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Tank Farm Surveillance and Waste Status Summary Report for January 1993

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

Date Published
March 1993

Prepared for the U.S. Department of Energy
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R. E. Raymond <i>R E Raymond</i>		3/11/93	Date Cancelled		Date Disapproved

**TANK FARM SURVEILLANCE AND WASTE STATUS
SUMMARY REPORT FOR JANUARY 1993**

B. M. Hanlon

ABSTRACT

This report is the 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. This report provides data on each of the existing 177 large underground waste storage tanks and 49 smaller catch tanks and special surveillance facilities, and supplemental information regarding tank surveillance anomalies and ongoing investigations. This report is intended to meet the requirement of U. S. Department of Energy-Richland Operations Office Order 5820.2A, Chapter I, Section 3.e. (3) (DOE-RL, 1990, Radioactive Waste Management, U. S. Department of Energy-Richland Operation Office, Richland, Washington) requiring the reporting of waste inventories and space utilization for Hanford Tank Farm Tanks.

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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
$^{\circ}\text{F} = \left(\frac{9}{5} ^{\circ}\text{C}\right) + 32$		
1 Btu/h = 2.930711 E-01 watts (International Table)		

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**TANK FARM SURVEILLANCE AND WASTE STATUS SUMMARY
REPORT FOR JANUARY 1993
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 ^f	67 single-shell	10/92
Sound Tanks	28 double-shell 82 single-shell	1986 10/92
Interim Stabilized Tanks ^{b,d}	105 single-shell	09/90
Not Interim Stabilized ^f	44 single-shell	09/90
Interim Isolated Tanks ^e	98 single-shell	09/91

^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, 58 are listed as assumed leakers. The total of 105 interim stabilized tanks includes eight tanks that do not meet current established supernatant and interstitial liquid stabilization criteria: 104-B, 107-B, 110-B, 111-B, 110-BX, 102-T, 112-T, and 110-U.

^c Six double-shell tanks listed as "in service" are currently included on the Hydrogen Watch List and are thus prohibited from receiving waste in accordance with "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the *National Defense Authorization Act for Fiscal Year 1991*, November 5, 1990, Public Law 101-510.

^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, 20 have been Interim Isolated.

^f Nine of these tanks are both assumed leakers and not interim stabilized. See Appendix H for more details.

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 slow buildup and relatively fast release of gas within the waste. An investigation into solutions to this slurry growth problem is ongoing. Multiple Event Fact Sheets, a Critique Report, Occurrence Reports, Discrepancy Reports, and Unusual Occurrence Reports have been issued. The Food Instrument Company (FIC) surface level monitor showed an increase from 408.80 inches on January 1 to 411.20 inches by January 31, 1993. The

manual tape increased from 409.25 to 414.75 inches by January 31, 1993. The radar gauge reading was 410.86 inches January 1 and 413.08 inches on January 31, 1993. The surface level measurements for the radar gauge, FIC, and manual tape are different due to the location of the measurement devices, irregular surface, and the different method by which the level is obtained.

Tank 241-SX-105. An Interstitial Liquid Level (ILL) baseline of 21.2 feet was established for Tank 105-SX Liquid Observation Well (LOW) on August 27, 1986. The current scan of January 22, 1993, shows a 0.2-foot decrease below the reference baseline. The decrease criteria is -0.3 foot. LOW monitoring has been increased from quarterly to every two weeks. In-tank photographs taken June 15, 1988, show a dry cracked, uneven surface. The FIC is in the intrusion mode of operation, and the FIC plummet is suspended over solids. Drywell scan data remain stable. Work is in progress to repair the radiation detection laterals underneath this tank to provide improved leak detection. The Tank Leak Assessment Review Board has recommended waiting for the lateral scans and evaporation analysis, currently in progress, to be completed prior to deciding on the tank integrity. Estimated completion for the evaporation analysis and lateral restoration is March 1993.

Tank 241-SX-106. The surface level measurement baseline was adjusted on April 3, 1991, for an increase attributed to a steam coil leak that occurred March 13, 1991 (reference Occurrence Report WHC-91-0206-TFARM). The level increased an additional 1.20 inches by May 17, 1991, after baseline change. There has been a decreasing trend in the surface level measurement from 209.90 inches on May 17, 1991, to 206.00 inches by December 31, 1992. The decrease criteria is 5.00 inches from reference baseline of 208.70 inches. The FIC plummet is contacting solids. In-tank photographs taken June 1, 1989, show what appears to be a floating solid (foam-like) surface. The LOW ILL increased from 16.3 feet (from reference baseline) to 16.6 feet by March 19, 1991, and remained at 16.6 feet to October 24, 1991. The ILL decreased to 16.3 feet (-0.3 feet) by October 8, 1992, and has remained at 16.3 feet during January 1993. An evaporation study has been completed by Waste Characterization Analysis. The analysis indicated that observed liquid level decreases could be attributed to evaporation and are within the range expected from evaporation. A small leak could easily be masked by modeling uncertainties. LOW monitoring has been increased to very two weeks. Drywells associated with 106-SX are stable. The technical evaluation of the alert condition in this tank is in progress by Engineering. The expected completion date for the results is February 16, 1993.

Potential or Assumed Leaks:

Tank 241-T-101. A surface level decrease of 2.60 inches from the previously established liquid level of 44.20 inches was noted on September 18, 1992, following maintenance on the 101-T Level Indicator (FIC). Because the FIC had been operating only sporadically since December 1991, and no reliable surface level data was obtained between December 1991 and July 1992, the decrease was assumed to be due to the faulty FIC, and no occurrence reporting action was taken during that time. Occurrence Report RL-WHC-TANKFARM-1992-0073 was issued October 1, 1992, and Tank 101-T was declared an assumed leaker on October 4, 1992. The FIC surface level measurement was 41.50 inches on October 31, 1992, and increased to 43.80 inches after a reference elevation check was performed by instrument technicians on November 14, 1992. The FIC surface level measurement is reading 43.55 inches on January 31, 1993. A manual tape surface level measurement device was installed on December 18,

1992. The measurement from this device is 40.25 inches as of January 31, 1993. Drywell scan data was reviewed and is stable. Drywell monitoring (gross gamma) frequencies have been increased to weekly. Plans are underway to begin pumping this tank by March 15, 1993. The photography work package is in place, but will not be scheduled until after Tank 101-SY Window "H" work is complete. Estimated completion date for vapor space sampling is February 15, 1993.

Potential or Assumed Intrusions:

The following tanks have been reported for potential in-leakage (intrusions) from known/unknown sources.

Tank 241-B-202. A steady increase in the surface level measurement has been observed since December 1984. The manual tape pencil plummet is contacting liquid. When the quarterly reading was obtained on October 6, 1992, the level was recorded as 144.75 inches, thus exceeding the 2.00-inch increase criteria from the established baseline of 142.50 inches. The surface level measurement was rechecked on October 9, 1992, (145.50 inches) and October 13 (145.00 inches), verifying the increase and that the criteria had been exceeded. The monitoring frequency has been increased from quarterly to monthly. The reading for January 31, 1993, was 145.00 inches. The technical evaluation of the alert condition in this tank is in progress by Engineering. The expected completion date for the results is February 16, 1993. Tank 202-B has been added to the Alert List and will be reported in accordance with applicable reporting requirements.

Tank 241-S-107. A slow increase in the surface level has been observed since May 1987. The surface level measurement increased 1.10 inches in September 1991, when water was added to the tank in order to install a saltwell screen. The reference baseline was adjusted to reflect this water addition. On August 3, 1992, the surface level measurement was 144.50 inches, thus exceeding the 2.00-inch increase criteria from the established baseline of 142.40 inches. The FIC was reported out of service on August 17, 1992. After the FIC was repaired on September 21, 1992, the surface level measurement was 144.20 inches, which is within criteria limits. The reading level for January 26, 1993, was 144.25 inches. This tank will remain under close surveillance for additional unexplained surface level increases.

Tank 241-TX-115. The LOW scans revealed an ILL increase over baseline in excess of the established 0.4-foot 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. Environmental Protection Deviation Report #88-08 was issued on May 18, 1988. Event Fact Sheet #TF-EFS-80-140 was issued January 9, 1990. The ILL showed an additional increase of 0.4 feet on March 1, 1991. The increase was verified on March 11, 1991. These LOWs are monitored quarterly, alternating every six weeks with the neutron and gamma probes. No further increase of the ILL has been observed since March 1, 1991. The LOW was last scanned with the neutron probe on October 23, 1992.

Tank 241-TY-102. On November 8, 1992, the automatic FIC surface level measurement of 32.10 inches exceeded the 0.50-inch increase criteria from the reference baseline of 31.40 inches. Discrepancy Report S&DA-92-489 was issued November 9, 1992. The tank has a history of icicle buildup on the FIC plummet

and intrusions. A request was made on November 16 for Tank Farm Operations to flush the FIC plummet. Work Order 2W-92-01155 was written to perform the flush, scheduled for December 3, 1992. The reference elevation of the FIC was verified on December 17, 1992. The FIC plummet was clean.

HIGHLIGHTS

1. Criticality Safety Issues

On April 30, 1992, an Unreviewed Safety Question (USQ) concerning criticality safety issues in the Tank Farms was declared to be a reportable event. Unusual Occurrence report RL-WHC-TANKFARM-1992-0037 was issued. A prohibition was placed on all waste transfers into and between the tank farm facilities which is negatively affecting various Hanford programs. On September 1, 1992, the approved Justification For Continued Operations (JCO) was received. This establishes the limitations for all tanks receiving transfers and also excludes any interim stabilization of single-shell tanks until further evaluations are completed and approved by DOE-HQ. On December 15, 1992, the approved JCO was issued as WHC-SD-WM-JCO-001, "Justification for Continued Operations of Hanford High Level Waste Tanks Resulting From the Criticality USQ, 492-CRITSAS." An amendment request to this JCO to pump and stabilize Tank 241-T-101 has been sent to DOE-HQ for approval. The resolution of the USQ is scheduled for summer 1993.

2. Saltwell Pumping

Interim stabilization has been delayed because of the criticality safety issues which suspended waste transfers into and between tank farm facilities. The approved Justification For Continued Operations (JCO) excludes any stabilization of single-shell tanks until further evaluations are completed and approved by DOE-HQ. The resolution of the USQ is scheduled for summer 1993.

3. Tank 241-SY-101 Gas Venting

Several maintenance and mitigation projects are scheduled for "Window H," following the next venting of Tank 101-SY, which is expected to occur in February. The key activity will be the installation of a mixer pump which may bring an end to the periodic venting. The goal is to create a continuous release of gases with the least amount of agitation of the waste. This will reduce the likelihood of an episodic venting in potentially explosive concentrations.

4. Occurrence Reports

RL-WHC-TANKFARM-1993-0005 (UNUSUAL) - MISSED SURVEILLANCE READINGS ON TANK 106-C VACUUM RESULTS IN A NON-CONFORMANCE TO OSR-T-152-00003 (Notification Report, January 12, 1993)

On January 12, 1993, at 0430 hours, it was discovered that missed vacuum surveillance readings for the 105/106-C exhauster resulted in a Non-conformance to the OSR. The surveillance requirement is for vacuum readings to be obtained "daily, not to exceed 30 hours." Twelve hours elapsed beyond the 30-hour requirement before vacuum readings were obtained. Snow and icy conditions prevailed, with ambient temperatures below 15°F. Access to farm required supplied breathing air for entry.

Entry steps were cleared of snow and ice to 241-C farm at 0445 hours and readings were obtained at 0500 hours on January 12.

RL-WHC-TANKFARM-1993-0012 (UNUSUAL) - POTENTIAL PERSONNEL EXPOSURE TO HAZARDOUS VAPORS (Notification Report, January 23, 1993)

On January 21, 1993, at 2030 hours, four workers in 241-SY farm were potentially exposed to hazardous vapors in excess of the occupational safety limit. The four workers were in a greenhouse, attempting to install a drain line on one of the over pack assemblies for the Tank 101-SY lances. The workers were removing a one-inch pipe plug and noted a strong ammonia odor. The workers immediately evacuated the greenhouse. At 2050 hours, one of the workers exited the farm complaining of burning eyes, sore throat and a headache. He was sent to first aid for examination and returned to the work site. This worker had been approximately four feet from the pipe opening. The other three workers in the greenhouse reported no adverse effects at 2055 hours. The area was placed in a safe configuration at 2100 hours.

On January 22, at 1530 hours, shift supervision was notified that industrial hygiene personnel checked the vapor conditions within the air lance receivers and found them to be at levels >700 ppm. The levels the the personnel were exposed to will still need to be determined. The investigation is continuing.

RL-WHC-TFARM-1993-0014 (OFF-NORMAL) - TRANSFER OF COMPLEXED WASTE FROM 204-AR TO 101-AY RESULTED IN OUT-OF-TOLERANCE MATERIAL BALANCE AND UNEXPECTED INCREASE IN 102-AY. (Notification Report, January 26, 1993)

On January 25, 1993, at 2120 hours, a transfer from 204-AR Rail Car Facility to Tank 101-AY was started. At 2132 hours, a leak detector in AX-B Valve Pit activated, shutting down the transfer pump. At 2135 hours, the leak detector cleared. At 2145 hours, all catch tanks and interconnected tanks were checked and no level differences were noted. At 2155 hours, the transfer was restarted and no further alarms were received on any leak detectors for the duration of the transfer. The transfer and flush were completed at 2330 hours.

After a 2-hour drain-down period, final data was obtained. Initial calculation of the material balance showed a discrepancy of -0.65 inches in the receiving tank which exceeds the allowable tolerance of ± 0.5 inches. It was also noted that Tank 102-AY, which served as both an interconnecting tank and as a valve pit leakage catch tank for the transfer, showed an apparent level rise of 0.4 inches (1100 gallons). All data was verified to be accurate in the field and the flush volumes were carefully checked for proper accountability in the material balance. On January 26, at 0445 hours, the material balance was completed and the discrepancy was confirmed to be -0.65 inches.

At 0545 hours, a limited inspection of the AX-B Valve Pit was performed through an inspection port in the cover block. The inspection indicated that the floor of the pit was wet. The investigation is continuing.

Changes to the Report:

1. Summary section

Tables 2 through 5 (Temperature Tables): The table formats and footnotes have been revised. All temperatures shown in these tables were taken in the waste unless otherwise indicated.

Figures 3 and 4 (Single-Shell Tanks Waste Volumes Grouped by Waste Types) show a graphic representation of the waste in the tanks for Sound and Assumed Leaking tanks. These figures are presented in this issue only.

TABLE 1. WATCH LIST TANKS

These tanks have been identified as Watch List Tanks in accordance with Public Law 101-510, Section 3137, "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," (1990). These have been identified as the Priority 1 Hanford Site Tank Farm Safety Issues: "Issues/situations that contain most necessary conditions that could lead to worker (onsite) or offsite radiation exposure through an uncontrolled release of fission products, e. g., Tank 101-SY." Tank 241-AW-101 was added to this list in accordance with Occurrence Report RL-WHC-TANKFARM-1992-0083.

January 1993

Single-Shell Tanks			Single-Shell Tanks			Single-Shell Tanks		
Tank No.	Category		Tank No.	Category		Tank No.	Category	
101-A	Hydrogen		108-C	Ferrocyanide		105-TX	Organic Salts	
101-AX	Hydrogen		109-C	Ferrocyanide		118-TX	Ferrocyanide,	
103-AX	Hydrogen		111-C	Ferrocyanide			Organic Salts	
103-B	Organic Salts		112-C	Ferrocyanide		101-TY	Ferrocyanide	
102-BX	Ferrocyanide		102-S	Hydrogen,		103-TY	Ferrocyanide	
106-BX	Ferrocyanide			Organic Salts		104-TY	Ferrocyanide	
110-BX	Ferrocyanide		111-S	Hydrogen		103-U	Hydrogen	
111-BX	Ferrocyanide		112-S	Hydrogen		105-U	Hydrogen	
101-BY	Ferrocyanide		101-SX	Hydrogen		106-U	Organic Salts	
103-BY	Ferrocyanide		102-SX	Hydrogen		107-U	Organic Salts	
104-BY	Ferrocyanide		103-SX	Hydrogen		108-U	Hydrogen	
105-BY	Ferrocyanide		104-SX	Hydrogen		109-U	Hydrogen	
106-BY	Ferrocyanide		105-SX	Hydrogen		48 Tanks		
107-BY	Ferrocyanide		106-SX	Hydrogen,				
108-BY	Ferrocyanide			Organic Salts		Double-Shell Tanks		
110-BY	Ferrocyanide		109-SX	Hydrogen potential,		Tank No.	Category	
111-BY	Ferrocyanide			other tanks vent		103-AN	Hydrogen	
112-BY	Ferrocyanide			thru it		104-AN	Hydrogen	
103-C	Organic Salts		101-T	Ferrocyanide		105-AN	Hydrogen	
106-C	High Heat Load		107-T	Ferrocyanide		101-AW	Hydrogen	
			110-T	Hydrogen		101-SY	Hydrogen	
						103-SY	Hydrogen	
						6 Tanks		

TABLE 2. TANKS CONTAINING >1000 GRAM MOLE OF FERROCYANIDE (Watch List Tanks) (Sheet 1 of 2)

These tanks have been declared an Unreviewed Safety Question (USQ) because their explosion potential exceeds previously reported safety analysis consequences (1). Ferrocyanide tanks are monitored weekly.

Temperatures in these tanks did not exceed the maximum temperature criteria or surveillance frequency limits for January 1993.

All Watch List tanks are reviewed for increasing temperature trends.

All temperatures are taken in the waste unless indicated otherwise. Thermocouples evaluated as "failed" (8) are not used in this report. Tanks not connected to TMACS are monitored manually.

Tank No.	Temperature Reading in Waste (F.)	Date of Reading	Monitored by TMACS (5)	Total Waste (inches) (7)	FeCN (x1000 g mol)(2)	Estimated Heat Load (3) (Btu/h)	Assumed Leak Date	Interim Stabilized Date
102-BX	68	01/23/93	No	42	<1	<10000	1971	11/78
106-BX	68	01/09/93	No	24	<1	<10000	Sound	N/A
110-BX	68	01/23/93	No	80	<1	<10000	1976	8/85
111-BX	72	01/23/93	No	91	<1	<10000	1984	N/A
101-BY	77	01/03/93	Yes	148	<1	8200	Sound	5/84
103-BY	83	01/03/93	Yes	153	66	8600	1973	N/A
104-BY	130	01/31/93	Yes	155	83	5500	Sound	1/85
104-BY (6)	116	01/24/93	Yes	155	83	5500	Sound	1/85
105-BY	115	01/23/93	Yes	190	36	3400	1984	N/A
105-BY	121	01/31/93	Yes	190	36	3400	1984	N/A
106-BY	131	01/24/93	Yes	241	70	3300	1984	N/A
107-BY	96	01/24/93	Yes	104	42	14500	1984	7/79
108-BY	111	01/24/93	Yes	90	58	23000	1972	2/85
110-BY	120	01/31/93	Yes	152	71	25200	Sound	1/85
110-BY (6)	109	01/19/93	Yes	152	71	25200	Sound	1/85
111-BY	86	01/31/93	Yes	174	6	34200	Sound	1/85
112-BY	83	01/17/93	Yes	113	2	<10000	Sound	5/85
108-C	76	01/24/93	No	31	25	10000	Sound	3/84
109-C	79	01/23/93	No	31	30	3800	Sound	11/83
109-C (6)	84	01/29/93	No	31	30	3800	1.11	
111-C	74	01/24/93	No	28	33	<10000	1968	3/84
112-C	82	01/24/93	No	45	31	<10000	Sound	9/90
112-C (6)	82	01/23/93	No	45	31	<10000	Sound	9/90
101-T	73	01/15/93	No	56	<1	<10000	1992	N/A
107-T	69	01/15/93	No	73	5	<10000	1984	N/A
118-TX (4)	78	01/31/93	Yes	134	<1	4900	Sound	4/83
101-TY	67	01/15/93	Yes	50	23	<10000	1973	8/83
103-TY	70	01/24/93	Yes	66	28	<10000	1973	2/83
104-TY	66	01/15/93	Yes	24	12	<10000	1981	1/83
24 Tanks	Legend: TMACS = Tank Monitoring & Control System N/A = Not Applicable							

FOOTNOTES: See next page

TABLE 2. TANKS CONTAINING >1000 GRAM MOLE OF FERROCYANIDE (Watch List Tanks) (Sheet 2 of 2)

FOOTNOTES:

- (1) This Priority 1 Waste Tank Safety Issue is stated as follows: "Could the concentrations and distribution of ferrocyanide and nitrate/nitrite in the tanks lead to an explosion if allowed to heat up or if an uncontrolled exothermic reaction could occur (24 SSTs)?"
- (2) The estimates of the amount of FeCN in the tanks are based on WHC-SD-WM-ER-133-REV 0, "An Assessment of the Inventories of the FeCN Watch List Tanks," (Table 3-7), October 1991.
- (3) The estimated heat generation rates are from WHC-EP-0474-4, "Quarterly Report on Defense Nuclear Facilities Safety Board Recommendation 90-7 for the Period Ending March 31, 1992," Table 1-A, dated January 1992. Tank 104-EY only estimated per WHC-EP-0521, "SST 104-BY Thermal Hydraulic Analysis," October 1991 (kW = 3412 Btu/h). A new thermal hydraulic analysis of several tanks has been completed; this information will be incorporated in the monthly report as soon as the document is cleared for public release.
- (4) This tank also contains a high concentration (>3% wt TOC) of organic salts.
- (5) These tanks are connected to the Tank Monitoring & Control System (TMACS). Automatic temperature readings are being taken continuously with the exception of 110-BY (out of service since November 23, 1992). Readings shown in 110-BY are taken manually.
- (6) New thermocouples were installed in these tanks during September 1992.
- (7) Calculations used to compute Total Waste Inches
for temperature tables in this report:
$$\frac{\text{Kgal waste} - 12.5 \text{ Kgal waste}^*}{2.75 \text{ Kgal/inch}} + 12 \text{ inches}^*$$
- (8) * The bottom 12 inches in dish bottom tanks contains 12.5 Kgal. Inches are from centerline tank bottom.
Waste Kgal are taken from Monthly Summary Report, SST Inventory and Status by Tank.

The revised engineering evaluation, WHC-SD-WM-ER-134 REV 0-A, "Engineering Evaluation of Thermocouples in FeCN Watch Tanks," dated January 24, 1992, specifies the classification of the thermocouple conditions as follows:
Good - indicated temperature compares favorably to the temperature measured by another thermocouple in an LOW
Acceptable - thermocouples with measured resistance values within normal limits and an indicated temperature within an expected range
Marginal - thermocouples with higher than normal (0.5 ohms to 20 ohms depending on length) loop resistance, higher than normal resistance in one lead to ground, or having some other abnormality, e. g., inconsistent resistance measurements
Failed - those thermocouples with either open circuits or loop resistance greater than 100 ohms. (Failed thermocouples are not used in this report)

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 flammable gas burn, an event not analyzed in previous safety analyses.

Temperatures in these tanks did not exceed the applicable maximum temperature criteria or surveillance frequency limits for the month of January 1993. All Watch List tanks are reviewed for increasing temperature trends.

All temperatures are taken in the waste unless indicated otherwise.

Tank No.	Temperature		Date of Reading	Total Waste (4) (inches)	Monitoring Frequency	Assumed Leaked		Interim Stabilized	
	Reading (F.) in Waste	Date				Date	Date	Date	Date
101-A	155	01/14/93		354	Weekly	SOUND		N/A	
101-AX	140	01/21/93		279	Weekly	SOUND		N/A	
103-AX	116	01/21/93		48	Weekly	SOUND		8/87	
102-S (3)	109	01/23/93		207	Weekly	SOUND		N/A	
111-S	95	01/16/93		224	Weekly	SOUND		N/A	
112-S	88	01/07/93		239	Weekly	SOUND		N/A	
101-SX	140	01/23/93		173	Weekly	SOUND		N/A	
102-SX	154	01/31/93		205	Weekly	SOUND		N/A	
103-SX	179	01/23/93		245	Weekly	SOUND		N/A	
104-SX	172	01/23/93		231	Weekly	SOUND	1988	N/A	
105-SX	185	01/23/93		256	Weekly	SOUND		N/A	
106-SX (3)	117	01/23/93		203	Weekly	SOUND		N/A	
109-SX (2)	154	01/07/93	Riser 2	98	Weekly	SOUND	1965	5/81	
109-SX	154	01/07/93	Riser 8	98	Weekly	SOUND	1965	5/81	
110-T	64	01/16/93		145	Weekly	SOUND		N/A	
103-U	90	01/09/93		178	Weekly	SOUND		N/A	
105-U	93	01/09/93		159	Weekly	SOUND		N/A	
108-U	91	01/09/93		178	Weekly	SOUND		N/A	
109-U	89	01/09/93		176	Weekly	SOUND		N/A	
103-AN (1)	115	01/25/93			Weekly	SOUND		N/A	
104-AN (1)	122	01/25/93			Weekly	SOUND		N/A	
105-AN (1)	111	01/25/93			Weekly	SOUND		N/A	
101-AW (1) (5)	106	01/18/93			Weekly	SOUND		N/A	
101-SY (1)	132	01/29/93			Daily	SOUND		N/A	
103-SY (1)	105	01/04/93			Weekly	SOUND		N/A	

Legend: N/A = Not Applicable

(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

(4) See footnote (8) in Table 2 (Ferrocyanide Tanks) for Total Waste Inches calculations.

(5) Tank 241-AW-101 was added to this list in accordance with Occurrence Report RL-WHC-TANKFARM-1992-0083.

**TABLE 4. SINGLE-SHELL TANKS CONTAINING CONCENTRATIONS OF ORGANIC SALTS
>3% 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 because of uncontrolled increases in the temperature or pressure." Double-Shell tanks having >3% TOC are not on the Watch List because they contain mostly liquid and there is no credible organic safety concern for tanks which contain mostly liquid. The safety concern is with tanks that primarily contain solids because they could dry out and heat up, and "high organic concentrations in the tanks could support an exothermic reaction at elevated temperatures (350 degrees F/180 degrees C)."

Temperatures in these tanks did not exceed the applicable maximum temperature criteria or surveillance frequency limits for the month of January 1993. These tanks are monitored weekly.
All Watch List tanks are reviewed for increasing temperature trends.

All temperatures are taken in the waste unless indicated otherwise.

Tank No.	Temperature Reading (F.) in Waste	Date of Reading	Total Waste Inches (4)	Assumed Leaked Date	Interim Stabilized Date
103-B	63	01/24/93	29	1978	2/85
103-C (3)	124	01/02/93	78	SOUND	N/A
102-S (1)	109	01/23/93	207	SOUND	N/A
106-SX (1)	117	01/23/93	203	SOUND	N/A
105-TX	100	01/21/93	228	1977	9/83
118-TX (2)	78	01/24/93	134	SOUND	4/83
106-U	84	01/09/93	90	SOUND	N/A
107-U	82	01/09/93	155	SOUND	N/A
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 to the Watch List due to the presence of a separable organic layer found on the surface

(4) See footnote (8) in Table 2 (Ferrocyanide Tanks) for Total Waste Inches calculations

TABLE 5. SINGLE-SHELL TANKS WITH HIGH HEAT LOADS (>40,000 Btu/h)(Sheet 1 of 2)

High heat load tanks have temperature surveillance requirements established by SD-WM-SAR-006 REV 1, "SST Isolation Safety Analysis Report," dated January 1986, and OSD-T-151-00013 REV D-O, "Operating Specifications for Single-Shell Waste Storage Tanks," dated August 1990. These requirements do not apply to the temperature laterals beneath 105-A.

Temperatures in these tanks did not exceed SAR or OSD requirement limits for the month of January 1993.

All high heat load tanks are on active ventilation. These high heat tanks are reviewed for increasing temperature trends.

All temperatures are taken in the waste unless indicated otherwise.

Tank No.	Temperature Reading (F.) in Waste	Date of Reading	Location	Total Waste Inches (8)	Monitoring Frequency	Estimated Heat Load (Btu/h)	Assumed		Interim	
							Leaked	Date	Stabilized	Date
104-A (4)	194	01/21/93	R-18	18	Weekly	50000	14.65	1975		9/78
105-A (4)	139	01/28/98	R-16	14	Weekly	50000	14.65	1963		7/79
105-C (2)(6)	98	01/16/93	Riser 1	62	Monthly	42000	11.72	SOUND		N/A
106-C (2)(3)	155	01/29/93	Riser 8	91	Weekly	150000	43.96	SOUND		N/A
	129	01/02/93	Riser 14	91	Weekly	150000	43.96	SOUND		N/A
107-SX	171	01/05/93	Tree 2	45	Monthly	42000	11.72	1964		10/79
	169	01/05/93	Tree 8	45	Monthly	42000	11.72	1964		10/79
108-SX	198	01/05/93	Tree 2	49	Monthly	45000	13.19	1962		8/79
	202	01/05/93	Tree 8	49	Monthly	45000	13.19	1962		8/79
109-SX (3)	154	01/07/93	Tree 2	98	Weekly	50000	14.65	1965		5/81
	154	01/07/93	Tree 8	98	Weekly	50000	14.65	1965		5/81
110-SX	167	01/05/93	Tree 2	30	Monthly	42000	11.72	1976		8/79
	170	01/05/93	Tree 8	30	Monthly	42000	11.72	1976		8/79
111-SX	189	01/05/93	Tree 2	53	Monthly	44000	12.90	1974		7/79
	160	01/05/93	Tree 8	53	Monthly	44000	12.90	1974		7/79
112-SX	158	01/05/93	Tree 2	41	Monthly	43000	12.60	1969		7/79
	158	01/05/93	Tree 8	41	Monthly	43000	12.60	1969		7/79
114-SX	190	01/05/93	Tree 2	73	Monthly	58000	17.00	1972		7/79
	188	01/05/93	Tree 8	73	Monthly	58000	17.00	1972		7/79
11 Tanks										
105-A Laterals (5)	243	01/21/93			Weekly					
Temperatures are taken in 34 thermocouples located beneath 105-A; although not regulated by SAR-006, the same criteria limits are applied										
Footnotes - see next page										

Legend: Tree = Thermocouple Tree

TABLE 5. SINGLE-SHELL TANKS WITH HIGH HEAT LOADS (>40,000 Btu/h)(Sheet 2 of 2)

Footnotes:

- (1) High heat loads as of 1988, evaluation completed April 20, 1989 (kW = 3412 Btu/h). The predominant heat load for these tanks is from CS 137 (half life of 30 yr) and SR 90 (half life of 28.1 yr).
- (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.
- (3) Watch List Tanks: 106-C is on the Watch List because "without water additions (in the event of a leak) the tank could exceed structural temperature limits resulting in unacceptable structural damage." 109-SX is on the hydrogen Watch List because it has the potential for flammable gas accumulation due to other SX tanks venting through it.
- (4) 104/105-A exhauster has been out of service from October 1, 1991, until August 20, 1992, when it was briefly restarted. Problems exist which must be resolved before the exhauster is operational. These temperatures are closely monitored.
- (5) Maximum lateral temperatures under 105-A increased 20 degrees F. by January 1992, but then dropped a few degrees and have remained fairly stable at current temperature. These temperatures are being closely monitored.
- (6) Although 105-C is required to be monitored monthly, it is actually monitored weekly.
- (7) Tanks 104-A and 105-A
Two temperature probes are installed in risers in 104-A, and six are installed in risers in 105-A. These are individual probes. In 104-A, the probes are in contact with the sludge; in 105-A, they are in contact with the bottom of the tank (105-A has a bulged bottom).
Tanks 105-C and 106-C
Tank 105-C has four functioning thermocouples (#1 through 4). 106-C has six functioning thermocouples (#1 through 6).
Tanks 107, 108, 109, 110, 111, 112, and 114-SX
Each of these tanks has eight thermocouple trees, with eight thermocouples on each tree, with the exception of 108-SX, which has four operational thermocouples on each tree. Tree #2 and Tree#8 are monitored in each tank.
- (8) Calculations for Total Waste Inches: see footnote (8), Table 2 (Ferrocyanide Tanks)

TABLE 7. AUTOMATIC FOOD INSTRUMENT COMPANY (FIC) GAUGES OUT OF SERVICE

January 1993

		Date of Last Automatic		Reading Status		Comments		Monitoring Frequency	
Tank No.	Category	FIC Reading							
107-C	-	12/11/92	No reading taken since 12/21/92	Out of compliance as of 12/28/92				Weekly	
103-T	IS	11/15/91	No reading taken since 12/07/92	Out of compliance as of 1/07/93				Quarterly	
103-BX	IS	12/30/92	Taking manual FIC readings	In compliance				Quarterly	
104-BX	IS	11/16/91	Taking manual FIC readings	In compliance				Weekly	
107-BX	IS	12/30/92	Taking manual FIC readings	In compliance				Monthly	
109-BX	IS	12/30/92	Taking manual FIC readings	In compliance				Weekly	
109-BY	-	10/20/92	Taking manual FIC readings	In compliance				W/M/Q	
B-Substation		01/27/93	Taking manual FIC readings	In compliance				Weekly	
103-S	-	12/15/92	Taking manual FIC readings	In compliance				Weekly	
106-S	-	12/29/92	Taking manual FIC readings	In compliance				Weekly	
S-Substation		01/25/93	Taking manual FIC readings	In compliance				Daily/Weekly	
101-T	-	12/02/91	Taking manual FIC readings	In compliance				Daily	
102-T	IS	05/26/91	Taking manual FIC readings	In compliance				Quarterly	
104-TX	IS	07/27/92	Taking manual FIC readings	In compliance				Quarterly	
105-U	-	11/17/92	Taking manual FIC readings	In compliance				Weekly	
107-U	-	12/28/92	Taking manual FIC readings	In compliance				Weekly	
102-AN	DST	10/28/92	Taking manual FIC readings	In compliance				Daily	
102-AP	DST	01/27/93	Taking manual FIC readings	In compliance				Daily	
103-AP	DST	12/16/92	Taking manual FIC readings	In compliance				Daily	
101-SY	DST	08/23/91	Taking manual FIC readings	In compliance				Daily	
101-AW	DST	10/23/92	Taking manual tape readings	In compliance				Daily	
103-AW	DST	03/21/92	Taking manual tape readings	In compliance				Daily	
101-AY	DST	08/31/90	Taking manual tape readings	In compliance				Daily	
101-AZ	DST	02/02/90	Taking manual tape readings	In compliance				Daily	
102-AZ	DST	02/15/90	Taking manual tape readings	In compliance				Daily	
102-SY	DST	01/06/92	Taking manual tape readings	In compliance				Daily	
Catch Tanks									
A-302-A		04/16/91	Taking manual FIC reading	In compliance				Daily	
S-302		07/02/90	Taking manual FIC reading	In compliance				Daily	
S-302-A		12/04/91	No reading taken since 12/04/91	Out of compliance as of 12/05/91				Daily	
Frequency reading requirements:									
Daily - Must be taken by 2 pm each day									
Weekly - Must be taken by 2 pm each Monday									
Quarterly - Must be taken by 2 pm on the seventh day of each quarter									
LEGEND: IS = Interim Stabilized DST = Double-Shell Tank									

TABLE 6. DOUBLE-SHELL TANK WASTE TYPE AND SPACE ALLOCATION

January 1993

DOUBLE-SHELL TANK INVENTORY BY WASTE TYPE		SPACE DESIGNATED FOR SPECIFIC USE	
Complexant Concentrate (102-AN, 107-AN, 101-AY, 101-SY, 103-SY)	4.98 Mgal	Spare Tanks (3) (1 Aging & 1 Non-Aging Waste Tank)	2.28 Mgal
Concentrate Phosphate (106-AN)	1.13 Mgal	Segregated Tank Space (102-AN, 107-AN, 103-AW, 101-AY)	0.66 Mgal
Double-Shell Slurry and Slurry Feed (103-AN, 104-AN, 105-AN, 105-AP, 101-AW)	5.11 Mgal	Watch List Tank Space (103-AN, 104-AN, 105-AN, 101-SY, 103-SY, 101-AW)	0.67 Mgal
Neutralized Current Acid Waste (101-AZ, 102-AZ)	1.20 Mgal	Priority Tank Space (2) (101-AN, 102-AW, 106-AW, 102-SY)	1.46 Mgal
Dilute Waste (1) (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)	11.56 Mgal	Miscellaneous Head Space	0.21 Mgal
			5.28 Mgal
TOTAL DOUBLE-SHELL TANK SPACE			
NCRW and PFP Settled Solids (103-AW, 105-AW, 102-SY)		24 Tanks at 1140 Kgal	27.36 Mgal
		4 Tanks at 980 Kgal	3.92 Mgal
			31.28 Mgal
Total Inventory:			
			24.99 Mgal
		Total Available Space	31.28 Mgal
		Double-Shell Tank Inventory	- 24.99 Mgal
		Space Designated for Specific Use	- 5.28 Mgal
		Remaining Unallocated Space	1.01 Mgal

(1) Easily reduced in volume by Evaporator/LERF

(2) Reduced by Saltwell Liquid pumping

(3) 241-101-AY and 102-AY: a minimum liquid level is set to provide extra protection against any bottom uplifting of the tank's steel liner. WHC-SD-WM-TI-357 "Waste Storage Tank Status and Leak Detection Criteria," specifies 64 in. as the minimum surface level measurement when the annulus system is in operation, and 18 in. if the annulus ventilation system is shut down. See also OSD-T-151-0007, "Unclassified Operating Specifications for the 241AN, 241AP, 241AW, 241AY and 241SY Tank Farms." Because of space availability, waste is stored in 102-AY, the aging waste spare tank. In case of a leak, the contents of 102-AY will be distributed to any other DST(s) having available space.

Note: Net change since last month: inventory increased 181 Kgal

TABLE 8: SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS
149 TANKS (Sheet 1 of 4)

The following table indicates whether Single-Shell tank monitoring is in compliance with the requirements as specified in the applicable documents:

NOTE:

All Watch List and High Heat tank temperature monitoring is in compliance.

All Dome Elevation Survey monitoring is in compliance.

All Drywell monitoring is in compliance.

Psychrometrics (2)

In-tank Photographs (3)

LEGEND:

(Shaded)	= In compliance with all applicable documentation
O/C	= Out of compliance with documentation
-357	= WHC-SD-WM-TI-357, "Waste Storage Tank Status and Leak Detection Criteria"
POP	= Plant Operating Procedure TO-040-850, "Obtain/Record SST Temperatures"
M.T.	= Manual Tape
FIC	= Food Instrument Company
OSR/SAR	= Operations Safety Requirements/Safety Analysis Report Requirements
OSD	= Operating Specifications Document
N/A	= Not Applicable (i.e., no LOW, M.T., FIC installed)
O/S	= Out of Service
Gamma	= LOW readings taken by Gamma probe
Neutron	= LOW readings taken by Neutron probe

Information as of 1/31/93

Tank Number	Category		Temperature Readings (5)	Surface Level Readings (1) (-357)		LOW Readings (-357)		Radiation Readings		Dome Elevation Surveys (OSR/SAR)
	Watch List	High Heat		M.T.	FIC	Gamma	Neutron	Lateral Readings (-357)	Drywell Readings (OSR/SAR)	
101-A	X			N/A	N/A			O/C		
102-A				N/A		N/A	N/A	O/C		
103-A				N/A				O/C		
104-A		X		O/C	N/A	N/A	N/A	O/C		
105-A		X			N/A	N/A	N/A	O/C		
106-A				N/A		N/A	N/A	O/C		
101-AX	X			N/A						
102-AX			O/C		N/A	N/A	N/A			
103-AX	X			N/A		N/A	N/A			
104-AX				O/C	N/A	N/A	N/A			
101-B				N/A		N/A	N/A			
102-B				N/A		N/A	N/A			
103-B	X			N/A		N/A	N/A			
104-B					N/A					
105-B					N/A					
106-B				N/A		N/A	N/A			
107-B					N/A	N/A	N/A			
108-B				N/A		N/A	N/A			
109-B					N/A	N/A	N/A			
110-B			O/C	O/C	N/A	N/A	N/A			
111-B			O/C	N/A		N/A	N/A			
112-B				N/A		N/A	N/A			
201-B					N/A	N/A	N/A			
202-B					N/A	N/A	N/A			
203-B					N/A	N/A	N/A			
204-B					N/A	N/A	N/A			
101-BX			O/C		N/A	N/A	N/A			
102-BX	X				N/A	N/A	N/A			
103-BX			O/C	N/A		N/A	N/A			
104-BX			O/S-O/C	N/A		N/A	N/A			
105-BX				N/A		N/A	N/A			
106-BX	X			N/A		N/A	N/A			
107-BX			O/C	N/A		N/A	N/A			

TABLE 8. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 2 of 4)

Information as of 1/31/93

Tank Number	Category		Temperature Readings (5)	Surface Level Readings (1) (-357)		LOW Readings (-357)		Radiation Readings		Dome Elevation Surveys (OSR/SAR)
	Watch List	High Heat		M.T.	FIC	Gamma	Neutron	Lateral Readings (-357)	Drywell Readings (OSR/SAR)	
108-BX			O/C		N/A	N/A	N/A	N/A		
109-BX			O/C	N/A		N/A	N/A	N/A		
110-BX	X				N/A	N/A	N/A	N/A		
111-BX	X				N/A			N/A		
112-BX			O/C	N/A		N/A	N/A	N/A		
101-BY	X				N/A			N/A		
102-BY			O/S-O/C		N/A			N/A		
103-BY	X				N/A			N/A		
104-BY	X				N/A			N/A		
105-BY	X				N/A			N/A		
106-BY	X				N/A			N/A		
107-BY	X				N/A			N/A		
108-BY	X				N/A	N/A	N/A	N/A		
109-BY			O/S-O/C	N/A				N/A		
110-BY	X				N/A			N/A		
111-BY	X				N/A			N/A		
112-BY	X				N/A	O/C	O/C	N/A		
101-C				O/C	N/A	N/A	N/A	N/A		
102-C			O/C	N/A		N/A	N/A	N/A	N/A	
103-C	X			N/A		N/A	N/A	N/A		
104-C				N/A		N/A	N/A	N/A		
105-C		X		N/A		N/A	N/A	N/A		
106-C (4)	X	X		N/A		N/A	N/A	N/A		
107-C				N/A	O/C	N/A	N/A	N/A		
108-C	X				N/A	N/A	N/A	N/A		
109-C	X				N/A	N/A	N/A	N/A		
110-C					N/A	N/A	N/A	N/A		
111-C	X				N/A	N/A	N/A	N/A		
112-C	X				N/A	N/A	N/A	N/A		
201-C					N/A	N/A	N/A	N/A		
202-C					N/A	N/A	N/A	N/A		
203-C					N/A	N/A	N/A	N/A		
204-C			O/C		N/A	N/A	N/A	N/A		
101-S			O/C	N/A				N/A		
102-S	X			N/A				N/A		
103-S			O/C	N/A				N/A		
104-S			O/C		N/A	N/A	N/A	N/A		
105-S				N/A				N/A		
106-S				N/A				N/A		
107-S			O/C	N/A		N/A	N/A	N/A		
108-S								N/A		
109-S			O/C	N/A				N/A		
110-S			O/C	N/A				N/A		
111-S	X			N/A				N/A		
112-S	X			N/A				N/A		
101-SX	X			N/A				N/A		
102-SX	X			N/A				N/A		
103-SX	X			N/A				N/A		
104-SX	X			N/A		O/S-O/C	O/S-O/C	N/A		
105-SX	X			N/A				O/C		
106-SX	X			N/A				N/A		
107-SX		X			N/A	N/A	N/A	O/C		
108-SX		X		O/C	N/A	N/A	N/A	O/C		

TABLE 8. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS
 149 TANKS (Sheet 3 of 4)

Information as of 1/31/93

Tank Number	Category		Temperature Readings (5)	Surface Level Readings (1) (-357)		LOW Readings (-357)		Radiation Readings		Dome Elevation Surveys (OSR/SAR)
	Watch List	High Heat		M.T.	FIC	Gamma	Neutron	Lateral Readings (-357)	Drywell Readings (OSR/SAR)	
109-SX (4)	X	X			N/A	N/A	N/A	O/C		
110-SX		X			N/A	N/A	N/A	O/C		
111-SX		X			N/A	N/A	N/A	O/C		
112-SX		X			N/A	N/A	N/A	O/C		
113-SX			O/C		N/A	N/A	N/A	N/A		
114-SX		X			N/A	N/A	N/A	O/C		
115-SX			O/S - O/C		N/A	N/A	N/A	O/C		
101-T	X			N/A		N/A	N/A	N/A		
102-T			O/S - O/C	N/A		N/A	N/A	N/A		
103-T			O/C	N/A	O/C	N/A	N/A	N/A		
104-T			O/C		N/A		O/C	N/A		
105-T			O/S - O/C	N/A		N/A	N/A	N/A		
106-T			O/C	N/A		N/A	N/A	N/A		
107-T	X			N/A		N/A	N/A	N/A		
108-T			O/C		N/A	N/A	N/A	N/A		
109-T			O/C	N/A		N/A	N/A	N/A		
110-T	X			N/A			O/C	N/A		
111-T			O/C	N/A			O/C	N/A		
112-T			O/C	N/A		N/A	N/A	N/A		
201-T			O/C		N/A	N/A	N/A	N/A		
202-T			O/C		N/A	N/A	N/A	N/A		
203-T			O/C		N/A	N/A	N/A	N/A		
204-T			O/C		N/A	N/A	N/A	N/A		
101-TX			O/S - O/C	N/A		N/A	N/A	N/A		
102-TX			O/C		N/A		O/C	N/A		
103-TX			O/C	N/A		N/A	N/A	N/A		
104-TX			O/C	N/A		N/A	N/A	N/A		
105-TX	X				N/A	O/S-O/C	O/S-O/C	N/A		
106-TX			O/C		N/A		O/C	N/A		
107-TX			O/C	N/A		N/A	N/A	N/A		
108-TX			O/C	N/A			O/C	N/A		
109-TX			O/C	N/A			O/C	N/A		
110-TX			O/C		N/A		O/C	N/A		
111-TX			O/C		N/A		O/C	N/A		
112-TX			O/C		N/A		O/C	N/A		
113-TX			O/C		N/A		O/C	N/A		
114-TX			O/C		N/A		O/C	N/A		
115-TX			O/C		N/A		O/C	N/A		
116-TX			O/S O/C		N/A	N/A	N/A	N/A		
117-TX			O/C		N/A		O/C	N/A		
118-TX	X			N/A			O/C	N/A		
101-TY	X			N/A		N/A	N/A	N/A		
102-TY			O/C	N/A		N/A	N/A	N/A		
103-TY	X			N/A				N/A		
104-TY	X			N/A		N/A	N/A	N/A		
105-TY			O/C		N/A	N/A	N/A	N/A		
106-TY			O/C		N/A	N/A	N/A	N/A		
101-U			O/C		N/A	N/A	N/A	N/A		
102-U				N/A				N/A		
103-U	X			N/A				N/A		
104-U			O/S - O/C		N/A	N/A	N/A	N/A		
105-U	X			N/A				N/A		
106-U	X			N/A				N/A		

TABLE 8. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 4 of 4)

Information as of 1/31/93

Information as of 10/1/95

Tank Number	Category		Temperature Readings (5)	Surface Level Readings (1) (-357)		LOW Readings (-357)		Radiation Readings		Dome Elevation Surveys (OSR/SAR)
	Watch List	High Heat		M.T.	FIC	Gamma	Neutron	Lateral Readings (-357)	Drywell Readings (OSR/SAR)	
107-U	X			N/A				N/A		
108-U	X			N/A				N/A		
109-U	X			N/A				N/A		
110-U				N/A		N/A	N/A	N/A		
111-U				N/A				N/A		
112-U			O/C		N/A	N/A	N/A	N/A		
201-U			O/C		N/A	N/A	N/A	N/A		
202-U			O/C		N/A	N/A	N/A	N/A		
203-U			O/C		N/A	N/A	N/A	N/A		
204-U			O/C		N/A	N/A	N/A	N/A		
Catch Tanks										
A-302-A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A
A-302-B	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
311-ER	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A
Vent Sta.	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
151-AZ	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A
154-AZ	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
S-302	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A
S-302-A	N/A	N/A	N/A	N/A	O/C	N/A	N/A	N/A	N/A	N/A
TX-302-B	N/A	N/A	N/A	O/C	N/A	N/A	N/A	N/A	N/A	N/A
TX-302-C	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A
U-301-B	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A
UX-302-A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A
141-S	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
142-S	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Totals: 149 tanks	48 Watch List Tanks (4)	11 High Heat Tanks (4)	O/C: 61 tanks - (semiannual monitoring frequency) (5)	O/C: 6 tanks	O/C: 3 tanks	O/C: 3 tanks	O/C: 18 tanks	O/C: 15 tanks	0	0
						58 tanks have LOWs (2 are O/S)				

- (1) All SSTs have either manual tape or FIC, with the exception of 108-S which has both. All SST FICs are connected to CASS, (with the exception of 106-BX); however, the connection for many tanks is broken. For such cases, manual field readings are taken. Manual surface level readings include readings taken by manual tape, manual FIC (not connected to Computer Automated Surveillance System, 106-BX), manual readings of automatic FIC (if CASS is printing "0"), or automatic FIC. In some cases, the surface level readings are taken using a zip cord. While less accurate, such readings are acceptable for meeting the surface level reading requirements.
- (2) Psychrometric readings are taken on tanks with active exhausters (High heat tanks 104/105-A, 105/106-C, 107, 108, 109, 110, 111, 112, and 114-SX). Psychrometrics were not taken from 9/91 to 9/92. Exhauster down on 104/105-A since 10/1/91. 105/106-C have resumed psychrometric readings on a monthly frequency. Psychrometric frequency not specified in -357 or operating procedures.
- (3) In-tank Photographs are not required by -357. Last in-tank photographs in SSTs were taken September 1990.
- (4) Two tanks are on both category lists (106-C, 109-SX).
- (5) Temperature readings may be regulated by OSD, -357, or POP. Additionally, high heat load tanks are regulated by OSR/SAR. Thermocouples in the 9 tanks designated O/S-O/C are out of service; there are either no thermocouple probes in these tanks, or probes have been cut off, covered over, or are otherwise not functioning. The OSD does not require readings or repair of out-of-service thermocouples for the 92 non-heat load (>40,000 Btu/hr) tanks. However, the operating procedure (POP) requires that attempts are to be made semiannually in January and July to obtain readings from these tanks. 61 tanks are O/C because either no attempts were made to read them in January 1993 or readings could not be obtained. (102-AX had only one thermocouple working in January and July 1992 - it was not working in January 1993).

**TABLE 9. DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS
28 TANKS**

The following table indicates whether Double-Shell tank monitoring is in compliance with the requirements as specified in the applicable documents:

NOTE:

All DST tank temperature tree monitoring is in compliance.
Dome Elevation Surveys are not required for DSTs.
Psychrometrics (2)
In-tank Photographs (3)

LEGEND:

(Shaded) = In compliance with all applicable documentation
O/C = Out of compliance with documentation
-357 = WHC-SD-WM-TI-357, "Waste Storage Tank Status and Leak Detection Criteria"
M.T. = Manual Tape
FIC = Food Instrument Company
OSR/SAR = Operations Safety Requirements/Safety Analysis Report Requirements
N/A = Not Applicable (i.e., no M.T., FIC installed)
O/S = Out of Service
W.F. = Weight Factor
Rad. = Radiation

Information as of 1/31/93

Information as of 11/2/1995

Tank Number	Watch List	Temperature Readings (4) (OSR/SAR)	Surface Level Readings (1) (-357, OSR/SAR)		Radiation Readings		Annulus (-357)
			M.T.	FIC	Leak Detection Pits (5) (-357, OSR/SAR)		
					W.F.	Rad.	
101-AN			N/A				
102-AN			N/A			O/C	
103-AN	X		N/A				
104-AN	X		N/A			O/C	
105-AN	X		N/A				
106-AN			N/A				
107-AN			N/A				
101-AP			O/S				
102-AP							
103-AP			O/S				
104-AP			O/S				
105-AP		O/S					
106-AP		O/S					
107-AP		O/S					
108-AP		O/S					
101-AW	X			O/S			
102-AW							
103-AW				O/S			
104-AW							
105-AW							
106-AW							
101-AY				O/S			O/C
102-AY							O/C
101-AZ				O/S			O/C
102-AZ				O/S			O/C
101-SY	X						
102-SY				O/S			
103-SY	X					O/C	
Totals: 28 tanks	6 Watch List Tanks	O/C: 0 (4)	O/C: 0	O/C: 0	O/C: 0	O/C: 3 tanks	O/C: 4 tanks

- (1) All DSTs have both manual tape and FIC, with the exception of the AN Tank Farm which only has FICs. The manual tape is used when the FIC is out of service. O/C will be shown when no readings are obtained.
- (2) Psychrometric readings are taken on DSTs. All DSTs are equipped with active exhausters. Psychrometrics were not taken from 9/91 to 9/92; readings on some tanks were resumed beginning October 1992. Frequency of psychrometric monitoring is not specified in -357 or operating procedures.
- (3) In-tank photographs are not required by -357. Last in-tank photographs in DSTs were taken April 1989.
- (4) DST temperature tree readings are taken weekly, with the exception of 101-SY which are obtained shiftwise with increased readings taken prior to and following gas venting.
- (5) Failure of both leak detection systems requires repair of at least one system within 5 working days. Failure of one system only, repair must be within 10 working days. Per -357. If repair of out-of-service systems exceeds these timeframes, systems are O/C. Out-of-service systems which have not exceeded these timeframes will be shown as O/S.

Figure 1. FY 93 Integrated Core Sample Schedule

CURRENT STATUS AND CONTINGENCY SPACE FOR
THE 242-A EVAPORATOR RESTART

Figure 2. Current Status and Contingency Space for the 242-A Evaporator Restart

Sound Single Shell Tanks Waste Volumes - Grouped By Waste Type

Figure 3. Waste Volumes for Sound Single-Shell Tanks
(Grouped by Waste Type)

Assumed Leaking Single Shell Tanks Waste Volumes - Grouped By Waste Type

Figure 4. Waste Volumes for Assumed Leaking Single-Shell Tanks
(Grouped by Waste Type)

APPENDIX A

**TANK AND EQUIPMENT CODE
AND STATUS DEFINITIONS**

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TANK AND EQUIPMENT CODE/STATUS DEFINITIONS

January 1993

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 TANKS - GENERAL

Waste Tank Safety Issue	A potentially unsafe condition in the handling of waste material in underground storage tanks that requires corrective action to reduce or eliminate the unsafe condition
Watch List Tank	An underground storage tank containing waste that requires special safety precautions because it may have a serious potential for release of high level radioactive waste because of uncontrolled increases in temperature or pressure. Special restrictions have been placed on these tanks by "Safety Measures for Waste Tanks at Hanford Nuclear Reservation, Section 3137 of the <i>National Defense Authorization Act for Fiscal Year 1991</i> , November 5, 1990, Public Law 101-510, (also known as the Wyden Amendment).

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 100 N 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: ethylenediaminetetra-acetic acid (EDTA), citric acid, hydroxyethyl-ethylenediaminetriacetic acid (HEDTA), and iminodiacetate (IDA) being the major complexants used. Main sources of DC waste in the DST system 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 (supernate).
Double-Shell Slurry (DSS)	Waste that exceeds the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. For reporting purposes, DSS is considered a solid.
Double-Shell Slurry Feed (DSSF)	Waste concentrated just before reaching the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. 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. NCRW solids are classified as transuranic (TRU) waste.
PFP TRU Solids (PT)	TRU solids fraction from PFP Plant operations.
Drainable Interstitial Liquid (DIL)	Interstitial liquid that is not held in place by capillary forces, and will therefore migrate or move by gravity.
Supernate	The liquid above the solids in waste storage tanks.

Ferrocyanide A compound of iron and cyanide commonly expressed as FeCN. The actual formula for the ferrocyanide anion is $[\text{Fe}(\text{CN})_6]^{-4}$.

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. If the tank was jet pumped to achieve interim stabilization, then the jet pump flow must also have been at or below 0.05 gpm before interim stabilization criteria is met.

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 boreholes with 6-in. (internal diameter) 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. They are called drywells because they do not penetrate to the water table and are therefore usually "dry." The drywell frequency monitoring schedule calls for 105 drywells weekly, 91 biweekly, 41 monthly, 151 quarterly, and 371 annually.
- 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 or 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 (56 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), are constructed of steel and 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, although some SSTs do not have any trees installed. A single thermocouple may be installed in a riser, or lowered down an existing riser or LOW. There are also four thermocouple laterals beneath Tank 105-A in which temperature readings are taken in 34 thermocouples.

In-tank Photography

In-tank photographs may be 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. Supernate is usually derived by subtracting the solids level measurement from the liquid level measurement.

* TEFZEL, a trademark of E. I. du Pont de Nemours & Company

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Drainable Interstitial	Drainable Liquid Remaining minus Supernate. Drainable Interstitial Liquid is calculated based on the saltcake 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	Supernate 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 crystalization 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 Update	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

WHC-EP-0182-58

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• A and AX have flat bottoms

Figure B-1. High-Level Waste Tank Configuration

29103062.1a

Figure B-2. Double-Shell Tank Instrumentation Configuration

Figure B-3. Single-Shell Tank Instrumentation Configuration

Figure B-4. Double-Shell Tank Status

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

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

500,000 gal. tanks Constructed 1943-44

55,000 gal. tanks

500,000 gal. tanks Constructed 1946-47

750,000 gal. tanks Constructed 1948-49

500,000 gal. tanks Constructed 1943-44

55,000 gal. tanks

XXX = Total Waste Volume (Solids+Supernatant)(in K gal.)
 XXX = Total Liquids (in K gal.)
 [Drainable Interstitial + Supernatant]
 XXX = Sludge (in K gal.)
 (Saltcake Totals Not Shown)

AL = Assumed Leaker
 HH = High Heat Tanks
 F = Ferrocyanide
 (WHC-EP-0399)
 O = Organics
 H = Potential Flammable Gases
 (Hydrogen)(WHC-EP-0418)

II = Interim Isolated
 IS = Interim Stabilized
 PI = Partially Interim Isolated

Updated Quarterly 12/31/92

SST-ALL/S.G. SPENCER/03-93

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

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750,000 gal. tanks Constructed 1950-51

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

500,000 gal. tanks Constructed 1943-44

55,000 gal. tanks

750,000 gal. tanks Constructed 1947-48

750,000 gal. tanks Constructed 1951-52

500,000 gal. tanks Constructed 1943-44

55,000 gal. tanks

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

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Figure B-7. Tank Farm Facilities – Quick Reference

200 EAST

200 WEST

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			
	January 1993			
	200		200	
	EAST AREA	WEST AREA	EAST AREA	WEST AREA
IN SERVICE	25	3	28	(2)
OUT OF SERVICE	66	83	149	
SOUND	59	51	110	
ASSUMED LEAKER	32	35	67	
INTERIM STABILIZED (1)	51	54	105	
ISOLATED				
PARTIAL INTERIM	21	30	51	
INTERIM	45	53	98	
WASTE VOLUMES (Kgal/ons)				
	200		200	
	EAST AREA	WEST AREA	EAST AREA	WEST AREA
SUPERNATANT				
AGING	1753	0	1753	0
CC	1953	211	2164	3
CP	6	0	6	0
DC	842	1	843	1
DN	10090	0	10090	0
DN/PT	948	0	948	0
DN/PT	0	612	612	0
DSSF	3838	48	3886	56
NCPLX	234	310	544	0
TOTAL SUPERNATANT	19664	1182	20846	604
SOLIDS				
Double-shell slurry	937	1103	2040	0
Sludge	8206	6215	14421	12466
Saltcake	6577	17352	23929	23169
TOTAL SOLIDS	15720	24670	40390	35635
TOTAL WASTE	35384	25852	61236	36239
AVAILABLE SPACE IN TANKS	5424	859	6283	0
DRAINABLE INTERSTITIAL	2253	4505	6758	6319
DRAINABLE LIQUID REMAINING	21912	5687	27599	6918
				20681
				27599

(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) Includes six double-shell tanks on Hydrogen Watch List not currently allowed to receive waste, 103-AN, 104-AN, 105-AN, 101-AW, 101-SY, and 103-SY. Note: +/- 1 Kgal differences are the result of computer rounding

TABLE C-2. TANK USE SUMMARY

January 1993

TANK FARMS	IN SERVICE	OUT OF SERVICE	SOUND	ASSUMED LEAKER	ISOLATED TANKS		INTERIM STABILIZED TANKS
					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 (2)	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	6	6	10 (1)
BY	0	12	7	5	5	7	7
C	0	16	9	7	7	9	10
Total	25	66	59	32	21	45	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	9	7	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	51	35	30	53	54
TOTAL	28	149	110	67	51	98	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) Six Double-Shell Tanks on the Hydrogen Tank Watch List are not currently in service (103, 104, 105-AN, 101-AW, 101 and 103-SY).

TABLE C-3. INVENTORY SUMMARY BY TANK FARM

WASTE VOLUMES (Kgallons)

January 1993

SUPERNATANT LIQUID VOLUMES														SOLIDS VOLUME			
TANK FARM	TOTAL WASTE	AVAIL SPACE	AGING	CC	CP	DC	DN	DN/PT	DN/PT	DSS	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	5981	1999	0	1950	6	0	638	0	0	1946	0	4540	937	504	0	1441	
AP	7288	1832	0	0	0	0	6465	0	0	823	0	7288	0	0	0	0	
AW	5658	1182	0	0	0	0	2318	948	0	1061	0	4327	0	1135	196	1331	
AX	906	0	0	3	0	0	0	0	0	0	0	3	0	19	884	903	
AY	1626	334	0	0	0	842	669	0	0	0	0	1511	0	115	0	115	
AZ	1883	77	1753	0	0	0	0	0	0	0	0	1753	0	130	0	130	
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	4744	0	0	0	0	0	0	0	0	0	0	0	0	719	4025	4744	
C	2146	0	0	0	0	0	0	0	0	0	169	169	0	1977	0	1977	
Total	35384	5424	1753	1953	6	842	10090	948	0	3838	234	19664	937	8206	6577	15720	
WEST																	
S	5680	0	0	0	0	0	0	0	0	17	29	46	0	1171	4463	5634	
SX	4453	0	0	0	0	1	0	0	0	0	62	63	0	1532	2858	4390	
SY	2561	859	0	211	0	0	0	612	0	0	0	823	1103	71	564	1738	
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	25852	859	0	211	0	1	0	612	48	310	1182	1103	6215	17352	24670	40390	
TOTAL	61236	6283	1753	2164	6	843	10090	948	612	3886	544	20846	2040	14421	23929	40390	

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

TANK STATUS			LIQUID VOLUME										SOLIDS VOLUME										VOLUME DETERMINATION				CHANGE SINCE LAST MONTHLY REPORT	
TANK	WASTE TANK	TANK INTEGRITY USE	EQUIVA- LENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL SPACE (Kgal)	SUPER- NATANT LIQUID	DRAIN- ABLE INTER- STIT.	PUMPED THIS MONTH	TOTAL PUMPED	DRAIN- ABLE LIQUID REMAIN	PUMP- ABLE LIQUID REMAIN	DSS SLDG (Kgal)	SALT CAKE (Kgal)	VOL MTHD	LIQ VOL	SOL VOL	SOLIDS UPDATE	LAST DATE	PHOTO	LAST MONTHLY REPORT								
																					AN FARM STATUS				AP FARM STATUS			
101AN	DN	SOUND	231.8	638	502	638	0	0.0	0.0	638	638	0	0	0	FM	S	08/22/89	0/ 0/ 0										
102AN	CC	SOUND	397.1	1104	36	1015	3	0.0	0.0	1015	1015	0	89	0	FM	S	08/22/89	0/ 0/ 0										
103AN	DSS	SOUND	346.2	952	188	15	0	0.0	0.0	15	15	937	0	0	FM	S	08/22/89	10/29/87										
104AN	DSSF	SOUND	386.6	1061	79	797	25	0.0	0.0	822	800	0	264	0	FM	S	08/22/89	08/19/88										
105AN	DSSF	SOUND	410.9	1134	6	1134	0	0.0	0.0	1134	1134	0	0	0	FM	S	10/22/84	01/26/88										
106AN	CP	SOUND	368.4	23	1117	6	0	0.0	0.0	6	6	0	17	0	FM	S	08/22/89	0/ 0/ 0										
107AN	CC	SOUND	389.7	1069	71	935	9	0.0	0.0	944	935	0	134	0	FM	S	08/22/89	09/01/88										
7 DOUBLE-SHELL TANKS			TOTALS:	5981	1999	4540	37	0.0	0.0	4577	4543	937	504	0														
101AP	DN	SOUND	386.1	1061	79	1061	0	0.0	0.0	1061	1061	0	0	0	FM	S	05/01/89	0/ 0/ 0										
102AP	DN	SOUND	49.5	1105	35	1105	0	0.0	0.0	1105	1105	0	0	0	FM	S	07/11/89	0/ 0/ 0										
103AP	DN	SOUND	412.5	1133	7	1133	0	0.0	0.0	1133	1133	0	0	0	FM	S	10/13/88	0/ 0/ 0										
104AP	DN	SOUND	7.2	19	1121	19	0	0.0	0.0	19	19	0	0	0	FM	S	10/13/88	0/ 0/ 0										
105AP	DSSF	SOUND	299.6	823	317	823	0	0.0	0.0	823	823	0	0	0	FM	S	02/02/89	0/ 0/ 0										
106AP	DN	SOUND	411.5	1130	10	1130	0	0.0	0.0	1130	1130	0	0	0	FM	S	10/13/88	0/ 0/ 0										
107AP	DN	SOUND	408.2	1117	23	1117	0	0.0	0.0	1117	1117	0	0	0	FM	S	10/13/88	0/ 0/ 0										
108AP	DN	SOUND	328.9	900	240	900	0	0.0	0.0	900	900	0	0	0	FM	S	10/13/88	0/ 0/ 0										
8 DOUBLE-SHELL TANKS			TOTALS:	7288	1832	7288	0	0.0	0.0	7288	7288	0	0	0														

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TANK STATUS		LIQUID VOLUME										SOLIDS VOLUME										VOLUME DETERMINATION				CHANGE	
TANK	MATERIAL	WASTE TANK	TANK INTEGRITY	USE	EQUIVALENT WASTE INCHES	SUPER-ABLE			DRAIN-ABLE	INTER-STIT.	PUMPED THIS MONTH	TOTAL PUMPED	DRAIN-ABLE	LIQUID REMAIN	PUMP-ABLE	SALT DSS (Kgallons)	LIQ CAKE VOL	VOL	SOL VOLUME	SOLIDS UPDATE	LAST PHOTO	LAST MONTHLY REPORT					
						TOTAL WASTE (Kgal)	AVAIL SPACE (Kgal)	WASTE SPACE (Kgal)																			
***** AW FARM STATUS *****																											
101AW	DSSF	SOUND	CWHT		414.8	1145	0	1061	2	0.0	0.0	1063	1061			0	84	0	FM	S	10/22/84	03/17/88	(1)				
102AW	DN	SOUND	EVFD		234.9	788	352	787	0	0.0	0.0	787	787			0	1	0	FM	S	02/29/84	02/02/83					
103AW	DN/PD	SOUND	DRCVR		234.8	645	495	282	37	0.0	0.0	319	297			0	363	0	FM	S	02/01/89	0/ 0/ 0					
104AW	DN	SOUND	DRCVR		408.9	1124	16	834	49	0.0	0.0	883	861			0	179	111	FM	S	03/05/87	02/02/83					
105AW	DN/PD	SOUND	DRCVR		327.3	963	177	666	29	0.0	0.0	695	673			0	297	0	FM	S	03/05/87	0/ 0/ 0					
106AW	DN	SOUND	SRCLR		341.5	993	147	697	42	0.0	0.0	739	717			0	211	85	FM	S	01/31/92	02/02/83					
6 DOUBLE-SHELL TANKS					TOTALS:	5658	1182	4327	159	0.0	0.0	4486	4396			0	1135	196									
***** AY FARM STATUS *****																											
101AY	DC	SOUND	DRCVR		339.8	925	55	842	2	0.0	0.0	844	842			0	83	0	FM	S	02/02/87	12/28/82					
102AY	DN	SOUND	DRCVR		186.7	701	279	669	0	0.0	0.0	669	669			0	32	0	FM	S	02/10/88	04/28/81					
2 DOUBLE-SHELL TANKS					TOTALS:	1626	334	1511	2	0.0	0.0	1513	1511			0	115	0									
***** AZ FARM STATUS *****																											
101AZ	AGING	SOUND	CWHT		334.3	953	27	918	0	0.0	0.0	918	918			0	35	0	FM	S	09/30/90	08/18/83					
102AZ	AGING	SOUND	DRCVR		348.3	930	50	835	4	0.0	0.0	839	835			0	95	0	FM	S	06/04/92	12/24/84					
2 DOUBLE-SHELL TANKS					TOTALS:	1883	77	1753	4	0.0	0.0	1757	1753			0	130	0									

TABLE C-4. INVENTORY AND STATUS BY TANK
DOUBLE-SHELL TANKS
January 1993

TANK STATUS		LIQUID VOLUME										SOLIDS VOLUME					VOLUME DETERMINATION					CHANGE SINCE LAST MONTHLY REPORT	
TANK	WASTE TANK	TANK INTEGRITY USE	EQUIVALENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL SPACE (Kgal)	SUPER-TANT LIQUID (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH	TOTAL PUMPED	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SALT DSS (Kgal/tons)	LIQ SLDG (Kgal)	VOL CAKE (Kgal)	VOL MTND (Kgal)	SOL VOLUME UPDATE	LAST PHOTO DATE	LAST MONTHLY REPORT	CHANGE SINCE LAST MONTHLY REPORT				
+++++ SY FARM STATUS +++++																							
101SY	CC	SOUND	CUHT	408.0	1131	9	41	237	0.0	0.0	278	272	530	0	560	FM	S	01/31/92	04/12/89				
102SY	DN/PT	SOUND	DRCVR	245.8	683	457	612	0	0.0	0.0	612	612	0	71	0	FM	S	05/12/87	04/29/81				
103SY	CC	SOUND	CUHT	271.4	747	393	170	0	0.0	0.0	170	170	573	0	4	FM	S	10/22/84	10/01/85				
3 DOUBLE-SHELL TANKS				TOTALS:	2561	859	823	237	0.0	0.0	1060	1054	1103	71	564								
GRAND TOTAL					26997	6283	20242	439			20681	20545	2040	1955	760								

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

Tank Farms	Available Space Calculations Used In This Document (Most Conservative)		Document SD-WM-TI-357*		Document OSD-T-151-00007** Specification Limit	
	Operating Limit	Tank Capacity				
AN, AP, AW, SY	1,140,000 gal (414.5 in.)	1,144,000 gal (416 in.)	1,160,000 gal (421.8 in.)	1,160,500 gal (422 in.)		
AY, AZ (Aging Waste)	980,000 gal (356.4 in.)	990,000 gal (360 in.)	1,000,000 gal (363.6 in.)	1,001,000 gal (364 in.)		

* WHC-SD-WM-TI-357, "Waste Storage Tank Status and Leak Detection Criteria."

**WHC-OSD-T-151-00007, "Operating Specifications for 241-AN, AP, AW, AY, AZ, & SY Tank Farms."

(1) Tank 101-AW: Although the total waste exceeds the 1140 Kgal specified for waste volume projections of available space, it does not exceed the operating limit criteria.

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
January 1993

TANK STATUS			LIQUID VOLUME				SOLIDS VOLUME				VOLUME DETERMINATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
TANK	WASTE MATERIAL	TANK INTEGRITY STATUS	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- TANT 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 UPDATE	SOLIDS SOURCE	CHG SINCE LAST MONTHLY REPORT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

WHC-EP-0182-58

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
January 1993

TANK STATUS			LIQUID VOLUME					SOLIDS VOLUME			VOLUME DETERMINATION							
TANK	WASTE MATERIAL	TANK INTEGRITY	STABIL/ISOLATION STATUS	TOTAL WASTE (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)	SLUDGE (kgal)	SALTCAKE (kgal)	LIQUIDS		SOLIDS		SOLIDS UPDATE	CHG SINCE LAST MONTHLY REPORT
													VOLUME	METHOD	VOLUME	UPDATE		
+++++ B FARM STATUS +++++																		
101B	NCPLX	ASMD LKR	IS/11	113	0	6	0.0	0.0	6	0	113	0	P	F	04/28/82			05/19/83
102B	NCPLX	SOUND	IS/11	32	4	0	0.0	0.0	4	0	18	10	P	F	08/22/85	(1)		08/22/85
103B	NCPLX	ASMD LKR	IS/11	59	0	0	0.0	0.0	0	0	59	0	F	F	02/28/85	(1)		10/13/88
104B	NCPLX	SOUND	IS/11	371	1	46	0.0	0.0	47	40	301	69	M	M	06/30/85	(1)		10/13/88
105B	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
106B	NCPLX	SOUND	IS/11	117	1	6	0.0	0.0	7	0	116	0	F	F	03/31/85	(1)		02/28/85
107B	NCPLX	ASMD LKR	IS/11	165	1	12	0.0	0.0	13	7	164	0	M	M	03/31/85	(1)		02/28/85
108B	NCPLX	SOUND	IS/11	94	0	4	0.0	0.0	4	0	94	0	F	F	05/31/85	(1)		05/10/85
109B	NCPLX	SOUND	IS/11	127	0	8	0.0	0.0	8	0	127	0	M	M	04/08/85	(1)		04/02/85
110B	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
111B	NCPLX	ASMD LKR	IS/11	237	1	21	0.0	0.0	22	16	236	0	F	F	06/28/85	(1)		06/26/85
112B	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
201B	NCPLX	ASMD LKR	IS/11	29	1	3	0.0	0.0	4	0	28	0	M	M	04/28/82			11/12/86
202B	NCPLX	SOUND	IS/11	27	0	3	0.0	0.0	3	0	27	0	P	M	05/31/85	(1)		05/29/85
203B	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
204B	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
TOTALS				2057	15	164	0.0	0.0	179	80	1697	345						
16 SINGLE-SHELL TANKS																		

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
January 1993

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.	PUMPED TH'S MONTH	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID REMAIN	PUMP- ABLE LIQUID REMAIN	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS UPDATE SEE FOOTNOTE	LAST PHOTO DATE	CHG SINCE LAST MONTHLY REPORT							
+++++ BX FARM STATUS +++++																									
101BX	NCPLX	ASMD LKR	IS/II		43	1	0	0.0	0.0	1	0	42	0	P	M	04/28/82		11/24/88							
102BX	NCPLX	ASMD LKR	IS/II		96	0	4	0.0	0.0	4	0	96	0	P	M	04/28/82		09/18/85							
103BX	NCPLX	SOUND	IS/II		66	4	0	0.0	0.0	4	0	62	0	P	F	11/29/83		10/31/86							
104BX	NCPLX	SOUND	IS/II		99	3	30	0.0	17.4	33	27	96	0	F	F	09/22/89	(1)	09/21/89							
105BX	NCPLX	SOUND	IS/II		51	5	6	0.0	15.0	11	4	43	3	F	S	09/03/86	(1)	10/23/86							
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	(2)	09/11/90							
108BX	NCPLX	ASMD LKR	IS/II		26	0	1	0.0	0.0	1	0	26	0	M	PS	07/31/79	(1)	10/23/86							
109BX	NCPLX	SOUND	IS/PI		193	0	13	0.0	8.2	13	8	193	0	FP	P	09/17/90	(2)	09/11/90							
110BX	NCPLX	ASMD LKR	IS/PI		199	1	15	0.0	0.0	16	10	189	9	MP	M	08/22/85	(1)	07/31/85							
111BX	NCPLX	ASMD LKR	/PI		230	19	50	0.0	0.0	69	46	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	(2)	09/11/90							
12 SINGLE-SHELL TANKS			TOTALS:		1559	50	155	0.0	67.8	205	135	1354	155												
+++++ BY FARM STATUS +++++																									
101BY	NCPLX	SOUND	IS/II		387	0	5	0.0	35.8	5	0	109	278	P	M	05/30/84		09/19/89							
102BY	NCPLX	SOUND	/PI		341	0	41	0.0	123.3	41	22	0	341	MP	M	08/30/91	(2)	09/11/87							
103BY	NCPLX	ASMD LKR	/PI		400	0	160	0.0	78.5	160	137	5	395	MP	M	04/03/90	(2)	09/07/89							
104BY	NCPLX	SOUND	IS/II		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	192	0.0	0.0	192	169	44	459	P	MP	04/28/82		07/11/86							
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/II		266	0	25	0.0	56.4	25	0	60	206	P	MP	04/28/82		10/15/86							

WHC-EP-0182-58

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
January 1993

TANK STATUS			LIQUID VOLUME										SOLIDS VOLUME			VOLUME DETERMINATION										CHG SINCE LAST MONTHLY REPORT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
			STABIL/ ISOLATION STATUS	WASTE (Kgal)	TOTAL (Kgal)	SUPER- NATANT (Kgal)	DRAIN- ABLE (Kgal)	INTER- STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	LIQUID REMAIN (Kgal)	PUMP- ABLE (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	SOLIDS VOLUME UPDATE	SEE FOOTNOTE	LAST DATE	PHOTO DATE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
WASTE	TANK	MATERIAL	INTEGRITY	STATUS	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
January 1993

TANK STATUS		LIQUID VOLUME										SOLIDS VOLUME				VOLUME DETERMINATION										CHG	
TANK	WASTE MATERIAL	TANK INTEGRITY	STATUS	STABIL/ ISOLATION	TOTAL WASTE		SUPER- NATANT	DRAIN- ABLE		PUMPED THIS MONTH	TOTAL PUMPED	DRAIN- ABLE		PUMP- ABLE	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS UPDATE SEE FOOTNOTE	SOLIDS SOURCE DATE	LAST PHOTO DATE	LAST MONTHLY REPORT					
					(Kgal)	(Kgal)		(Kgal)	(Kgal)			(Kgal)	(Kgal)										(Kgal)	(Kgal)			
201C	NCPLX	ASMD LKR	IS/11		2	0	0	0	0	0	0	0	0	0	2	0	P	MF	03/31/82			12/02/86					
202C	EMPTY	ASMD 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	ASMD 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	ASMD 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:			2146	169	143	0.0	36.8	312	254	1977	0														
***** S FARM STATUS *****																											
101S	NCPLX	SOUND	/PI		427	12	84	0.0	0.0	96					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	79				10	221	M	S	11/20/80			06/01/89					
104S	NCPLX	ASMD LKR	IS/11		294	1	28	0.0	0.0	29	23				293	0	M	M	12/20/84	(1)		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	185	0.0	99.8	185	162				32	511	P	FP	06/28/82			03/17/89					
107S	NCPLX	SOUND	/PI		368	6	45	0.0	0.0	51	44				293	69	F	PS	09/25/80			03/12/87					
108S	NCPLX	SOUND	/PI		604	0	127	0.0	151.6	127	105				4	600	P	MP	04/28/82			03/12/87					
109S	NCPLX	SOUND	/PI		568	0	141	0.0	111.0	141	119				13	555	F	PS	09/30/75			08/24/84					
110S	NCPLX	SOUND	/PI		390	0	110	0.0	185.9	110	103				131	259	F	PS	05/14/92			03/12/87					
111S	NCPLX	SOUND	/PI		596	10	195	0.0	3.3	205	134				139	447	P	FP	04/28/82			08/10/89					
112S	NCPLX	SOUND	/PI		637	0	134	0.0	145.1	134	112				6	631	P	FP	06/28/82			03/24/87					
12 SINGLE-SHELL TANKS		TOTALS:			5680	46	1399	0.0	791.0	1445	1192	1171	4463														

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
January 1993

TANK STATUS		LIQUID VOLUME										SOLIDS VOLUME		VOLUME DETERMINATION										CHG				
TANK	WASTE MATERIAL	TANK INTEGRITY	STATUS	STABIL/ ISOLATION	TOTAL WASTE (Kgal)	SUPER-NATANT		DRAIN-ABLE		PUMPED THIS MONTH	TOTAL PUMPED (Kgal)	DRAIN-ABLE		PUMP-ABLE	LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS		SOLIDS		SOLIDS UPDATE	SEE FOOTNOTE	LAST DATE	PHOTO DATE	MONTHLY REPORT		
						WASTE LIQUID (Kgal)	INTER-STIT. (Kgal)	ABLE	INTER-STIT. (Kgal)			ABLE	LIQUID REMAIN (Kgal)					VOLUME METHOD	VOLUME UPDATE									
+++++ SX FARM STATUS +++++																												
101SX	DC		/PI		456	1	145	0.0	0.0	0.0	146	124				112	343	P	FP	04/28/82					03/10/89			
102SX	DSSF		/PI		543	0	183	0.0	0.0	0.0	183	177				117	426	P	M	04/28/82					01/07/88			
103SX	NCPLX		/PI		652	1	232	0.0	0.0	0.0	233	211				115	536	F	S	07/15/91					12/17/87			
104SX	DSSF		/PI		614	0	201	0.0	0.0	113.2	201	195				136	478	F	S	07/07/89					09/08/88			
105SX	DSSF		/PI		683	0	261	0.0	0.0	0.0	261	238				73	610	P	F	04/28/82					06/15/88			
106SX	NCPLX		/PI		538	61	194	0.0	0.0	0.0	255	233				12	465	F	PS	10/28/80					06/01/89			
107SX	NCPLX		IS/II		104	0	5	0.0	0.0	0.0	5	0				104	0	P	M	04/28/82					03/06/87			
108SX	NCPLX		IS/II		115	0	6	0.0	0.0	0.0	6	0				115	0	P	M	04/28/82					03/06/87			
109SX	NCPLX		IS/II		250	0	10	0.0	0.0	0.0	10	0				250	0	P	M	04/28/82					05/21/86			
110SX	NCPLX		IS/II		62	0	0	0.0	0.0	0.0	0	0				62	0	M	PS	10/06/76					02/20/87			
111SX	NCPLX		IS/II		125	0	7	0.0	0.0	0.0	7	0				125	0	M	PS	05/31/74					03/10/87			
112SX	NCPLX		IS/II		92	0	3	0.0	0.0	0.0	3	0				92	0	P	M	04/28/82					03/10/87			
113SX	NCPLX		IS/II		26	0	0	0.0	0.0	0.0	0	0				26	0	P	M	04/28/82					03/18/88			
114SX	NCPLX		IS/II		181	0	14	0.0	0.0	0.0	14	0				181	0	P	M	04/28/82					02/26/87			
115SX	NCPLX		IS/II		12	0	0	0.0	0.0	0.0	0	0				12	0	P	M	04/28/82					03/31/88			
15 SINGLE-SHELL TANKS					TOTALS:	4453	63	1261	0.0	113.2	1324	1178				1532	2858											

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
January 1993

TANK STATUS			LIQUID VOLUME					SOLIDS VOLUME			VOLUME DETERMINATION									
TANK	WASTE MATERIAL	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (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)	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS UPDATE SOURCE	LAST PHOTO DATE	CHG SINCE LAST MONTHLY REPORT			
+++++ T FARM STATUS +++++																				
101T	NCLPX	ASMD LKR	/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	ASMD LKR	IS/II	27	4	0	0.0	0.0	4	0	23	0	F	FP	11/29/83	07/02/84	(1)			
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	ASMD LKR	IS/II	21	2	0	0.0	0.0	2	0	19	0	P	FP	04/28/82	06/29/89				
107T	NCPLX	ASMD LKR	/PI	180	9	13	0.0	0.0	22	16	171	0	P	FP	08/31/84	07/12/84				
108T	NCPLX	ASMD LKR	IS/II	44	0	0	0.0	0.0	0	0	44	0	P	M	04/28/82	07/17/84				
109T	NCPLX	ASMD LKR	IS/II	58	0	0	0.0	0.0	0	0	58	0	M	M	12/30/84	07/03/84	(1)			
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	ASMD 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
January 1993

TANK STATUS			LIQUID VOLUME				SOLIDS VOLUME				VOLUME DETERMINATION									
TANK	WASTE MATERIAL	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN- ABLE LIQUID		PUMP- ABLE LIQUID		SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	SOLIDS SOURCE SEE FOOTNOTE	LAST PHOTO DATE	CHG SINCE LAST MONTHLY REPORT
									ABLE	INTER- STIT. (Kgal)	ABLE	LIQUID REMAIN (Kgal)								
+++++ TX FARM STATUS +++++																				
101TX	NCLPX	SOUND	IS/11	87	3	2	0.0	0.0	5	0	84	0	F	P	02/02/84	(1)			10/24/85	
102TX	NCPLX	SOUND	IS/11	113	0	22	0.0	94.4	22	0	0	113	0	M	S	08/31/84			10/31/85	
103TX	NCPLX	SOUND	IS/11	157	0	15	0.0	68.3	15	0	157	0	F	S	08/14/80			10/31/85		
104TX	NCPLX	SOUND	IS/11	65	1	14	0.0	3.6	15	0	0	64	0	F	FP	04/06/84			10/16/84	
105TX	NCPLX	ASMD LKR	IS/11	609	0	20	0.0	121.5	20	0	0	609	0	M	PS	08/22/77			10/24/89	
106TX	NCPLX	SOUND	IS/11	453	0	10	0.0	134.6	10	0	0	453	0	M	S	08/29/77			10/31/85	
107TX	NCPLX	ASMD LKR	IS/11	36	1	1	0.0	0.0	2	0	0	35	0	FP	FP	01/20/84	(1)		10/31/85	
108TX	NCPLX	SOUND	IS/11	134	0	0	0.0	13.7	0	0	0	134	0	P	FP	05/30/83			09/12/89	
109TX	NCPLX	SOUND	IS/11	384	0	10	0.0	72.3	10	0	0	384	0	F	PS	05/30/83			10/24/89	
110TX	NCPLX	ASMD LKR	IS/11	462	0	15	0.0	115.1	15	0	0	462	0	M	PS	05/30/83			10/24/89	
111TX	NCPLX	SOUND	IS/11	370	0	9	0.0	98.4	9	0	0	370	0	M	PS	07/26/77			09/12/89	
112TX	NCPLX	SOUND	IS/11	649	0	24	0.0	94.0	24	0	0	649	0	P	PS	05/30/83			11/19/87	
113TX	NCPLX	ASMD LKR	IS/11	607	0	16	0.0	19.2	16	0	0	607	0	M	PS	05/30/83			04/11/83	
114TX	NCPLX	ASMD LKR	IS/11	535	0	15	0.0	104.3	15	0	0	535	0	M	PS	05/30/83			04/11/83	
115TX	NCPLX	ASMD LKR	IS/11	640	0	19	0.0	99.1	19	0	0	640	0	M	S	03/25/83			06/15/88	
116TX	NCPLX	ASMD LKR	IS/11	631	0	23	0.0	23.8	23	0	0	631	0	M	PS	03/31/72			10/17/89	
117TX	NCPLX	ASMD LKR	IS/11	626	0	8	0.0	54.3	8	0	0	626	0	M	PS	12/31/71			04/11/83	
118TX	NCPLX	SOUND	IS/11	347	0	27	0.0	89.1	27	0	0	347	0	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
January 1993

TANK STATUS		LIQUID VOLUME				SOLIDS VOLUME				VOLUME DETERMINATION									
		DRAIN-ABLE		PUMPED THIS MONTH		DRAIN-ABLE		PUMP-ABLE		LIQUIDS VOLUME		SOLIDS VOLUME		SOLIDS UPDATE		CHG SINCE LAST MONTHLY REPORT			
TANK	WASTE MATERIAL	NCPLX	ASMD LKR	IS/II	STABIL/ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-ABTANT LIQUID (Kgal)	INTER-STIT. (Kgal)	ABTANT LIQUID (Kgal)	THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	REMAIN (Kgal)	REMAIN (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	LIQUIDS VOLUME UPDATE	SOLIDS SOURCE SEE FOOTNOTE	LAST PHOTO DATE	MONTHLY REPORT
***** TY FARM STATUS *****																			
101TY	NCPLX	ASMD LKR	IS/II	118	0	0	0.0	8.2	0	0	0	0	0	P	F	04/28/82			08/22/89
102TY	NCPLX	SOUND	IS/II	64	0	14	0.0	6.6	14	0	0	0	0	P	FP	06/28/82			07/07/87
103TY	NCPLX	ASMD LKR	IS/II	162	0	5	0.0	11.5	5	0	0	0	0	P	FP	07/09/82			08/22/89
104TY	NCPLX	ASMD LKR	IS/II	46	3	12	0.0	0.0	15	0	0	0	0	P	FP	06/27/90	(1)		11/03/87
105TY	NCPLX	ASMD LKR	IS/II	231	0	0	0.0	3.6	0	0	0	0	0	P	M	04/28/82			09/07/89
106TY	NCPLX	ASMD LKR	IS/II	17	0	0	0.0	0.0	0	0	0	0	0	P	M	04/28/82			08/22/89
6 SINGLE-SHELL TANKS		TOTALS:		638	3	31	0.0	29.9	34	0	0	0	0			571	64		
***** U FARM STATUS *****																			
101U	NCPLX	ASMD LKR	IS/II	25	3	0	0.0	0.0	3	0	0	0	0	P	MP	04/28/82			06/19/79
102U	NCPLX	SOUND	/PI	374	18	126	0.0	0.0	144	122	43	313	0	P	MP	04/28/82			06/08/89
103U	NCPLX	SOUND	/PI	468	13	176	0.0	0.0	189	166	32	423	0	P	FP	04/28/82			09/13/88
104U	NCPLX	ASMD LKR	IS/II	122	0	7	0.0	0.0	7	0	0	0	0	P	MP	04/28/82			08/10/89
105U	NCPLX	SOUND	/PI	418	37	142	0.0	0.0	179	157	32	349	0	FM	PS	09/30/78			07/07/88
106U	NCPLX	SOUND	/PI	226	15	68	0.0	0.0	83	61	26	185	0	F	PS	12/30/83			07/07/88
107U	DSSF	SOUND	/PI	406	31	147	0.0	0.0	178	156	15	360	0	F	S	12/30/83			10/27/88
108U	NCPLX	SOUND	/PI	468	24	172	0.0	0.0	196	174	29	415	0	F	S	12/30/83			09/12/84
109U	NCPLX	SOUND	/PI	463	19	163	0.0	0.0	182	160	48	396	0	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	0	M	M	12/30/84	(1)		12/11/84
111U	DSSF	SOUND	/PI	329	0	122	0.0	0.0	122	99	26	303	0	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	0	P	MP	02/10/84	(1)		08/03/89

TABLE C-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
January 1993

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 (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	CHG SINCE LAST MONTHLY REPORT
201U	NCPLX	SOUND	IS/11	5	1	0	0.0	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	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	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	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	0.0	1306	1104	638	2744				
GRAND TOTAL				36239	604	6319				6918	5443	12466	23169				

NOTE: +/- 1K gal differences are the result of rounding

Total Waste is calculated as the sum of Sludge and Saltcake plus Supernate.

- (1) WHC-SD-RE-TI-178 SST STABILIZATION RECORD
(2) TANK FARMS COGNIZANT ENGINEER MONTHLY INPUT (Retained 10 yr in Surveillance & Data Acquisition office)

* The following changes were made by Single-Shell Tanks Engineering

Total pumped was changed for these tanks based on recalculation of flush additions
102-C - from 10.5 to 11.6 Kgallons
107-C - from 17.7 to 16.3 Kgallons
110-C - from 8.6 to 8.9 Kgallons

APPENDIX D
PERFORMANCE SUMMARY

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WASTE VOLUMES (Kgallons)

January 1993

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

* No water was added to either tank during January 1993

Footnotes: See Next Page

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

Footnotes:

INCREASES/DECREASES IN WASTE VOLUMES

- (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 in the tank causing the surface level and volume to increase. Slurry decrease results from the periodic release of gas in the waste.
- (4) Aging waste tanks
- (5) Unknown waste gains or losses may be the result of rounding calculations, clean water slowly leaking through a valve, changes in levels (expansion/constriction) because of 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) Includes Tank Farms miscellaneous flushes (flushes are used to "clean out" pipelines and reduce personnel exposure, reduce potential for waste incompatibility, prevent line plugging, and reduce waste content of potential spills or leaks), and saltwell liquid, which results from pumping of single-shell tanks to double-shell tanks.
- (7) Liquid level measurement instrument changes from the automatic FIC to manual tape (and vice versa) result in unusual gains or losses because the manual tape may rest on an uneven crust surface giving a different reading from that of the automatic FIC. These instrument changes are made when the automatic FIC is out of service and the reading from the manual tape is used for reporting purposes. The reported reading reverts back to the automatic FIC when it is repaired.
- (8) Water is periodically added to 105-C and 106-C to provide evaporative cooling. Losses due to evaporation are calculated assuming all losses are evaporative losses. Drywell monitoring for leak detection is done monthly on tank 105-C. Some drywells are monitored weekly and some are monitored every two weeks on tank 106-C. If there are any indications of a leak from these tanks, the assumption that all losses are due to evaporation will be reevaluated.

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

WASTE VOLUME REDUCTION

- (9) Currently inoperative. These evaporator systems (242-B and 242-T) were installed in 1952 in each of the two operating areas to remove water from the waste, and ran for approximately 4 yr after which both units were shut down. The 242-T Evaporator was reactivated in December 1965, and shut down again in April 1976.
- (10) Currently inoperative. These two in-tank solidification (ITS) units provided in-tank heating to promote in-tank boiling or evaporation. The 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.
- (11) Currently inoperative. The 242-S Evaporator-Crystallizer was started up November 1973, and shut down March 1980, when its processing campaign 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.
- (12) 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. The restart schedule specifies January 4, 1993, as the projected start-up date. This evaporator operates under a vacuum, employing evaporative concentration with subsequent crystallization and precipitation of salt crystals (forming saltcake).
- (13) Currently inoperative. Additional concentration of wastes was completed 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.
- (14) Waste generated for training and testing purposes prior to Evaporator restart

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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)
January 1993

TANK	FARMS	SUPERNATANT LIQUID	DRAINABLE INTERSTITIAL LIQUID	DRAINABLE LIQUID REMAINING	PUMPABLE LIQUID REMAINING
EAST					
A		8	439	442	390
AN		4540	37	4577	N/A
AP		7288	0	7288	N/A
AW		4327	159	4486	N/A
AX		3	370	373	304
AY		1511	2	1513	N/A
AZ		1753	4	1757	N/A
B		15	164	179	80
BX		50	155	205	135
BY		0	780	780	598
C		163	143	312	254
Total		19664	2253	21912	1761
WEST					
S		46	1399	1445	1192
SX		63	1261	1324	1178
SY		823	237	1060	N/A
T		74	189	263	208
TX		5	250	255	0
TY		3	31	34	0
U		168	1138	1306	1104
Total		1182	4505	5687	3682
TOTAL		20846	6758	27599	5443 (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 Kgal 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

(Kgallons)

January 1993

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	0.0	68.9
BY	0.0	0.0	1387.4 *
C	0.0	0.0	36.8 **
Total	0.0	0.0	1656.6
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	0.0	0.0	3796.4

NA = Not Applicable

* The total volume pumped was adjusted by the Single-Shell Tanks Engineer to account for the 14% miscalibration of the constant velocity transmitter and the amount of flush water used. DIL, DLR and PLR volumes were recalculated, based on the observed porosity in 102 and 109-BY. The total volume pumped was recalculated by the Single-Shell Tanks Engineer based on the surface level readings taken after shutdown of the saltwell pumps on January 28, 1992, in 102-C, 107-C and 110-C, and revised again based on recalculation of flush water additions on January 26, 1993. (The total for the tank farm remains the same, the amount pumped varied among the three tanks).

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APPENDIX G
CATCH TANKS AND SPECIAL
SURVEILLANCE FACILITIES

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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

January 1993

VOLUME
OF

CONTENTS MONITORED

REMARKS

FACILITY	LOCATION	PURPOSE (receives waste from:)	(Gallons)	BY	REMARKS
EAST AREA					
A-302-A	A FARM	151-A DB	510	CASS/FIC	PUMPED 08/11/92
311-ER	B PLANT	151-ER, 152-ER DB	4160	CASS/FIC	PUMPED 05/29/91
152-AX	AX FARM	152-AX DB	2078	MANUALLY	DIAL O/S, USING ZIP CORD, PUMPED 08/29/92
151-AZ	AZ FARM	152-AZ DB, AZ LOOP SEAL	2100	CASS/FIC	VOLUME CHANGES DAILY
154-AZ	AZ FARM	102-AZ HTG COIL STEAM CONDENSATE	0	CASS/MT	AUTOMATIC PUMP
244-BX-TK/SMP	BX FARM	DCRT - RECEIVES FROM SEVERAL FARMS	7784	MANUALLY	USING MANUAL TAPE FOR TANK
244-A-TK/SMP	AR VAULT	DCRT - RECEIVES FROM SEVERAL FARMS	3689	MCS	DIRECT GAL READING
204-AR	AY FARM	RR CARS DURING TRANSFER TO REC. TKS	250	DIP TUBE	ALARMS ON CASS
417-A	A FARM	702-A PROCESS CONDENSATE	36580	DIP TUBE	
Vent Station		CROSS COUNTRY TRANSFER LINE	535	MT	
WEST AREA					
TX-302-C	TX FARM	154-TX DB	3528	CASS/FIC	FIC REPAIRED
U-301-B	U FARM	151-U, 152-U, 153-U, 252-U DB	6331	CASS/FIC	
UX-302-A	U PLANT	154-UX DB	10205	CASS/MFIC	
241-S-304	S FARM	151-S DB	1339	FIC	OPERATIONAL 10/91, REPLACED S-302-A
244-S-TK/SMP	S FARM	DCRT - RECEIVES FROM SEVERAL FARMS	9006	MANUALLY	CWF
244-TX-TK/SMP	TX FARM	DCRT - RECEIVES FROM SEVERAL FARMS	20417	MANUALLY	CWF

Total active facilities

16

LEGEND: DB - Diversion Box
 DCRT - Double-Contained Receiver Tank
 FIC - Food Instrument Corporation
 MFIC - Manual FIC
 MT - Manual Tape
 O/S - Out of Service
 CWF - Weight Factor/SpG = Corrected Weight Factor
 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
January 1993

VOLUME
OF

FACILITY	LOCATION	RECEIVED WASTE FROM:	CONTENTS		MONITORED		REMARKS
			(Gallons)	BY	BY		
A-302-B	A FARM	152-A DB	3206	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
January 1993

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 PARTIALLY 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)
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
O/S - Out of Service
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

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TABLE H-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES (4) (Sheet 1 of 5)

Tank No.	Date Declared Confirmed or Assumed Leaker (3)		Volume (2) (Gallons)	Associated KiloCuries 137 cs (11)		Interim Stabilized Date	Leak Estimate	
							Updated	Reference
241-A-103	1987		5500 (10)			8/88	1987	(j)
241-A-104	1975		500 to 2500	0.8 to 1.8 (q)		9/78	1983	(a) (q)
241-A-105 (1)	1963		10000 to 277000	85 to 760 (b)		7/79	1991	(b), (c)
241-AX-102	1988		3000 (10)			9/88	1989	(h)
241-AX-104	1977		-- (8)			8/81	1989	(g)
241-B-101	1974		-- (8)			3/81	1989	(g)
241-B-103	1978		-- (8)			2/85	1989	(g)
241-B-105	1978		-- (8)			12/84	1989	(g)
241-B-107	1980		8000 (10)			3/85	1986	(d), (f)
241-B-110	1981		10000 (10)			12/84	1986	(d)
241-B-111	1978		-- (8)			6/85	1989	(g)
241-B-112	1978		2000			5/85	1989	(g)
241-B-201	1980		1200 (10)			8/81	1984	(e), (f)
241-B-203	1983		300 (10)			6/84	1986	(d)
241-B-204	1984		400 (10)			6/84	1989	(g)
241-BX-101	1972		-- (8)			9/78	1989	(g)
241-BX-102	1971		7000 (10)	50 (l)		11/78	1986	(d)
241-BX-108	1974		2500	0.5 (l)		7/79	1986	(d)
241-BX-110	1976		-- (8)			8/85	1989	(g)
241-BX-111 (7)	1984		-- (8)			N/A	1989	(g)
241-BY-103	1973		<5000			N/A	1983	(a)
241-BY-105	1984		-- (8)			N/A	1989	(g)
241-BY-106	1984		-- (8)			N/A	1989	(g)
241-BY-107	1984		15100 (10)			7/79	1989	(g)
241-BY-108	1972		<5000			2/85	1983	(a)
241-C-101	1980		20000 (10)			11/83	1986	(d)
241-C-110	1984		2000			N/A	1989	(g)
241-C-111	1968		5500 (10)			3/84	1989	(g)
241-C-201 (5)	1988		550			3/82	1987	(i)
241-C-202 (5)	1988		450			8/81	1987	(i)
241-C-203	1984		400 (10)			3/82	1986	(d)
241-C-204 (5)	1988		350			9/82	1987	(i)
241-S-104	1968		24000 (10)			12/84	1989	(g)
241-SX-104	1988		6000 (10)			N/A	1988	(k)
241-SX-107	1964		<5000			10/79	1983	(a)
241-SX-108 (6)	1962		2400 to 35000	17 to 140 (m) (q)		8/79	1991	(m) (q)
241-SX-109 (6)	1965		<10000	<40 (n)		5/81	1992	(n)
241-SX-110	1976		5500 (10)			8/79	1989	(g)
241-SX-111	1974		500 to 2000	0.6 to 2.4 (l) (q)		7/79	1986	(d) (q)
241-SX-112	1969		30000	40 (l)		7/79	1986	(d)
241-SX-113	1962		15000	8 (l)		11/78	1986	(d)
241-SX-114	1972		-- (8)			7/79	1989	(g)
241-SX-115	1965		50000	21 (o)		9/78	1992	(o)
241-T-101	1992		7500 (10)			N/A	1992	(p)
241-T-103	1974		<1000 (10)			11/83	1989	(g)
241-T-106	1973		115000 (10)	40 (l)		8/81	1986	(d)
241-T-107	1984		-- (8)			N/A	1989	(g)
241-T-108	1974		<1000 (10)			11/78	1980	(i)
241-T-109	1974		<1000 (10)			12/84	1989	(g)
241-T-111 (5)	1984		<1000 (10)			N/A	1980	(i)
241-TX-105 (7)	1977		-- (8)			9/83	1989	(g)
241-TX-107 (6)	1984		2500			10/79	1986	(d)
241-TX-110	1977		-- (8)			4/83	1989	(g)
241-TX-113	1974		-- (8)			4/83	1989	(g)
241-TX-114	1974		-- (8)			4/83	1989	(g)
241-TX-115	1977		-- (8)			9/83	1989	(g)
241-TX-116	1977		-- (8)			4/83	1989	(g)
241-TX-117	1977		-- (8)			3/83	1989	(g)
241-TY-101	1973		<1000 (10)			8/83	1980	(f)
241-TY-103	1973		3000	0.7 (l)		2/83	1986	(d)
241-TY-104	1981		1400 (10)			1/83	1986	(d)
241-TY-105	1960		35000	4 (l)		2/83	1986	(d)
241-TY-106	1959		20000	2 (l)		11/78	1986	(d)
241-U-101	1959		30000	20 (l)		9/79	1986	(d)
241-U-104 (7)	1961		55000	0.09 (l)		10/78	1986	(d)
241-U-110	1975		5000 to 8100 (10)	0.05 (q)		12/84	1986	(d) (q)
241-U-112 (7)	1980		8500 (10)			9/78	1986	(d)
67 Tanks			<600,000 - 900,000 (9)					

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

FOOTNOTES: SEE NEXT PAGE

TABLE H-1. Single-Shell Tank Leak Volume Estimates
(Sheet 2 of 5)

Footnotes:

- (1) Current estimates (see reference b) are that 610 Kgal of cooling water was added to Tank 241-A-105 from November 1970 to December 1978 to aid in evaporative cooling. In accordance with *Dangerous Waste Regulations* (Washington Administrative Code 173-303-070 (2)(a)(ii), as amended, Washington State Department of Ecology, 1990, Olympia, Washington), any of this cooling water that has been added and subsequently leaked from the tank must be classified as a waste and should be included in the total leak volume. In August 1991, the leak volume estimate for this tank was updated and moved into compliance with the WAC regulations. Previous estimates excluded the cooling water leaks from the total leak volume estimates because the waste content (concentration) in the cooling water which leaked should be much less than the original liquid waste in the tank (the sludge is relatively insoluble). The total leak volume estimate in this report (10 Kgal to 277 Kgal) is based on the following (see References).
1. Reference (b) contains an estimate of 5 Kgal to 15 Kgal for the initial leak prior to August 1968.
 2. Reference (b) contains an estimate of 5 Kgal to 30 Kgal for the leak while the tank was being sluiced from August 1968 to November 1970.
 3. Reference (b) contains an estimate of 610 Kgal of cooling water added to the tank from November 1970 to December 1978 but it was estimated that the leakage was small during this period. This reference contains the statement "Sufficient heat was generated in the tank to evaporate most, and perhaps nearly all, of this water." This results in a low estimate of zero gallons leakage from November 1970 to December 1978.
 4. Reference (c) contains an estimate that 378 to 410 Kgal evaporated out of the tank from November 1970 to December 1978. Subtracting the minimum evaporation estimate from the cooling water added estimate provides a range from 0 to 232 Kgal of cooling water leakage from November 1970 to December 1978.

	<u>Low Estimate</u>	<u>High Estimate</u>
Prior to August 1968	5,000	15,000
August 1968 to November 1970	5,000	30,000
November 1970 to December 1978	0	232,000
Totals	10,000	277,000

- (2) These leak volume estimates 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.

TABLE H-1. Single-Shell Tank Leak Volume Estimates
(Sheet 3 of 5)

- (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," "confirmed leaker," "declared leaker," "borderline," and "dormant," were merged into one category now reported as "assumed leaker." See reference (f) for explanation of when, how long, and how fast some of the tanks leaked.
- (4) There is an effort currently in progress to reevaluate these leak volume estimates. During the FY 1993 funding reviews, this reevaluation of leak volumes was given a priority which resulted in this activity no longer being funded. The priority versus funding will be reevaluated prior to FY 1994.
- (5) The leak volume estimate date for these tanks is before the "declared leaker" date because the tank was in a "suspected leaker" or "questionable integrity" status; however, a leak volume had been estimated prior to the tank being reclassified.
- (6) The increasing radiation levels in drywells and laterals associated with these three tanks could be indicative of a continuing leak or movement of existing radionuclides in the soil. There is no conclusive way to confirm these observations.
- (7) These four tanks also show slight indications of continuing leaks or movement of radionuclides in the soil.
- (8) Methods were used to estimate the leak volumes from these 19 tanks based on the assumption that their cumulative leakage is approximately the same as for 18 of the 24 tanks identified in footnote (10). For more details see reference (g). The total leak volume estimate for these tanks is 150 Kgal (rounded to the nearest 10 Kgal), for an average of approximately 8 Kgal for each of the 19 tanks.
- (9) The total has been rounded to the nearest 50 Kgal. Upperbound values were used in many cases in developing these estimates. It is likely that some of these tanks have not actually leaked.
- (10) Leak volume estimate is based solely on observed liquid level decreases in these tanks. This is considered to be the most accurate method for estimating leak volumes.
- (11) The curie content listed is as listed in the reference document and is not decayed to a consistent date; therefore, a cumulative total is inappropriate.

TABLE H-1. Single-Shell Tank Leak Volume Estimates.
(Sheet 4 of 5)

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- (a) Murthy, K.S., et al, June 1983, *Assessment of Single-Shell Tank Residual Liquid Issues at Hanford Site, Washington*, PNL-4688, Pacific Northwest Laboratory, Richland, Washington.
- (b) WHC, 1991a, *Tank 241-A-105 Leak Assessment*, WHC-MR-0264, Westinghouse Hanford Company, Richland, Washington.
- (c) WHC, 1991b, *Tank 241-A-105 Evaporation Estimate 1970 Through 1978*, WHC-EP-0410, Westinghouse Hanford Company, Richland, Washington.
- (d) Smith, D. A., January 1986, *Single-Shell Tank Isolation Safety Analysis Report*, SD-WM-SAR-006, Rev. 1, Westinghouse Hanford Company, Richland, Washington.
- (e) McCann, D. C., and T. S. Vail, September 1984, *Waste Status Summary*, RHO-RE-SR-14, Rockwell Hanford Operations, Richland, Washington.
- (f) Catlin, R. J., March 1980, *Assessment of the Surveillance Program of the High-Level Waste Storage Tanks at Hanford*, Hanford Engineering Development Laboratory, Richland, Washington.
- (g) Baumhardt, R. J., May 15, 1989, Letter to R. E. Gerton, U.S. Department of Energy-Richland Operations Office, *Single-Shell Tank Leak Volumes*, Westinghouse Hanford Company, Richland, Washington.
- (h) WHC, 1990a, *Occurrence Report "Surface Level Measurement Decrease in Single-Shell Tank 241-AX-102,"* WHC-UO-89-023-TF-05, Westinghouse Hanford Company, Richland, Washington.
- (i) Groth, D. R., July 1, 1987, Internal Memorandum to R. J. Baumhardt, *Liquid Level Losses in Tanks 241-C-201, -202 and -204*, 65950-87-517, Westinghouse Hanford Company, Richland, Washington.
- (j) Groth, D. R. and G. C. Owens, May 15, 1987, Internal Memorandum to J. H. Roecker, *Tank 103-A Integrity Evaluation*, Westinghouse Hanford Company, Richland, Washington.
- (k) Campbell, G. D., July 8, 1988, Internal Memorandum to R. K. Welty, *Engineering Investigation: Interstitial Liquid Level Decrease in Tank 241-SX-104*, 13331-88-416, Westinghouse Hanford Company, Richland, Washington.
- (l) ERDA, 1975, *Final Environmental Statement Waste Management Operations, Hanford Reservation, Richland, Washington*, ERDA-1538, 2 vols., U.S. Energy Research and Development Administration, Washington, D.C.
- (m) WHC, 1992a, *Tank 241-SX-108 Leak Assessment*, WHC-MR-0300, Westinghouse Hanford Company, Richland, Washington.
- (n) WHC, 1992b, *Tank 241-SX-109 Leak Assessment*, WHC-MR-0301, Westinghouse Hanford Company, Richland, Washington.

TABLE H-1. Single-Shell Tank Leak Volume Estimates.
(Sheet 5 of 5)

- (o) WHC, 1992c, *Tank 241-SX-115 Leak Assessment*, WHC-MR-0302, Westinghouse Hanford Company, Richland, Washington.
- (p) WHC, 1992d, *Occurrence Report*, "Apparent Decrease in Liquid Level in Single Shell Underground Storage Tank 241-T-101, Leak Suspected; Investigation Continuing," RL-WHC-TANKFARM-1992-0073, Westinghouse Hanford Company, Richland, Washington.
- (q) WHC-1990b, *A History of the 200 Area Tank Farms*, WHC-MR-0132, Westinghouse Hanford Company, Richland, Washington.

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L. K. Holton Jr.	P7-43
J. Janata	K2-12
B. M. Johnson	K1-78
E. O. Jones	P8-38

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L. G. Morgan	P7-35
B. E. Opitz	K6-81
M. S. Peffers	K7-94
W. G. Richmond	P7-41
R. D. Scheele	P7-25
P. A. Scott	P7-19
J. C. Spanner	K2-05
D. Strachan	K2-38
K. L. Steinmaus	K6-84
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A. T. Alstad	R1-49
R. P. Anantatmula	R2-11
J. D. Anderson	N3-11
J. N. Appel	S4-58
I. J. Austin	T4-01
H. Babad	R2-78
A. D. Bates	T6-07
P. K. Bhatia	S4-58
T. J. Bander	H0-33
L. L. Barry	R1-67
G. D. Bazinet	L4-71
D. L. Becker	H5-57
D. B. Bechtold	T6-09
K. H. Bergsman	L6-24
M. V. Berriochoa	B3-30
D. L. Bjorklund	S6-01
J. E. Bjorklund	R1-62
R. J. Blanchard	R1-17
D. C. Board	S1-57
K. D. Boomer	H5-49
G. L. Borsheim	R2-11
V. C. Boyles	R1-49
H. R. Brager	L5-65
D. R. Bratzel	L5-31
R. G. Brown	R2-14
J. G. Burk, Jr.	B3-25
J. H. Bussell	L7-06
J. A. Caggiano Jr	H6-06
K. G. Carothers	R1-51
J. W. Carey	S0-01
R. J. Cash	R2-32
G. Christensen	H4-21
J. C. Conner	H4-61
F. M. Coony	H6-07
W. L. Cowley	H4-61
N. R. Croskrey	R1-30
G. M. Crummel	R1-51
J. M. Cruse	L5-63
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L. T. Cunningham	T5-55
J. I. Dearing	H5-72
C. DeFigh-Price	R2-31
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D. R. Dickinson	L5-31
E. C. Ladd	R1-19
R. A. Dodd	R1-51
M. R. Duncan	L6-10
G. L. Dunford	R1-51
W. S. Dunnivant	R2-88
J. A. Eacker	R2-50
D. R. Ellingson	H5-37
M. F. Erhart	R1-51
S. D. Estey	R2-11
W. G. Farley	H4-62
K. O. Fein	H4-63
R. A. Flores	S0-12
L. A. Fort	S4-57
K. D. Fowler	R2-11
G. L. Fox, Jr.	L5-01
G. T. Frater	R1-51
J. R. Freeman-Pollard	H6-03
J. C. Fulton	R2-31
K. A. Gasper	R2-08
G. J. Gauck	R1-51
R. L. Gilchrist	L5-63
D. A. Gilles	S2-14
S. D. Godfrey	R1-51
D. J. Green	H5-53
P. R. Golberg	B4-08
J. M. Grigsby	H4-62
V. W. Hall	B1-59
C. S. Haller	G6-04
D. G. Hamrick	R1-51
K. L. Hampsten	L4-71
B. M. Hanlon (30)	R1-80
J. M. Hanson	B1-58
H. D. Harmon	R2-52
J. P. Harris III	S4-55
J. M. Henderson	S4-55
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N. A. Hertelendy	H5-09
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J. E. Hysjulien	S0-09
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G. D. Johnson	R2-78
J. L. Juette	G6-56
L. J. Julyk	H5-56
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N. W. Kirch	R2-11
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E. M. Koellermeier	R4-40
G. M. Koreski	R1-51
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M. Kummerer	H4-62
M. J. Kupfer	H5-49
D. R. Lance	S0-09
J. E. Langdon	S2-24
D. L. Lenseigne	R2-75
D. C. Lini	H5-49
P. J. Mackey	B3-15
G. T. MacLean	S4-58
M. K. Mahaffey	L4-73
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V. D. Maupin	R1-51
T. B. McCall	H0-33
J. D. McCormack	L5-31
K. S. McCullough	H5-34
M. E. McDonald	X3-68
M. A. McLaughlin	H5-09
T. E. Mensinger	T3-10
N. J. Milliken	H4-62
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G. J. Miskho	R2-50
J. R. Mobley	R2-18
K. L. Morris	H5-09
J. P. Mullally	S4-57
L. D. Muhlestein	N1-28
A. F. Noonan	R2-12
T. W. Oden	R2-18
P. C. Ohl	H5-09
D. B. Pabst	B2-35
R. B. Pan	H5-53
I. G. Papp	R3-45
G. L. Parsons	S4-57
M. A. Payne	R2-50
T. B. Powers	H4-65
R. K. P'Pool	T1-30
J. G. Propson	R2-18
T. E. Rainey	R1-49
R. E. Raymond (2)	R1-80
R. W. Reed	R1-51
I. E. Reep	R2-08
M. A. Rezvani	H5-55
D. Richardson	R2-31
J. H. Roecker	B1-59
L. Ruffin	R1-51
J. A. Ryan	H5-55

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F. A. Schmorde	B2-18
J. S. Schofield	R1-51
C. P. Schroeder	L7-06
D. D. Scott	L6-10
K. V. Scott	H5-52
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J. E. Shapley	N1-83
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S. G. Spencer	R1-30
S. M. Stahl	H4-61
E. G. Stephan	A3-74
R. R. Stickney	R1-49
T. L. Strathman	S0-14
J. N. Strobe	R1-51
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M. J. Sutey	R1-49
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S. R. Tifft	H6-26
J. A. Tilden (2)	L6-12
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