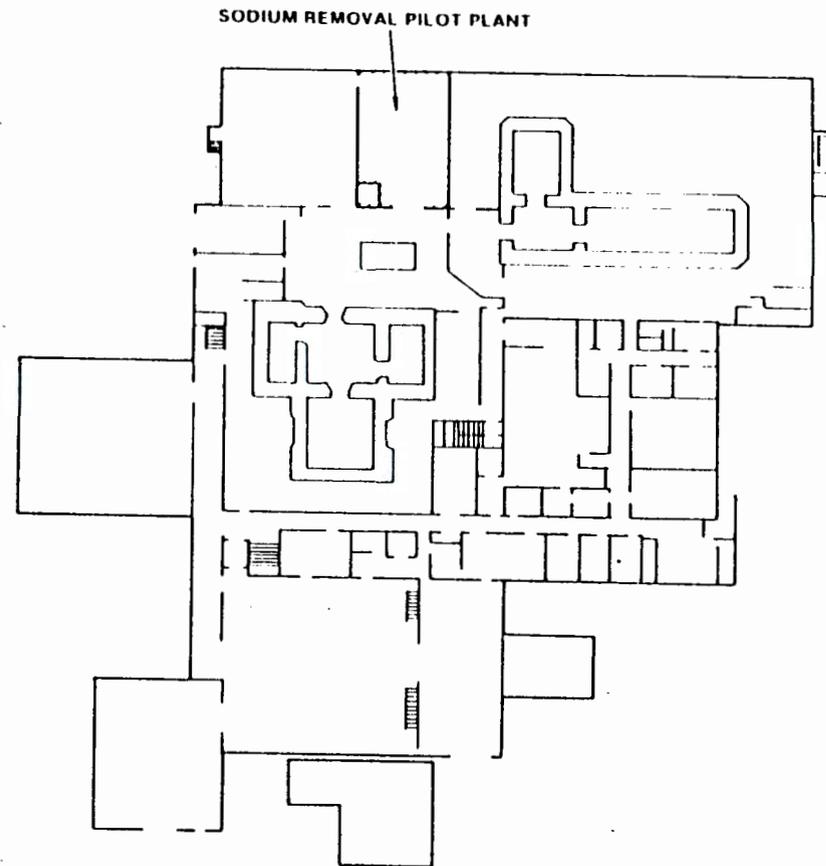
9613458.0919

# 324/300 AREA SODIUM REMOVAL PILOT PLANT



46° 22' 0.8"  
119° 16' 21"

PHOTO TAKEN 1985



2K8509-3.24

9613458.09210

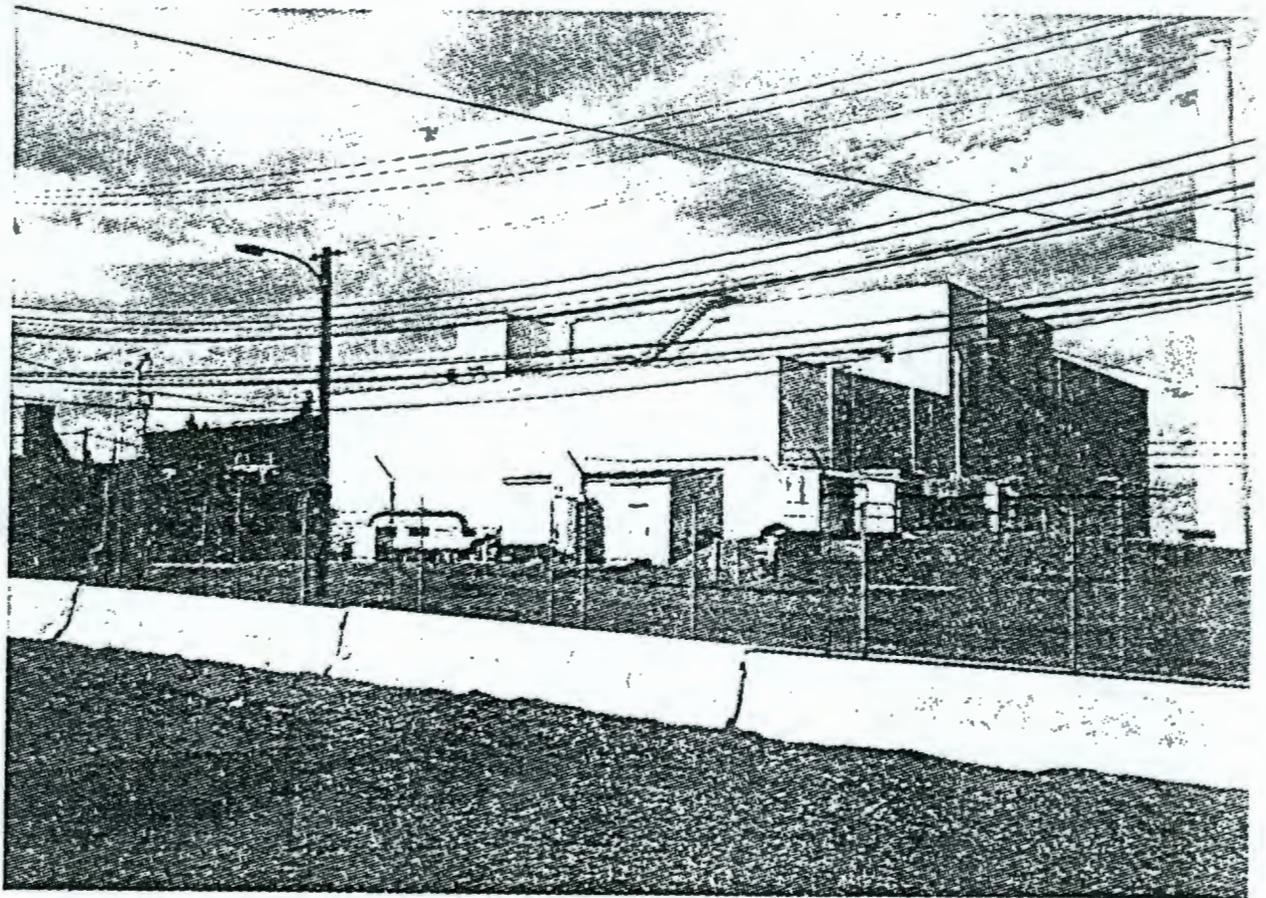
WA7890006967

SECTION VI - PHOTOGRAPHS



9613458.0922

SODIUM REMOVAL  
PILOT PLANT  
324/300 AREA

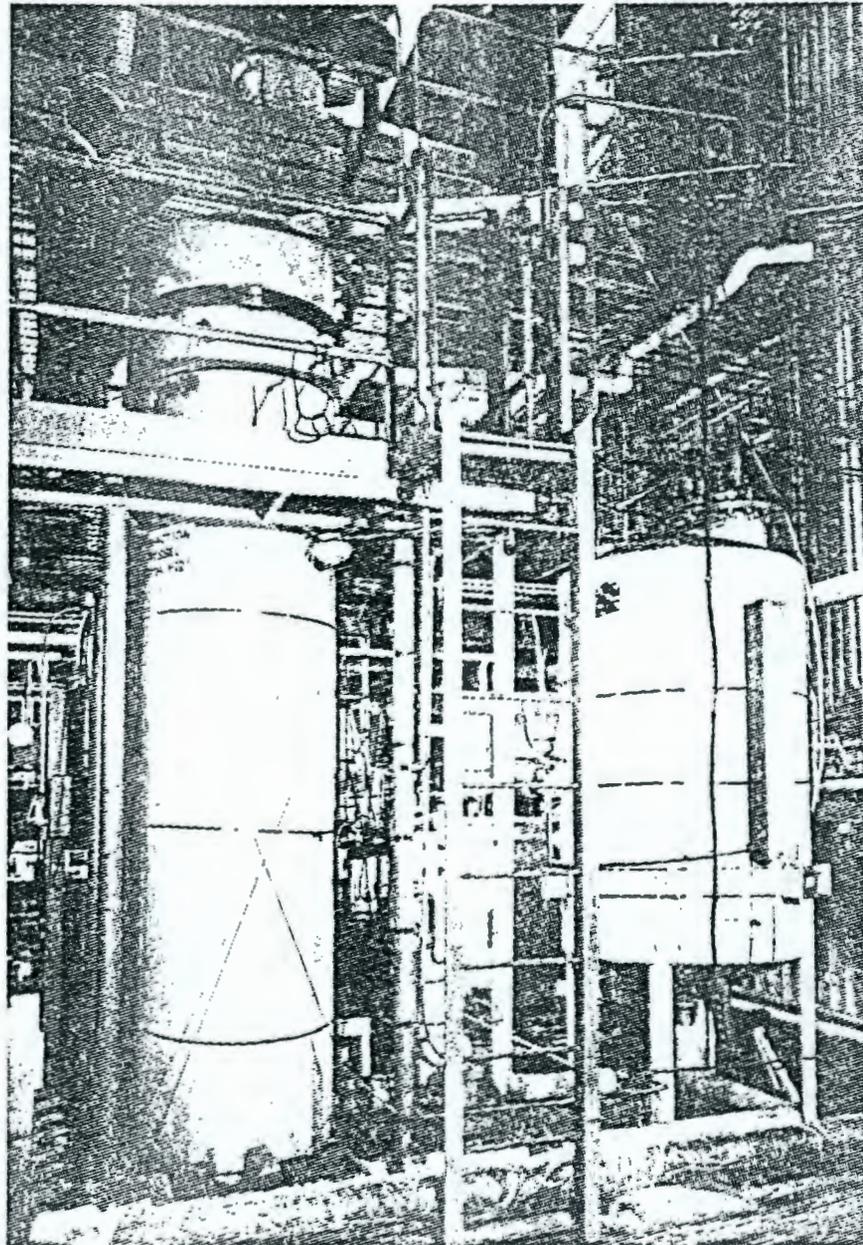


46° 22' 0.8"  
119° 16' 21"

PHOTO TAKEN 1985

9613458.0923

SODIUM REMOVAL  
PILOT PLANT  
324/300 AREA



46° 22' 0.2"  
119° 16' 21"





3. YOUR EPA/STATE HAZARDOUS WASTE IDENTIFICATION NUMBER

WA7890008967

14. GENERATOR'S EPA/STATE I.D. NUMBER

I.D. NUMBER  
WA7890008967

NAME: Department of Energy - Richland  
ADDRESS: Federal Building  
Richland, Washington

ZIP: 99352

15. WASTE IDENTIFICATION

A. Manifest Document Number	B. Date Shipment Received	C. Status	D. Physical State S=Solid L=Liquid G=Sludge M=Compressed Gas	E. Chemical Nature O=Organic I=Inorganic	F. Waste Description (see instructions)	G. Handling Method and Containment Vessel (see instructions)	H. Dangerous Waste Number (see instructions)	I. Waste Designation DW or EHW	J. Amount of Waste	K. Weight of Waste
	1987		L	I	Radioactively-contaminated, corrosive solution of sodium hydroxide, water and sodium nitrite from site operation	T34T	D002	RMW-DW	1,425,571	K

1. COMMENTS (Enter information by section and/or line number—see instructions).

Line 1: 204-AR Waste Unloading Station. Waste is transferred to the Double-Shell Tanks from this facility. The waste may also be chemically adjusted to meet tank corrosion specifications at this facility.

13. YOUR EPA/STATE HAZARDOUS WASTE IDENTIFICATION NUMBER  
 WA7890008967

14. GENERATOR'S EPA/STATE I.D. NUMBER  
 I.D. NUMBER  
 WA7890008967

NAME: Department of Energy - Richland  
 ADDRESS: Federal Building  
 Richland, Washington  
 ZIP: 99352

15. WASTE IDENTIFICATION		C. S t a t u s	D. Physical State S=Solid L=Liquid G=Sludge M=Compressed Gas	E. Chemical Nature O=Organic I=Inorganic	F. Waste Description (see Instructions)	G. Handling Method and Containment Vessel (see Instructions)	H. Dangerous Waste Number (see Instructions)		I. Waste Designa- tion DW or EHW	J. Amount of Waste	K. W e i g h t
A. Manifest Document Number	B. Date Shipment Received										
	1987		L	I	Radioactively-contaminated, toxic, corrosive, EP toxic, aqueous solution of cadmium, chromium, lead, silver, neutralized acids, and lab waste which includes acids and bases treated with sodium nitrite from plant and laboratory operations	S02U T34U T57U	WT01 D002 D006	D007 D008 D011	RHW- EHW	84737114.0	K

COMMENTS (Enter information by section and/or line number—see instructions).

Line 1: The Double-Shell Tank Farms. Waste is treated with sodium nitrite for corrosion control and water is evaporated from the tanks by adding heat.

The purpose of the solution conditioning tank, in conjunction with the main sodium vessel, was to determine the effectiveness of the pilot plant at removing (i.e., decontaminating) radioactivity from sodium-wetted hardware via a four-step process. It should be noted that the solution conditioning tank was only used during a small percentage of pilot plant campaigns; i.e., it was used only when the research objectives included identifying the quantity of radioactivity removed.

The following process steps describe how the tank was used.

Step 1. The process started by filling the solution conditioning tank with deionized water and adding citric and glycolic (hydroxiacetic) acids (common decontamination agents) to make a 2.5% solution.

Step 2. Test coupons contaminated with radioactivity were wetted with sodium, were then placed in the main vessel where the sodium was removed with the water vapor-nitrogen process.

Coupons were small (one to several inches square) pieces of metal from pumps and vessels proposed for use in breeder programs.

Step 3. To remove the radioactivity from the coupon, decontamination solution from the solution conditioning tank was then pumped into the main vessel to remove the radioactivity from the coupons.

Step 4. The coupons were then removed from the main vessel and tested to determine the effectiveness of steps 2 and 3.

As can be seen from the description of the process, the tank was a chemical makeup tank and was not used in direct contact with sodium- and/or radioactively-contaminated parts.

### .2.1.2 Conditioning Tank

This is an approximately 500 gallon tank, which is entirely closed except for piping penetrations. Its primary function is to provide storage for mixed decontamination acids, in which the concentrated acids can be brought to final dilution, heated to working temperature and deoxygenated if required for etching. It is also used for distilled water storage. The tank has a bottom drain, a supply line at the top for feeding concentrated acids, a supply line at the top for feeding distilled or demineralized water, a dip line leading to a perforated ring for inert gas sparging, lines for withdrawing and returning samples of the liquid, and

sensing lines for level measurement by differential pressure. In the water storage mode, this level sensor can be used for automatic fill with distilled water. The tank is insulated and heated with five independent electrical, controlled heaters.