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Tank Farm Surveillance and Waste Status Report for June 1991

Prepared for the U.S. Department of Energy
Office of Environmental Restoration
and Waste Management

Westinghouse
Hanford Company Richland, Washington

Hanford Operations and Engineering Contractor for the
U.S. Department of Energy under Contract DE-AC06-87RL10930

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B. M. Hanlon

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**TANK FARM SURVEILLANCE AND WASTE STATUS
SUMMARY REPORT FOR JUNE 1991**

B. M. Hanlon

ABSTRACT

This report is Westinghouse Hanford Company's official inventory for radioactive waste stored in underground tanks in the 200 Areas at the Hanford Site. Data that depict the status of stored radioactive waste and tank vessel integrity are contained within the report. The intent of the report is to provide data on each of the existing 177 large underground waste storage tanks and 49 smaller catch tanks and special surveillance facilities, and to provide supplemental information regarding tank surveillance anomalies and ongoing investigations.

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METRIC CONVERSION CHART		
1 inch	=	2.54 centimeters
1 foot	=	30.48 centimeters
1 gallon	=	3.80 liters
1 ton	=	0.90 metric tons
$1\text{ }^{\circ}\text{F} = \left(\frac{9}{5}\text{ }^{\circ}\text{C}\right) + 32$		
1 Btu/h = 2.930711 E-01 watts (International Table)		

TANK FARM SURVEILLANCE AND WASTE STATUS SUMMARY REPORT FOR JUNE 1991

SUMMARY

Note: Changes from the previous month are in bold print.

TANK STATUS

Category	Quantity	Date of Last Change
In-Service Tanks ^c	28 double-shell	10/86
Out-of-Service Tanks ^a	149 single-shell	07/88
Assumed-Leaker Tanks	66 single-shell	09/88
Interim-Stabilized Tanks ^{b,d}	105 single-shell	09/90
Interim-Isolated Tanks ^e	94 single-shell	09/90

^a All 149 single-shell tanks were removed from service (i.e., no longer authorized to receive waste) as of November 21, 1980.

^b Of the 105 tanks classified as interim stabilized, 56 have been listed as "questionable integrity" or "confirmed leakers" in past documents.

^c Five double-shell tanks listed as "in service" are currently not receiving waste because of inclusion on the Hydrogen Watch List.

^d Of the 48 single-shell tanks on Watch Lists, 21 have been Interim Stabilized.

^e Of the 48 single-shell tanks on Watch Lists, 16 have been Interim Isolated.

TANK INVESTIGATIONS

Tank 241-SY-101. The surface level within this tank continues to fluctuate. The surface level increase/decrease phenomena has been observed since 1981, and is attributed to the buildup and release of gas beneath the crusted surface. An investigation into solutions to the slurry growth problems is ongoing. Multiple Event Fact Sheets, a Critique Report, Occurrence Reports Nos. 77-64, 77-92, 77-175, 77-207, 78-16, 79-11, Discrepancy Reports, and Unusual Occurrence Reports have been issued. The Food Instrument Corporation (FIC) gauge, manual tape, and radar gauge measurement devices showed an upward trend in the surface level measurement during the month of June. The FIC and manual tape surface level measurement anomalies were seen June 11 to June 14 and June 19 to June 22, 1991. The radar gauge did not show these apparent anomalies, and is most likely the best representation of the surface level during the later part of June.

Potential or Assumed Leaks

Catch Tank 241-S-302-A. Surface level measurement decreases have been observed after noted increases attributed to rain. The decreases in this tank could not be accounted for and were assumed to be indicative of a leak. Event Fact Sheet TF-EFS-90-042 was issued June 8, 1990. Pumping of the tank commenced June 14, 1990, and Unusual Occurrence Report WHC-UO-90-23-TF-05 was

issued June 21, 1990. Pumping was completed on July 13, 1990. At that time the surface level measurement device was touching on solids (surface level was 14.20 in.), and less than 400 gal of liquid remained in a visible pool. Total gallons pumped was 2,660. Occurrence Report WHC-90-B013-TFarm, an update to WHC-UO-90-23-TF-05 (TF-EFS-90-042), was issued November 12, 1990. Westinghouse Hanford Company and U. S. Army Corps of Engineers (USACE) developed a plan to perform a temporary repair of this tank in order to support required transfers of facilities waste to the tank farms. This temporary repair, involving grout being added to the tank, would allow near-term transfers to proceed pending planned replacement with a new tank. The pouring of the first of three layers of grout was accomplished on February 26, 1991. The remaining pours were completed and 4,400 gal of water were added on March 20 to facilitate leak testing. Upon completion of the leak testing, the ultrasonic leak test data and the FIC gauge data was analyzed, and it was determined that the slow decrease in the liquid level was not the effect of temperature variations or evaporation. It was concluded that the catch tank is still leaking. On April 16, 1991, the tank was pumped to remove water that was added to perform the leak test. New criteria limits have been established for the tank, and the surface level will not be allowed to increase more than 0.5 in. from the baseline of 54.0 in. without attempting to pump. On June 4, 1991, the surface level increased to 54.7 in., exceeding the 0.5-in. increase criteria by 0.2 in. Occurrence Report RL-WHC-TANKFARM-191-1018 was issued June 5, 1991. The increase was attributed to an intrusion of approximately 90 gal of water that had leaked from a faulty hose connection to a diversion box which drains directly into S-302-A. This occurred during maintenance activities to install a replacement catch tank for S-302-A. On June 12, 1991, the tank was pumped. Preliminary work is in progress to replace this catch tank. The new tank is expected to be in service before September 30, 1991.

Potential or Assumed Intrusions:

The following tanks are on report for potential in-leakage (intrusions) from known/unknown sources.

Tank 241-TX-115. The Liquid Observation Well (LOW) scans revealed an Interstitial Liquid Level (ILL) increase in excess of the established 0.4 ft. increase criteria in May 1987. Comparison of past and present in-tank photographs show no significant change in surface conditions or obvious evidence of intrusion. An Event Fact Sheet was issued on January 9, 1990. The ILL showed an increase of 0.4 ft on March 1, 1991. The increase was verified on March 11, 1991. Engineering Testing is conducting an intrusion investigation for this tank. These LOWs are monitored quarterly, alternating every six weeks with the neutron and gamma probes. The ILL showed no further increase on the scan taken June 7, 1991.

Tank 241-S-107. A slow increase in the surface level has been observed since May 1987, but it has not exceeded the 2.00-in. increase criteria. This tank now appears on the Alert List.

HIGHLIGHTS

1. Saltwell Pumping

Jet pumping in Tanks 102-BY and 109-BY began June 13 and June 16, 1991, respectively. Detailed information on the resulting changes in liquids and solids can be found in Appendix C (Inventory and Status by Tank, Single-Shell Tanks) and the Changes section immediately following Appendix C.

2. Tank 101-SY Videotape

A videotape animation of "Gas Release Event Temperature Profiles for 101-SY," was cleared for public viewing and presented at the High Level Waste Tank Task Force meetings on June 11 - 12, 1991.

Changes to the Summary Report:

1. Monthly Summary

Table 6 (Unique Contents Added to Tanks) has been deleted from this document. The table has appeared in the document for six months and is no longer needed for reference.

2. Appendix D-1. Performance Summary

The Footnote (7), Instrument change, in the "Increases/Decreases of Waste Volumes Stored in Double-Shell Tanks" column, has been expanded to further clarify this category.

TABLE 1. TANKS CONTAINING >1000 GRAM MOLE OF FERROCYANIDE (Watch List Tanks)

These tanks have been declared an Unreviewed Safety Question (USQ) because their explosion potential exceeds previously reported safety analysis consequences.

June 1991

Tank No.	Highest Temperature Reading this Month (F.)	Date	Probe Position	Monitoring Frequency	FeCN(1) (x1000 gm mole)	Heat Load(2) (BTU/hr)	Assumed Leak Date	Interim Stabilized Date
102-BX	66	06/23/91	TC	Weekly	0-3	<10000	1971	11/78
106-BX	64	06/23/91	TC	Weekly	0-1	<10000	Sound	N/A
110-BX	69	06/08/91	TC	Weekly	0-1	<10000	1976	8/85
111-BX	68	06/23/91	TC	Weekly	0-1	<10000	1984	N/A
101-BY	74	06/23/91	TC	Weekly	0-1	8200	Sound	5/84
103-BY	82	06/09/91	LOW	Weekly	0-1	8600	1973	N/A
104-BY	131	06/23/91	TC	Weekly	100-200	17000	Sound	1/85
105-BY	114	06/15/91	TC	Weekly	70-100	37700	1984	N/A
106-BY	132	06/15/91	TC	Weekly	30	12200	1984	N/A
107-BY	79	06/23/91	TC	Weekly	30-80	14500	1984	7/79
108-BY	84	06/23/91	TC	Weekly	30-70	23000	1972	2/85
110-BY	123	06/23/91	TC	Weekly	50-90	25200	Sound	1/85
111-BY	86	06/09/91	LOW	Weekly	0-3	34200	Sound	1/85
112-BY	79	06/23/91	LOW	Weekly	2-3	<10000	Sound	5/85
108-C	74	06/15/91	TC	Weekly	9-21	<10000	Sound	3/84
109-C	78	06/22/91	TC	Weekly	30-50	<10000	Sound	11/83
111-C	73	06/22/91	TC	Weekly	10-30	<10000	1968	3/84
112-C	81	06/22/91	TC	Weekly	50-70	<10000	Sound	9/90
101-T	68	06/27/91	TC	Weekly	0-10	<10000	Sound	N/A
107-T	70	06/27/91	TC	Weekly	0-5	<10000	1984	N/A
118-TX (3)	76	06/13/91	TC	Weekly	0-3	4900	Sound	4/83
101-TY	70	06/20/91	TC	Weekly	0-30	<10000	1973	8/83
103-TY	66	06/29/91	LOW	Weekly	0-30	<10000	1973	2/83
104-TY	72	06/06/91	TC	Weekly	0-20	<10000	1981	1/83
24 Tanks Legend: TC - Thermocouple Tree LOW - Liquid Observation Well. A single thermocouple is positioned in the well.								

(1) The amounts of FeCN in the tanks were estimated using the Track Radioactive Components (TRAC) program and memo report, L. L. Burger, PNL, Complexant Stability Investigation, Task 1, Ferrocyanide Solids, PNL-5441, dated 1984

(2) The estimated heat generation rates were obtained from memo report, W. S. Lewis and A. T. Alstad to S. J. Joncus, Replacement of Defective Thermocouples in Single-Wall Tanks, dated July 23, 1986. (1 kW = 3412 BTU/hr)

(3) This tank also contains a high concentration (> 10 wt %) of organic salts

N/A = Not Applicable (not yet interim stabilized)

TABLE 2. SINGLE-SHELL TANKS WITH HIGH HEAT LOADS (>40,000 BTU/hr)

June 1991

Tank No.	Highest Temperature		Date	Probe Position	Monitoring Frequency	Estimated Heat Load (1) (BTU/hr)
	Reading this Month (F.)					
104-A	187		06/27/91	R	Weekly	50000
105-A	130		06/27/91	R	Weekly	50000
105-C (2)	94		06/29/91	TC	Monthly	42000
106-C (2)(3)	160		06/29/91	TC	Weekly	150000
107-SX	168		06/14/91	TC	Monthly	42000
108-SX	196		06/14/91	TC	Monthly	45000
109-SX (3)	147		06/14/91	TC	Monthly	50000
110-SX	171		06/14/91	TC	Monthly	42000
111-SX	189		06/14/91	TC	Monthly	44000
112-SX	157		06/14/91	TC	Monthly	43000
114-SX	183		06/14/91	TC	Monthly	58000
11 Tanks Legend: Probe Position TC= Thermocouple Tree R=Riser						
The temperature data for these tanks have been analyzed, and there are no indications of an increasing trend. Ref: SD-WM-SAR-006, OSR 11.4.2.1						
All of these tanks are on active ventilation (see Table 5)						
105-A LATERALS		Highest Temperature Reading This Month	219	Date	06/20/91	Monitoring Frequency Biweekly
There are 35 thermocouples located beneath the tank. Lateral temperatures are not regulated by SAR-006, however the same limits and reporting requirements are applied.						

(1) High heat loads as of 1988, evaluation completed April 20, 1989 (1 kW = 3412 BTU/hr).

The predominant heat load for these tanks is from CS 137 (half life of 30 years) and SR 90 (half life of 28.1 years).

(2) Periodic water additions are required in these tanks to maintain evaporative cooling and thus prevent overheating. Both tanks are scheduled for interim stabilization in 1996, at which time cooling water additions will be discontinued. In 1990, 75,000 gallons of cooling water was added to 106-C.

(3) Watch List Tanks: 106-C, and 109-SX which has the potential for flammable gas accumulation because other SX tanks vent through it.

TABLE 3. TANKS WITH POTENTIAL FOR HYDROGEN OR FLAMMABLE GAS ACCUMULATION ABOVE THE FLAMMABILITY LIMIT (Watch List Tanks)

These tanks have been declared an Unreviewed Safety Question (USQ) because of the potential consequences of a radiological release resulting from a hydrogen burn and resulting secondary crust burn, an event not analyzed in previous safety analysis.

June 1991

Readings taken by Thermocouple Tree

Highest

Tank No.	Temp. Reading this month (F.)	Date	Monitoring Frequency
101-A	157	06/29/91	Weekly
101-AX	143	06/29/91	Weekly
103-AX	117	06/29/91	Weekly
102-S (3)	110	06/22/91	Weekly
111-S	95	06/22/91	Weekly
112-S	38	06/20/91	Weekly
101-SX	153	06/22/91	Weekly
102-SX	159	06/22/91	Weekly
103-SX	182	06/22/91	Weekly
104-SX	176	06/16/91	Weekly
105-SX	189	06/16/91	Weekly
106-SX (3)	121	06/16/91	Weekly
109-SX (2)	147	06/16/91	Monthly
110-T	62	06/14/91	Weekly
103-U	90	06/16/91	Weekly
105-U	92	06/22/91	Weekly
108-U	90	06/22/91	Weekly
109-U	89	06/22/91	Weekly
103-AN (1)	111	06/03/91	Weekly
104-AN (1)	112	06/03/91	Weekly
105-AN (1)	105	06/03/91	Weekly
101-SY (1)	131	06/24/91	Daily
103-SY (1)	110	06/24/91	Weekly
23 Tanks			

(1) Double-shell tanks

(2) This tank has the potential for flammable gas accumulation only because other SX tanks vent through it

(3) These tanks also contain potentially high concentrations of organic salts

**TABLE 4. TANKS CONTAINING CONCENTRATIONS OF ORGANIC SALTS
≥10 WEIGHT % TOC (Watch List Tanks)**

These tanks have organic chemicals which are potentially flammable and mixtures of organic materials mixed with nitrate and nitrate salts can deflagrate. They are listed here because of their "potential for release of high level waste due to uncontrolled increases in the temperature or pressure."

June 1991

Readings taken by Thermocouple Tree

Tank No.	Highest Temperature Reading this month (F.)	Date	Monitoring Frequency
103-B	61	06/15/91	Weekly
103-C (3)	123	06/22/91	Weekly
102-S (1)	110	06/22/91	Weekly
106-SX (1)	121	06/16/91	Weekly
105-TX	99	06/20/91	Weekly
118-TX (2)	76	06/13/91	Weekly
106-U	83	06/16/91	Weekly
107-U	80	06/22/91	Weekly
8 Tanks			

(1) These tanks also have the potential for hydrogen or flammable gas accumulation.

(2) This tank also contains ferrocyanide

(3) This tank was added due to the presence of a separable organic layer found on the surface

TABLE 5. SINGLE-SHELL TANKS ON ACTIVE VENTILATION

June 1991

Tank No.	Temperature Monitoring Frequency	Active Cooling	Currently Operating	Tank Integrity	Comments
104-A	Weekly	Cascade lines from 105-A	Yes	ASMD LKR	High Heat Load tank
105-A	Weekly	Exhauster	Yes	ASMD LKR	High Heat Load tank
106-A	Biannually	Cascade lines from 105-A	Yes	SOUND	
104-C	Biannually	One exhauster on 104/105/106-C	Yes	SOUND	
105-C	Monthly	One exhauster on 104/105/106-C	Yes	SOUND	High Heat Load tank
106-C	Weekly	One exhauster on 104/105/106-C	Yes	SOUND	High Heat Load tank
101-SX	Weekly	Underground lines thru 109-SX	Yes	SOUND	Hydrogen tank
102-SX	Weekly	Underground lines thru 109-SX	Yes	SOUND	Hydrogen tank
103-SX	Weekly	Underground lines thru 109-SX	Yes	SOUND	Hydrogen tank
104-SX	Weekly	Underground lines thru 109-SX	Yes	ASMD LKR	Hydrogen tank
105-SX	Weekly	Underground lines thru 109-SX	Yes	SOUND	Hydrogen tank
106-SX	Weekly	Underground lines thru 109-SX	Yes	SOUND	Hydrogen and Organic Salts tank
107-SX	Monthly	Overground lines to Exhauster	Yes	ASMD LKR	High Heat Load tank
108-SX	Monthly	Overground lines to Exhauster	Yes	ASMD LKR	High Heat Load tank
109-SX	Monthly	Overground lines to Exhauster	Yes	ASMD LKR	High Heat Load tank
110-SX	Monthly	Overground lines to Exhauster	Yes	ASMD LKR	High Heat Load tank
111-SX	Monthly	Overground lines to Exhauster	Yes	ASMD LKR	High Heat Load tank
112-SX	Monthly	Overground lines to Exhauster	Yes	ASMD LKR	High Heat Load tank
114-SX	Monthly	Overground lines to Exhauster	Yes	ASMD LKR	High Heat Load tank

ASMD LKR = Assumed Leaker

TABLE 6. SINGLE-SHELL TANKS STABILIZATION AND ISOLATION SCHEDULE (Page 1 of 2)

FY-91	FY-92	FY-93	FY-94	FY-95	FY-96
June 1991					
<u>Begin pumping:</u>					
BY-102	C-103	BX-106	A-101		
BY-109	S-102	BX-110*	AX-101		
C-102	S-111	BX-111	B-104*		
C-107	S-112	BY-103	B-107*		
C-110	SX-101	BY-105	B-110*		
S-101	SX-102	BY-106	B-111*		
S-103	SX-103	T-101	U-102		
S-106	SX-104	T-102*	U-103		
S-107	SX-105	T-104	U-105		
S-108	SX-106	T-107	U-106		
S-109		T-110	U-107		
S-110		T-111	U-108		
		T-112*	U-109		
			U-110*		
			U-111		
<u>Complete Interim</u>					
<u>Stabilization:</u>					
BY-102	C-103	BX-106	B-104*	A-101	C-105
BY-109	S-101	BX-110*	B-107*	AX-101	C-106
C-102	S-103	BX-111	B-110*	U-102	
C-107	S-106	S-102	B-111*	U-103	
C-110	S-107	S-111	BY-103	U-105	
	S-108	S-112	BY-105	U-106	
	S-109	SX-101	BY-106	U-107	
	S-110	SX-102	T-101	U-108	
		SX-103	T-102*	U-109	
		SX-104	T-104	U-110*	
		SX-105	T-107	U-111	
		SX-106	T-110		
			T-111		
			T-112*		
NOTE: This schedule has been adjusted to accommodate pumping restrictions imposed on Watch List Tanks. SEE PAGE 2 OF THIS TABLE. Pumping will not begin unless the associated safety concerns are resolved or mitigated; therefore there is no guarantee this schedule will be met.					

* Possible restabilization required

TABLE 6. SINGLE-SHELL TANKS STABILIZATION AND ISOLATION SCHEDULE (Page 2 of 2)

June 1991

Interim Stabilization (IS)			Interim Stabilization (IS)			Watch List Tanks		
Tank No.	Begin IS	Complete IS	Tank No.	Begin IS	Complete IS	Tank No.	Begin IS	Complete IS
<u>(1) Pumping on hold due to Ferrocyanide content.</u>			<u>(4) Pumping on hold due to high concentrations of Organic Salts.</u>			A-101	1994	1995
BX-106	1993	1993	C-103	1992	1992	AX-101	1994	1995
BX-110	1993	1993	S-102	1992	1993	BX-106	1993	1993
BX-111	1993	1993	SX-106	1992	1993	BX-111	1993	1993
BY-103	1993	1994	U-106	1994	1995	BY-103	1993	1994
BY-105	1993	1994	U-107	1994	1995	BY-105	1993	1994
BY-106	1993	1994				BY-106	1993	1994
T-101	1993	1994	<u>(5) Possible restabilization required</u>			C-103	1992	1992
T-107	1993	1994	B-104 *	1994	1994	C-106	1996	1996
			B-107 *	1994	1994	S-102	1992	1993
<u>(2) Pumping on hold due to High Heat loads.</u>			B-110 *	1994	1994	S-111	1992	1993
C-105 *	1996	1996	B-111 *	1994	1994	S-112	1992	1993
C-106	1996	1996	BX-110	1993	1993	SX-101	1992	1993
<u>(3) Pumping on hold due to potential for Hydrogen or flammable gas accumulation above flammability limits.</u>			T-102 *	1993	1994	SX-102	1992	1993
A-101	1994	1995	T-112 *	1993	1994	SX-103	1992	1993
AX-101	1994	1995	U-110 *	1994	1995	SX-104	1992	1993
S-102	1992	1993	<u>NOTE: Following tanks are listed in more than one category</u>			SX-105	1992	1993
S-111	1992	1993	BX-110	(1)(5)		SX-106	1992	1993
S-112	1992	1993	S-102	(3)(4)		T-101	1993	1994
SX-101	1992	1993	SX-106	(3)(4)		T-107	1993	1994
SX-102	1992	1993				T-110	1993	1994
SX-103	1992	1993				U-103	1994	1995
SX-104	1992	1993				U-105	1994	1995
SX-105	1992	1993				U-106	1994	1995
SX-106	1992	1993				U-107	1994	1995
T-110	1993	1994				U-108	1994	1995
U-103	1994	1995				U-109	1994	1995
U-105	1994	1995				27 Tanks		
U-108	1994	1995				(BX-110, a candidate for restabilization, is not included in this list)		
U-109	1994	1995						

* These tanks are not Watch List tanks

TABLE 7. INTERIM STABILIZATION STATUS FOR WATCH LIST TANKS

June 1991

Tank No.	Interim		Interim		Interim	
	Stabilized	Scheduled	Stabilized	Scheduled	Stabilized	Scheduled
	Date	Date	Date	Date	Date	Date
101-A	N/A	1994			N/A	1992
101-AX	N/A	1994			N/A	1992
103-AX	8/87	N/A			N/A	1992
103-B	2/85	N/A			N/A	1992
102-BX	11/78	N/A			N/A	1992
106-BX	N/A	1993			N/A	1992
110-BX	8/85	N/A			N/A	1992
111-BX	N/A	1993			N/A	1992
101-BY	5/84	N/A			N/A	1992
103-BY	N/A	1993			N/A	N/A
104-BY	1/85	N/A			5/81	1993
105-BY	N/A	1993			N/A	1993
106-BY	N/A	1993			N/A	1993
107-BY	7/79	N/A			9/83	N/A
108-BY	2/85	N/A			4/83	N/A
110-BY	1/85	N/A			8/83	N/A
111-BY	1/85	N/A			2/83	N/A
112-BY	5/85	N/A			1/83	N/A
103-C	N/A	1992			N/A	1994
106-C	N/A	1996			N/A	1994
108-C	3/85	N/A			N/A	1994
109-C	11/83	N/A			N/A	1994
111-C	3/84	N/A			N/A	1994
112-C	9/90	N/A			N/A	1994

48 Tanks on Watch Lists
21 Tanks Interim Stabilized

N/A = Not Applicable

TABLE 8. DOUBLE-SHELL TANK WASTE TYPE AND SPACE ALLOCATION

June 1991

DOUBLE-SHELL TANK INVENTORY BY WASTE TYPE		TOTAL DOUBLE-SHELL TANK SPACE	
Complexant Concentrate (102-AN, 107-AN, 101-AY, 101-SY, 103-SY)	5.0 Mgal	24 Tanks at 1140 Kgal 4 Tanks at 980 Kgal	27.4 Mgal 3.9 Mgal 31.3 Mgal
Concentrate Phosphate (106-AN)	1.0 Mgal	Double-Shell Tank Inventory Space Designated for Specific Use	- 23.9 Mgal - 7.1 Mgal
Double-Shell Slurry and Slurry Feed (103-AN, 104-AN, 105-AN, 105-AP, 101-AW)	5.1 Mgal	Remaining Unallocated Space	0.6 Mgal
Neutralized Current Acid Waste (101-AZ, 102-AZ)	1.4 Mgal	<u>SPACE DESIGNATED FOR SPECIFIC USE</u>	
Dilute Waste (101-AN, 101-AP, 103-AP, 106-AP, 107-AP, 108-AP, 102-AW, 103-AW, 104-AW, 105-AW, 106-AW, 101-AY, 102-AY, 102-AZ, 102-SY)	10.4 Mgal *	Spare Tanks (1 Aging & 1 Non-Aging Waste Tank)	2.3 Mgal
NCR and PFP Settled Solids (103-AW, 105-AW, 102-SY)	1.0 Mgal <u>23.9 Mgal</u>	Segregation (CC) (102-AN, 107-AN, 101-SY)	.2 Mgal
		Segregation (NCRW) (103-AW, 105-AW)	.6 Mgal
		Head Space	.5 Mgal
		Operational (Grout & West Transfer) (102-AP, 104-AP, 102-SY)	2.8 Mgal
		Watch List Tanks (103-AN, 104-AN, 105-AN, 101-SY, 103-SY)	.7 Mgal
			<u>7.1 Mgal</u>

* Easily reduced in volume by Evaporator/LERF

Note: Change since last month - Dilute Waste increased 129 Kgal

+/- 0.1 Mgal differences are the result of rounding

Figure 1. Tank 101-SY Surface Level Readings

Figure 2. Double-Shell Tanks Overall Waste Flow and Disposal

APPENDIX A

TANK AND EQUIPMENT CODE/STATUS DEFINITIONS

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TANK AND EQUIPMENT CODE/STATUS DEFINITIONS

June 1991

1. TANK STATUS CODES

WASTE TYPE

AGING	Aging Waste (Neutralized Current Acid Waste [NCAW])
CC	Complexant Concentrate Waste
CP	Concentrated Phosphate Waste
DC	Dilute Complexed Waste
DN	Dilute Non-Complexed Waste
DSS	Double-Shell Slurry
DSSF	Double-Shell Slurry Feed
NCPLX	Non-Complexed Waste
PD/PN	Plutonium-Uranium Extraction (PUREX) Neutralized Cladding Removal Waste (NCRW), transuranic waste (TRU)
PT	Plutonium Finishing Plant (PFP) TRU Solids

TANK USE (DOUBLE-SHELL TANKS ONLY)

CWHT	Concentrated Waste Holding Tank
DRCVR	Dilute Receiver Tank
EVFD	Evaporate Feed Tank
GRTFD	Grout Feed Tank
SRCVR	Slurry Receiver Tank

2. SOLID AND LIQUID VOLUME DETERMINATION METHODS

F	Food Instrument Company (FIC) Automatic Surface Level Gauge
M	Manual Tape Surface Level Gauge
P	Photo Evaluation
S	Sludge Level Measurement Device

3. DEFINITIONS

WASTE TYPES

Aging Waste (AGING)	High level, first cycle solvent extraction waste from the PUREX plant (NCAW)
Concentrated Complexant (CC)	Concentrated product from the evaporation of dilute complexed waste.
Concentrated Phosphate Waste (CP)	Waste originating from the decontamination of 100N Area reactor. Concentration of this waste produces concentrated phosphate waste.
Dilute Complexed Waste (DC)	Characterized by a high content of organic carbon including organic complexants: ethylenediametetraacetic acid (EDTA), citric acid, N-(hydroxyethyl)-ethylenediaminetriacetic acid (HEDTA), and iminodiacetate (IDA) being the major complexants

used. Main sources of DC waste are saltwell liquid inventory.

Dilute Non-Complexed Waste (DN)

Low activity liquid waste originating from T and S Plants, the 300 and 400 Areas, PUREX facility (decladding supernatant and miscellaneous wastes), 100 N Area (sulfate waste), B Plant, saltwells, and PFP (supernatant).

Double-Shell Slurry (DSS)

Waste evaporated almost to its sodium aluminate saturation boundary or 6.5 M hydroxide in the evaporator. For reporting purposes, DSS is considered a solid.

Double-Shell Slurry Feed (DSSF)

Waste evaporated just before reaching the sodium aluminate saturation boundary or 6.5 M hydroxide in the evaporator. This form is not as concentrated as DSS.

Non-complexed (NCPLX)

General waste term applied to all Hanford site liquors not identified as complexed.

PUREX Decladding (PD/PN)

PUREX Neutralized Cladding Removal Waste (NCRW) is the solids portion of the PUREX plant neutralized cladding removal waste stream; received in Tank Farms as a slurry. Classified as transuranic (TRU) waste.

PFP TRU Solids (PT)

TRU solids from West Area operations.

Drainable Interstitial Liquid (DIL)

Interstitial liquid that is not held in place by capillary forces, and will therefore migrate or move by gravity.

Supernatant

The liquid above the solids in waste storage tanks.

WASTE STATUS

In-Service Tank

The waste classification of a tank being used, or planned for use, for the storage of liquid (in excess of a minimum supernatant liquid heel) in conjunction with production and/or waste processing.

Out-of-Service Tank

A tank which does not meet the definition of an in-service tank. Before September 1988, these tanks were defined as inactive in this report. (note: All single-shell tanks [SST] are out of service.)

STABILIZATION (Single-Shell Tanks only)

Interim Stabilized (IS)	A tank which contains less than 50,000 gal of drainable interstitial liquid and less than 5,000 gal of supernatant liquid.

ISOLATION (Single-Shell Tanks only)

Partially Interim Isolated (PI)	The administrative designation reflecting the completion of the physical effort required for Interim Isolation except for isolation of risers and piping that is required for jet pumping or for other methods of stabilization.

Interim Isolated (II)	The administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box.

TANK INTEGRITY

Sound	The integrity classification of a waste storage tank for which surveillance data indicate no loss of liquid attributed to a breach of integrity.

Assumed Leaker	The integrity classification of a waste storage tank for which surveillance data indicate a loss of liquid attributed to a breach of integrity.

TANK INVESTIGATION

Intrusion	A term used to describe the infiltration of liquid into a waste tank.

SURVEILLANCE INSTRUMENTATION

Drywells	Drywells are vertical carbon steel casings positioned radially around SSTs. Periodic monitoring is done by gamma radiation or neutron sensors to obtain scan profiles of radiation or moisture in the soil as a function of well depth, which could be indicative of tank leakage. These wells range between 50 and 250 ft in depth, and are monitored between the range of 50 to 150 ft. The wells are sealed when not in use.

Laterals	Laterals are horizontal drywells positioned under single-shell waste storage tanks to detect radionuclides in the soil which could be indicative of tank leakage. These drywells are monitored by radiation detection probes. Laterals are 4-in. inside diameter steel pipes located 8 to 10 ft below

the tank's concrete base. There are three laterals per tank. Laterals are located only in A and SX farms.

Surface Levels The surface level measurements in all waste storage tanks are monitored by manual or automatic conductivity probes, and recorded and transmitted or inputted to the Computer Automated Surveillance System (CASS).

Automatic FIC An automatic waste surface level measurement device is manufactured by the Food Instrument Company (FIC). The instrument consists of a conductivity electrode (plummet) connected to a calibrated steel tape, a steel tape reel housing and a controller that automatically raises and lowers the plummet to obtain a waste surface level reading. The controller can provide a digital display of the data and also transmit the reading to the CASS. Some tanks have gauges connected to CASS and others are read manually.

Annulus The annulus is the space between the inner and outer shells on DSTs. Drain channels in the insulating and/or supporting concrete carry any leakage to the annulus space where conductivity probes are installed. Alarms from the annunciators are received by CASS. Continuous Air Monitoring (CAM) alarms are also located in the annulus. The annulus conductivity probes and radiation detectors are the primary means of leak detection for all DSTs.

Liquid Observation Well (LOW) In-tank liquid observation wells are used for monitoring the interstitial liquid level (ILL) in single-shell waste storage tanks. The wells are constructed of fiberglass, tefzel-reinforced epoxy-polyester resin, sized to extend to within 1 in. of the bottom of the tank steel liner. They are sealed at their bottom ends and have a nominal outside diameter of 3.5 in. Three probes are used to monitor changes in the ILL: acoustic; gamma; and neutron, which can indicate intrusions or leakage by increases or decreases in the ILL. There are 58 LOWs (57 are in operation) installed in SSTs that contain or are capable of containing greater than 50,000 gal of drainable interstitial liquid, and in two DSTs only. The LOWs installed in two DSTs (102-SY and 103-AW Tanks only) are used for special surveillance purposes only.

Thermocouple (TC) A thermocouple is a thermoelectric device used to measure temperature. More than one thermocouple on a device (probe) is called a thermocouple tree. In

DSTs there may be one or more thermocouple trees in risers in the primary tank. In addition, in DSTs only, there are thermocouple elements installed in the insulating concrete, the lower primary tank knuckle, the secondary tank concrete foundation, and in the outer structural concrete. These monitor temperature gradients within the concrete walls, bottom of the tank, and the domes. In SSTs, there may be one or more thermocouple trees installed directly in a tank. A single thermocouple may be installed in risers, or lowered down an existing riser or LOW. There are also thermocouple laterals beneath Tank 105-A in which temperature readings are taken in 34 thermocouples.

**In-tank
Photography**

In-tank photographs are taken to aid in resolving in-tank measurement anomalies and determine tank integrity. Photographs help determine sludge and liquid levels by visual examination.

4. INVENTORY AND STATUS BY TANK - COLUMN CALCULATIONS (SINGLE-SHELL TANKS)

COLUMN HEADING

Total Waste	Solids Volume plus Supernatant liquid.
Supernatant Liquid	Drainable Liquid Remaining minus Drainable Interstitial. Supernatant is usually derived by subtracting the solids level measurement from the liquid level measurement.
Drainable Interstitial	Drainable Liquid Remaining minus Supernatant. Drainable Interstitial Liquid is calculated based on the salt cake and sludge volumes, using average porosity values or actual data for each tank, when available.
Total Jet Pumped	Cumulative total pumped 1979 to date.
Drainable Liquid Remaining	Supernatant plus Drainable Interstitial.
Pumpable Liquid Remaining	Drainable Liquid Remaining less undrainable heel volume.
Sludge	Solids formed during sodium hydroxide additions to waste. Sludge usually was in the form of suspended solids when the waste was originally received in the tank from the waste generator. In-tank photographs may be used to estimate the volume.

Saltcake	Results from crystallization and precipitation after concentration of liquid waste, usually in an evaporator. If saltcake is layered over sludge, it is only possible to measure total solids volume. In-tank photographs may be used to estimate the saltcake volume.
Solids Volume	Indicates the latest update of any change in the solids volume.
Solids Update Source - See Footnote	Indicates the source or basis of the latest solids volume update.
Last Photo Date	Date of latest in-tank photographs taken.
Change Since Last Monthly Report	Indicates any change made since the previous month. Explanation for the change follows the Inventory and Status by Tank section.

APPENDIX B

TANK FARM CONFIGURATION, STATUS AND FACILITY CHARTS

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Figure B-1. High-Level Waste Tank Configuration

28905008.1c

Figure B-2. Double-Shell Tank Instrumentation Configuration

Schematic - Not to Scale

Figure B-3. Single-Shell Tank Instrumentation Configuration

28905008.2

WHC-EP-0182-39

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Figure B-4. Double-Shell Tank Status

1,000,000 gal. tanks Constructed 1954-55

A		41 6 15		371 17 366	28 0 28	19 4 19	125 7 125
	101 ^H 102	IS/PI	103 ^{AL} 104 ^{AL} 105 ^{AL} 106 ^{AL}	IS/II	IS/II	IS/II	IS/II

1,000,000 gal. tanks Constructed 1963-64

AX		748 320 3		99 17 7	112 36 2	7 9 7
	101 ^H 102 ^{AL} 103 ^H 104 ^{AL}	PI	IS/II	IS/II	IS/II	IS/II

500,000 gal. tanks Constructed 1943-44

B		113 6 113		32 4 18		59 0 59		371 47 301	306 28 40	117 7 116		165 13 164		94 4 94		127 8 127		246 28 246		237 22 236	39 8 30
	101 ^{AL} 102	IS/II	103 ^{AL} 104	IS/II	105 ^{AL} 106	IS/II	107 ^{AL} 108	IS/II	109	IS/II	110 ^{AL} 111 ^{AL} 112 ^{AL}	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II

55,000 gal. tanks

201 ^{AL} 202		29 4 28		27 3 27		51 6 50	50 6 49
	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II

500,000 gal. tanks Constructed 1946-47

BX		49 42		96 4 96		66 4 62	99 33 96		51 11 43		46 15 31
	101 ^{AL} 102 ^{AL} 103	IS/II	IS/II	IS/PI	104	IS/II	105	106 ^F	IS/II	IS/II	PI

107 108^{AL} 109 110^{AL} 111^{AL} 112^F
IS/PI IS/II IS/PI IS/II PI IS/PI

750,000 gal. tanks Constructed 1948-49

BY

101 ^F	102	103 ^{AL}	104 ^F
IS/II	PI	PI	PI
		IS/II	PI
107 ^{AL}	108 ^{AL}	109	110 ^F
IS/II	IS/PI	PI	IS/PI
		IS/II	IS/PI
			112 ^F

500,000 gal. tanks Constructed 1943-44

C

101 ^{AL}	102	103 ^o	104	105 ^{HH}	106 ^{HH}	107	108 ^F	109 ^F	110 ^{AL}	111 ^{AL}	112 ^F
IS/II	PI	PI	IS/II	PI	PI	PI	IS/II	IS/II	PI	IS/II	IS/PI

55,000 gal. tanks

201 ^{AL}	202 ^{AL}	203 ^{AL}	204 ^{AL}
IS/II	IS/II	IS/II	IS/II

	Sludge		Saltcake
XXX - Total Waste Volume (In K gal.)			
XXX - Total Liquids (In K gal.)			
XXX - Sludge (In K gal.)			
(Saltcake Totals Not Shown)			
Updated Quarterly 06/30/91			
SST-ALL/S.G. SPENCER/8-91			
AL - Assumed Leaker HH - High Heat Tanks F - Ferrocyanide (WHC-EP-0399) O - Organics H - Potential Flammable Gases (Hydrogen)(WHC-EP-0416)			
I - Interim Isolated IS - Interim Stabilized PI - Partially Interim Isolated			

Figure B-5. 200E Single-Shell Tank Status

750,000 gal. tanks Constructed 1950-51

S						
	101	102 ^H	103	104 ^{AL}	105	106
	PI	PI	PI	IS//	IS//	PI
	107	108	109	110	111 ^H	112 ^H
	PI	PI	PI	PI	PI	PI

1,000,000 gal. tanks Constructed 1953-54

SX							
	101 ^H	102 ^H	103 ^H	104 ^{AL}	105 ^H	106 ^H	107 ^{AL}
	PI	PI	PI	PI	PI	PI	IS//
	108 ^{AL}	109 ^{AL}	110 ^{AL}	111 ^{AL}	112 ^{AL}	113 ^{AL}	114 ^{AL}
	IS//	IS//	IS//	IS//	IS//	IS//	IS//

500,000 gal. tanks Constructed 1943-44

T												
	101 ^F	102	103	104	105	106 ^{AL}	107 ^{AL}	108 ^{AL}	109 ^{AL}	110 ^H	111 ^{AL}	112
	PI	IS//	IS//	PI	IS//	IS//	PI	IS//	IS//	PI	PI	IS//

55,000 gal. tanks

201	202	203	204
IS//	IS//	IS//	IS//

750,000 gal. tanks Constructed 1947-48

TX		101	102	103	104	105 ^{AL}	106	107 ^{AL}	108	109
	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II
		110 ^{AL}	111	112	113 ^{AL}	114 ^{AL}	115 ^{AL}	116 ^{AL}	117 ^{AL}	118 ^F
	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II

750,000 gal. tanks Constructed 1951-52

TY		101 ^{AL}	102	103 ^F	104 ^{AL}	105 ^{AL}	106 ^{AL}
	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II	IS/II

500,000 gal. tanks Constructed 1943-44

U		101 AL	102	103 ^H	104	105 ^H	106 ^o	107 ^o	108 ^H	109 ^H	110 AL	111	112 AL
	IS/II	PI	PI	PI	IS/II	PI	PI	PI	PI	PI	IS/PI	PI	IS/II

55,000 gal. tanks

	201	202	203	204
IS/II	IS/II	IS/II	IS/II	IS/II

Sediment
 Sulfate
XXX = Total Waste Volume (in K gal.)
XXX = Total Liquids (in K gal.)
XXX = Sludge (in K gal.)
(Sulfate Totals Not Shown)

AL = Assumed Leaker
H = High Heat Tanks
F = Ferrocyanide (WHC-EP-0399)
O = Organics
H = Potential Flammable Gases (Hydrogen)(WHC-EP-0416)

I = Interim Isolated
IS = Interim Stabilized
PI = Partially Interim Isolated

Updated Quarterly 06/30/91
SST-ALL/S.G. SPENCER/8-91

Fig. B-6. 200W Single-Shell Tank Status

APPENDIX C

**MONTHLY SUMMARY
TANK USE SUMMARY
INVENTORY SUMMARY BY TANK FARM
INVENTORY AND STATUS BY TANK**

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TABLE C-1. MONTHLY SUMMARY

	TANK STATUS			
	June 1991			
	200		200	
	EAST AREA	WEST AREA	EAST AREA	WEST AREA
IN SERVICE	25	3	28	(2)
OUT OF SERVICE	66	83	149	
SOUND	59	52	111	
ASSUMED LEAKER	32	34	66	
INTERIM STABILIZED (1)	51	54	105	
ISOLATED				
PARTIAL INTERIM	25	30	55	
INTERIM	41	53	94	
WASTE VOLUMES (Kgalions)				
	200		200	
	EAST AREA	WEST AREA	EAST AREA	WEST AREA
SUPERNATANT	1782	0	1782	0
AGING	1956	170	2126	3
CC	1001	0	1001	0
CP	817	1	818	1
DC	8078	0	8078	0
DN	891	0	891	0
DN/PT	0	567	567	0
DN/PT	3812	48	3860	56
DSSF	259	341	600	600
NCPLX	18596	1127	19723	660
TOTAL SUPERNATANT			19063	19723
SOLIDS	937	1134	2071	0
Double-shell slurry	8265	6212	14477	12539
Sludge	6655	17641	24296	23536
Saltcake	15857	24987	40844	36075
TOTAL SOLIDS	34453	26114	60567	36735
TOTAL WASTE	6400	914	7314	0
AVAILABLE SPACE IN TANKS	2422	4282	6704	6268
DRAINABLE INTERSTITIAL	21018	5409	26427	19499
DRAINABLE LIQUID REMAINING				

(1) Includes tanks that do not meet current established supernatant and interstitial liquid stabilization criteria, B-104, B-107, B110, B-111, BX-110, T-102, T-112, and U-110.

(2) Includes five double-shell tanks on Hydrogen Watch List not currently in service, 103-AN, 104-AN, 105-AN, 101-SY, and 103-SY.

Note: +/- 1 Kgalion differences are the result of computer rounding

TABLE C-2. TANK USE SUMMARY

June 1991

TANK FARMS	IN SERVICE		OUT OF SERVICE	SOUND	ASSUMED LEAKER	ISOLATED TANKS		INTERIM STABILIZED TANKS
	IN SERVICE					PARTIAL	INTERIM	
EAST								
A	0		6	3	3	2	4	5
AN	7 (2)		0	7	0	0	0	0
AP	8		0	8	0	0	0	0
AW	6		0	6	0	0	0	0
AX	0		4	2	2	1	3	3
AY	2		0	2	0	0	0	0
AZ	2		0	2	0	0	0	0
B	0		16	6	10	0	16	16 (1)
BX	0		12	7	5	7	5	10 (1)
BY	0		12	7	5	8	4	7
C	0		16	9	7	7	9	10
Total	25		66	59	32	25	41	51
WEST								
S	0		12	11	1	10	2	2
SX	0		15	5	10	6	9	9
SY	3 (2)		0	3	0	0	0	0
T	0		16	10	6	5	11	11 (1)
TX	0		18	10	8	0	18	18
TY	0		6	1	5	0	6	6
U	0		16	12	4	9	7	8 (1)
Total	3		83	52	34	30	53	54
TOTAL	28		149	111	66	55	94	105

(1) Includes tanks that do not meet current established supernatant and interstitial liquid stabilization criteria (B-104, B-107, B-110, B-111, BX-110, T-102, T-112, and U-110).

(2) Five Double-Shell Tanks on the Hydrogen Tank Watch List are not currently in service.

TABLE C-3. INVENTORY SUMMARY BY TANK FARM

WASTE VOLUMES (Kgallons)

June 1991

SUPERNATANT LIQUID VOLUMES

SOLIDS VOLUME

TANK FARM	TOTAL WASTE	AVAIL SPACE	AGING	CC	CP	DC	DN	DN/PT	DN/PT	DSSF	NCPLX	TOTAL	DSS	SLUDGE	CAKE	TOTAL
EAST																
A	1536	0	0	0	0	0	0	0	0	8	0	8	0	556	972	1528
AN	6711	1269	0	1953	1001	0	375	0	0	1941	0	5270	937	504	0	1441
AP	5609	3511	0	0	0	0	4783	0	0	826	0	5609	0	0	0	0
AW	5353	1487	0	0	0	0	2107	891	0	1037	0	4035	0	1122	196	1318
AX	906	0	0	3	0	0	0	0	0	0	0	3	0	19	884	903
AY	1744	81	0	0	0	817	813	0	0	0	0	1630	0	115	0	115
AZ	1908	52	1782	0	0	0	0	0	0	0	0	1782	0	126	0	126
B	2057	0	0	0	0	0	0	0	0	0	15	15	0	1697	345	2042
BX	1559	0	0	0	0	0	0	0	0	0	50	50	0	1354	155	1509
BY	4843	0	0	0	0	0	0	0	0	0	17	17	0	723	4103	4826
C	2226	0	0	0	0	0	0	0	0	0	177	177	0	2049	0	2049
Total	34452	6400	1782	1956	1001	817	8078	891	0	3812	259	18596	937	8265	6655	15857
WEST																
S	5982	0	0	0	0	0	0	0	0	17	29	46	0	1171	4765	5936
SX	4468	0	0	0	0	1	0	0	0	0	93	94	0	1525	2845	4374
SY	2506	914	0	170	0	0	0	567	0	0	0	737	1134	71	564	1769
T	2065	0	0	0	0	0	0	0	0	0	74	74	0	1991	0	1991
TX	6905	0	0	0	0	0	0	0	0	0	5	5	0	241	6659	6900
TY	638	0	0	0	0	0	0	0	0	0	3	3	0	571	64	635
U	3550	0	0	0	0	0	0	0	0	31	137	168	0	638	2744	3382
Total	26114	914	0	170	0	1	0	0	567	48	341	1127	1134	6212	17641	24987
TOTAL	60566	7314	1782	2126	1001	818	8078	891	567	3860	600	19723	2071	14477	24296	40844

Note: +/- 1 Kgallon differences are the result of computer rounding

TABLE C-4. INVENTORY AND STATUS BY TANK
DOUBLE-SHELL TANKS

June 1991

TANK STATUS				LIQUID VOLUME										SOLIDS VOLUME										VOLUME DETERMINATION				CHANGE SINCE LAST MONTHLY REPORT	
TANK	WASTE TANK	TANK INTEGRITY	USE	EQUIVA- LENT WASTE INCHES (Kgal)	TOTAL WASTE (Kgal)		AVAIL SPACE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)		PUMPED THIS MONTH	TOTAL PUMPED	DRAIN- ABLE LIQUID REMAIN (Kgal)		PUMP- ABLE LIQUID REMAIN (Kgal)	DSS SLDG (Kgal)	CAKE VOL	SALT LIQ VOL	SOL VOL	SOLIDS VOLUME	UPDATE	PHOTO DATE	MONTHLY REPORT						
					WASTE (Kgal)	SPACE (Kgal)			ABLE (Kgal)	INTER- STIT. (Kgal)			ABLE (Kgal)	REMAIN (Kgal)										REMAIN (Kgal)	MTHD	MTHD			
7 DOUBLE-SHELL TANKS																													
101AN	DN	SOUND	DRCVR	136.5	375	765	375	375	0	0.0	0.0	375	375	0	0	0	FM	S	08/22/89	0/0/0									
102AN	CC	SOUND	CWHT	398.9	1097	43	1008	15	3	0.0	0.0	1011	1008	0	89	0	FM	S	08/22/89	0/0/0									
103AN	DSS	SOUND	CWHT	346.1	952	188	15	0	0	0.0	0.0	15	15	937	0	0	FM	S	08/22/89	10/29/87									
104AN	DSSF	SOUND	CWHT	385.2	1059	81	795	25	25	0.0	0.0	820	798	0	264	0	FM	S	08/22/89	08/19/88									
105AN	DSSF	SOUND	CWHT	411.4	1131	9	1131	0	0	0.0	0.0	1131	1131	0	0	0	FM	S	10/22/84	01/26/88									
106AN	CP	SOUND	CWHT	370.2	1018	122	1001	0	0	0.0	0.0	1001	1001	0	17	0	FM	S	08/22/89	0/0/0									
107AN	CC	SOUND	CWHT	392.2	1079	61	945	9	9	0.0	0.0	954	945	0	134	0	FM	S	08/22/89	09/01/88									
TOTALS:				6711	1269	5270	37	0.0	0.0	5307	5273	937	504	0															
8 DOUBLE-SHELL TANKS																													
101AP	DN	SOUND	DRCVR	386.5	1063	77	1063	0	0	0.0	0.0	1063	1063	0	0	0	FM	S	05/01/89	0/0/0									
102AP	DN	SOUND	GRTFD	48.5	133	1007	133	0	0	0.0	0.0	133	133	0	0	0	FM	S	07/11/89	0/0/0									
103AP	DN	SOUND	DRCVR	412.8	1135	5	1135	0	0	0.0	0.0	1135	1135	0	0	0	FM	S	10/13/88	0/0/0									
104AP	DN	SOUND	GRTFD	7.6	21	1119	21	0	0	0.0	0.0	21	21	0	0	0	FM	S	10/13/88	0/0/0									
105AP	DSSF	SOUND	CWHT	300.2	826	314	826	0	0	0.0	0.0	826	826	0	0	0	FM	S	02/02/89	0/0/0									
106AP	DN	SOUND	DRCVR	412.3	1134	6	1134	0	0	0.0	0.0	1134	1134	0	0	0	FM	S	10/13/88	0/0/0									
107AP	DN	SOUND	DRCVR	410.4	1129	11	1129	0	0	0.0	0.0	1129	1129	0	0	0	FM	S	10/13/88	0/0/0									
108AP	DN	SOUND	DRCVR	61.0	168	972	168	0	0	0.0	0.0	168	168	0	0	0	FM	S	10/13/88	0/0/0									
TOTALS:				5609	3511	5609	0	0.0	0.0	5609	5609	0	0	0															

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TABLE C-4. INVENTORY AND STATUS BY TANK
DOUBLE-SHELL TANKS
June 1991

TANK STATUS		LIQUID VOLUME										SOLIDS VOLUME					VOLUME DETERMINATION					CHANGE SINCE LAST MONTHLY REPORT	
TANK	WASTE TANK	TANK INTEGRITY USE	EQUIVA- LENT	TOTAL WASTE INCHES (Kgal)	AVAIL SPACE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	DSS SLDG (Kgal)	SALT CAKE (Kgal)	VOL	SOL	LIQ	SOLIDS VOLUME	DATE	PHOTO	LAST	MONTHLY REPORT		
+++++ SY FARM STATUS +++++																							
101SY	CC	SOUND	CWHT	407.2	1121	19	0	237	0.0	0.0	237	231	561	0	560	FM	S	10/15/84	04/12/89				
102SY	DN/PT	SOUND	DRCVR	232.0	638	502	567	0	0.0	0.0	567	567	0	71	0	FM	S	05/12/87	04/29/81				
103SY	CC	SOUND	CWHT	271.8	747	393	170	0	0.0	0.0	170	170	573	0	4	FM	S	10/22/84	10/01/85				
TOTALS:				2506	914	737	237	0.0	0.0	974	968	1134	71	564									
3 DOUBLE-SHELL TANKS																							

NOTE: +/- 1 Kgal differences are the result of computer rounding

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS

June 1991

TANK STATUS			LIQUID VOLUME				SOLIDS VOLUME				VOLUME DETERMINATION						
TANK	WASTE MATERIAL INTEGRITY	TANK ISOLATION STATUS	STABIL/ISOLATION	TOTAL WASTE (Kgal)	SUPER-NATANT LIQUID (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	SOLIDS SOURCE SEE FOOTNOTE	SOLIDS UPDATE	CHG SINCE LAST MONTHLY REPORT
+++++ A FARM STATUS +++++																	
101A	DSSF	SOUND	/PI	953	0	413	0.0	0.0	413	391	3	950	P	F	11/21/80		08/21/85
102A	DSSF	SOUND	IS/PI	41	4	2	0.0	39.5	6	0	15	22	P	FP	07/27/89	(1)	07/20/89
103A	DSSF	ASMD LKR	IS/II	370	4	13	0.0	111.0	17	0	366	0	-	FP	06/03/88	(1)	12/28/88
104A	NCPLX	ASMD LKR	IS/II	28	0	0	0.0	0.0	0	0	28	0	M	PS	01/27/78		06/25/86
105A	NCPLX	ASMD LKR	IS/II	19	0	4	0.0	0.0	4	0	19	0	P	MP	08/23/79	(1)	08/20/86
106A	CP	SOUND	IS/II	125	0	7	0.0	0.0	7	0	125	0	P	M	09/07/82		08/17/86
6 SINGLE-SHELL TANKS		TOTALS		1536	8	439	0.0	150.5	447	391	556	972					
+++++ AX FARM STATUS +++++																	
101AX	DSSF	SOUND	/PI	748	0	320	0.0	0.0	320	298	3	745	P	F	05/06/82		08/18/87
102AX	CC	ASMD LKR	IS/II	39	3	14	0.0	13.0	17	3	7	29	F	S	09/06/88		06/05/89
103AX	CC	SOUND	IS/II	112	0	36	0.0	0.0	36	3	2	110	F	S	08/19/87		08/13/87
104AX	NCPLX	ASMD LKR	IS/II	7	0	0	0.0	0.0	0	0	7	0	P	M	04/28/82		08/18/87
4 SINGLE-SHELL TANKS		TOTALS:		906	3	370	0.0	13.0	373	304	19	884					

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TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
June 1991

TANK STATUS			LIQUID VOLUME				SOLIDS VOLUME			VOLUME DETERMINATION						CHG							
TANK	WASTE MATERIAL	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS		SOLIDS		LAST PHOTO DATE	SINCE LAST MONTHLY REPORT					
													VOLUME	METHOD	VOLUME	METHOD			VOLUME	UPDATE	SEE	SOURCE	UPDATE
+++++ B FARM STATUS +++++																							
1018	NCPLX	ASMD LKR	IS/11	113	0	6	0.0	0.0	6	0	113	0	P	F	04/28/82		05/19/83						
1028	NCPLX	SOUND	IS/11	32	4	0	0.0	0.0	4	0	18	10	P	F	08/22/85	(1)	08/22/85						
1038	NCPLX	ASMD LKR	IS/11	59	0	0	0.0	0.0	0	0	59	0	F	F	02/28/85	(1)	02/05/85						
1048	NCPLX	SOUND	IS/11	371	1	46	0.0	0.0	47	25	301	69	M	M	06/30/85	(1)	10/13/88						
1058	NCPLX	ASMD LKR	IS/11	306	0	23	0.0	0.0	23	0	40	266	P	MP	12/27/84	(1)	05/19/88						
1068	NCPLX	SOUND	IS/11	117	1	6	0.0	0.0	7	0	116	0	F	F	03/31/85	(1)	02/28/85						
1078	NCPLX	ASMD LKR	IS/11	165	1	12	0.0	0.0	13	0	164	0	M	M	03/31/85	(1)	02/28/85						
1088	NCPLX	SOUND	IS/11	94	0	4	0.0	0.0	4	0	94	0	F	F	05/31/85	(1)	05/10/85						
1098	NCPLX	SOUND	IS/11	127	0	8	0.0	0.0	8	0	127	0	M	M	04/08/85	(1)	04/02/85						
1108	NCPLX	ASMD LKR	IS/11	246	1	22	0.0	0.0	23	17	245	0	MP	MP	02/28/85	(1)	03/17/88						
1118	NCPLX	ASMD LKR	IS/11	237	1	21	0.0	0.0	22	0	236	0	F	F	06/28/85	(1)	06/26/85						
1128	NCPLX	ASMD LKR	IS/11	33	3	0	0.0	0.0	3	0	30	0	F	F	05/31/85	(1)	05/29/85						
2018	NCPLX	ASMD LKR	IS/11	29	1	3	0.0	0.0	4	0	28	0	M	M	04/28/82		11/12/86						
2028	NCPLX	SOUND	IS/11	27	0	3	0.0	0.0	3	0	27	0	P	M	05/31/85	(1)	05/29/85						
2038	NCPLX	ASMD LKR	IS/11	51	1	5	0.0	0.0	6	0	50	0	PM	PM	05/31/84	(1)	11/13/86						
2048	NCPLX	ASMD LKR	IS/11	50	1	5	0.0	0.0	6	0	49	0	P	M	05/31/84	(1)	10/21/87						
16 SINGLE-SHELL TANKS			TOTALS	2057	15	164	0.0	0.0	179	42	1697	345											

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
June 1991

TANK STATUS		LIQUID VOLUME						SOLIDS VOLUME		VOLUME DETERMINATION						CHG SINCE LAST MONTHLY REPORT	
		STABIL/ ISOLATION STATUS	TANK WASTE MATERIAL INTEGRITY	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS UPDATE SOURCE SEE FOOTNOTE	LAST PHOTO DATE		
+++++ BX FARM STATUS +++++																	
101BX	NCPLX	ASMD LKR	IS/11	43	1	0	0.0	0.0	1	0	42	0	P	M	04/28/82	11/24/88	
102BX	NCPLX	ASMD LKR	IS/11	96	0	4	0.0	0.0	4	0	96	0	P	M	04/28/82	09/18/85	
103BX	NCPLX	SOUND	IS/11	66	4	0	0.0	0.0	4	0	62	0	P	F	11/29/83	10/31/86	
104BX	NCPLX	SOUND	IS/PI	99	3	30	0.0	17.4	33	27	96	0	F	F	09/22/89	09/21/89	(1)
105BX	NCPLX	SOUND	IS/11	51	5	6	0.0	15.0	11	4	43	3	F	S	09/03/86	10/23/86	(1)
106BX	NCPLX	SOUND	/PI	46	15	0	0.0	0.0	15	15	31	0	MP	PS	04/28/82	05/19/88	
107BX	NCPLX	SOUND	IS/PI	345	1	29	0.0	23.1	30	23	344	0	MP	P	09/18/90	09/11/90	(2)
108BX	NCPLX	ASMD LKR	IS/11	26	0	1	0.0	0.0	1	0	26	0	M	PS	07/31/79	10/23/86	(1)
109BX	NCPLX	SOUND	IS/PI	193	0	13	0.0	8.2	13	8	193	0	FP	P	09/17/90	09/11/90	(2)
110BX	NCPLX	ASMD LKR	IS/PI	199	1	20	0.0	0.0	21	0	189	9	MP	M	08/22/85	07/31/85	(1)
111BX	NCPLX	ASMD LKR	/PI	230	19	50	0.0	0.0	69	47	68	143	M	M	07/26/77	09/18/85	
112BX	NCPLX	SOUND	IS/PI	165	1	7	0.0	4.1	8	2	164	0	FP	P	09/17/90	09/11/90	(2)
12 SINGLE-SHELL TANKS		TOTALS:		1559	50	160	0.0	67.8	210	126	1354	155					
+++++ BY FARM STATUS +++++																	
101BY	NCPLX	SOUND	IS/11	387	0	5	0.0	35.8	5	0	109	278	P	M	05/30/84	09/19/89	*
102BY	NCPLX	SOUND	/PI	405	0	164	26.6	26.6	164	142	0	405	MP	M	07/08/91	09/11/87	(2)
103BY	NCPLX	ASMD LKR	/PI	400	0	108	0.0	78.5	108	86	5	395	MP	M	04/03/90	09/07/89	(2)
104BY	NCPLX	SOUND	IS/11	406	0	18	0.0	329.5	18	0	40	366	P	M	04/28/82	04/27/83	
105BY	NCPLX	ASMD LKR	/PI	503	0	194	0.0	0.0	194	172	44	459	P	MP	04/28/82	12/02/88	
106BY	NCPLX	ASMD LKR	/PI	642	0	235	0.0	0.0	235	213	95	547	P	MP	04/28/82	11/04/82	
107BY	NCPLX	ASMD LKR	IS/11	266	0	25	0.0	56.4	25	0	60	206	P	MP	04/28/82	10/15/86	

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
June 1991

TANK STATUS			LIQUID VOLUME										SOLIDS VOLUME			VOLUME DETERMINATION									
TANK	WASTE	TANK MATERIAL INTEGRITY STATUS	STABIL/ ISOLATION	TANK	TOTAL WASTE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT.	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS UPDATE SOURCE SEE FOOTNOTE	CHG SINCE LAST MONTHLY REPORT								
																		ASND LKR	IS/PI	228	0	9	0.0	27.5	9
1088Y	NCPLX	ASND LKR	IS/PI		228	0	9	0.0	27.5	9	0	154	74	MP	M	04/28/82	10/15/86								
1098Y	NCPLX	SOUND	/PI		458	17	147	15.6	15.6	164	142	87	354	F	PS	07/08/91 (2)	10/15/86 *								
1108Y	NCPLX	SOUND	IS/11		398	0	9	0.0	213.3	9	0	103	295	M	S	09/10/79	07/26/84								
1118Y	NCPLX	SOUND	IS/PI		459	0	0	0.0	313.2	0	0	21	438	P	M	04/28/82	10/31/86								
1128Y	NCPLX	SOUND	IS/PI		291	0	8	0.0	116.4	8	0	5	286	P	M	04/28/82	04/14/88								
12 SINGLE-SHELL TANKS				TOTALS:	4843	17	922	42.2	1212.8	939	755	723	4103												
+++++ C FARM STATUS +++++																									
101C	NCPLX	ASND LKR	IS/11		88	0	3	0.0	0.0	3	0	88	0	M	M	11/29/83	11/17/87								
102C	NCPLX	SOUND	/PI		427	3	45	0.0	0.0	48	42	424	0	P	FP	04/28/82	05/18/76								
103C	NCPLX	SOUND	/PI		195	133	0	0.0	0.0	133	133	62	0	F	S	10/22/90 (1)	07/28/87								
104C	CC	SOUND	IS/11		295	0	11	0.0	0.0	11	5	295	0	FP	P	09/22/89 (1)	07/25/90								
105C	NCPLX	SOUND	/PI		150	0	11	0.0	0.0	11	5	150	0	F	S	05/31/85	04/01/88								
106C	NCPLX	SOUND	/PI		229	32	16	0.0	0.0	48	42	197	0	F	PS	04/28/82	04/05/79								
107C	NCPLX	SOUND	/PI		337	0	34	0.0	0.0	34	28	337	0	F	S	07/19/78	00/00/00								
108C	NCPLX	SOUND	IS/11		66	0	0	0.0	0.0	0	0	66	0	M	S	02/24/84 (1)	12/05/74								
109C	NCPLX	SOUND	IS/11		66	4	0	0.0	0.0	4	0	62	0	M	PS	11/29/83	01/30/76								
110C	NCPLX	ASND LKR	/PI		201	5	16	0.0	0.0	21	15	196	0	P	FHP	05/31/85	08/12/86								
111C	NCPLX	ASND LKR	IS/11		57	0	0	0.0	0.0	0	0	57	0	M	S	04/28/82	02/25/70								
112C	NCPLX	SOUND	IS/PI		104	0	32	0.0	0.0	32	26	104	0	M	PS	09/18/90 (2)	09/18/90								

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TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
June 1991

TANK STATUS		LIQUID VOLUME				SOLIDS VOLUME			VOLUME DETERMINATION										CHG	
TANK	WASTE MATERIAL	TANK INTEGRITY	STATUS	STABIL/ ISOLATION	TOTAL WASTE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS UPDATE SOURCE	LAST PHOTO DATE	MONTHLY REPORT	CHG	SINCE LAST
201C	NCPLX	ASHD LKR	IS/11	2	0	0	0	0.0	0.0	0	0	2	0	P	MP	03/31/82	12/02/86			
202C	EMPTY	ASHD LKR	IS/11	1	0	0	0	0.0	0.0	0	0	1	0	P	M	01/19/79	12/09/86			
203C	NCPLX	ASHD LKR	IS/11	5	0	0	0	0.0	0.0	0	0	5	0	P	MP	04/28/82	12/09/86			
204C	NCPLX	ASHD LKR	IS/11	3	0	0	0	0.0	0.0	0	0	3	0	P	MP	04/28/82	12/09/86			
16 SINGLE-SHELL TANKS		TOTALS:		2226	177	168	0.0	0.0	345	296	2049	0								
***** S FARM STATUS *****																				
101S	NCPLX	SOUND	/PI	427	12	84	0.0	0.0	96	74	244	171		F	PS	09/16/80	03/18/88			
102S	DSSF	SOUND	/PI	549	0	230	0.0	0.0	230	208	4	545		P	FP	04/28/82	03/18/88			
103S	DSSF	SOUND	/PI	248	17	85	0.0	0.0	102	80	10	221		M	S	11/20/80	06/01/89			
104S	NCPLX	ASHD LKR	IS/11	294	1	28	0.0	0.0	29	23	293	0		M	M	12/20/84	12/12/84			
105S	NCPLX	SOUND	IS/11	456	0	35	0.0	114.3	35	13	2	454		MP	S	09/26/88	04/12/89			
106S	NCPLX	SOUND	/PI	543	0	115	0.0	99.8	115	93	32	511		P	FP	06/28/82	03/17/89			
107S	NCPLX	SOUND	/PI	368	6	45	0.0	0.0	51	29	293	69		F	PS	09/25/80	03/12/87			
108S	NCPLX	SOUND	/PI	604	0	103	0.0	151.6	103	81	4	600		P	MP	04/28/82	03/12/87			
109S	NCPLX	SOUND	/PI	568	0	124	0.0	111.0	124	102	13	555		F	PS	09/30/75	08/24/84			
110S	NCPLX	SOUND	/PI	692	0	60	0.0	185.9	60	38	131	561		F	PS	01/31/79	03/12/87			
111S	NCPLX	SOUND	/PI	596	10	192	0.0	3.3	202	180	139	447		P	FP	04/28/82	08/10/89			
112S	NCPLX	SOUND	/PI	637	0	144	0.0	125.1	144	122	6	631		P	FP	06/28/82	03/24/87			
12 SINGLE-SHELL TANKS		TOTALS:		5982	46	1245	0.0	791.0	1291	1043	1171	4765								

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
June 1991

TANK STATUS			LIQUID VOLUME										SOLIDS VOLUME				VOLUME DETERMINATION										CHG	
TANK	WASTE MATERIAL	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	SOLIDS SOURCE SEE FOOTNOTE	LAST PHOTO DATE	MONTHLY REPORT	SINCE										
																		LAST	MONTHLY									
+++++ SX FARM STATUS +++++																												
101SX	DC	SOUND	/PI	456	1	145	0.0	0.0	146	124	112	343	P	FP	04/28/82		03/10/89											
102SX	DSSF	SOUND	/PI	543	0	183	0.0	0.0	183	161	117	426	P	M	04/28/82		01/07/88											
103SX	NCPLX	SOUND	/PI	667	32	226	0.0	0.0	258	236	112	523	F	S	04/28/82		12/17/87											
104SX	DSSF	ASHD LKR	/PI	614	0	138	0.0	113.2	138	116	136	478	F	S	07/07/89		09/08/88											
105SX	DSSF	SOUND	/PI	683	0	261	0.0	0.0	261	239	73	610	P	F	04/28/82		06/15/88											
106SX	NCPLX	SOUND	/PI	538	61	194	0.0	0.0	255	233	12	465	F	PS	10/28/80		06/01/89											
107SX	NCPLX	ASHD LKR	IS/II	104	0	5	0.0	0.0	5	0	104	0	P	M	04/28/82		03/06/87											
108SX	NCPLX	ASHD LKR	IS/II	115	0	6	0.0	0.0	6	0	115	0	P	M	04/28/82		03/06/87											
109SX	NCPLX	ASHD LKR	IS/II	250	0	10	0.0	0.0	10	0	250	0	P	M	04/28/82		05/21/86											
110SX	NCPLX	ASHD LKR	IS/II	62	0	0	0.0	0.0	0	0	62	0	M	PS	10/06/76		02/20/87											
111SX	NCPLX	ASHD LKR	IS/II	125	0	7	0.0	0.0	7	0	125	0	M	PS	05/31/74		03/10/87											
112SX	NCPLX	ASHD LKR	IS/II	92	0	3	0.0	0.0	3	0	92	0	P	M	04/28/82		03/10/87											
113SX	NCPLX	ASHD LKR	IS/II	26	0	0	0.0	0.0	0	0	26	0	P	M	04/28/82		03/18/88											
114SX	NCPLX	ASHD LKR	IS/II	181	0	14	0.0	0.0	14	0	181	0	P	M	04/28/82		02/26/87											
115SX	NCPLX	ASHD LKR	IS/II	12	0	0	0.0	0.0	0	0	12	0	P	M	04/28/82		03/31/88											
15 SINGLE-SHELL TANKS			TOTALS:	4468	94	1192	0.0	113.2	1286	1109	1529	2845																

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
June 1991

TANK STATUS			LIQUID VOLUME				SOLIDS VOLUME				VOLUME DETERMINATION										CHG	
TANK	WASTE MATERIAL	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS UPDATE SOURCE	SEE FOOTNOTE	LAST PHOTO DATE	SINCE LAST MONTHLY REPORT				
+++++ T FARM STATUS +++++																						
101T	NCLPX	SOUND	/PI	133	30	5	0.0	0.0	35	30	103	0	F	S	08/31/84			07/03/84				
102T	NCPLX	SOUND	IS/II	32	13	0	0.0	0.0	13	13	19	0	P	FP	08/31/84			06/28/89				
103T	NCPLX	ASND LKR	IS/II	27	4	0	0.0	0.0	4	0	23	0	F	FP	11/29/83	(1)		07/02/84				
104T	NCPLX	SOUND	/PI	445	3	47	0.0	0.0	50	44	442	0	P	MP	04/28/82			06/29/89				
105T	NCPLX	SOUND	IS/II	98	0	23	0.0	0.0	23	17	98	0	P	F	05/29/87			05/14/87				
106T	NCPLX	ASND LKR	IS/II	21	2	0	0.0	0.0	2	0	19	0	P	FP	04/28/82			06/29/89				
107T	NCPLX	ASND LKR	/PI	180	9	13	0.0	0.0	22	16	171	0	P	FP	08/31/84			07/12/84				
108T	NCPLX	ASND LKR	IS/II	44	0	0	0.0	0.0	0	0	44	0	P	M	04/28/82			07/17/84				
109T	NCPLX	ASND LKR	IS/II	58	0	0	0.0	0.0	0	0	58	0	M	M	12/30/84	(1)		07/03/84				
110T	NCPLX	SOUND	/PI	379	3	39	0.0	0.0	42	36	376	0	P	FP	04/28/82			07/12/84				
111T	NCPLX	ASND LKR	/PI	458	2	49	0.0	0.0	51	45	456	0	P	FP	04/28/82			08/02/84				
112T	NCPLX	SOUND	IS/II	67	7	0	0.0	0.0	7	7	60	0	P	FP	04/28/82			08/01/84				
201T	NCPLX	SOUND	IS/II	29	1	3	0.0	0.0	4	0	28	0	M	PS	05/31/78			04/15/86				
202T	NCPLX	SOUND	IS/II	21	0	2	0.0	0.0	2	0	21	0	FP	P	07/12/81			07/06/89				
203T	NCPLX	SOUND	IS/II	35	0	4	0.0	0.0	4	0	35	0	M	PS	01/31/78			08/03/89				
204T	NCPLX	SOUND	IS/II	38	0	4	0.0	0.0	4	0	38	0	FP	P	07/22/81			08/03/89				
TOTALS:				2065	74	189	0.0	0.0	263	208	1991	0										
16 SINGLE-SHELL TANKS																						

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
June 1991

TANK STATUS			LIQUID VOLUME					SOLIDS VOLUME			VOLUME DETERMINATION									
TANK	WASTE MATERIAL	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- MANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS		SOLIDS		SOLIDS UPDATE	CHG SINCE LAST MONTHLY REPORT		
													WASTE (Kgal)	WASTE METHOD	VOLUME METHOD	VOLUME UPDATE			VOLUME UPDATE	SEE FOOTNOTE
+++++ TX FARM STATUS +++++																				
101TX	NCLPX	SOUND	IS/II	87	3	2	0.0	0.0	5	0	84	0	F	P	02/02/84	(1)	10/24/85			
102TX	NCPLX	SOUND	IS/II	113	0	22	0.0	94.4	22	0	0	113	M	S	08/31/84		10/31/85			
103TX	NCPLX	SOUND	IS/II	157	0	15	0.0	68.3	15	0	157	0	F	S	08/14/80		10/31/85			
104TX	NCPLX	SOUND	IS/II	65	1	14	0.0	3.6	15	0	0	64	F	FP	04/06/84		10/16/84			
105TX	NCPLX	ASWD LKR	IS/II	609	0	20	0.0	121.5	20	0	0	609	M	PS	08/22/77		10/24/89			
106TX	NCPLX	SOUND	IS/II	453	0	10	0.0	134.6	10	0	0	453	M	S	08/29/77		10/31/85			
107TX	NCPLX	ASWD LKR	IS/II	36	1	1	0.0	0.0	2	0	0	35	FP	FP	01/20/84	(1)	10/31/85			
108TX	NCPLX	SOUND	IS/II	134	0	0	0.0	13.7	0	0	0	134	P	FP	05/30/83		09/12/89			
109TX	NCPLX	SOUND	IS/II	384	0	10	0.0	72.3	10	0	0	384	F	PS	05/30/83		10/24/89			
110TX	NCPLX	ASWD LKR	IS/II	462	0	15	0.0	115.1	15	0	0	462	M	PS	05/30/83		10/24/89			
111TX	NCPLX	SOUND	IS/II	370	0	9	0.0	98.4	9	0	0	370	M	PS	07/26/77		09/12/89			
112TX	NCPLX	SOUND	IS/II	649	0	24	0.0	94.0	24	0	0	649	P	PS	05/30/83		11/19/87			
113TX	NCPLX	ASWD LKR	IS/II	607	0	16	0.0	19.2	16	0	0	607	M	PS	05/30/83		04/11/83			
114TX	NCPLX	ASWD LKR	IS/II	535	0	15	0.0	104.3	15	0	0	535	M	PS	05/30/83		04/11/83			
115TX	NCPLX	ASWD LKR	IS/II	640	0	19	0.0	99.1	19	0	0	640	M	S	03/25/83		06/15/88			
116TX	NCPLX	ASWD LKR	IS/II	631	0	23	0.0	23.8	23	0	0	631	M	PS	03/31/72		10/17/89			
117TX	NCPLX	ASWD LKR	IS/II	626	0	8	0.0	54.3	8	0	0	626	M	PS	12/31/71		04/11/83			
118TX	NCPLX	SOUND	IS/II	347	0	27	0.0	89.1	27	0	0	347	F	S	11/17/80		12/19/79			
TOTALS:				6905	5	250	0.0	1205.7	255	0	241	6659								
18 SINGLE-SHELL TANKS																				

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
June 1991

TANK STATUS			LIQUID VOLUME				SOLIDS VOLUME				VOLUME DETERMINATION					
TANK	WASTE MATERIAL	TANK INTEGRITY STATUS	STABIL/ ISOLATION	TOTAL WASTE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS UPDATE SOURCE SEE FOOTNOTE	CHG SINCE LAST MONTHLY REPORT
+++++ TY FARM STATUS +++++																
101TY	NCPLX	ASMD LKR	IS/II	118	0	0	0.0	8.2	0	0	118	0	P	F	04/28/82	08/22/89
102TY	NCPLX	SOUND	IS/II	64	0	14	0.0	6.6	14	0	0	64	P	FP	06/28/82	07/07/87
103TY	NCPLX	ASMD LKR	IS/II	162	0	5	0.0	11.5	5	0	162	0	P	FP	07/09/82	08/22/89
104TY	NCPLX	ASMD LKR	IS/II	46	3	12	0.0	0.0	15	0	43	0	P	FP	06/27/90	11/03/87
105TY	NCPLX	ASMD LKR	IS/II	231	0	0	0.0	3.6	0	0	231	0	P	M	04/28/82	09/07/89
106TY	NCPLX	ASMD LKR	IS/II	17	0	0	0.0	0.0	0	0	17	0	P	M	04/28/82	08/22/89
TOTALS:				638	3	31	0.0	29.9	34	0	571	64				
6 SINGLE-SHELL TANKS																
+++++ U FARM STATUS +++++																
101U	NCPLX	ASMD LKR	IS/II	25	3	0	0.0	0.0	3	0	22	0	P	MP	04/28/82	06/19/79
102U	NCPLX	SOUND	/PI	374	18	126	0.0	0.0	144	122	43	313	P	MP	04/28/82	06/08/89
103U	NCPLX	SOUND	/PI	468	13	176	0.0	0.0	189	167	32	423	P	FP	04/28/82	09/13/88
104U	NCPLX	ASMD LKR	IS/II	122	0	7	0.0	0.0	7	0	122	0	P	MP	04/28/82	08/10/89
105U	NCPLX	SOUND	/PI	418	37	142	0.0	0.0	179	157	32	349	FM	PS	09/30/78	07/07/88
106U	NCPLX	SOUND	/PI	226	15	68	0.0	0.0	83	61	26	185	F	PS	12/30/83	07/07/88
107U	DSSF	SOUND	/PI	406	31	147	0.0	0.0	178	156	15	360	F	S	12/30/83	10/27/88
108U	NCPLX	SOUND	/PI	468	24	172	0.0	0.0	196	174	29	415	F	S	12/30/83	09/12/84
109U	NCPLX	SOUND	/PI	463	19	163	0.0	0.0	182	160	48	396	F	F	11/13/77	07/07/88
110U	NCPLX	ASMD LKR	IS/PI	186	0	15	0.0	0.0	15	9	186	0	M	M	12/30/84	12/11/84
111U	DSSF	SOUND	/PI	329	0	122	0.0	0.0	122	100	26	303	PS	FPS	04/28/82	06/23/88
112U	NCPLX	ASMD LKR	IS/II	49	4	0	0.0	0.0	4	0	45	0	P	MP	02/10/84	08/03/89

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
June 1991

TANK STATUS		LIQUID VOLUME				SOLIDS VOLUME				VOLUME DETERMINATION							
TANK	WASTE MATERIAL	TANK INTEGRITY	STATUS	STABIL/ISOLATION	TOTAL WASTE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS UPDATE	CHG SINCE LAST MONTHLY REPORT
201U	NCPLX	SOUND	IS/11		5	1	0	0.0	0.0	1	0	4	0	M	S	08/15/79	08/03/89
202U	NCPLX	SOUND	IS/11		5	1	0	0.0	0.0	1	0	4	0	M	S	08/15/79	08/08/89
203U	NCPLX	SOUND	IS/11		3	1	0	0.0	0.0	1	0	2	0	M	S	08/15/79	06/13/89
204U	NCPLX	SOUND	IS/11		3	1	0	0.0	0.0	1	0	2	0	M	S	08/15/79	06/13/89
16 SINGLE-SHELL TANKS		TOTALS:			3550	168	1138	0.0	0.0	1306	1106	638	2744				

NOTE: +/- 1 Kgal differences are the result of computer rounding

(1) WHC-SD-RE-T1-178 SST STABILIZATION RECORD

(2) TANK FARMS COGNIZANT ENGINEER MONTHLY INPUT (RETAINED 5 YR)

* - Asterisk in CHANGE SINCE LAST MONTHLY REPORT column - SEE NEXT PAGE

CHANGES TO THE INVENTORY AND STATUS BY TANK FOR SINGLE-SHELL TANKS
June 1991

<u>Tank No.</u>	<u>Comments</u>
102-BY	Information per SST Stabilization Engineering Manager: Jet pumping began June 13, 1991. Following entries were changed in the Inventory and Status by Tank section: Total Waste from 432 to 405 Kgal Supernatant from 15 to 0 Drainable Interstitial Liquid from 176 to 164 Kgal Drainable Liquid Remaining from 191 to 164 Kgal Pumpable Liquid Remaining from 169 to 142 Kgal Sludge remains 0 Saltcake from 417 to 405 kgal Pumped This Month was 26.6 and Total Pumped is 26.6 Kgal Solids Volume Update from 04/30/83 to 07/08/91
109-BY	Information per SST Stabilization Engineering Manager: Jet pumping began June 16, 1991. Following entries were changed in the Inventory and Status by Tank section: Total Waste from 474 to 458 Kgal Supernatant from 33 to 17 Kgal Drainable Interstitial Liquid remains 147 Kgal Drainable Liquid Remaining from 180 to 164 Kgal Pumpable Liquid Remaining from 158 to 142 Kgal Sludge remains 87 Kgal Saltcake remains 354 Kgal Pumped This Month was 15.6 Kgal and Total Pumped is 15.6 Kgal Solids Volume Update from 08/09/79 to 07/08/91

Note: +/- 1 Kgal differences are the result of rounding

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APPENDIX D
PERFORMANCE SUMMARY

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TABLE D-1. PERFORMANCE SUMMARY (Sheet 1 of 3)

INCREASES/DECREASES IN WASTE VOLUMES STORED IN DOUBLE-SHELL TANKS			WASTE VOLUMES (Kgallons) June 1991		CUMULATIVE EVAPORATION - 1950 TO PRESENT	
SOURCE	THIS MONTH	FY1991 TO DATE	WASTE VOLUME REDUCTION			
			FACILITY			
B PLANT	17	307	242-B EVAPORATOR (8)			
PUREX TOTAL (1)	25	253	242-T EVAPORATOR (1950's) (8)			
PFP (1)	0	0	IN-TANK SOLIDIFICATION UNIT 1 (9)			
T PLANT (1)	20	20	IN-TANK SOLIDIFICATION UNIT 2 (9)			
S PLANT (1)	6	34	IN-TANK SOLID. UNIT 1 & 2 (9)			
300/400 AREAS (1)	0	27	(after conversion of Unit 1 to a cooler for Unit 2)			
SULFATE WASTE -100 N (2)	0	0	242-T (Modified) (8)			
TANK FARMS & SWL (6)	41	269	242-S EVAPORATOR (10)			
Tank Farms	6		242-A EVAPORATOR (11)			
Saltwell Liquid	35		B PLANT (Cell 23) (12)			
OTHER GAINS	59	190	REDOX (12)			
Slurry increase (3)	3		Total			
Condensate	15		196748			
Instrument change (7)	41					
Unknown (5)	0					
OTHER LOSSES	-39	-332	TOTAL THROUGHPUT			
Slurry decrease	0					
Evaporation (4)	-22					
Instrument change (7)	0					
Unknown (5)	-17					
EVAPORATED	0	0	FACILITY			
GROUTED	0	0	242-A EVAPORATOR (11)			
			242-S EVAPORATOR (10)			
THIS MONTH	129	768	Total			
FY1991 TO DATE			182437			
			134587			
			317024			

TABLE D-1. Performance Summary (Sheet 2 of 3)

Footnotes:

INCREASES/DECREASES IN WASTE VOLUMES

- (a) Gas venting in 101-SY and 104-AN.
- (b) Instrument change. See Summary section Highlights.
- (1) Including Flush
- (2) Sulfate waste is generated from ion exchange backflushing and sand filter clean out, resulting in sulfate waste (Na_2SO_4).
- (3) Slurry increase/growth is caused by gas generation within the waste. The gas which is trapped in the waste expands the waste in the tank causing the surface level and volume to increase.
- (4) Aging waste tanks
- (5) Unknown waste gains or losses may be due to rounding calculations, clean water slowly leaking through a valve, changes in levels due to ambient temperature changes, different measuring devices being used by Tank Farm operators, transfers taking place during the end of the month, Tank Farm activities such as miscellaneous water additions not associated with facility waste generation, or the addition of water which is added to aging waste tanks and then evaporated off.
- (6) Tank Farms miscellaneous flushes.

WASTE VOLUME REDUCTION

- (7) Currently inoperative. This evaporator system (242-B and 242-T) was installed in 1952 in each of the two operating areas to remove water from the waste, and ran for approximately 4 years after which both units were shut down. The 242-T Evaporator was reactivated in December 1965, and shut down again in April 1976.
- (8) Currently inoperative. These two in-tank solidification (ITS) units accomplished in-tank heating. ITS Unit #1 started up March 1965, and ITS Unit 2 started up February 1968. In August 1971, ITS Unit 1 was converted from an evaporator to a cooler for ITS Unit 2. Both units were shut down June 1974.
- (9) Currently inoperative. The 242-S Evaporator-Crystallizer was started up November 1973, and shut down March 1980, when its processing project was completed. It is in standby mode with no future mission. This evaporator operates under a vacuum, employing evaporative concentration with subsequent crystallization and precipitation of salt crystals.

TABLE D-1. Performance Summary (Sheet 3 of 3)

- (10) Currently inoperative. The 242-S Evaporator-Crystallizer was started up November 1973, and shut down March 1980, when its processing project was completed. It is in standby mode with no future mission. This evaporator operates under a vacuum, employing evaporative concentration with subsequent crystallization and precipitation of salt crystals.
- (11) Currently inoperative. The 242-A Evaporator-Crystallizer was started up March 1977, and shut down April 1989 because of regulatory issues, and has remained shut down for subsequent upgrading. It is planned that the upgrade will be completed and the evaporator restarted in December 1991. This evaporator operates under a vacuum, employing evaporative concentration with subsequent crystallization and precipitation of salt crystals.
- (12) Currently inoperative. Additional concentration of wastes was obtained by using the concentrators at REDOX and B Plant. The REDOX concentrator was used from July 1967 to June 1972, while the B Plant concentrator was used from July 1967 to February 1968.

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APPENDIX E
LIQUID STATUS AND PUMPABLE LIQUID
REMAINING IN TANKS

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**TABLE E-1. LIQUID STATUS AND PUMPABLE LIQUID
REMAINING IN TANKS**

WASTE VOLUMES (Kgallons)

June 1991

TANK FARMS	SUPERNATANT LIQUID	DRAINABLE INTERSTITIAL LIQUID	DRAINABLE LIQUID REMAINING	PUMPABLE LIQUID REMAINING
EAST				
A	8	439	447	391
AN	5270	37	5307	N/A
AP	5609	0	5609	N/A
AW	4035	157	4192	N/A
AX	3	370	373	304
AY	1630	2	1632	N/A
AZ	1782	3	1785	N/A
B	15	164	179	42
BX	50	160	210	126
BY	17	922	939	755
C	177	168	345	296
Total	18596	2422	21018	1914
WEST				
S	46	1245	1291	1043
SX	94	1192	1286	1109
SY	737	237	974	N/A
T	74	189	263	208
TX	5	250	255	0
TY	3	31	34	0
U	168	1138	1306	1106
Total	1127	4282	5409	3466
TOTAL	19723	6704	26427	5380 (1)

(1) Volume based on 12.5% (sludge waste) and 45% (saltcake waste) liquid in solid (porosity)

value. This is a conservative (high) estimate.

Note: +/- 1 Kgallon differences are the result of computer rounding

N/A = Not applicable

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APPENDIX F
PUMPING RECORD

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TABLE F-1. PUMPING RECORD

June 1991

TANK FARMS	PUMPED THIS MONTH	PUMPED FY TO DATE	CUMULATIVE TOTAL PUMPED 1979 TO DATE
EAST			
A	0.0	0.0	150.5
AN	N/A	N/A	N/A
AP	N/A	N/A	N/A
AW	N/A	N/A	N/A
AX	0.0	0.0	13.0
AY	N/A	N/A	N/A
AZ	N/A	N/A	N/A
B	0.0	0.0	0.0
BX	0.0	1.1	68.9
BY	42.2	42.2	1212.8
C	0.0	0.0	0.0
Total	42.2	43.3	1445.2
WEST			
S	0.0	0.0	791.0
SX	0.0	0.0	113.2
SY	N/A	N/A	N/A
T	0.0	0.0	0.0
TX	0.0	0.0	1205.7
TY	0.0	0.0	29.9
U	0.0	0.0	0.0
Total	0.0	0.0	2139.8
TOTAL	42.2	43.3	3585.0
NA = Not Applicable			

NA = Not Applicable

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APPENDIX G
CATCH TANKS AND SPECIAL
SURVEILLANCE FACILITIES

WHC-EP-0182-39

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TABLE G-1. EAST AND WEST AREA CATCH TANKS AND SPECIAL SURVEILLANCE FACILITIES

ACTIVE - still running transfers through the associated diversion boxes or pipeline encasements

June 1991

VOLUME
OF

CONTENTS MONITORED

(Gallons) BY REMARKS

FACILITY LOCATION PURPOSE (receives waste from:)

EAST AREA

A-302-A	A FARM	151-A DB	3605	CASS/FIC	
311-ER	B PLANT	151-ER, 152-ER DB	1630	CASS/FIC	PUMPED JUNE 29, 1991
152-AX	AX FARM	152-AX DB	O/S	MANUALLY	DIAL OUT OF SERVICE
151-AZ	AZ FARM	152-AZ DB, AZ LOOP SEAL	2650	CASS/FIC	VOLUME CHANGES DAILY
154-AZ	AZ FARM	102-AZ HTG COIL STEAM CONDENSATE	0	CASS/MT	AUTOMATIC PUMP
244-A-TK/SMP	AR VAULT	DCRT - RECEIVES FROM SEVERAL FARMS	3346	MCS	
244-BX-TK/SMP	BX FARM	DCRT - RECEIVES FROM SEVERAL FARMS	26705	MANUALLY	
VENT STATION		CROSS COUNTRY LINE	584	CASS/MT	
204-AR	AY FARM	RR CARS DURING TRANSFER TO REC. TKS	520	DIP TUBE	ALARMS ON CASS
417-A	A FARM	702-A PROCESS CONDENSATE	31860	DIP TUBE	

WEST AREA

TX-302-C	TX FARM	154-TX DB	2788	CASS/FIC	
U-301-B	U FARM	151-U, 152-U, 153-U, 252-U DB	5253	CASS/FIC	
UX-302-A	U PLANT	154-UX DB	7643	CASS/MFIC	
244-S-TK/SMP	S FARM	DCRT - RECEIVES FROM SEVERAL FARMS	10954	MANUALLY	WEIGHT FACTOR & SpG
244-TX-TK/SMP	TX FARM	DCRT - RECEIVES FROM SEVERAL FARMS	28651	MANUALLY	TANK MT O/S, SUMP MT IN SERVICE

Total active facilities

15

LEGEND: DB - Diversion Box

DCRT - Double-Contained Receiver Tank

FIC - Food Instrument Corporation

MFIC - Manual FIC

MT - Manual Tape

CASS - Computer Automated Surveillance System

MCS - Monitor and Control System

TABLE G-2. EAST AREA CATCH TANKS AND SPECIAL SURVEILLANCE FACILITIES

INACTIVE - no longer receiving waste transfers
June 1991

VOLUME
OF

FACILITY	LOCATION	RECEIVED WASTE FROM:	CONTENTS MONITORED		REMARKS
			(Gallons)	BY	
A-302-B	A FARM	152-A DB	3240	CASS/MT	ISOLATED 1985, PROJECT B-138 INTERIM STABILIZED 1990
B-301-B	B FARM	151-B, 152-B, 153-B, 252-B DB	UNKNOWN	NM	ISOLATED 1985(1)
B-302-B	B FARM	154-B DB	UNKNOWN	NM	ISOLATED 1985(1)
BX-302-A	BX FARM	152-BR, 153-BX, 152-BXR, 152-BYR DB	UNKNOWN	NM	ISOLATED 1985(1)
BX-302-B	BX FARM	154-DB	UNKNOWN	NM	ISOLATED 1985(1)
BX-302-C	BX FARM	155-B DB	UNKNOWN	NM	ISOLATED 1985(1)
C-301-C	C FARM	151-C, 152-C, 153-C, 252-C DB	UNKNOWN	NM	ISOLATED 1985(1)
241-CX-70	HOT SEMI-	TRANSFER LINES	UNKNOWN	NM	ISOLATED, DECOMMISSION PROJ.
241-CX-72	WORKS	TRANSFER LINES	UNKNOWN	NM	SEE DWG H-2-95-501, 2/5/87
244-AR	A COMPLEX	DCRT - RECEIVES FROM SEVERAL FARMS	UNKNOWN	NM	BEING UPGRADED
001-BXR-TK/SMP	BX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED 1985(1)
002-BXR-TK/SMP	BX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED 1985(1)
003-BXR-TK/SMP	BX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED 1985(1)
011-BXR-TK/SMP	BX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED 1985(1)
361-B-TANK	B PLANT	DRAINAGE FROM B-PLANT	UNKNOWN	NM	INTERIM STABILIZED 1985(1)

Total East Area inactive facilities 15

LEGEND: DB - Diversion Box
DCRT - Double-Contained Receiver Tank
MT - Manual Tape
CASS - Computer Automated Surveillance System
NM - Not Monitored

(1) SOURCE: WASTE STORAGE TANK STATUS & LEAK DETECTION CRITERIA document

TABLE G-3. WEST AREA CATCH TANKS AND SPECIAL SURVEILLANCE FACILITIES

INACTIVE - no longer receiving waste transfers
June 1991

VOLUME
OF
CONTENTS
(Gallons)

FACILITY	LOCATION	RECEIVED WASTE FROM:	BY	REMARKS
S-302	S FARM	240-S-151 DB	CASS/FIC	ASSUMED LEAKER EPDA 85-04
S-302-A	S FARM	241-S-151 DB	CASS/FIC	ASSUMED LEAKER TF-EFS-90-042 FILLED WITH GROUT 2/91, DETERMINED STILL ASSUMED LEAKER AFTER LEAK TEST
S-302-B	S FARM	S ENCASEMENTS	NM	ISOLATED 1985(1)
SX-304(302)	SX FARM	152-SX TRANSFER BOX, 151-SX DB	NM	ISOLATED 1985(1)
T-301-B	T FARM	151-T, 152-T, 153-T, 252-T DB	NM	ISOLATED 1985(1)
TX-302	TX FARM	153-TX DB	NM	ISOLATED 1985(1)
TX-302-X-B	TX FARM	TX ENCASEMENTS	NM	ISOLATED 1985(1)
TX-302-B	TX FARM	155-TX DB	CASS/MT	WORK REQ. ISSUED TO REPLACE O/S MT
TY-302-A	TY FARM	153-TX DB	NM	ISOLATED 1985(1)
TY-302-B	TY FARM	TY ENCASEMENTS	NM	ISOLATED 1985(1)
001-UR-TK/SMP	U FARM	TRANSFER LINES	NM	INTERIM STABILIZED, MT REMOVED 1985(1)
002-UR-TK/SMP	U FARM	TRANSFER LINES	NM	INTERIM STABILIZED, MT REMOVED 1985(1)
003-UR-TK/SMP	U FARM	TRANSFER LINES	NM	INTERIM STABILIZED, MT REMOVED 1985(1)
001-TXR-TK/SMP	TX FARM	TRANSFER LINES	NM	INTERIM STABILIZED, MT REMOVED 1984(1)
002-TXR-TK/SMP	TX FARM	TRANSFER LINES	NM	INTERIM STABILIZED, MT REMOVED 1984(1)
003-TXR-TK/SMP	TX FARM	TRANSFER LINES	NM	INTERIM STABILIZED, MT REMOVED 1984(1)
361-T-TANK	T PLANT	DRAINAGE FROM T-PLANT	NM	ISOLATED 1985(1)
361-U-TANK	U PLANT	DRAINAGE FROM U-PLANT	NM	INTERIM STABILIZED, MT REMOVED 1985(1)
244-U-TK/SMP	U FARM	DCRT - RECEIVES FROM SEVERAL FARMS	NM	NOT YET IN USE

Total West Area inactive facilities 19

LEGEND:	DB - Diversion Box
	DCRT - Double-Contained Receiver Tank
	FIC - Food Instrument Corporation
	MT - Manual Tape
	CASS - Computer Automated Surveillance System
	NM - Not Monitored

(1) SOURCE: WASTE STORAGE TANK STATUS & LEAK DETECTION CRITERIA document

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APPENDIX H
LEAK VOLUME ESTIMATES

WHC-EP-0182-39

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**TABLE H-1. LEAK VOLUMES ESTIMATED AND REPORTED
BEFORE 1989 (39 Tanks) (5) (Sheet 1 of 2)**

TANK	LEAK IDENTIFIED (3)	VOLUME (2) (Gallons)	ASSOCIATED 137 CS (4)	INTERIM STABILIZED
241-A-103	1987	5500		8/88
241-A-104	1975	2500		9/78
241-A-105	1963	5000 (1)		7/79
241-AX-102	1988	3000		9/88
241-B-107	1980	8000		3/85
241-B-110	1981	10000		12/84
241-B-201	1980	1200		8/81
241-B-203	1983	300		6/84
241-BX-102	1971	70000	50000	11/78
241-BX-108	1974	2500	500	7/79
241-BY-103	1973	<5000		N/A
241-BY-108	1972	<5000		2/85
241-C-101	1980	20000		11/83
241-C-201	1988	550		3/82
241-C-202	1988	450		8/81
241-C-203	1984	400		3/82
241-C-204	1988	350		9/82
241-SX-104	1988	6000		N/A
241-SX-107	1964	<5000		10/79
241-SX-108	1962	2400	20000	8/79
241-SX-109	1965	5000		5/81
241-SX-110	1976	5500		8/79
241-SX-111	1974	2000	2000	7/79
241-SX-112	1969	30000	40000	7/79
241-SX-113	1962	15000	8000	11/78
241-SX-115	1965	50000	40000	9/78
241-T-106	1973	115000	40000	8/81
241-T-108	1974	<1000		11/78
241-T-111	1984	<1000		N/A
241-TX-107	1984	2500		10/79
241-TY-101	1973	<1000		8/83
241-TY-103	1973	3000	700	2/83
241-TY-104	1981	1400		1/83
241-TY-105	1960	35000	4000	2/83
241-TY-106	1959	20000	2000	11/78
241-U-101	1959	30000	20000	9/79
241-U-104	1961	55000	90	10/78
241-U-110	1975	8100		12/84
241-U-112	1980	8500		9/78
Subtotal		542000	(39 tanks)	

N/A = not applicable (not yet interim stabilized)

FOOTNOTES: SEE NEXT PAGE

TABLE H-1. Leak Volumes Estimated and Reported
Before 1989 (39 Tanks). (sheet 2 of 2)

Footnotes:

- (1) Perhaps as much as 1 Mgal of clean cooling water was sprayed into single-shell Tank 241-A-105 in the 1970's to aid in evaporative cooling. It is likely that much of this water (50,000 to 800,000 gal) did not evaporate and, therefore, may have leached or entrained some of the sludge and added to the waste released from this tank. In accordance with Washington Administrative Code 173-303-070 (2)(a)(ii)¹, this leachate is also a waste. Past practice was to exclude the cooling water from the leak volume estimate. This practice has been continued in current reports for the following reasons:
  1. Estimates of cooling water additions have varied from approximately 100,000 gal up to 1.5 Mgal
  2. There is no accurate method to estimate the amount of cooling water that leaked from the tank (as of October 1990, the estimates ranged from 50,000 to 800,000 gal)
  3. There is no method to accurately determine the amount of additional waste that was released by being dissolved or entrained from the cooling water that leaked from the tank. The waste content (concentration) in the cooling water that leaked should be less than in the original liquid waste in the tank (the sludge is relatively insoluble).
- (2) These volumes do not include (with some exceptions) such things as (a) cooling/raw water leaks; (b) intrusions (rain infiltration) and subsequent leaks; (c) leaks inside the tank farm but not through the tank liner (surface leaks, pipeline leaks, leaks at the joint for the overflow or fill lines, etc.); and (d) leaks from catch tanks, diversion boxes, encasements, etc.
- (3) In many cases a leak was suspected long before it was identified or confirmed. In 1984, the criteria designations of "suspected leaker," "questionable integrity," and "confirmed leaker" were merged into one category now reported as "assumed leaker."
- (4) Source: ERDA-1538 (Final Environmental Statement, Waste Management). The ¹³⁷Cs leakage can be used to estimate the amount of other radionuclides leaked.
- (5) There is effort currently in progress to reevaluate these leak volume estimates.

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¹WAC, 1989, *Dangerous Waste Regulations*, Washington Administrative Code 173-303, Washington State Department of Ecology, Olympia, Washington.

TABLE H-2. LEAK VOLUMES ESTIMATED IN 1989 (27 Tanks)

<i>TANK</i>	<i>LEAK IDENTIFIED</i>	<i>VOLUME (Gallons)</i>	<i>INTERIM STABILIZED</i>
241-B-204	1984	400	6/84
241-BY-107	1984	15100	7/79
241-C-111	1968	5500	3/84
241-S-104	1968	24000	12/84
241-T-103	1974	<1000	11/83
241-T-109	1974	<1000	12/84
Subtotal		47000 (6 Tanks)	
241-B-112	1978	2000	5/85
241-C-110	1984	2000	N/A
Subtotal		4000 (2 Tanks)	
241-AX-104	1977	--	8/81
241-B-101	1974	--	3/81
241-B-103	1978	--	2/85
241-B-105	1978	--	12/84
241-B-111	1978	--	6/85
241-BX-101	1972	--	9/78
241-BX-110	1976	--	8/85
241-BX-111	1984	--	N/A
241-BY-105	1984	--	N/A
241-BY-106	1984	--	N/A
241-SX-114	1972	--	7/79
241-T-107	1984	--	N/A
241-TX-105	1977	--	9/83
241-TX-110	1977	--	4/83
241-TX-113	1974	--	4/83
241-TX-114	1974	--	4/83
241-TX-115	1977	--	9/83
241-TX-116	1977	--	4/83
241-TX-117	1977	--	3/83
Subtotal		150000 (a) (19 Tanks)	
Subtotal		201000 Table G-2	
Subtotal		542000 Table G-1	
TOTAL		750000 (b)	

(a) Estimate rounded to nearest 10000 gallons.

(b) Rounded to nearest 50000 gallons.

N/A = not applicable (not yet interim stabilized)

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