AIM

Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202

Centimeter

Inches

MANUFACTURED TO AIM STANDARDS
BY APPLIED IMAGE, INC.

1 of 2

Tank Farm Surveillance and Waste Status Summary Report for May 1994

B. M. Hanlon

August 1994

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

**Westinghouse
Hanford Company**

P.O. Box 1970
Richland, Washington

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

Approved for Public Release

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

84D

APPROVAL

Prepared by: B. M. Hanlon 6-30-94
B. M. Hanlon Date

Approved by: R. E. Raymond 7/6/94
R. E. Raymond Date
Manager, Waste Tank
Plant Engineering

RELEASE AUTHORIZATION

Document Number: WHC-EP-0182-74

Document Title: TANK FARMS SURVEILLANCE AND WASTE STATUS SUMMARY
REPORT FOR MAY 1994

Release Date: 8/18/94

* * * * *

**This document was reviewed following the
procedures described in WHC-CM-3-4 and is:**

APPROVED FOR PUBLIC RELEASE

* * * * *

WHC Information Release Administration Specialist:

Kara Broz
(Signature)

8/18/94
(Date)

**TANK FARM SURVEILLANCE AND WASTE STATUS
SUMMARY REPORT FOR MAY 1994**

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 58.0.2A, 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.

This page intentionally left blank.

CONTENTS

SUMMARY	1
I. WASTE TANK STATUS	1
II. WASTE TANK INVESTIGATIONS	2
III. SURVEILLANCE AND WASTE TANK STATUS HIGHLIGHTS	7

Appendixes:

A. WASTE TANK SURVEILLANCE MONITORING TABLES	A-1
<u>Tables:</u>	
1 Watch List Tanks	A-3
2 Tanks Containing >1000 Gram Mole of Ferrocyanide	A-5
3 Tanks With Potential for Hydrogen or Flammable Gas Accumulation above the Flammability Limit	A-7
4 Single-Shell Tanks Containing Concentrations of Organic Salts	A-8
5 Single-Shell Tanks With High Heat Loads (>40,000 Btu/h)	A-10
6 Non-Watch List Low Heat Load Tanks (<40,000 Btu/h)	A-12
7 Single-Shell Tanks Monitoring Compliance Status	A-15
8 Double-Shell Tanks Monitoring Compliance Status	A-20
9 Automatic Food Instrument Corporation (FIC) Gauges Out of Service	A-22
<u>Figures:</u>	
1 Discrepancy Report Status	A-23
2 Discrepancy Report Cumulative Total	A-24
3 Discrepancy Report Status by Age	A-25
B. DOUBLE-SHELL TANK WASTE TYPE AND SPACE ALLOCATION	B-1
<u>Tables:</u>	
1 Double-Shell Tank Waste Type and Space Allocation	B-3
2 Double-Shell Tank Waste Inventory	B-10
<u>Figures:</u>	
1 Total Double-Shell Tank Inventory and Changes.	B-4
2 Usable Tank Space Inventory and Changes	B-5
3 Contributions to Priority Space	B-6
4 Comparison of Facility Generations to Management Limit	B-7
5 Comparison of Monthly Average Waste Generation to Management Limit by Facility	B-8
6 Overall Waste Flow - Hanford Tank Waste Disposal	B-9
C. TANK AND EQUIPMENT CODE AND STATUS DEFINITIONS	C-1
1 Tank and Equipment Code/Status Definitions	C-3
D. TANK FARM CONFIGURATION, STATUS AND FACILITY CHARTS	D-1
<u>Figures:</u>	
1 High-Level Waste Tank Configuration	D-3
2 Double-Shell Tank Instrumentation Configuration	D-4
3 Single-Shell Tank Instrumentation Configuration	D-5
4 Double-Shell Tank Status	D-7/8
5 200 E Single-Shell Tank Status	D-9/10
6 200 W Single-Shell Tank Status	D-11/12
7 Hanford Tank Farms Facilities Chart: 200-East Area	D-13/14
8 Hanford Tank Farms Facilities Chart: 200-West Area	D-15/16

This page intentionally left blank

E.	MONTHLY SUMMARY	E-1
	<u>Tables:</u>	
1	Monthly Summary	E-3
2	Tank Use Summary	E-4
3	Inventory Summary by Tank Farm	E-5
4	Inventory and Status by Tank - Double-Shell Tanks	E-6
5	Inventory and Status by Tank - Single-Shell Tanks	E-9
F.	PERFORMANCE SUMMARY	F-1
	<u>Table:</u>	
1	Performance Summary	F-3
G.	PUMPING RECORD/LIQUID STATUS AND PUMPABLE LIQUID REMAINING IN TANKS . .	G-1
	<u>Tables:</u>	
1	Pumping Record	G-3
2	Liquid Status and Pumpable Liquid Remaining in Tanks	G-4
H.	CATCH TANKS AND SPECIAL SURVEILLANCE FACILITIES	H-1
	<u>Tables:</u>	
1	East and West Area Catch Tanks and Special Surveillance Facilities (Active)	H-3
2	East Area Catch Tanks and Special Surveillance Facilities (Inactive)	H-4
3	West Area Catch Tanks and Special Surveillance Facilities (Inactive)	H-5
I.	LEAK VOLUME ESTIMATES	I-1
	<u>Table:</u>	
1	Single-Shell Tank Leak Volume Estimates	I-3
J.	INTERIM STABILIZATION STATUS	J-1
	<u>Table:</u>	
1	Single-Shell Tanks Interim Stabilization Status	J-3
	<u>Figure:</u>	
1	Tri-Party Agreement Single-Shell Tank Stabilization Schedule . . .	J-5
K.	TANK FARM OPERATIONS SAMPLING SCHEDULE STATUS	K-1
	<u>Table:</u>	
1	Tank Farm Operations Sampling Schedule Status	K-3

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

TANK FARM SURVEILLANCE AND WASTE STATUS SUMMARY REPORT FOR MAY 1994 SUMMARY

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

I. WASTE 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	7/93
Sound Tanks	28 double-shell 82 single-shell	1986 7/93
Interim Stabilized Tanks ^{b,d}	106 single-shell	04/93
Not Interim Stabilized ^f	43 single-shell	04/93
Intrusion Prevention Completed ^e	98 single-shell	09/91
Watch List Tanks ^g	50 single-shell 6 double-shell	5/94 ^h 6/93
Total	56 tanks	

^a Although all 149 single-shell tanks were removed from service (i.e., no longer authorized to receive waste) as of November 21, 1980, the category of "Out-of-Service" was not established until July 1988.

^b Of the 106 tanks classified as interim stabilized, 59 are listed as assumed leakers. The total of 106 interim stabilized tanks includes six tanks that do not meet current established supernatant and interstitial liquid stabilization criteria: B-104, B-110, B-111, T-102, T-112, and U-110. (These six tanks did meet the criteria in existence when they were declared interim stabilized). B-110, B-111, and U-110 are assumed leakers but surveillance data do not show an indication of a continuing leak.

^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 50 single-shell tanks on Watch Lists, 19 have been Interim Stabilized.

^e Of the 50 single-shell tanks on Watch Lists, 28 have completed Intrusion Prevention (this category replaced Interim Isolation). See Appendix C, Tank and Equipment Codes and Status Definitions, for "Intrusion Prevention" definition.

^f Eight of the tanks are both assumed leakers and not Interim Stabilized. See Appendix I, Leak Volume Estimates, for more details. Tank SX-102 was declared an assumed leaker in May, and reclassified as Sound in July, 1993. See "Waste Tank Investigations" section of the July 1993 report for more details.

^g See Tables A-1 through A-5 for more information on Watch List Tanks. Ten tanks (A-101, S-102, S-111, SX-103, SX-106, TX-118, TY-104, U-103, U-105, and U-107) are currently on more than one Watch List.

^h Dates for the Watch List tanks are "officially added to the Watch List" dates. See Table A-1, Watch List Tanks, for further information.

II. WASTE TANK INVESTIGATIONS

This section includes all single-shell tanks or catch tanks which are showing surface level or interstitial liquid level (ILL) decreases, or drywell/lateral radiation level increases in excess of established criteria.

There were no tanks under investigation for ILL decreases or drywell/lateral radiation level increases which exceeded the criteria in May 1994.

A. Assumed Leakers or Assumed Re-leakers: (See Appendix C for definition of "Re-leaker")

This section includes all single- or double-shell tanks or catch tanks for which an off-normal or unusual occurrence report has been issued for assumed leaks or re-leaks. Tanks/catch tanks will remain on this list until either a) completion of Interim Stabilization, or b) the updated occurrence report indicates that the tank/catch tank is not an assumed leaker.

Tank 241-BX-111. This tank was declared an assumed re-leaker on April 30, 1993. Pumping of the tank commenced on October 22, 1993. Pumping was completed as of April 30, 1994. Flushing activities were done in May, to confirm the pumping completion. 3.3 Kgal were pumped, 110.4 Kgal pumped as of May 31, 1994. (See Table E-5 footnotes for further information).

Tank 241-T-111. The surface level has shown a steady decrease since the automatic FIC was repaired in August 1993. The surface level measurement after the FIC repair was 161.70 inches and continued to decrease to 161.10 inches by January 31, 1994. This is a 1.00-in decrease from the reference baseline of 162.10 inches. Off-Normal Occurrence Report RL-WMC-TANKFARM-1994-0009 was issued on February 24, 1994. This tank was declared an assumed re-leaker on February 25, 1994.

This tank had previously been Partial Interim Stabilized. Tank T-111 was added to the Organics Watch List on February 28, 1994. In-tank photos were taken April 13, 1994. Review of these photos resulted in some changes in the tank's inventory. (See Table E-5 footnotes for April 1994).

Pumping began May 17, 1994, completing a TPA milestone for the start of emergency pumping before May 30, 1994. Total pumped was 3.1 Kgal as of May 30, 1994. (See Table E-5 footnotes for further information).

B. Tanks with increases indicating possible intrusions:

This section includes all single-shell tanks for which the surveillance data show that the surface level or ILL has met or exceeded the increase criteria, or are still being investigated.

244-AR Tanks and Sumps: Currently, all ventilation systems at 244-AR are shut down. Based on the weight factors for the sumps and tanks, Tank 001 contains 2300 gallons, Tank 002 contains 8100 gallons (some unknown amount of sludge), Tank 003 contains 2100 gallons, and Tank 004 contains 500 gallons. Sump 003 increased to approximately 250 gallons of intrusion water (rain) over the past three months because of rainfall. Currently, Sump 003 contains approximately 450 gallons of water.

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), verifying the increase and that the criteria had been exceeded. Occurrence Report RL-WHC-TANKFARM-1993-0024 was issued February 13, 1993. The surface level remained stable at 145.75 (+0.25 inches) during May, 1994. The monitoring frequency has been increased from quarterly to daily. This tank is Sound, Interim Stabilized, and Intrusion Prevention completed.

Resolution status: A photo package was initiated on May 11, 1993, to investigate the possibility of an intrusion. Review of previous photos was inconclusive. New photos are required to determine the actual supernatant increase, if any. A temporary baseline was established at 145.25 inches, until the new photos are available.

Tank 241-BX-101. On September 2, 1993, the surface level increased from 10.00 to 12.00 inches. The surface level was 11.75 inches on May 31, 1994. In-tank photographs show the manual tape donut plummet contacting liquid in a shallow pool. This tank is an Assumed Leaker, Interim Stabilized, and Intrusion Prevention completed.

Resolution Status: Comparison of October 1986 photos with November 1988 photos shows evidence of an ongoing intrusion. A work package was initiated October 14, 1993, to obtain in-tank photographs which will be used to inspect the area under the plummet and investigate the possible intrusion. At current manpower levels, photos in this tank should be available by October 1994.

Tank 241-BX-103. This tank has shown an erratic increase in surface level measurements since January 6, 1986. On January 18, 1993, the surface level measurement in 103-BX exceeded the 0.50-inch increase criteria from the reference baseline of 19.50 inches, and was verified on January 20, 1993. Discrepancy Report S&DA 93-522 was issued January 21, 1993. Occurrence Report RL-WHC-TANKFARM-1993-0036 was issued March 25, 1993. The surface level measurement is currently 20.50 inches. The FIC plummet is contacting liquid as indicated by in-tank photographs taken October 31, 1986. This tank is Sound, Interim Stabilized, and Intrusion Prevention completed.

Resolution status: The current level is greater than that prior to stabilization in November 1983. The tank was previously determined to have experienced an intrusion from 1977 to March 1983 (prior to stabilization). Subsequent isolation was expected to halt the intrusion, however, the intrusion is apparently ongoing. A work package was initiated on May 11, 1993, to obtain in-tank photos. The photos will be used to assess the current stabilization status of the tank. A visual survey of the area was performed to determine possible paths for precipitation to enter the tank. The weather covering on the pits and risers was found in place and undamaged. The existing grade is level and revealed no obvious draining problems. Design/isolation drawing review revealed that nozzles, floor drains and some transfer lines entering the heel pit have been left open. Neighboring tank BX-101 was investigated in 1987 and recommendations were provided to halt an ongoing intrusion. Similar measures may halt the BX-103 intrusion. In-tank

photos will provide verification of the intrusion. Determination of the need to provide additional isolation measures will follow. At current manpower levels, photos in this tank should be available by November 1994.

Tank 241-BY-105. Although the surface level and ILL are within the criteria limits, the data indicates unusual behavior trends that merit continued observation. The monitoring frequency has been increased from quarterly to weekly. This tank is on the ferrocyanide Watch List, an Assumed Leaker, and not yet Interim Stabilized.

Resolution Status: The surface level and ILL are displaying behavior similar to TX-113 and TX-115. The ILL is showing an increase, while the surface level measurement is showing a decrease. This phenomena could be due to either solids dissolution or formation of a depression in the solids beneath the plummet in conjunction with an intrusion. Review of previous photos indicates the liquid volume is increasing, although it cannot be verified that the solids level is decreasing. A photo package was initiated to investigate the possibility of intrusion, or solids dissolution. At current manpower levels, photos in this tank should be available by April 1995.

Tank 241-S-102. The FIC was out of service from November 16, 1993, to January 14, 1994. The surface level reading after the FIC was repaired on January 14 was 207.00 inches. This level exceeded the 3.00-inch increase criteria from the reference baseline of 202.30 inches. Reference Discrepancy Report S&DA-904-672. This tank has a history of erratic increases/decreases. In-tank photographs taken March 18, 1988, show the FIC plummet contacting an uneven, dry surface. A verification of the reference elevation was completed February 27, 1994. The FIC counter was found to be out of calibration by +2.60 inches. On May 27, 1994, the baseline was adjusted to 205.80 inches. The surface level reading on May 31, 1994, was 206.00 inches. The LOW ILL was within the 0.10-foot tolerance when last scanned on May 23, 1994. This tank will be removed from the report unless further activities warrant its inclusion.

Resolution status: Photos taken in March 1988, show the surface consists of very uneven solids with scattered liquid pools. Photos taken in 1983 compared with the 1988 photos indicate the waste is shifting, possibly causing a change in surface level under the plummet. Reevaluation of the ILL using the "new method" shows an increasing trend of about 0.4 inches per year. Occurrence Report 77-191 attributed previous intrusions into the tank to drainage from the SA and SB valve pits. Because neither the tank nor the pits are interim isolated, the intrusion is likely ongoing. A photo package was initiated on May 17, 1993, to confirm the ongoing intrusion. This tank is on the hydrogen and organic salts Watch List. A safety basis has been established for performing in-tank photography in tanks of this nature. In-tank photos may be performed provided continuous sampling is done through a different tank riser. At current manpower levels, photos in this tank will be available by December 1996.

Tank 241-TX-111. Although the surface level and ILL measurements do not exceed the criteria, the data indicates unusual behavior trends that merit continued observation. This tank is Sound, Interim Stabilized, and Intrusion Prevention completed.

Resolution Status: The ILL trend was re-analyzed for this tank using the new "count rate" method. A steady, significant increase of 1.32 inch/year is evident. Surface level data is showing a decrease. Photos show a dry surface. The surface level decrease is expected to be caused by crumbling of the waste beneath the plummet. Overall, the waste level behavior of the tank is similar to that of TX-113 and 115. A photo package was initiated on October 13, 1993, to investigate the possibility of an intrusion. At current manpower levels, photos in this tank will be available by November 1995.

Tank 241-TX-113. Although the surface level and ILL measurements do not exceed the criteria, the data indicates unusual behavior trends that merit continued observation. This tank is an Assumed Leaker, Interim Stabilized, and Intrusion Prevention completed.

Resolution status: The technical evaluation of the alert condition in this tank was completed April 14, 1993. The results were inconclusive, with recommendation to accelerate the October 1997 waste characterization of the tank. This characterization is expected to confirm that solids are dissolving, causing an increase in ILL. Acceleration of waste characterization is not possible. Watch List tanks have first priority for core sampling. A photo package has been written. At current manpower levels, photos in this tank will be available by December 1995. The LOW is scanned weekly.

Tank 241-TX-115. Although the surface level and ILL measurements do not exceed the criteria, the data indicates unusual behavior trends that merit continued observation. This tank is an Assumed Leaker, Interim Stabilized, and Intrusion Prevention completed.

Resolution status: The technical evaluation of the alert condition in this tank was completed April 14, 1993. The results were inconclusive, with recommendation to accelerate the October 1997 waste characterization. Waste characterization is expected to confirm that solids are dissolving, causing an increase in ILL. Acceleration of waste characterization is not possible for non-Watch List tanks. The 1981 photos show evidence of rain intrusion through a central pump pit riser. However, it cannot be concluded from the 1988 photos that the intrusion is ongoing. A photo package has been written. At current manpower levels, photos in this tank will be available by February 1996. The LOW is scanned weekly. This tank will be included in the waste characterization with TX-113.

Tank 241-TY-102. Discrepancy Report S&DA-92-489 was issued November 9, 1992, when the surface level measurement exceeded the 0.50-inch increase criteria from the established baseline of 31.40 inches. The tank has a history of intrusions and icicle-shaped mineral buildup on the FIC plummet. The FIC plummet is contacting a shallow pool of liquid. The surface level measurement on April 1, 1993, was 31.90 inches and at the increase criteria. The increase criteria of 0.50 inch, considered to be an extremely tight tolerance for this tank, was revised to 1.00 inch, which is more in line with other tanks that exhibit similar erratic surface level behavior. The surface level measurement remained stable during May and was 31.80 inches on May 31, 1994. This tank is Sound, Interim Stabilized, and Intrusion Prevention completed.

Resolution status: This tank is experiencing an ongoing intrusion as is evident by comparison of November 1984 photos with July 1987 photos and an

increasing trend in surface level data. A visual survey was conducted to determine possible paths for precipitation to enter the tank. The grade around the tank is level and weather covering is on the pits and intact. The photo package, initiated May 17, 1993, will be required to assess the current stabilization status of the tank, and to assist in determining the possible paths of intrusion. Ongoing design/isolation drawing review revealed that nozzles, floor drains and some transfer lines entering the pump pit have been left open. Photo verification of the intrusion will determine the need to provide additional isolation measures. At current manpower levels, photos in this tank will be available by March 1996.

Catch Tanks:

241-AX-152 Diverter Station. The surface level measurement exceeded the 30.00-inch action limit and the 48.00-inch maximum operating limit, but did not exceed the Operating Specifications Document (OSD) limit of 77.00 inches. The tank was pumped on May 21, 1994. The surface level dropped from 71.75 inches to 14.75 inches after being pumped. The level was 15.00 inches on May 31, 1994.

Resolution status: Alternative methods to supply water for transfer are underway due to a water line leak in the A-Farm complex. This tank will not appear in future reports unless further activities warrant its inclusion.

241-ER-311 Catch Tank. This catch tank shows increases from precipitation and runoff. The tank currently exceeds the active tank limit of 45% volume (8000 gallons). This tank may contain up to 80% of volume capacity, (14,100 gallons, 80.00 inches) during inactive periods.

Resolution Status: A procedure is being drafted to pump this tank. The procedure is expected to be completed in September 1994.

241-E/W-151 Vent Station Catch Tank. The zip cord surface level reading exceeds the maximum operating limit of 36.00 inches. The manual tape was out of service from July 7, 1992, to December 16, 1992, when a temporary zip cord was installed. A surface level reading of 68.00 inches was obtained, exceeding the active tank limit of 50% volume of 40 inches (400 gallons). Discrepancy Report S&DA-92-511 was issued December 24, 1992. Transfers are not permitted until the tank is pumped and the level is within limits. A new calibrated zip cord was installed December 16, 1993, and the surface level reading went from 71.00 to 59.00 inches. Discrepancy Report 93-655 was issued December 17, 1993. The zip cord was replaced with a new manual tape on December 23, 1993. The level reading was 60.50 inches. The surface level reading was 65.55 inches on May 31, 1994.

Resolution status: The catch tank was sampled on December 23, 1993. The waste is to be transferred using existing cross-site lines. The required procedure is in approval stages; other documentation has been completed. Transferring with this method could be ready by late June.

241-UX-302-A Catch Tank. The surface level measurement exceeds the maximum operating limit of 50.00 inches. Discrepancy report S&DA-92-465 was issued May 12, 1992. The current surface level reading is 68.60 inches, which exceeds the 50% volume of 54 inches (8840 gallons). The FIC plummet is contacting liquid.

Resolution status: Work packages for the transfer of waste from UX-302-A and the repair of necessary instrumentation are being prepared, and the transfer of waste is being scheduled as a prestart item for the cross-site transfer. A work package has been prepared to sample/pump this catch tank. Transfer will begin after completing Vent Station transfer. Procedures are being prepared.

III. SURVEILLANCE AND WASTE TANK STATUS HIGHLIGHTS

1. Single-Shell Tanks Saltwell Jet Pumping

Tank 241-BX-110 - Saltwell jet pumping began December 4, 1993, to pump contents of this tank into 244-BX Double Container Receiver Tank (DCRT). Saltwell pumping was shut down on December 9, 1993, for repair of system air leaks. After repair of the leaks, it was determined other problems existed, resulting in a work order to modify the system to run the pump manually. It is uncertain whether any further waste can actually be pumped. A total of 4.0 Kgal has been pumped from BX-110.

Tank 241-BX-111 - Saltwell jet pumping began on October 22, 1993, to pump tank BX-111 into 244-BX Double Container Receiver Tank. Pumping was considered complete as of April 29, meeting a DOE milestone. In-tank photos were taken on May 19, 1994. After review of photos, the pumping was restarted to remove additional pumpable liquid. 3.3 Kgal were pumped, making a total of 110.4 Kgal pumped as of May 31, 1994. (See Table E-5 footnotes for further information).

Tank 241-BY-102 - Saltwell jet pumping resumed May 30, 1994, after being suspended in 1992 due to an Unreviewed Safety Question (USQ) and other issues. (See item #5 below). Restart of the pumping completed a TPA milestone. 2.3 Kgal were pumped from this tank in May, with a total of 125.6 Kgal pumped by May 31, 1994. (See Table E-5 footnotes for further information).

Tank 241-BY-109 - Saltwell jet pumping resumed May 31, 1994, after being suspended in 1992 due to an Unreviewed Safety Question (USQ) and other issues. (See item #5 below). Restart of the pumping completed a TPA milestone. 0.1 Kgal were pumped, making a total of 93.6 Kgal pumped by May 31, 1994.

Tank-241-T-111 - Saltwell jet pumping began on May 17, 1994, completing a TPA milestone for emergency pumping. 3.1 Kgal was pumped by May 31, 1994. In-tank photos were taken May 19, 1994. (See Table E-5 footnotes for further information).

2. Tank Waste Remediation System Safety Initiatives

The U. S. Secretary of Energy has directed that six safety initiatives be implemented in the Tank Waste Remediation System Program to accelerate the mitigation/resolution of the higher priority waste tank safety issues at the Hanford Site. Forty-two milestones were established for accomplishing the initiatives.

Safety Initiative "Close Tank C-103 Unreviewed Safety Question" was closed in May 1994.

3. Tank Waste Analysis Plan

The 1995 Fiscal Year Tank Waste Remediation System - Tank Waste Analysis Plan was submitted to DOE-RL for transmission to the U. S. Environmental Protection Agency and the Washington State Department of Ecology. The plan is a guidance document that directs the sampling and analysis of core, auger, and grab samples through Tank Characterization Plans. Transmission of this plan completes a TPA milestone due May 31, 1994.

4. Tank Farms Stand Down (Administrative Hold)

On August 12, 1993, non-essential work activities in the tank farms were put on administrative hold by WHC senior management until operators, supervisors and managers are retrained to perform their duties in a safe and accountable manner. Minimal essential activities required for safety, monitoring and compliance, including the daily "pump-bumping" of the SY-101 mixer pump, will continue. The administrative hold has impacted several programmatic goals for Tank Waste Remediation System (TWRS). A letter from WHC senior management has been submitted to DOE-RL addressing these programmatic delays. Further corrective actions were addressed in a Tank Waste Remediation System Tank Farm Resumption of Work Plan, dated September 13, 1993. Contained within the Work Plan is the Integrated Schedule for reinitiating individual work activities on an ongoing basis.

Testing of the SY-101 mixer pump continues to be successfully accomplished. Many other tank farm work activities have now been fully resumed. In addition, reorganization is taking place to reduce management layers, and the Integrated Upgrade Plan of Action was issued January 31, 1994.

5. 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."

On March 31, 1994, DOE approved the WHC request to close the criticality USQ. This approval does not resolve the outstanding criticality safety issues pending in the tank farms. Resolution of these issues will require WHC to complete actions described in "Upgrade Activities for the Criticality Safety Program of Hanford High-Level Radioactive Waste Tank Farm," dated September 1992.

Also, the existing JCO will remain in effect until WHC completes the following: 1) Criticality Safety Evaluation Reports for single-shell and double-shell tanks; 2) Criticality Prevention Specifications; 3) Criticality

operating procedures; and 4) Operator training for the revised operating procedures.

6. Ten Single-Shell Tanks Added to Organic Salts Watch List

Ten tanks (A-101, AX-102, C-102, S-111, SX-103, TY-104, U-103, U-105, U-203, and U-204) were added to the Organic Salts Watch List in May 1994, based on a reassessment of the historical records on tank waste contents. Six of these tanks, (A-101, S-111, SX-103, TY-104, U-103, and U-105) are also on other Watch Lists.

7. Tank SY-101 Hydrogen Mitigation

The hydrogen mixer pump installed in 241-SY-101 in July 1993, was operated 13 times during May 1994. The pump continues to maintain the gas inventory at historically low levels as measured by the surface level. The pump operating mode has shifted from testing to Long Term Operations (surface level maintenance) where the objective is to maintain the surface level less than 405 inches.

8. Occurrence Reports

RL-WHC-TANKFARM-1994-0002 (OFF-NORMAL) - SOIL LOADING OF WASTE TANK 241-SY-101 EXCEEDS OPERATIONS SPECIFICATION DOCUMENT (OSD) OSD-T-151-00007 LIMIT (10-Day Report, [latest], 5/06/94)

On January 8, 1994, a tank dome survey for SY-101 was performed to determine the amount of soil and gravel on top of the dome. The results of the survey were forwarded to Waste Tank Operations (WTO) personnel on January 10, 1994.

On January 11, the survey results were reviewed and determined to be a violation of OSD-T-151-00007 had occurred in relation to soil loading for this tank. Note: There are no Operational Safety Requirements (OSR) for tank dome loading. There are 3 limits specified in the OSD, when the three are added together, they result in a violation of the first level of control.

Immediate actions were taken to restrict vehicle access to the SY Tank Farm until concurrence from Waste Tank Plant Engineering can be obtained.

In the 10-day report dated February 24, 1994, further investigation was indicated as to the cause of why no further safety review was conducted prior to the gravel addition.

On May 5, 1994, WHC conducted an extensive follow-on review to resolve differing staff opinions as to whether conditions were within the Authorization Basis. It was concluded that these conditions do involve a USQ.

The current excess soil depth does not overload the tanks. Operation of the tanks, including the hydrogen mitigation mixer pump operation, can continue to operate as long as any additional loads do not exceed the remaining load margins.

Immediate actions include surveying double-shell and single-shell tanks to verify soil cover depths in both East and West areas. Resolution of the USQ was submitted in May to clarify that the limit is the total load on the tank and not on the sources of that load.

9. Changes to the Monthly Report

Figure B-6 "Overall Waste Flow, Hanford Tank Waste Disposal" has been added to Appendix B "Double-Shell Tank Waste Type and Space Allocation" (see page B-9).

The Watch Tanks pocket list has been revised to include 10 tanks added to the Organics Watch list in May 1994. Cut out the list and fold it. Tape it closed if you wish.

You are encouraged to urge your fellow employees to replace their obsolete pocket card with the list below. You may duplicate this list or cc:mail the author for additional copies.

The list will be updated and included in this report as changes occur.

5/31/94 Watch List Tanks	
SST	
A-101	H, O
AX-101	
AX-102	
AX-103	
B-103	
BX-102	
BX-106	
BY-103	
BY-104	
BY-105	
BY-106	
BY-107	
BY-108	
BY-110	
BY-111	
BY-112	
C-102	
C-103	
C-106	
C-108	
C-109	
C-111	
C-112	
S-102	
S-111	
S-112	
SX-101	
SX-102	
SX-103	
SX-104	
SX-105	
Legend	
H - Hydrogen	
F - Ferrocyanide	
O - Organics	
HH - High Heat	
SST	
SX-106	
SX-109	
T-107	
T-110	
T-111	
TX-105	
TX-118	
TY-101	
TY-103	
TY-104	
U-103	
U-105	
U-106	
U-107	
U-108	
U-109	
U-111	
U-203	
U-204	
DST	
AN-103	
AN-104	
AN-105	
AW-101	
SY-101	
SY-103	
Organics	
A-101	
AX-102	
B-103	
C-102	
C-103	
S-102	
S-111	
SX-103	
SX-106	
T-111	
U-204	
Hydrogen	
A-101	
AX-101	
AX-103	
B-102	
B-111	
B-112	
SX-101	
SX-102	
SX-103	
SX-104	
SX-105	
SX-106	
SX-109	
Ferrocyanide	
BX-102	
BY-106	
BY-103	
BY-104	
BY-105	
BY-106	
BY-107	
BY-108	
BY-110	
BY-111	
BY-112	
TX-103	
TY-101	
TY-103	
TY-104	
Total of 56 tanks on Watch List (Ten tanks are on more than one list)	
20 Tanks	
25 tanks	
8 tanks	
20 Tanks	
High Heat	
C-106	

This page intentionally left blank

APPENDIX A

WASTE TANK SURVEILLANCE MONITORING TABLES

WMC-EP-0182-74

This page intentionally left blank

TABLE A-1. WATCH LIST TANKS (Sheet 1 of 2)

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 tanks 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 SY-101."

May 31, 1994

Single-Shell Tanks			Single-Shell Tanks			Single-Shell Tanks		
Tank No.	Category	Officially Added to Watch List	Tank No.	Category	Officially Added to Watch List	Tank No.	Category	Officially Added to Watch List
A-101 (2)	Hydrogen	1/91	S-102 (2)	Hydrogen,	1/91	U-103 (2)	Hydrogen	1/91
	Organics	5/94		Organics	1/91		Organics	5/94
AX-101 (2)	Hydrogen	1/91	S-111 (2)	Hydrogen	1/91	U-105 (2)	Hydrogen	1/91
AX-102 (9)	Organics	5/94		Organics	5/94		Organics	5/94
AX-103 (2)	Hydrogen	1/91	S-112 (2)	Hydrogen	1/91	U-106 (2)	Organics	1/91
B-103 (2)	Organics	1/91	SX-101 (1)(2)	Hydrogen	1/91	U-107 (2)	Organics	1/91
BX-102 (2)	Ferrocyanide	1/91	SX-102 (1)(2)	Hydrogen	1/91		(6) Hydrogen	12/93
BX-106 (2)	Ferrocyanide	1/91	SX-103 (1)(2)	Hydrogen	1/91	U-108 (2)	Hydrogen	1/91
				(9) Organics	5/94	U-109 (2)	Hydrogen	1/91
BY-103 (2)	Ferrocyanide	1/91	SX-104 (1)(2)	Hydrogen	1/91	U-111 (7)	Organics	8/93
BY-104 (2)	Ferrocyanide	1/91	SX-105 (1)(2)	Hydrogen	1/91	U-203 (9)	Organics	5/94
BY-105 (2)	Ferrocyanide	1/91	SX-106 (1)(2)	Hydrogen,	1/91	U-204 (9)	Organics	5/94
BY-106 (2)	Ferrocyanide	1/91		(1)(2) Organics	1/91			
BY-107 (2)	Ferrocyanide	1/91	SX-109 (1)(2)	Hydrogen because				
BY-108 (2)	Ferrocyanide	1/91		other tanks vent				
BY-110 (2)	Ferrocyanide	1/91		thru it	1/91			
BY-111 (2)	Ferrocyanide	1/91	T-107 (3)	Ferrocyanide	2/91			
BY-112 (2)	Ferrocyanide	1/91	T-110 (2)	Hydrogen	1/91			
C-102 (9)	Organics	5/94	T-111 (8)	Organics	2/94			
C-103 (2)(4)	Organics	1/91	TX-105 (2)	Organics	1/91			
C-106 (2)	High Heat Load	1/91	TX-118 (2)	Ferrocyanide,	1/91			
C-108 (2)	Ferrocyanide	1/91		Organics	1/91			
C-109 (2)	Ferrocyanide	1/91	TY-101 (2)	Ferrocyanide	1/91			
C-111 (2)	Ferrocyanide	1/91	TY-103 (2)	Ferrocyanide	1/91			
C-112 (2)	Ferrocyanide	1/91	TY-104 (2)	Ferrocyanide	1/91			
				(9) Organics	5/94			

Ten tanks (A-101, S-102, S-111, SX-103, SX-106, TX-118, TY-104, U-103, U-105, and U-107,) are on more than one Watch List

See footnotes next page

MHC-EP-0182-74

TABLE A-1 WATCH LIST TANKS (Sheet 2 of 2)

Footnotes:

- (1) These eight single-shell tanks and the six double-shell tanks on the Watch List are actively ventilated.

Although on various dates beginning in March 1990, WHC identified tanks containing ferrocyanide, organic salts, etc., which were then added to this report as Watch List tanks, the following official notifications were made to DOE-RL:

- (2) Letter 9059124, H. D. Harmon, WHC, to R. E. Gerton, DOE-RL, "Safety Measures for Waste Tanks at Hanford Site, Richland, Washington," dated January 8, 1991, identified 23 ferrocyanide tanks, 23 tanks with potential for accumulation of flammable gas, eight organic tanks, and one high heat load tank, as being Watch List tanks. (52 tanks)

The ferrocyanide and hydrogen tanks were declared Unresolved Safety Questions (USQ); the organic tanks and the high heat load tank were within the safety envelope as defined by the safety analysis reports and were not designated as USQs. On March 1, 1994, the ferrocyanide USQ was closed. See Table A-2 footnote (1) for further information.

- (3) Letter 9059124.1 (revision to 9059124 above), dated February 8, 1991, added T-107 to the Ferrocyanide Watch List. (53 tanks)

- (4) Tank C-103 was declared a USQ per Unusual Occurrence Report RL-WHC-TANKFARM-1992-0069, issued September 1992, because of an organic layer covering the surface. This USQ was closed May 19, 1994.

- (5) Letter 9354700, J. C. Fulton, WHC, to R. E. Gerton, DOE-RL, "Addition of Tank 241-AW-101 to Flammable Gas Watch List," dated June 3, 1993, added this double-shell tank to the Watch List. (54 tanks)

- (6) Letter 9353957, J. C. Fulton, WHC, to R. E. Gerton, DOE-RL, "Single-Shell Waste Tank 241-U-111," dated May 24, 1993, recommended this tank be included on the Organic Tanks Watch List. This tank was added to the Watch List on August 31, 1993.

- (7) Tank U-107 was declared a USQ per Occurrence Report RL-WHC-TANKFARM-1993-0115, issued December 1993, because of an increase in slurry growth. This tank is also on the Organics Watch List.

- (8) Tank T-111 was added to the Organic Salts Watch List on February 28, 1994, upon recommendation by WHC Waste Tank Safety Program.

- (9) Ten tanks (A-101, AX-102, C-102, S-111, SX-103, TY-104, U-103, U-105, U-203, and U-204) were added to the Organic Salts Watch List, upon recommendation by WHC to DOE-RL, (Letter 9453328, M. A. Payne, WHC, to R. E. Gerton, DOE-RL, "Revision of the Organic Tanks Watch List," dated May 15, 1994,) and DOE-RL concurrence (Letter 94-SST-116, R. E. Gerton, DOE-RL, to President, WHC, Same Subject, dated May 25, 1994). Six of these tanks were already on the Watch List.

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

The Unreviewed Safety Question (USQ) associated with these tanks was closed March 1, 1994. (1)

Temperatures in these tanks did not exceed the maximum temperature criteria for May 1994.

All Watch List tanks are reviewed for increasing temperature trends. Tanks connected to TMACS are required to be monitored continuously; those not connected are required to be monitored weekly. Temperatures are taken in the waste unless indicated otherwise.

Tank No.	Riser No.	Highest Temperature Reading In Waste (F.)	Date of Reading	Readings Taken by TMACS (5)	Total Waste (inches) (6)	FeCN (2) (x1000 g mol)	Estimated Heat Load (3) (Btu/h)	(kW)	Date Declared Assumed Leaker	Interim Stabilized Date
BX-102	8	65	05/30/94	Yes	42	<1	2800	<2.93	1971	11/78
BX-106	1	65	05/31/94	Yes	24	<1	2500	<2.93	Sound	N/A
BX-106	7	65	05/29/94	Yes	24	<1	2500	<2.93	Sound	N/A
BY-103	1	80	05/31/94	Yes	153	68	5500	2.52	1973	N/A
BY-104	1	126	05/31/94	Yes	155	83	8700	1.61	Sound	1/85
BY-104	10B	114	05/10/94	Yes	155	83	8700	1.61	Sound	1/85
BY-105	10C	113	05/26/94	Yes	190	36	8700	0.97	1984	N/A
BY-105	1	120	05/10/94	Yes	190	36	8700	0.97	1984	N/A
BY-106	1	128	05/28/94	Yes	241	70	10100	0.97	1984	N/A
BY-107	1	97	05/10/94	Yes	104	42	8900	4.25	1984	7/79
BY-108	9	108	05/30/94	Yes	90	58	9200	6.74	1972	2/85
BY-110	1	118	05/31/94	Yes	152	71	6900	7.39	Sound	1/85
BY-110	10A	107	05/31/94	Yes	152	71	6900	7.39	Sound	1/85
BY-111	LOW-1	87	05/31/94	Yes	174	8	5500	10.02	Sound	1/85
BY-111	14	83	05/31/94	Yes	174	6	5500	10.02	Sound	1/85
BY-112	LOW-15	82	05/31/94	Yes	113	2	6100	<2.93	Sound	5/85
BY-112	2	89	05/24/94	Yes	113	2	6100	<2.93	Sound	5/85
C-108	6	71	05/31/94	Yes	31	25	6000	<2.93	Sound	3/84
C-108	1	69	05/10/94	Yes	31	25	6000	<2.93	Sound	3/84
C-109	8	76	05/31/94	Yes	31	30	7000	1.11	Sound	11/83
C-109	3	78	05/31/94	Yes	31	30	7000	1.11	Sound	11/83
C-111	5	71	05/31/94	Yes	28	33	6400	<2.93	1988	3/84
C-112	1	79	05/31/94	Yes	45	31	7500	<2.93	Sound	9/90
C-112	8	80	05/31/94	Yes	45	31	7500	<2.93	Sound	9/90
T-107	4	64	05/16/94	Yes	73	5	3000	<2.93	1984	N/A
TX-118(4)	3	75	05/31/94	Yes	134	<1	4600	1.44	Sound	4/83
TY-101	4	66	05/28/94	Yes	50	23	3100	<2.93	1973	8/83
TY-103	4	68	05/31/94	Yes	66	28	4000	<2.93	1973	2/83
TY-104	4	65	05/31/94	Yes	24	12	3000	<2.93	1981	1/83
20 Tanks		Legend: TMACS = Tank Monitor & Control System								

Note: Tanks BX-110, BX-111, BY-101 and T-101 were removed from this Watch List in July 1993, per letter 93-CAB-223, John H. Anttonen, DOE-RL, to T. M. Anderson, WHC, "Resolution of Unreviewed Safety Question for Four Ferrocyanide Tanks," dated July 9, 1993.

FOOTNOTES: See next page

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

FOOTNOTES:

- (1) Closure of the Ferrocyanide Unreviewed Safety Question (USQ) was approved in U.S. DOE Memorandum EM-36, Thomas P. Grumbly, to Manager, DOE Richland Operations Office, "Approval of the Request to Close the Ferrocyanide Unreviewed Safety Question at the Hanford High-Level Waste Tank Farms," dated March 1, 1994; and DOE-RL letter 94-SST-052, T. R. Sheridan, to President, WHC, "Closure of the Ferrocyanide Unreviewed Safety Question," dated March 4, 1994.
- (2) The amount of FeCN reported in the tanks is 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-0709, "Estimation of Heat Load in Waste Tanks Using Average Vapor Space Temperatures," December 1993. This document analyzed all ferrocyanide tanks.
- (4) This tank also contains a high concentration (>3% wt TOC) of organic salts.
- (5) This column indicates which tanks are being monitored by the Tank Monitor & Control System (TMACS); automatic temperature readings are taken continuously. Temperatures in tanks connected to TMACS but temporarily not being monitored by TMACS are taken manually.
- (6) Total waste in Kgal taken from Table E-5, Inventory and Status by Tanks for SSTs. Kgal/inches calculations for the temperature tables are as follows: (waste in inches is an approximation only for these temperature tables)

$$\frac{\text{Kgal waste} - 12.5 \text{ Kgal waste}^*}{2.75 \text{ Kgal/inch}} + 12 \text{ inches}^*$$

* The bottom 12 inches in dish bottom tanks contain 12.5 Kgal. All tanks are calculated as dish bottom tanks for the temperature tables, although A and AX farms have flat bottoms. Inches are from centerline tank bottom.

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

These tanks have 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 the SST Safety Analysis Report.

Temperatures in these tanks did not exceed the applicable maximum temperature criteria for the month of May 1994.

All Watch List tanks are reviewed for increasing temperature trends. Temperatures are taken in the waste unless indicated otherwise.

Tank No.	Riser No.		Highest Temperature Reading (F.) in Waste	Date of Reading	Total Waste (3) (inches)	Monitoring Frequency	Assumed Leaked Date	Interim Stabilized Date
A-101 (2)	R-12		154	05/18/94	354	Weekly	SOUND	N/A
AX-101	R-9b		136	05/18/94	279	Weekly	SOUND	N/A
AX-103	R-13c		111	05/18/94	48	Weekly	SOUND	8/87
S-102 (2)	R-3		107	05/30/94	207	Weekly	SOUND	N/A
S-111(2)	R-4		92	05/30/94	224	Weekly	SOUND	N/A
S-112	R-4		83	05/06/94	239	Weekly	SOUND	N/A
SX-101 (5)	R-15		138	05/23/94	173	Weekly	SOUND	N/A
SX-102	R-15		151	05/23/94	205	Weekly	1993	N/A
SX-103(2)	R-2		174	05/30/94	245	Weekly	SOUND	N/A
SX-104	R-2		167	05/30/94	231	Weekly	1988	N/A
SX-105	R-2		180	05/23/93	256	Weekly	SOUND	N/A
SX-106 (2)	R-15		111	05/23/93	203	Weekly	SOUND	N/A
SX-109 (1)	R-10		148	05/23/93	98	Weekly	1965	5/81
SX-109 (1)	R-10		151	05/23/93	98	Weekly	1965	5/81
T-110	R-8		63	05/30/94	145	Weekly	SOUND	N/A
U-103 (2)	R-1		87	05/02/94	178	Weekly	SOUND	N/A
U-105(2)	R-1		89	05/23/94	159	Weekly	SOUND	N/A
U-107 (2)(5)	R-1		78	05/02/94	165	Weekly	SOUND	N/A
U-108	R-1		88	05/02/94	178	Weekly	SOUND	N/A
U-109	R-1		86	05/02/94	176	Weekly	SOUND	N/A
AN-103		Double-shell tank	113	05/18/94		Weekly	SOUND	N/A
AN-104		Double-shell tank	117	05/25/94		Weekly	SOUND	N/A
AN-105		Double-shell tank	114	05/18/94		Weekly	SOUND	N/A
AW-101 (4)		Double-shell tank	102	05/31/94		Weekly	SOUND	N/A
SY-101	Riser 17b	Double-shell tank	115	05/31/94		Daily	SOUND	N/A
SY-101	Riser 17c	Double-shell tank	116	05/29/94		Daily	SOUND	N/A
SY-103		Double-shell tank	97	05/25/94		Weekly	SOUND	N/A
Legend: N/A = Not Applicable								
25 Tanks								

(1) Tank SX-109 has the potential for flammable gas accumulation only because other SX tanks vent through it.

(2) Tanks A-101, S-102, S-111, SX-103, SX-106, U-103, U-105 and U-107 are also on the Organics Watch List.

(3) See footnote (6) in Table A-2 (Ferrocyanide Tanks) for Total Waste/inches calculations. Waste in inches is an approximation for temperature tables only.

(4) Tank AW-101 was added to this list per letter 9354700, J. C. Fulton, WHC, To R. E. Gerton, DOE-RL, "Addition of Tank 241-AW-101 to Flammable Gas Watch List," dated June 3, 1993.

(5) Tank U-107 was added to this list per Unusual Occurrence Report RL-WHC-TANKFARM-0115, issued December 1993, because of an increase in slurry growth.

**TABLE A-4. SINGLE-SHELL TANKS CONTAINING CONCENTRATIONS OF ORGANIC SALTS
>3 WEIGHT % TOTAL ORGANIC CARBON (TOC) (Watch List Tanks) (Sheet 1 of 2)**

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 have >3 Weight % TOC and 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)." These tanks (with the exception of C-103), do not have an associated USQ because the presence of organic material was reviewed in the SST Safety Analysis Report.

Temperatures in these tanks did not exceed the applicable maximum temperature criteria for the month of May 1994. These tanks are monitored weekly. All Watch List tanks are reviewed for increasing temperature trends.

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	Source of Waste	Organic Content (wt. %) (6)	NaNO 3 and NaNO 2 (wt. %)(6)	TOC (WT.%) (7)	Waste Surface Potentially Dry (8)	Last Date Sampled
A-101 (17)	154	05/18/94		SOUND	N/A						
AX-102 (17)	101	05/20/94		SOUND	N/A						
B-103	59	05/20/94	29	1978	2/85	First and second cycle waste from B Plant and in-tank solidification (ITS-1 & ITS-2) evaporator bottoms (11)	11.4 (9)	60.5 (9)	3.3	x	9/75
C-102 (17)	0/8	01/94		SOUND	N/A						
C-103 (9)	118	05/31/94	78	SOUND	N/A	PUREX and insoluble strontium-rich sludging solids from the operation of 244-CR Vault (11)	-	-	-		9/90
8-102 (1)	107	05/30/94	207	SOUND	N/A	REDOX (11)	21.0 (10)	41.0 (10)	6.1	x	2/80
8-111 (17)	92	05/30/94		SOUND	N/A						
8X-103 (17)	174	05/30/94		SOUND	N/A						
8X-108 (1)	111	05/23/94	203	SOUND	N/A	Salt waste and first cycle condensate from REDOX, and 242-S Evaporator bottoms (11)	14.6 (9)	80.9 (9)	4.3		8/79
T-111 (12)	63	05/30/94	232	1984 Assumed Re-leaker 1994	N/A	Second cycle waste, 224 waste, Decontamination & Decommissioning operations at T-Plant (13)	14.0 (14)	NO 3, 4.1 wt, NO 2, 0.08 (15)	4.1	x	3/94 (16)
TX-105	63	05/09/94	228	1977	9/83	) Tributyl phosphate (TBP)	12.8 (9)	52.7 (9)	3.7	x	1/81
TX-118 (2)	75	05/31/94	134	SOUND	4/83	) process waste and 242-T	20.2 (10)	50.4 (10)	5.9	x	9/81
TY-104 (17)	65	05/31/94		1981	11/83						
U-103 (17)	87	05/09/94		SOUND	N/A						
U-105 (17)	89	05/23/94		SOUND	N/A						
U-108	90	05/09/94	90	SOUND	N/A	) Evaporator bottoms (11)	48.6 (10)	52.4 (10)	13.6		6/77
U-107 (1)	78	05/02/94	155	SOUND	N/A	)	14.7 (9)	75.4 (9)	4.3		12/74
U-111 (5)	79	05/23/94	127	SOUND	N/A	Concentrated B Plant Waste (11)	48.2 (10)	—(10)	14.1	x	7/81
U-203 (17)	60	01/94		SOUND	N/A						
U-204 (17)	65	01/94		SOUND	N/A						
20 Tanks											

See Footnotes next page

**TABLE A-4. SINGLE-SHELL TANKS CONTAINING CONCENTRATIONS OF ORGANIC SALTS
>3 WEIGHT % TOTAL ORGANIC CARBON (TOC) (Sheet 2 of 2)**

Footnotes:

- (1) These tanks also have the potential for hydrogen or flammable gas accumulation.
- (2) Tank TX-118 also contains ferrocyanide.
- (3) Tank C-103 was declared a USQ because of an organic layer covering the surface, reference Unusual Occurrence Report RL-WHC-TANKFARM-1992-0069, issued September 1992.
- (4) See footnote (6) in Table A-2 (Ferrocyanide Temperature Table) for Total Waste/Inches calculations. Waste inches calculations are approximations only for temperature tables.
- (5) Tank U-111 was added August 31, 1993. See August 1993 Summary Highlights for information and Table A-1. "Watch List Tanks" for applicable reference.
- (6) WHC, 1990, "The Kyshtym Explosion and Explosion Hazards with Nitrate-Nitrite Bearing Wastes with Acetates and Other Organic Salts," WHC-SD-LB-033, Westinghouse Hanford Company, Richland, Washington
- (7) Dry wt.% basis. Calculated as wt.% sodium acetate equivalent X.2928.
- (8) Due to absence of supernatant liquid.
- (9) Calculated from data developed by Track Radioactive Components (TRAC) computer code, 1984.
- (10) "Removal of Radionuclides from Hanford Defense Waste Solutions," RHO-SA-51, 1980, Rockwell Hanford Operations, Richland, Washington. All or part of liquid from which composition data were derived may have been transferred to double-shell tanks.
- (11) WHC, 1993, "Action Plan for Responses to Abnormal Conditions in Hanford Site Radioactive Waste Tanks with High Organic Content," WHC-EP-0461, Rev. 1, Westinghouse Hanford, Richland, Washington.
- (12) Tank 241-T-111 was added to the Organic Salts Watch List on February 28, 1994, upon recommendation by WHC Waste Tank Safety Program.
- (13) WHC, 1990, "A History of the 200 Area Tank Farms," WHC-MR-0132, Westinghouse Hanford, Richland, Washington.
- (14) Pacific Northwest Laboratories analysis on Core 33, Segment 2, dated January 14, 1994.
- (15) WHC, 1993, "Single-Shell Tank Characterization, Tank T-111, Cores 31 and 33," WHC-SM-PD-024, Rev 0A, Westinghouse Hanford, Richland, Washington.
- (16) Data not yet available.
- (17) Ten tanks (A-101, AX-102, C-102, S-111, SX-103, TY-104, U-103, U-105, U-203, and U-204) were added to this Watch List upon the recommendation of WHC to DOE-RL on May 15, 1994, and concurrence by DOE on May 25, 1994.

TABLE A-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. While all of these tanks are considered high heat load tanks per SAR definition, only one (241-C-106) is on the High Heat Watch List.

Temperatures in these tanks did not exceed SAR or OSD requirement limits for the month of May 1994. All high heat load tanks are on active ventilation unless indicated otherwise in the footnotes. These high heat tanks are reviewed for increasing temperature trends.

Temperatures are taken in the waste unless indicated otherwise.

Tank No.	Riser No. (6)	Temperature Reading (F.) In Waste	Date of Reading	Total Waste Inches (7)	Monitoring Frequency	Estimated Heat Load (1)		Date Declared Assumed Leaker	Interim Stabilized Date
						(Btu/h)	(kW)		
A-104 (4)	R-18	189	05/18/94	18	Weekly	50000	15	1975	9/78
A-105 (4)	R-16	162	05/25/94	14	Weekly	50000	15	1969	7/79
C-106 (2)(3)	R-8	164	05/26/94	91	Weekly	110000	32	SOUND	N/A
C-106 (2)(3)	R-14	128	05/18/94	91	Weekly	110000	32	SOUND	N/A
SX-107	R-10	173	05/05/94	45	Monthly	42000	12	1964	10/79
SX-107	R-14	172	05/30/94	45	Monthly	42000	12	1964	10/79
SX-108	R-10	195	05/05/94	49	Monthly	45000	13	1962	8/79
SX-108	R-19	200	05/04/94	49	Monthly	45000	13	1962	8/79
SX-109 (3)	R-10	148	05/23/94	98	Weekly	50000	15	1965	5/81
SX-109 (3)	R-19	151	05/23/94	98	Weekly	50000	15	1965	5/81
SX-110	R-12	174	05/05/94	30	Monthly	42000	12	1976	8/79
SX-110	R-20	170	05/05/94	30	Monthly	42000	12	1976	8/79
SX-111	R-10	194	05/05/94	53	Monthly	44000	13	1974	7/79
SX-111	R-19	167	05/30/94	53	Monthly	44000	13	1974	7/79
SX-112	R-10	153	05/30/94	41	Monthly	43000	13	1969	7/79
SX-112	R-19	160	05/05/94	41	Monthly	43000	13	1969	7/79
SX-114	R-10	191	05/30/94	73	Monthly	58000	17	1972	7/79
SX-114	R-19	189	05/30/94	73	Monthly	58000	17	1972	7/79
10 Tanks						Legend: Tree = Thermocouple Tree			
A-105 Laterals (5)						244	05/18/94	Weekly	
Temperatures are taken in 34 thermocouples located in the laterals beneath A-105. SAR requirements (see top of table) do not apply to these temperatures; however, Westinghouse Hanford has voluntarily chosen to apply the waste temperature limits to the soil temperature for surveillance reporting.									

Footnotes - see next page

A-10

WHC-EP-0182-74

TABLE A-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 years) and SR 90 (half life of 28.1 years). Tank C-105 was re-evaluated in WHC-SD-WM-ER-189, "Thermal Analysis of Tank 241-C-105 in Support of Process Test," January 1993. Engineering Change Notice #196834, June 24, 1993, changed the status of C-105 from High Heat Load to Normal, effective July 1, 1993. Tank C-106 was re-evaluated using a revised thermal history based on the thermal transient behavior during the ventilation outage in 1992. WHC-SD-WM-ER-200 "Revised Thermal History of Tank 241-C-106," issued December 20, 1993, documents the new heat load estimate of 110,000 Btu/hr (+/-20,000 Btu/h) for this tank.
- (2) Periodic water additions are required in C-106 to maintain evaporative cooling and thus prevent overheating. This tank is scheduled for partial retrieval starting in 1997, at which time cooling water additions will be discontinued. Temperatures in riser 8 are consistent at mid-150 degrees, however, temperatures in riser 14 vary between approximately 120 and 135, also consistently. Starting March 7, 1994, C-106 is undergoing a liquid-reduction process test to determine a new low level for future water addition. The process test is expected to be completed in FY-94. Cooling water is not added during the test. C-Farm thermocouple trees were connected to the Tank Monitor and Control System (TMACS) and are monitored continuously.
- (3) Watch List Tanks: C-106 is on the high heat load Watch List because in the event of a leak "without water additions the tank could exceed structural temperature limits resulting in unacceptable structural damage." Also see (2) above. SX-109 is on the hydrogen Watch List because it has the potential for flammable gas accumulation due to other SX tanks venting through it.
- (4) A-104/105/106 exhaustor 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 exhaustor is operational. Temperatures in A-104 and A-105 are monitored weekly.
- (5) Maximum lateral temperatures under A-105 increased 20 degrees F. by January 1992, but then dropped a few degrees and have remained fairly stable at current temperature. These temperatures are monitored weekly.
- (6) Tanks A-104 and A-105
Two temperature probes are installed in risers in A-104, and six are installed in risers in A-105. These are individual probes. In A-104, the probes are in contact with the sludge; in A-105, they are in contact with the bottom of the tank (A-105 has a bulged bottom).

Tank C-106

Tank C-106 has six functioning thermocouples (#1 through 6) on riser 8, and 12 functioning thermocouples on riser 14. The trees are connected to TMACS and are monitored continuously.

Tanks SX-107, 108, 109, 110, 111, 112, and 114

Each of these tanks has eight thermocouple trees, with eight thermocouples on each tree, with the exception of SX-108, which has four operational thermocouples on each of two trees. Two trees are monitored in each of these SX tanks..

- (7) Calculations for Total Waste Inches: see footnote (6), Table A-2 (Ferrocyanide Tanks). Waste in inches is an approximation only for temperature tables.
- (8) There are 19 single-shell tanks with active ventilation (eight are on the Watch List as indicated by an asterisk):

A-104	SX-101 *	SX-107
A-105	SX-102 *	SX-108
A-106	SX-103 *	SX-109 *
C-104	SX-104 *	SX-110
C-105	SX-105 *	SX-111
C-106 *	SX-106 *	SX-112
		SX-114

TABLE A-6. NON-WATCH LIST LOW HEAT LOAD TANKS (<40,000 Btu/h)

(Page 1 of 3)

Temperatures are taken semiannually in January and July, unless otherwise indicated, in the following 91 single-shell tanks. Legend follows table.

	Tank No.	Highest Temperatures taken in waste		Total Waste (1)		Comments
		Jul. 93	Jan. 94	Kgal	Inches	
1	A-102	92	87	41	15	
2	A-103	117	114	370	135	
3	A-106	137	135	125	50	
4	AX-104	98	92	7	3	
5	B-101	108	109	113	48	
6	B-102	63	63	32	19	TC#1 O/S, reading in vapor space
7	B-104	66	65	371	142	
8	B-105	66	65	306	50	
9	B-106	62	63	117	67	TC#1 & 2 O/S
10	B-107	62	60	165	41	TC#1 thru 3 O/S, reading in vapor space
11	B-108	62	64	94	54	
12	B-109	61	63	127	97	
13	B-110	68	63	246	94	TC#1 thru 4 O/S. Reading in vapor space
14	B-111	86	86	237	19	TC#1 & 2 O/S, work order issued, historical readings erratic
15	B-112	63	64	33	7	
16	B-201	60	60	29	151	
17	B-202	61	60	27	141	
18	B-203	62	61	51	263	
19	B-204	62	61	50	258	
20	BX-101	O/S	O/S	43	27	All TCs O/S, work order issued, last reading 74 F. in 11/92
21	BX-103	O/S	O/S	66	31	All TCs O/S, last reading 77 F. in 10/92
22	BX-104	O/S	O/S	99	43	(2) No TC tree per Riser Configuration document Last reading 87 F. in 10/80
23	BX-105	63	66	51	26	
24	BX-107	O/S	O/S	345	133	All TCs O/S, work order issued, last reading 69 F. in 10/82
25	BX-108	63	65	26	17	
26	BX-109	77	O/S	193	78	Temp reading obtained 7/93 only, 2 attempts made 1/94 No historical readings available
27	BX-110	68	74	199	80	Readings taken weekly, pumping began, now on hold
28	BX-111	65	69	211	84	Readings taken weekly, tank being pumped
29	BX-112	62	65	165	67	
30	BY-101	75	75	387	148	Continuous readings taken on TMACS
31	BY-102	O/S	O/S	341	131	(2) No TC tree per Riser Configuration document. Last reading 72 F. in 4/79
32	BY-109	O/S	O/S	423	161	(2) No TC tree per Riser Configuration document.

TABLE A-6. NON-WATCH LIST LOW HEAT LOAD TANKS (<40,000 Btu/h)

(Page 2 of 3)

Temperatures are taken semiannually in January and July, unless otherwise indicated, in the following 95 single-shell tanks. Legend follows table.

	Tank No.	Highest Temperatures taken in waste		Total Waste (1)		Comments
		Jul. 93	Jan. 94	Kgal	Inches	
33	C-101 (3)	88	86	88	39	
34	C-104 (3)	87	85	295	115	TC#1 thru 5 O/S, reading in vapor space
35	C-105 (3)	92	80	150	63	Monitored weekly, formerly on High Heat Load list
36	C-107 (3)	125	124	275	107	Monthly reading requirement per procedure, monitored weekly
37	C-110 (3)	65	66	187	75	TC#1 thru 4 O/S, reading in vapor space
38	C-201 (3)	61	56	2	13	
39	C-202 (3)	61	60	1	8	
40	C-203 (3)	60	59	5	29	
41	C-204	O/S	O/S	3	18	In-tank photos revealed no tree. Last reading obtained prior '91.
42	S-101	115	118	427	162	TC#1, 3, 5, & 6 O/S, work order issued
43	S-103	85	87	248	98	
44	S-104	104	108	294	114	
45	S-105	73	78	456	173	
46	S-106	78	81	543	205	
47	S-107	107	110	368	129	
48	S-108	85	89	604	227	
49	S-109	O/S	68	568	214	Readings available on TC#7 only
50	S-110	116	117	390	149	
51	SX-113	73	77	26	15	
52	SX-115	O/S	O/S	12	10	(2) No TC tree, per Riser Configuration document, last reading prior to 12/91
53	T-101	66	72	102	45	Formerly on ferrocyanide Watch List
54	T-102	O/S	O/S	32	19	(2) No TC tree per Riser Configuration document, last reading 68 F. in 2/81
55	T-103	59	62	27	17	
56	T-104	O/S	62	445	169	All TCs O/S, work order issued
57	T-105	O/S	O/S	98	43	(2) No TC tree per Riser Configuration document
58	T-106	59	60	21	15	
59	T-108	O/S	57	180	73	
60	T-109	O/S	O/S	58	29	All TCs O/S, work order issued, last reading 75 F. in 2/91
61	T-112	58	60	67	32	
62	T-201	59	60	29	150	
63	T-202	58	62	21	110	
64	T-203	75	64	35	182	
65	T-204	60	63	38	197	
66	TX-101	O/S	O/S	87	39	(2) No TC tree per Riser Configuration document
67	TX-102	O/S	O/S	113	49	Cable cut from tree

TABLE A-6. NON-WATCH LIST LOW HEAT LOAD TANKS (<40,000 Btu/h)

(Page 3 of 3)

Temperatures are taken semiannually in January and July, unless otherwise indicated, in the following 95 single-shell tanks. Legend follows table.

Tank No.	Highest Temperatures taken in waste		Total Waste (1)		Comments
	Jul. 93	Jan. 94	Kgal	Inches	
68 TX-103	55	71	157	54	Cable cut from tree, readings taken by Instrument Technician High reading taken 1/93 was 71 F.
69 TX-104	60	65	65	31	Cable cut from tree, readings taken by Instrument Technician
70 TX-106	59	78	453	172	Cable cut from tree, readings taken by Instrument Technician
71 TX-107	60	66	36	21	Cable cut from tree, readings taken by Instrument Technician
72 TX-108	61	68	134	56	Cable cut from tree, readings taken by Instrument Technician
73 TX-109	64	94	384	147	Cable cut from tree, readings taken by Instrument Technician High reading taken 1/93 was 97 F.
74 TX-110	O/S	O/S	462	175	Cable cut from tree, readings taken by Instrument Technician
75 TX-111	61	79	370	142	Cable cut from tree, readings taken by Instrument Technician High reading taken 1/93 was 73 F.
76 TX-112	72	67	649	243	Cable cut from tree, readings taken by Instrument Technician
77 TX-113	65	72	607	228	Dial pushed inside housing, readings taken by Instr. Tech.
78 TX-114	O/S	O/S	535	202	Cable cut from TC tree
79 TX-115	67	70	640	240	Dial pushed inside housing, readings taken by Instr. Tech.
80 TX-116	O/S	O/S	631	237	(2) Tree cut off in riser per Riser Configuration document
81 TX-117	O/S	O/S	626	235	All TCs O/S, cable cut from tree
82 TY-102	O/S	60	64	31	
83 TY-105	77	79	231	91	
84 TY-106	60	59	17	14	
85 U-101	61	67	25	17	
86 U-102	81	85	374	143	
87 U-104	O/S	O/S	122	52	(2) No TC tree per Riser Configuration document
88 U-110	72	76	186	75	
89 U-112	61	63	49	25	
90 U-201	O/S	61	5	29	
91 U-202	59	61	5	29	

- (1) See Table A-2 (footnote 6) for waste gallons/inches calculations.
- (2) Thermocouples in nine tanks (BX-104, BY-102, BY-109, SX-115, T-102, T-105, TX-101, TX-116, and U-104) are out of service due to no TC trees in these tanks, or the thermocouples have been cut off, covered over, or are otherwise unable to function, per the Riser Configuration document. (Also see comment section above)
- (3) All TC trees in C-Farm connected to TMACS on 3/31/94, except for C-204 which has no tree.
- (4) T-111 was deleted from this list and added to the Organics Watch List in February 1994
- (5) AX-102, C-102, U-203 and U-204 were deleted from this list and added to the Organics Watch List in May 1994.

Legend:		
TC - Thermocouple		
TMACS - Tank Monitor & Control System		
O/S - Out of service		
Riser Configuration document - WHC-SD-RE-TI-053, REV 8, "Riser Configuration Document for Single-Shell Tanks," dated September 1991		
SUMMARY:		
Readings obtained in SSTs	Jul. 93	Jan. 94
No readings (TC trees O/S - includes nine tanks with no trees - see footnote above)	71	76
	25	20
Total low heat load tanks	96	96

TABLE A-7. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 1 of 5)

The following table indicates whether Single-Shell tank monitoring was in compliance with the requirements as specified in the applicable documents as of the last day of the applicable month:

NOTE:

All Watch List and High Heat tank temperature monitoring is in compliance. (5)

All Dome Elevation Survey monitoring is in compliance.

All Drywell monitoring is in compliance.

Psychrometrics (2)

In-tank Photographs (3)

Pressure Monitoring (6)

CAM/RAMP Monitoring (7)

Vapor Monitoring (8)

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 Operation Procedure TO-040-860, "Obtain/Record SST Temperatures"
M.T.	= Manual Tape
FIC	= Food Instrument Corporation
OSR/SAR	= Operations Safety Requirements/Safety Analysis Report, SD-WM-SAR-006, Rev 2, 2/88; -SAR-034, Rev 0, 8/81
OSD	= Operating Specifications Doc., OSD-T-151-00013, Rev D-0, 8/90
N/A	= Not applicable (i.e., no LOW, M.T., FIC installed)
O/S	= Out of Service
Neutron	= LOW readings taken by Neutron probe

Information as of May 31, 1994

Tank Number	Category		Temperature Readings (5)(6)	Surface Level Readings (1) (-357)		LOW Readings (-357) Neutron	Radiation Readings		Dome Elevation Surveys (OSR/SAR)
	Watch List(6)	High Heat		M.T.	FIC		Lateral Readings (-357)	Drywell Readings (OSR/SAR)	
A-101	X				N/A				
A-102				N/A	N/A	N/A			
A-103				N/A					
A-104		X			N/A	N/A			
A-105		X			N/A	N/A			
A-106				N/A		N/A			
AX-101	X			N/A					
AX-102					N/A	N/A			
AX-103	X			N/A		N/A			
AX-104					N/A	N/A			
B-101				N/A		N/A			
B-102				N/A		N/A			
B-103	X			N/A		N/A			
B-104					N/A				
B-105					N/A				
B-106				N/A		N/A			
B-107					N/A	N/A			
B-108				N/A		N/A			
B-109					N/A	N/A			
B-110					N/A	N/A			
B-111				N/A		N/A			
B-112				N/A		N/A			
B-201					N/A	N/A			
B-202					N/A	N/A			
B-203					N/A	N/A			
B-204					N/A	N/A			
BX-101			O/C		N/A	N/A			
BX-102	X				N/A	N/A			
BX-103			O/C		N/A	N/A			
BX-104			O/S-O/C		N/A	N/A			
BX-105					N/A	N/A			
BX-106	X				N/A	N/A			
BX-107			O/C		N/A	N/A			

TABLE A-7. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS
 149 TANKS (Sheet 2 of 5)

Information as of May 31, 1994

Tank Number	Category		Temperature Readings (5)(6)	Surface Level Readings (1) (-357)		LOW Readings (-357) (9) Neutron	Radiation Readings		Dome Elevation Surveys (OSP/SAR)
	Watch List(6)	High Heat		M.T.	FIC		Lateral Readings (-357)	Drywell Readings (OSP/SAR)	
SX-108					N/A	N/A	N/A		
SX-109			O/C	N/A	N/A	N/A	N/A		
SX-110 (4)					N/A	N/A	N/A		
SX-111 (4)					N/A	N/A	N/A		
SX-112				N/A	N/A	N/A	N/A		
BY-101 (4)				O/C	N/A		N/A		
BY-102			O/S-O/C		N/A		N/A		
BY-103	X				N/A		N/A		
BY-104	X				N/A		N/A		
BY-105	X				N/A		N/A		
BY-106	X				N/A		N/A		
BY-107	X				N/A		N/A		
BY-108	X				N/A	N/A	N/A		
BY-109			O/S-O/C	N/A			N/A		
BY-110	X				N/A		N/A		
BY-111	X				N/A		N/A		
BY-112	X				N/A	O/C	N/A		
C-101					N/A	N/A	N/A		
C-102			O/C	N/A		N/A	N/A	N/A	
C-103	X			N/A		N/A	N/A		
C-104				N/A		N/A	N/A		
C-105				N/A		N/A	N/A		
C-106 (4)	X	X		N/A		N/A	N/A		
C-107				N/A		N/A	N/A		
C-108	X				N/A	N/A	N/A		
C-109	X				N/A	N/A	N/A		
C-110					N/A	N/A	N/A		
C-111	X				N/A	N/A	N/A		
C-112	X				N/A	N/A	N/A		
C-201					N/A	N/A	N/A		
C-202					N/A	N/A	N/A		
C-203					N/A	N/A	N/A		
C-204			O/C		N/A	N/A	N/A		
S-101				N/A			N/A		
S-102	X			N/A			N/A		
S-103				N/A			N/A		
S-104					N/A	N/A	N/A		
S-105				N/A			N/A		
S-106				N/A			N/A		
S-107				N/A		N/A	N/A		
S-108							N/A		
S-109				N/A			N/A		
S-110				N/A			N/A		
S-111	X			N/A			N/A		
S-112	X			N/A			N/A		
SX-101	X			N/A			N/A		
SX-102	X			N/A			N/A		
SX-103	X			N/A			N/A		
SX-104	X			N/A		O/S-O/C	N/A		
SX-105	X			N/A			O/C		
SX-106	X			N/A			N/A		
SX-107		X			N/A	N/A	O/C		
SX-108		X			N/A	N/A	O/C		

TABLE A-7. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 3 of 5)

Information as of May 31, 1994

Tank Number	Category		Temperature Readings (5)(6)	Surface Level Readings (1) (-357)		LOW Readings (-357) (9) Neutron	Radiation Readings		Dome Elevation Surveys (OSR/SAR)
	Watch List(6)	High Heat		M.T.	FIC		Lateral Readings (-357)	Drywell Readings (OSR/SAR)	
8X-108 (4)	X	X			N/A	N/A	O/C		
8X-110		X			N/A	N/A	O/C		
8X-111		X			N/A	N/A	O/C		
8X-112		X			N/A	N/A	O/C		
8X-113					N/A	N/A	N/A		
8X-114		X			N/A	N/A	O/C		
8X-118			O/S - O/C		N/A	N/A	O/C		
T-101 (4)						N/A	N/A		
T-102				N/A	O/C	N/A	N/A		
T-103				N/A		N/A	N/A		
T-104			O/C		N/A		N/A		
T-106			O/S - O/C	N/A		N/A	N/A		
T-108				N/A		N/A	N/A		
T-107	X			N/A		N/A	N/A		
T-108					N/A	N/A	N/A		
T-109			O/C	N/A		N/A	N/A		
T-110	X			N/A			N/A		
T-111	X			N/A			N/A		
T-112				N/A		N/A	N/A		
T-201					N/A	N/A	N/A		
T-202					N/A	N/A	N/A		
T-203					N/A	N/A	N/A		
T-204					N/A	N/A	N/A		
TX-101			O/S - O/C	N/A		N/A	N/A		
TX-102			O/C		N/A		N/A		
TX-103				N/A		N/A	N/A		
TX-104				N/A		N/A	N/A		
TX-106	X				N/A	O/S-O/C	N/A		
TX-108					N/A		N/A		
TX-107				N/A		N/A	N/A		
TX-108				N/A			N/A		
TX-109				N/A			N/A		
TX-110			O/C		N/A		N/A		
TX-111					N/A		N/A		
TX-112					N/A		N/A		
TX-113					N/A		N/A		
TX-114			O/C		N/A		N/A		
TX-116					N/A		N/A		
TX-118			O/S O/C		N/A	N/A	N/A		
TX-117			O/C		N/A		N/A		
TX-118	X			N/A			N/A		
TY-101	X			N/A		N/A	N/A		
TY-102				N/A		N/A	N/A		
TY-103	X			N/A			N/A		
TY-104	X			N/A		N/A	N/A		
TY-106					N/A	N/A	N/A		
TY-108					N/A	N/A	N/A		
U-101					N/A	N/A	N/A		
U-102				N/A			N/A		
U-103	X			N/A			N/A		
U-104			O/S - O/C		N/A	N/A	N/A		
U-106	X			N/A			N/A		
U-108	X			N/A			N/A		

TABLE A-7. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS
149 TANKS (Sheet 4 of 5)

Information as of May 31, 1994

Tank Number	Category		Temperature Readings (5)(6)	Surface Level Readings (1) (-357)		LOW Readings (-357) (9) Neutron	Radiation Readings		Dome Elevation Surveys (OSR/SAR)
	Watch List(6)	High Heat		M.T.	FIC		Lateral Readings (-357)	Drywell Readings (OSR/SAR)	
U-107	X			N/A			N/A		
U-108	X			N/A			N/A		
U-109	X			N/A			N/A		
U-110				N/A		N/A	N/A		
U-111	X			N/A			N/A		
U-112					N/A	N/A	N/A		
U-201					N/A	N/A	N/A		
U-202					N/A	N/A	N/A		
U-203					N/A	N/A	N/A		
U-204					N/A	N/A	N/A		
Catch Tanks and Special Surveillance Facilities									
A-302-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
311-ER	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
162-AX	N/A	N/A	N/A		N/A				
161-AZ	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
164-AZ	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A
BX-TK/SMP	N/A	N/A	N/A		N/A				
A-TK/SMP	N/A	N/A	N/A		N/A				
204-AR	N/A	N/A	N/A						
417-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
B-302	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
B-302-A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
B-304	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A
TX-302-B	N/A	N/A	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
U-301-B	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
141-S	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
Totals: 149 tanks	46 Watch List Tanks (4)	10 High Heat Tanks (4)	O/C: 20 tanks - (semiannual monitoring frequency) (5)	O/C: 1 tank 0 catch tanks	O/C: 1 tank 0 catch tanks	O/C: 3 tanks 56 tanks have LOWs (2 are O/S)	O/C: 9 tanks	0	0

See Footnotes on next page

TABLE A-7. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS
149 TANKS (Sheet 5 of 5)

Footnotes:

1. All SSTs have either manual tape or FIC, with the exception of S-108 and T-101, which have both. Tank 101-T also has a zip cord. All SST FICs are connected to CASS, with the exception of BX-106; however, the connection for many tanks is broken. For such cases, manual readings are taken. Manual surface level readings include readings taken by manual tape, manual FIC (not connected to CASS; BX-106), 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. High heat tanks have active exhausters; psychrometrics are taken in these tanks (A-104/105, C-105/106 [effective July 1, 1993, C-105 is no longer a high heat load tank], SX-107, 108, 109, 110, 111, 112, and 114). The exhausters on A-104/105 have been down since October 1991; no readings are being taken. Psychrometric readings have not been taken in the SX high heat load tanks since July 1993. The frequency of psychrometric readings in SSTs is determined by the Cognizant Engineers for the applicable tank farms on an "as needed" basis," with the exception of tanks C-105/106. Hanford Federal Facility Agreement and Consent Order," Washington State Department of Ecology, U. S. Environmental Protection Agency, and U. S. Department of Energy," 1992 (Tri-Party Agreement) requires psychrometric readings to be taken in C-105/106 on a monthly frequency. Psychrometric readings were taken in May 1994.
3. In-tank photographs are requested on an "as needed" basis. No in-tank photographs were taken between September 1990 and March 1993.
4. Two tanks are on both category lists (C-106 and SX-109). In July 1993, C-105 was removed from the High Heat Load list and BX-110, BX-111, BY-101 and T-101 were removed from the ferrocyanide Watch List; these tanks continue to have temperature readings taken weekly although they are only required to be taken semiannually.
5. Temperature readings may be regulated by OSD, -357, or POP. Additionally, high heat load tanks are regulated by OSR/SAR. Thermocouples in the nine tanks designated O/S-O/C are out of service; there are either no thermocouple trees in these tanks, or trees have been cut off, covered over, or are otherwise unable to function. The OSD does not require readings or repair of out-of service thermocouples for the 91 low heat load (<40,000 Btu/h) tanks. However, the POP requires that attempts are to be made semiannually in January and July to obtain readings for these tanks. Temperatures were taken in January 1994; a total of 20 tanks are O/C because readings could not be obtained.
6. "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, (the "Wyden Amendment") requires continuous pressure monitoring and temperature monitoring in Watch List tanks. WHC-EP-0422 REV 1, "A Plan to Implement Remediation of Waste Tank Safety Issues at the Hanford Site," December 1991, addresses these monitoring issues. WHC-EP-0600, "Status Report on Resolution of Waste Tank Safety Issues at the Hanford Site," issued August 1993, describes the resolution strategy for these safety issues.

All BY-Farm tanks on the ferrocyanide watch list are on the Tank Monitor and Control System (TMACS) which continuously monitors for temperatures. In addition, all of C-Farm was added March 31, 1994, with the exception of C-204, which has no thermocouple tree.
7. Continuous Air Monitoring (CAM) compliance and Radiation Area Monitoring Panel (RAMP) compliance are not addressed in this table.
8. Double-shell tank farm SY has the only tanks with continuous vapor/flamable gas monitoring; not addressed in this table.

TABLE A-8. DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS
 28 TANKS (Sheet 1 of 2)

The following table indicates whether Double-Shell tank monitoring was in compliance with the requirements as specified in the applicable documents as of the last day of the applicable month:

NOTE:

Dome Elevation Surveys are not required for DSTs.
 Psychrometrics (2)
 In-tank Photographs (3)
 Pressure Monitoring (6)
 CAM/RAMP Monitoring (7)
 Vapor Monitoring (8)

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 WHC-SD-WM-SAR-018, Rev 1, 5/88 WHC-SD-HS-SAR-010, Rev 1, 8/83 (Aging Waste)
OSD	= Operations Safety Doc., OSD-T-151-0007, Rev H-5, 1/82
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 May 31, 1994

Tank Number	Watch List	Temperature Readings (4) (OSD)	Surface Level Readings (1) (-357, OSR/SAR)		Radiation Readings		
					Leak Detection Pits (5) (-357, OSR/SAR)		Annulus (-357)
			M.T.	FIC	W.F.	Rad.	
AN-101			N/A				
AN-102			N/A				
AN-103	X		N/A				
AN-104	X		N/A				
AN-105	X		N/A				
AN-106			N/A				
AN-107			N/A				
AP-101						O/C	
AP-102				O/S		O/C	
AP-103						O/C	
AP-104			O/S			O/C	
AP-105				O/S		O/C	
AP-106						O/C	
AP-107						O/C	
AP-108						O/C	
AW-101	X						
AW-102							
AW-103							
AW-104							
AW-105						O/C	
AW-106							
AY-101				O/S			O/C
AY-102						O/C	O/C
AZ-101				O/S			
AZ-102						O/C	
SY-101	X						
SY-102							
SY-103	X						
Totals: 28 tanks	8 Watch List Tanks	O/C: 0	O/C: 0	O/C: 0	O/C: 0	O/C: 11 tanks	O/C: 2 tanks

See footnotes next page:

TABLE A-8. DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS
28 TANKS (Sheet 2 of 2)

Footnotes:

1. All DSTs have both manual tape and FIC, with the exception of the AM Tank Farm which has only 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 only taken on tanks with active exhausters; all DSTs have active exhausters. The frequency of psychrometric readings in DSTs is determined by the Cognizant Engineers for the applicable tank farms on an "as needed" basis. Currently, monthly readings are being taken on the SY-101 annulus exhaust, SY-102 tank and annulus exhaust, and SY-103 tank and annulus exhaust. SY-101 tank exhaust readings are not being taken until a port on the tank exhaust header becomes available for exhauster readings. No other psychrometric readings are currently being taken monthly.
3. In-tank photographs are requested on an "as needed" basis. Last in-tank photographs in DSTs were taken in April 1989.
4. OSD specifies DST temperature limits, gradients, etc. Tank SY-101 temperatures 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 workdays per -357 document. If the pair of out-of-service system exceeds these timeframes, all systems are O/C. Out-of-service systems which have not exceeded these timeframes will be shown as O/S.
6. "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, (the "Wyden Amendment") requires continuous pressure monitoring and temperature monitoring in Watch List tanks. WMC-EP-0422 REV 1, "A Plan to Implement Remediation of Waste Tank Safety Issues at the Hanford Site," December 1991, addresses these monitoring issues. A status report on resolution of Waste Tank Safety Issues at the Hanford Site has been prepared but has not yet been cleared for public release.
7. Continuous Air Monitoring (CAM) compliance and Radiation Area Monitoring Panel (RAMP) compliance are not addressed in this table.
8. Double-shell tank farm SY has the only tanks with continuous vapor/flamable gas monitoring; not addressed in this table.

TABLE A-9. AUTOMATIC FOOD INSTRUMENT CORPORATION (FIC) GAUGES OUT OF SERVICE

May 31, 1994

Tank No.	SST/DST	Date of Last Automatic FIC Reading	Reading Status	Comments	Required Monitoring Frequency(-357)
T-102	SST	09/06/93	No reading taken since 09/07/93	Out of compliance as of 09/07/93	Daily
AP-108	DST	02/23/94	Taking manual FIC readings	In compliance	Daily
AW-101	DST	10/23/92	Taking manual FIC readings	In compliance	Daily
AW-103	DST	12/15/93	Taking manual FIC readings	In compliance	Daily
BY-109	SST	04/01/94	Taking manual FIC readings	In compliance	Daily
C-107	SST	08/10/93	Taking manual FIC readings	In compliance	Quarterly
SY-101	DST	08/23/91	Taking manual FIC readings	In compliance	Daily
TX-107	SST	10/22/93	Taking manual FIC readings	In compliance	Quarterly
U-Farm	SST	05/17/94	Taking manual FIC readings	In compliance	Daily/Quarterly
U-105	SST	11/17/92	Taking manual FIC readings	In compliance	Daily
U-109	SST	03/17/94	Taking manual FIC readings	In compliance	Daily
AP-102	DST	01/27/93	Taking manual tape readings	In compliance	Daily
AP-105	DST	05/07/94	Taking manual tape readings	In compliance	Daily
AY-101	DST	08/31/90	Taking manual tape readings	In compliance	Daily
AZ-101	DST	02/02/90	Taking manual tape readings	In compliance	Daily
Catch Tanks					
A-302-A		04/16/91	Taking manual reading	In compliance	Daily
TX-302-C		10/22/93	Taking manual FIC reading	In compliance	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 SST = Single-Shell Tank DST = Double-Shell Tank -357 = WHC-SO-WM-TI-357, Waste Storage Tank Status and Leak Detection Criteria

Figure 1. Discrepancy Report Status

05/31/94

Figure 2. Open Discrepancy Reports

Figure 3. Discrepancy Report Status by Age

This page intentionally left blank

APPENDIX B

**DOUBLE SHELL TANK WASTE TYPE
AND SPACE ALLOCATION**

This page intentionally left blank

**TABLE B-1. DOUBLE-SHELL TANK WASTE TYPE AND SPACE ALLOCATION
MAY 1994**

DOUBLE-SHELL TANK INVENTORY BY WASTE TYPE		SPACE DESIGNATED FOR SPECIFIC USE	
Complexed Waste (102-AN, 107-AN, 101-SY, 103-SY) 101-AY (DC))	4.88 Mgal	Spare Tanks (3) (1 Aging & 1 Non-Aging Waste Tank)	2.28 Mgal
Concentrated Phosphate Waste (102-AP, 106-AN)	1.12 Mgal	Segregated Tank Space (102-AP, 105-AP, 101-AY, 102-AN, 107-AN,)	0.40 Mgal
Double-Shell Slurry and Slurry Feed (103-AN, 104-AN, 105-AN, 105-AP, 101-AW)	5.09 Mgal	Watch List Tank Space (103-AN, 104-AN, 105-AN, 101-SY, 103-SY, 101-AW)	0.73 Mgal
Aging Waste (NCAW) at 5M Na Dilute in Aging Tanks (101-AZ, 102-AZ)	1.23 Mgal 0.71 Mgal	Priority/Operational Tank Space (2) (101-AN, 102-SY, 102-AW, 106-AW)	1.87 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, 102-AY, 102-SY, 104-AP)	9.2 Mgal	Miscellaneous Head Space	0.17 Mgal
NCRW, PFP and Settled Solids (103-AW, 105-AW, 102-SY, 102-AW, 104-AW, 106-AW, 102-AY)	1.52 Mgal	Total Specific Use Space (06/30/94)	5.65 Mgal
Total Inventory=	23.74 Mgal	TOTAL DOUBLE-SHELL TANK SPACE	
		24 Tanks at 1140 Kgal	27.36 Mgal
		4 Tanks at 980 Kgal	3.92 Mgal
			31.28 Mgal
		Total Available Space	31.28 Mgal
		Double-Shell Tank Inventory	23.74 Mgal
		Space Designated for Specific Use	5.65 Mgal
		Remaining Unallocated Space	1.89 Mgal

(1) Was reduced in volume by -1.397 Mgal this month (Evaporator Waste Volume Reduction)

(2) Reduced by Saltwell Liquid pumping, and PFP Operations

(3) 241-101-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 Operation Specifications for the 241 AN, 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. Tank 104-AP has been designated as the non-aging spare tank.

Note: Net change in total inventory since last month: -1.380 Mgal

WVPTOT

WHC-EP-0182-74

FIGURE B-1. TOTAL DOUBLE-SHELL TANK INVENTORY AND CHANGES

NOTE: THIS GRAPHIC DEPICTS "USABLE" TANK SPACE CHANGES; NOT TOTAL RECEIPTS TO DOUBLE-SHELL TANKS

FIGURE B-2. USABLE TANK SPACE INVENTORY AND CHANGES

NOTE: Graphic depicts Priority space usage, Operational tanks are not included

FIGURE B-3. CONTRIBUTIONS TO PRIORITY SPACE

NOTE: THIS GRAPHIC DEPICTS "USABLE SPACE" DEPLETION AND NOT TOTAL RECEIPTS TO DSTs

FIGURE B-4. COMPARISON OF FACILITY GENERATIONS TO MANAGEMENT LIMIT

Figure B-6. Overall Waste Flow - Hanford Tank Waste Disposal

Table B-2. Double Shell Tank Waste Inventory for May 31, 1994

(page 1 of 2)

TANKS	INVENTORY	SOLIDS	TYPE	LEFT
101AW=	1124	84	DSSF	16
102AW=	215	3	DN	925
103AW=	647	487	NCRW	493
104AW=	1123	267	DN	17
105AW=	1043	388	NCRW	97
106AW=	964	211	DN	176
101AY=	877	83	DC	103
102AY=	719	32	DN	261
101AZ=	967	35	NCAW	13
102AZ=	967	95	NCAW	13
101AN=	783	0	DN	357
102AN=	1088	89	CC	52
103AN=	953	373	DSS	187
104AN=	1057	264	DSSF	83
105AN=	1124	0	DSSF	16
106AN=	21	17	CP	1119
107AN=	1062	134	CC	78
101SY=	1103	560	CC	37
102SY=	763	133	PT/DN	377
103SY=	748	4	CC	392
101AP=	1060	0	DN	80
102AP=	1102	0	CP	38
103AP=	28	0	DN	1112
104AP=	18	0	DN	1122
105AP=	817	0	DSSF	323
106AP=	1127	0	DN	13
107AP=	1110	0	DN	30
108AP=	1131	0	DN	9
TOTAL=	23741		TOTAL	7539

TOTAL SPACE AVAILABLE	
NON-AGING	27360
AGING =	3920
TOTAL=	31280

INVENTORY CHANGE	
04/94 TOTAL	25121
05/94 TOTAL	23741
DECREASE	-1380

SEGREGATED SPACE	
* 101AW=	16
102AP=	38
105AP=	323
* 101SY=	37
* 103SY=	392
101AY=	103
102AN=	52
* 103AN=	187
* 104AN=	83
* 105AN=	16
107AN=	78
TOTAL=	1325

USABLE SPACE	
103AP=	1112
104AP=	1122
108AP=	9
103AW=	493
105AW=	97
102AY=	261
106AN=	1119
102AW=	925
106AW=	176
TOTAL=	5314
SPARES	-2280
EVAP. OPERATION	-1140
USABLE LEFT=	1894

MISC. HEADSPACE	
101AP=	80
106AP=	13
107AP=	30
104AW=	17
101AZ=	13
102AZ=	13
TOTAL=	186

USABLE SPACE CHANGE	
04/94 TOTAL SPACE	1131
05/94 TOTAL SPACE	1894
INCREASE=	763

PRIORITY SPACE	
102SY=	377
101AN=	357
TOTAL=	734

PRIORITY SPACE CHANGE	
04/94 TOTAL SPACE	736
05/94 TOTAL SPACE	734
DECREASE=	-2

Inventory Calculation by Waste Type:

COMPLEXED WASTE	
102AN=	1088 (CC)
107AN=	1062 (CC)
101SY=	1103 (CC & DSS)
103SY=	748 (CC, DSS & SWL)
101AY=	877 (DC)
TOTAL=	4878

NCRW SOLIDS (PD)	
103AW=	487
105AW=	388
TOTAL=	875

PFP SOLIDS (PT)	
102SY=	133
TOTAL=	133

CONCENTRATED PHOSPHATE (CP)	
106AN=	21
102AP=	1102
TOTAL=	1123

DILUTE WASTE (DN)	
101AP=	1060
103AP=	28
106AP=	1127
107AP=	1110
108AP=	1131
101AN=	783
102AN=	212
104AW=	856
106AW=	753
102AY=	687
104AP=	18
103AW=	160
105AW=	655
102SY=	630
TOTAL=	8210

DSS/DSSF	
105AP=	817
103AN=	953
104AN=	1057
105AN=	1124
101AW=	1124
TOTAL=	5075

GRAND TOTALS	
CC=	4001
DC=	877
NCRW SOLIDS=	875
DST SOLIDS=	513
PFP SOLIDS=	133
CP=	1123
NCAW=	1934
DSS/DSSF=	5075
DILUTE=	9210
TOTAL=	23741

NCAW (AGING WASTE) (@ 5M Na)	
101AZ=	791
102AZ=	434
AT 5M Na	1225
DN=	709
TOTAL=	1934

NOTE: All Values are in Kilogallons.
(*) Watch List Tanks

Table B-2. Double Shell Tank Waste Inventory for May 31, 1994

(page 2 of 2)

TOTAL AVAILABLE SPACE AS OF MAY 31, 1994:				7539 KGALS
SEGREGATED TANK SPACE:				
(*) Watch List Tanks	TANK	WASTE TYPE	AVAILABLE	SPACE
	* 101-AW	DSSF	16	KGALS
	102-AP	CP	38	KGALS
	105-AP	DSSF	323	KGALS
	* 101-SY	CC/DSS	37	KGALS
	* 103-SY	CC/DSS	392	KGALS
	101-AY	DC	103	KGALS
	102-AN	CC	52	KGALS
	* 103-AN	DSS	187	KGALS
	* 104-AN	DSSF	83	KGALS
	* 105-AN	DSSF	16	KGALS
	107-AN	CC	78	KGALS
	TOTAL=			1325 KGALS
AVAILABLE TANK SPACE=			7539 KGALS	
MINUS SEGREGATED SPACE=			-1325 KGALS	
TOTAL AVAILABLE SPACE AFTER SEGREGATION=			6214 KGALS	
PRIORITY TANK SPACE:				
SWL/PFP	TANK	WASTE TYPE	AVAILABLE	SPACE
NON-COMPLEXED SWL RECEIVER	102-SY	DN	377	KGALS
	101-AN	DN	357	KGALS
TOTAL=			734 KGALS	
AVAILABLE SPACE AFTER SEGREGATION=			6214 KGALS	
MINUS PRIORITY SPACE=			-734 KGALS	
TOTAL AVAILABLE SPACE AFTER PRIORITY=			5480 KGALS	
MISCELLANEOUS HEADSPACE:				
	TANK	WASTE TYPE	AVAILABLE	SPACE
	101-AP	DN	80	KGALS
	106-AP	DN	13	KGALS
	107-AP	DN	30	KGALS
	104-AW	DN	17	KGALS
	101-AZ	AW	13	KGALS
	102-AZ	AW	13	KGALS
TOTAL=			166 KGALS	
AVAILABLE SPACE AFTER PRIORITY=			5480 KGALS	
MINUS MISCELLANEOUS HEADSPACE=			-166 KGALS	
TOTAL AVAILABLE SPACE AFTER HEADSPACE=			5314 KGALS	
USABLE TANK SPACE:				
	TANK	WASTE TYPE	AVAILABLE	SPACE
	103-AP	DN	1112	KGALS
	104-AP	DN	1122	KGALS
	108-AP	DN	9	KGALS
	103-AW	NCRW	493	KGALS
	105-AW	NCRW	97	KGALS
	102-AY	DN	261	KGALS
	106-AN	CP	1119	KGALS
EVAPORATOR FEED TANK	102-AW	DN	925	KGALS
EVAPORATOR RECEIVER TANK	106-AW	DN	176	KGALS
TOTAL=			5314 KGALS	
TOTAL AVAILABLE USABLE SPACE=			5314 KGALS	
MINUS EVAP. OPERATIONAL SPACE=			-1140 KGALS	
MINUS SPARE TANK SPACE=			-2280 KGALS	
TOTAL TANK SPACE AVAILABLE AFTER ALL DEDUCTIONS=			1894 KGALS	

This page intentionally left blank

APPENDIX C

**TANK AND EQUIPMENT CODE
AND STATUS DEFINITIONS**

This page intentionally left blank

C. TANK AND EQUIPMENT CODE/STATUS DEFINITIONS
May 31, 1994

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
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 *National Defense Authorization Act for Fiscal Year 1991*, 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 the N Reactor in the 100 N Area. 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, and hydroxyethyl-ethylenediaminetriacetic acid (HEDTA), being the major complexants used. Main sources of DC waste in the DST system are saltwell liquid inventory (from SSTs).

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 (DSSF)

Waste concentrated just before reaching the sodium aluminate saturation boundary (of 6.5 molar hydroxide) 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 (NCPLX) 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. (See also Section 4)

Supernate

The liquid above the solids in waste storage tanks. (See also Section 4)

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 are out of service.)

INTERIM 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.

Jet Pump

The jet pump system includes 1) a jet assembly with foot valve mounted to the base of two pipes that extend from the top of the well to near the bottom of the well casing inside the saltwell screen, 2) a centrifugal pump to supply power fluid to the down-hole jet assembly, 3) flexible or rigid transfer jumpers, 4) a flush line, and 5) a flowmeter. The jumpers contain piping, valves, and pressure and limit switches.

The centrifugal pump and jet assembly are needed to pump the interstitial liquid from the saltwell screen into the pump pit, nominally a 40-foot elevation rise. The power fluid passes through a nozzle in the jet assembly and acts to convert fluid pressure head to velocity head, thereby reducing the pressure in the jet assembly chamber. The reduction in pressure allows the interstitial liquid to enter the jet assembly chamber and mix with the power fluid. Velocity head is converted to pressure head above the nozzle, lifting power fluid, and interstitial liquid to the pump pit. Pumping rates vary from 0.05 gal to about 4 gal/min.

Saltwell Screen

The saltwell system is a 10-inch diameter saltwell casing consisting of a stainless steel saltwell screen welded to a Schedule 40 carbon steel pipe. The casing and screen are to be inserted into the 12-inch tank riser located in the pump pit. The stainless steel screen portion of the system will extend through the tank waste to near the bottom of the tank. The saltwell screen portion of the casing is an approximately 10-foot length of 300 Series, 10-inch diameter, stainless steel pipe with screen openings (slots) of 0.05 inches.

Emergency Pumping Trailer

A 45-foot Tractor-Type trailer is equipped to provide storage space and service facilities for emergency pumping equipment: this consists of two dedicated jet pump jumpers and two jet pumps, piping and dip tubes for each, two submersible pumps and attached piping, and a skid-mounted Weight Factor Instrument Enclosure (WFIE) with an air compressor and electronic recording instruments. The skid also contains a power control station for the pumps, pump pit leak detection, and instrumentation. A rack for over 100 feet of overground double-contained piping is also in the trailer.

INTRUSION PREVENTION (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. In June 1993, Interim Isolation was replaced by Intrusion Prevention.

Intrusion Prevention (IP)

Intrusion Prevention is 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. Under no circumstances are electrical or instrumentation devices disconnected or disabled during the intrusion prevention process (with the exception of the electrical pump), in accordance with WHC-SD-WM-SAR-006 REV 2, *Single-Shell Tank Isolation Safety Analysis Report*, March 1986.

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.

Assumed Re-Leaker

A condition that exists after a tank has been declared as an "assumed leaker" and then the surveillance data indicates a new 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." There are 759 drywells which are monitored on various frequencies.

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 entered into 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 only. 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 usually constructed of fiberglass or TEFZEL*-reinforced epoxy-polyester resin. There are a few LOWs constructed of steel. LOWs are sized to extend to within 1 in. of the bottom of the waste tank, are sealed at their bottom ends and have a nominal outside diameter of 3.5 in. Two probes are used to monitor changes in the ILL; 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, rather than routine, 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, one or more thermocouples may be installed directly in a tank, although some SSTs do not have any trees installed. A single thermocouple (probe) 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.

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

TERMS/ACRONYMS

CASS	Computer Analysis Surveillance System
OSD	Operating Specifications Document
OSR	Operational Safety Requirements (OSRs are sections in SARs - see below)
SAR	Safety Analysis Reports
TMACS	Tank Monitor and Control System
TPA	Hanford Federal Facility Consent and Compliance Order, "Washington State Department of Ecology, U. S. Environmental Protection Agency, and U. S. Department of Energy," 1992 (Tri-Party Agreement)
USQ	Unreviewed Safety Question
Wyden Amendment	"Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the <u>National Defense Authorization Act for Fiscal Year 1991</u> , November 5, 1990, Public Law 101-510.

4. INVENTORY AND STATUS BY TANK - VOLUME CALCULATIONS/DEFINITIONS FOR TABLE E-5 (SINGLE-SHELL TANKS)

COLUMN HEADING	VOLUME CALCULATIONS/DEFINITIONS
Total Waste	Solids volume plus Supernatant liquid. Solids include sludge and saltcake (see definitions below)
Supernatant Liquid	Drainable Liquid Remaining minus Drainable Interstitial. Supernate is the clear liquid floating on the surface of the waste. Supernate is usually derived by subtracting the solids level measurement from the liquid level measurement. In some cases, the supernatant volume includes floating solid crusts because their volume cannot be measured. Photographs are useful in estimating the liquid volumes; the area of solids covered and the average depth can be estimated.

COLUMN HEADING	VOLUME CALCULATIONS/DEFINITIONS
Drainable Interstitial Liquid	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. Interstitial liquid is liquid that fills the interstitial spaces of the solids waste. Drainable interstitial liquid is calculated based on the saltcake and sludge volumes in the tank. The sum of the interstitial liquid contained in saltcake and sludge is the initial volume of drainable interstitial liquid. The volume reported as Drainable Interstitial Liquid is the initial volume of drainable interstitial liquid minus interstitial liquid removed by pumping.
Pumped This Month	Net total gallons of liquid pumped from the tank during the month. If supernate is present, pump production is first subtracted from the supernatant volume. The remainder is then subtracted from the drainable interstitial liquid volume. The total pumped volume is subtracted from drainable liquid remaining and pumpable liquid remaining. Pump production takes into account the amount of water added to the tank during the month (if any).
Total Pumped	Cumulative net total gallons of liquid pump from 1979 to date.
Drainable Liquid Remaining	Supernate plus Drainable interstitial. (See Supernatant Liquid and Drainable Interstitial Liquid above for definitions). The total Drainable Liquid Remaining is the sum of drainable interstitial liquid and supernate minus total gallons pumped.
Pumpable Liquid Remaining	Drainable Liquid Remaining minus undrainable heel volume. (Dish bottom tanks have a "heel" where liquids can collect: flat bottom tanks do not). (See Drainable Liquid Remaining and Pumped this Month for definitions). Not all drainable interstitial liquid is pumpable. It is assumed that drainable interstitial liquid on top of the undrainable heel in sludge or saltcake, is not jet pumpable. Therefore, pumpable interstitial liquid is the initial volume of drainable interstitial liquid minus the amount of interstitial liquid on top of the heel. The volume shown as Pumpable Liquid Remaining is the sum of pumpable interstitial liquid and supernate minus total gallons pumped.

COLUMN HEADING	VOLUME CALCULATIONS/DEFINITIONS
Sludge	Solids formed during sodium hydroxide additions to waste. Sludge usually was in the form of suspended solids when the waste was originally received in the tank from the waste generator. In-tank photographs may be used to estimate the volume.
Saltcake	Results from crystallization and precipitation after concentration of liquid waste, usually in an evaporator. If saltcake is layered over sludge, it is only possible to measure total solids volume. In-tank photographs may be used to estimate the saltcake volume.
Solids Volume 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.
See Footnotes for These Changes	Indicates any change made the previous month. A footnote explanation for the change follows the Inventory and Status by Tank section (Table E-5).

This page intentionally left blank.

APPENDIX D

**TANK FARM CONFIGURATION, STATUS, AND
FACILITY CHARTS**

This page intentionally left blank.

D-3

75 ft Diameter Double-Shell Tank
Tank Farms: AN, AP, AW, AY, AZ, SY

* AY and AZ Have a Tank Capacity
of 1,000,000 gal

75 ft Diameter Single-Shell Tank
Tank Farms: A*, AX*, SX

* A and AX have flat bottoms

75 ft Diameter Single-Shell Tank
Tank Farms: BY, S, TX, TY

75 ft Diameter Single-Shell Tank
Tank Farms: B, BX, C, T, U

20 ft Diameter Single-Shell Tank
Tank Farms: B, C, T, U

Figure D-1. High-Level Waste Tank Configuration

29103062.1a

WHC-EP-0182

Figure D-2. Double-Shell Tank Instrumentation Configuration

Figure D-3. Single-Shell Tank Instrumentation Configuration

This page intentionally left blank

Op's limit 1,140,000 gal. Constructed 1974-76

200 West Tank Farms Double-Shell Tank Status

Op's limit 1,140,000 gal. Constructed 1980-81

Op's Limit 1,140,000 gal. Constructed 1983-86

Op's limit 1,140,000 gal. Constructed 1978-80

Op's limit 980,000 gal. Constructed 1968-70

Op's limit 980,000 gal. Constructed 1971 & 1977

200 East Tank Farms Double-Shell Tank Status

Complex
Concentrate

Dilute

Dilute
Complex
Waste Concentrated
Phosphate
Waste Neutralized
Current
Acid
Waste (NCAW)

PFP

Sludge

Double-Shell
Slurry/Feed NCRW
Neutralized Cladding
Removal Waste

H = Potential Flammable Gases
(Hydrogen) (WHC-WP-0416)
TT = Transfer Tank
XXX = Sludge (in K gal.)

Updated Quarterly 03/31/94

DST-LVL'S G SPENCER/04 94

Figure D-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

Sulfide

Sulfate

XXX = Total Waste Volume (Solids + Supernatant) (in K gal.)

XXX = Total Solids (in K gal.)

(Drainable Interstitial + Supernatant)

XXX = Sludge (in K gal.)

(Sulfate 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)

IP = Intrusion Prevention

IS = Interim Stabilized

PI = Partially Interim Isolated

Updated Quarterly 03/31/94

SST-ALL/A.L. HEIN/04-94

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

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

Sludge

Sediment

XXX = Total Waste Volume (Solids+Supernatant) (in K gal.)

XXX = Total Solids (in K gal.)

[Drainable Interstitial + Supernatant]

XXX = Sludge (in K gal.)

(Sediment Totals Not Shown)

AL = Assumed Leaker

HH = High Heat Tanks

F = Ferricyanide

(WHC-EP-0309)

O = Organics

H = Potential Rammable Gases

(Hydrogen)(WHC-EP-0416)

IP = Intrusion Prevention

IS = Interim Stabilized

PI = Partially Interim Isolated

Updated Quarterly 03/31/94

SST-ALL/A.L. HEN/04-94

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

Hanford Tank Farm Facilities

200 East

Note: All single-shell tanks were removed from service (not allowed to receive waste) on or before November 21, 1980

Single Walled Pipe Direct Buried

All Tanks 75 Foot Diameter
(Except 55,000 gal 20 foot dia.)

Single-Shell

Double-Shell

Interim
Stabilized

Sound

DCRT = Double Contained
Receiver Tank
NHW = Neutralized
High Level Waste
PAW = PUREX Acid Waste

Isolated
PI= Partial
Interim
IP= Intrusion
Prevention
Completed

Tank
Number

Radiation Monitoring
Dry Well - Approx Location
(● = Active ○ = Inactive)

BY-Tank Farm
1948-49
12 @ 758,000 gal

BX-Tank Farm
1946-47
12 @ 530,000 gal

244-BX
DCRT

B-Tank Farm
1943-44
12 @ 530,000 gal
4 @ 55,000 gal

C-Tank Farm
1943-44
12 @ 530,000 gal
4 @ 55,000 gal

AN-Tank Farm
1980-81
7 @ 1,160,000 gal

Hanford Tank Farm Facilities

200 West

Note: All single-shell tanks were removed from service (not allowed to receive waste) on or before November 21, 1980

Double Walled Pipe
Single Walled Pipe Direct Buried

All Tanks 75 Foot Diameter
(Except 55,000 gal 20 foot dia.)

TY-Tank Farm 1951-52
6 @ 758,000 gal

TX-Tank Farm 1947-48
18 @ 758,000 gal

U-Tank Farm 1943-44

244-TX DCRT
Z Plant

242-T Evaporator

152-TX

152-U

151-U

U Plant

Vent Station

Tank Number

Radiation Monitoring
Dry Well - Approx Location
(● = Active ○ = Inactive)

Radiation Monitoring
Laterals Under Tank
(X = not used)

Drainable Liquid
Remaining (1000 gal)
(Inactive Tanks)

Liquid Level Gauges
▼ = FIC Read Manually
Y = Tape Read Manually
▽ = Auto FIC on CASS
▽ = Intrusion Mode FIC

Airlift Circulators

Liquid Observation
Well (Low)

Screen - Jet Pump

Assumed
Leaker

Total Solids
(1000 gal)
Salt Cake/
Sludge/DSS
(Inactive Tanks)

Operating
Exhauster

Watch List and
High Heat Load
Tanks

Temperature Reading
Automatic Readings:
● By CASS for DSTs
○ By TMACS for SSTs

Assumed
Leaked Date

Watch List Tanks

- Ferrocyanide**
- H₂/Flammable gases (109-SX has potential only-other tanks vent thru it)**
- Organics**
- High Heat - 106-C only on Watch List (cooling water added)**

Status as of May 31, 1994 - Updated Monthly
Issued by WHC/WTPE

APPENDIX E

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

This page intentionally left blank.

TABLE E-1. MONTHLY SUMMARY

		<u>TANK STATUS</u>				
		May 31, 1994				
		200	200			
		<u>EAST AREA</u>	<u>WEST AREA</u>	<u>TOTAL</u>		
IN SERVICE		25	3	28	(2)	
OUT OF SERVICE		66	83	149		
SOUND		59	51	110		
ASSUMED LEAKER		32	35	67		
INTERIM STABILIZED		51	55	106	(1)	
ISOLATED						
PARTIAL INTERIM		21	30	51		
INTRUSION PREVENTION COMPLETED		45	53	98		
		<u>WASTE VOLUMES (Kgallons)</u>				
		200	200			
		<u>EAST AREA</u>	<u>WEST AREA</u>	<u>TOTAL</u>	<u>SST TANKS</u>	<u>DST TANKS</u>
						<u>TOTAL</u>
<u>SUPERNATANT</u>						
AGING	Aging waste	1804	0	1804	0	1804
CC	Complexant concentrate waste	1930	184	2114	3	2111
CP	Concentrated phosphate waste	1106	0	1106	0	1106
DC	Dilute complexed waste	794	1	795	1	794
DN	Dilute non-complexed waste	7659	0	7659	0	7659
DN/PT	Dilute non-complex/PUREX TRU solids	1030	0	1030	0	1030
DN/PT	Dilute non-complex/PFP TRU solids	0	692	692	0	692
DSSF	Double-shell slurry feed	3799	48	3847	57	3790
NCPLX	Non-complexed waste	215	291	506	506	0
TOTAL SUPERNATANT		18337	1216	19553	567	18986
<u>SOLIDS</u>						
	Double-shell slurry	937	1103	2040	0	2040
	Sludge	8206	5927	14133	12178	1955
	Saltcake	6577	17529	24106	23346	760
TOTAL SOLIDS		15720	24559	40279	35524	4755
TOTAL WASTE		34057	25775	59832	36091	23741
AVAILABLE SPACE IN TANKS		6733	806	7539	0	7539 (2)
DRAINABLE INTERSTITIAL		2232	4498	6730	6262	439
DRAINABLE LIQUID REMAINING		20571	5714	26285	6860	19425

(1) Includes six tanks that do not meet current established supernatant and interstitial liquid stabilization criteria, B-104, 110, 111, 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 E-2. TANK USE SUMMARY

May 31, 1994

TANK FARMS	IN SERVICE	OUT OF SERVICE	SOUND	ASSUMED LEAKER	ISOLATED TANKS		INTERIM STABILIZED TANKS
					PARTIAL INTERIM	INTRUSION PREVENTION	
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	12 (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	55
TOTAL	28	149	110	67	51	98	106

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

(2) Six Double-Shell Tanks on the Hydrogen Tank Watch List are not currently in service (AN-103, 104, 105, AW-101, SY-101 and 103).

TABLE E-3. INVENTORY SUMMARY BY TANK FARM

May 31, 1994

SUPERNATANT LIQUID VOLUMES (Kgallons)													SOLIDS VOLUME			
TANK FARM	TOTAL WASTE	AVAIL SPACE	AGING	CC	CP	DC	DN	DN/PD	DN/PT	DSSF	NCPLX	TOTAL	DSS	SLUDGE	CAKE	TOTAL
EAST																
A	1537	0	0	0	0	0	0	0	0	9	0	9	0	556	972	1528
AN	6088	1892	0	1927	4	0	783	0	0	1933	0	4647	937	504	0	1441
AP	6393	2727	0	0	1102	0	4474	0	0	817	0	6393	0	0	0	0
AW	5116	1724	0	0	0	0	1715	1030	0	1040	0	3785	0	1135	196	1331
AX	906	0	0	3	0	0	0	0	0	0	0	3	0	19	884	903
AY	1596	364	0	0	0	794	687	0	0	0	0	1481	0	115	0	115
AZ	1934	26	1804	0	0	0	0	0	0	0	0	1804	0	130	0	130
B	2057	0	0	0	0	0	0	0	0	0	15	15	0	1697	345	2042
BX	1540	0	0	0	0	0	0	0	0	0	31	31	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	34057	6733	1804	1930	1106	794	7659	1030	0	3799	215	18337	937	8206	6577	15720
WEST																
S	5510	0	0	0	0	0	0	0	0	17	41	58	0	1166	4286	5452
SX	4425	0	0	0	0	1	0	0	0	0	62	63	0	1254	3108	4362
SY	2614	806	0	184	0	0	0	0	692	0	0	876	1103	71	564	1738
T	2029	0	0	0	0	0	0	0	0	0	43	43	0	1980	0	1980
TX	7009	0	0	0	0	0	0	0	0	0	5	5	0	241	6763	7004
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	25775	806	0	184	0	1	0	0	692	48	291	1216	1103	5921	17529	24553
TOTAL	59832	7539	1804	2114	1106	795	7659	1030	692	3847	506	19553	2040	14127	24106	40273

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

TABLE E-4. INVENTORY AND STATUS BY TANK
DOUBLE-SHELL TANKS
May 31, 1994

TANK STATUS				LIQUID VOLUME							SOLIDS VOLUME			VOLUME DETERMINATION				SEE FOOTNOTES FOR THESE CHANGES
TANK	WASTE MATL	TANK INTEGRITY	TANK USE	EQUIVA-	TOTAL WASTE (Kgal)	AVAIL SPACE (Kgal)	SUPER- NATANT LIQUID (Kgal)	DRAIN-	DRAIN-	PUMP-	DSS (Kgallons)	SLUDGE CAKE	SALT METHOD	LIQUID VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST PHOTO DATE	
				LENT WASTE INCHES				ABLE INTER- STIT. (Kgal)	ABLE LIQUID REMAIN (Kgal)	ABLE LIQUID REMAIN (Kgal)								
AN TANK FARM STATUS																		
AN-101	DN	SOUND	DRCVR	284.7	783	357	783	0	783	783	0	0	0	FM	S	08/22/89	0/ 0/ 0	
AN-102	CC	SOUND	CWHT	395.6	1088	52	999	3	1002	999	0	89	0	FM	S	08/22/89	0/ 0/ 0	
AN-103	DSS	SOUND	CWHT	346.5	953	187	16	0	16	16	937	0	0	FM	S	08/22/89	10/29/87	
AN-104	DSSF	SOUND	CWHT	384.4	1057	83	793	25	818	796	0	264	0	FM	S	08/22/89	08/19/88	
AN-105	DSSF	SOUND	CWHT	408.7	1124	16	1124	0	1124	1124	0	0	0	FM	S	10/22/84	01/26/88	
AN-106	CP	SOUND	CWHT	7.6	21	1119	4	0	4	4	0	17	0	FM	S	08/22/89	0/ 0/ 0	
AN-107	CC	SOUND	CWHT	386.2	1062	78	928	9	937	928	0	134	0	FM	S	08/22/89	09/01/88	
7 DOUBLE-SHELL TANKS				TOTALS:	6088	1892	4647	37	4684	4650	937	504	0					
AP TANK FARM STATUS																		
AP-101	DN	SOUND	DRCVR	385.5	1060	80	1060	0	1060	1060	0	0	0	FM	S	05/01/89	0/ 0/ 0	
AP-102	CP	SOUND	GRTFD	400.7	1102	38	1102	0	1102	1102	0	0	0	FM	S	07/11/89	0/ 0/ 0	
AP-103	DN	SOUND	DRCVR	10.2	28	1112	28	0	28	28	0	0	0	FM	S	10/13/88	0/ 0/ 0	
AP-104	DN	SOUND	GRTFD	6.5	18	1122	18	0	18	18	0	0	0	FM	S	10/13/88	0/ 0/ 0	
AP-105	DSSF	SOUND	CWHT	297.1	817	323	817	0	817	817	0	0	0	FM	S	02/02/89	0/ 0/ 0	
AP-106	DN	SOUND	DRCVR	409.8	1127	13	1127	0	1127	1127	0	0	0	FM	S	10/13/88	0/ 0/ 0	
AP-107	DN	SOUND	DRCVR	403.6	1110	30	1110	0	1110	1110	0	0	0	FM	S	10/13/88	0/ 0/ 0	
AP-108	DN	SOUND	DRCVR	411.3	1131	9	1131	0	1131	1131	0	0	0	FM	S	10/13/88	0/ 0/ 0	
8 DOUBLE-SHELL TANKS				TOTALS:	6393	2727	6393	0	6393	6393	0	0	0					

TABLE E-4. INVENTORY AND STATUS BY TANK
DOUBLE-SHELL TANKS
May 31, 1994

TANK STATUS				LIQUID VOLUME							SOLIDS VOLUME		VOLUME DETERMINATION				SEE FOOTNOTES FOR THESE CHANGES
TANK	WASTE MATL	TANK INTEGRITY	TANK USE	EQUIVA- LENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL SPACE (Kgal)	NATANT LIQUID (Kgal)	DRAIN- ABLE INTER- STIT. (Kgal)	DRAIN- ABLE LIQUID REMAIN (Kgal)	PUMP- ABLE LIQUID REMAIN (Kgal)	DSS (Kgallons)	SLUDGE CAKE	LIQUID VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST PHOTO DATE	
AW TANK FARM STATUS																	
AW-101	DSSF	SOUND	CMHT	408.7	1124	16	1040	2	1042	1040	0	84	0	FM	S	10/22/84	03/17/88
AW-102	DN	SOUND	EVFD	78.2	215	925	214	0	214	214	0	1	0	FM	S	02/29/84	02/02/83
AW-103	DN/PD	SOUND	DRCVR	235.3	647	493	284	37	321	299	0	363	0	FM	S	02/01/89	0/ 0/ 0
AW-104	DN	SOUND	DRCVR	408.4	1123	17	833	49	882	860	0	179	111	FM	S	03/05/87	02/02/83
AW-105	DN/PD	SOUND	DRCVR	379.3	1043	97	746	29	775	753	0	297	0	FM	S	03/05/87	0/ 0/ 0
AW-106	DN	SOUND	SRCVR	350.5	964	176	668	42	710	688	0	211	85	FM	S	01/31/92	02/02/83
6 DOUBLE-SHELL TANKS				TOTALS:	5116	1724	3785	159	3944	3854	0	1135	196				
AY TANK FARM STATUS																	
AY-101	DC	SOUND	DRCVR	318.9	877	103	794	2	796	794	0	83	0	FM	S	02/02/87	12/28/82
AY-102	DN	SOUND	DRCVR	261.5	719	261	687	0	687	687	0	32	0	FM	S	02/10/88	04/28/81
2 DOUBLE-SHELL TANKS				TOTALS:	1596	364	1481	2	1483	1481	0	115	0				
AZ TANK FARM STATUS																	
AZ-101	AGING	SOUND	CMHT	351.6	967	13	932	0	932	932	0	35	0	FM	S	09/30/90	08/18/83
AZ-102	AGING	SOUND	DRCVR	351.6	967	13	872	4	876	872	0	95	0	FM	S	06/04/92	12/24/84
2 DOUBLE-SHELL TANKS				TOTALS:	1934	26	1804	4	1808	1804	0	130	0				

TABLE E-4. INVENTORY AND STATUS BY TANK
DOUBLE-SHELL TANKS
May 31, 1994

TANK STATUS				LIQUID VOLUME							SOLIDS VOLUME		VOLUME DETERMINATION				SEE FOOTNOTES FOR THESE CHANGES
TANK	WASTE MATL	TANK INTEGRTY	TANK USE	EQUIVA-	TOTAL WASTE (Kgal)	AVAIL SPACE (Kgal)	NATANT LIQUID (Kgal)	DRAIN-	DRAIN-	PUMP-	DSS (Kgallons)	SLUDGE SALT CAKE	LIQUID VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	LAST PHOTO DATE	
				LENT INCHES				ABLE INTER- STIT. (Kgal)	ABLE LIQUID REMAIN (Kgal)	ABLE LIQUID REMAIN (Kgal)							
SY TANK FARM STATUS																	
SY-101	CC	SOUND	CMHT	401.1	1103	37	13	237	250	244	530	0	560	FM	S	01/31/92	04/12/89
SY-102	DN/PT	SOUND	DRCVR	277.5	763	377	692	0	692	692	0	71	0	FM	S	05/12/87	04/29/81
SY-103	CC	SOUND	CMHT	272.0	748	392	171	0	171	171	573	0	4	FM	S	10/22/84	10/01/85
3 DOUBLE-SHELL TANKS				TOTALS:	2614	806	876	237	1113	1107	1103	71	564				
GRAND TOTAL					23741	7539	18986	439	19425	19289	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*		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.)

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

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

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

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 VOLUME UPDATE	SOLIDS	SEE	
																SOURCE	LAST	FOR
																UPDATE	PHOTO	THESE
																FOOTNOTE	DATE	CHANGES
+++++ A FARM STATUS +++++																		
A-101	DSSF	SOUND	/PI	953	0	413	0.0	0.0	413	390	3	950	P	F	11/21/80		08/21/85	
A-102	DSSF	SOUND	IS/PI	41	4	2	0.0	39.5	6	0	15	22	P	FP	07/27/89	(1)	07/20/89	
A-103	DSSF	ASMD LKR	IS/IP	371	5	15	0.0	111.0	20	0	366	0	-	FP	06/03/88	(1)	12/28/88	
A-104	NCPLX	ASMD LKR	IS/IP	28	0	0	0.0	0.0	0	0	28	0	M	PS	01/27/78		06/25/86	
A-105	NCPLX	ASMD LKR	IS/IP	19	0	4	0.0	0.0	4	0	19	0	P	MP	08/23/79	(1)	08/20/86	
A-106	CP	SOUND	IS/IP	125	0	7	0.0	0.0	7	0	125	0	P	M	09/07/82		08/17/86	
6 SINGLE-SHELL TANKS TOTALS				1537	9	441	0.0	150.5	450	390	556	972						
+++++ AX FARM STATUS +++++																		
AX-101	DSSF	SOUND	/PI	748	0	320	0.0	0.0	320	298	3	745	P	F	05/06/82		08/18/87	
AX-102	CC	ASMD LKR	IS/IP	39	3	14	0.0	13.0	17	3	7	29	F	S	09/06/88		06/05/89	
AX-103	CC	SOUND	IS/IP	112	0	36	0.0	0.0	36	3	2	110	F	S	08/19/87		08/13/87	
AX-104	NCPLX	ASMD LKR	IS/IP	7	0	0	0.0	0.0	0	0	7	0	P	M	04/28/82		08/18/87	
4 SINGLE-SHELL TANKS TOTALS:				906	3	370	0.0	13.0	373	304	19	884						

MHC-EP-0182-74

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

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 VOLUME UPDATE	SOLIDS UPDATE	SEE	FOR THESE CHANGES
																SOURCE SEE FOOTNOTE	LAST PHOTO DATE	
+++++ B FARM STATUS +++++																		
B-101	NCPLX	ASND LKR	IS/IP	113	0	6	0.0	0.0	6	0	113	0	P	F	04/28/82		05/19/83	
B-102	NCPLX	SOUND	IS/IP	32	4	0	0.0	0.0	4	0	18	10	P	F	08/22/85	(1)	08/22/85	
B-103	NCPLX	ASND LKR	IS/IP	59	0	0	0.0	0.0	0	0	59	0	F	F	02/28/85	(1)	10/13/88	
B-104	NCPLX	SOUND	IS/IP	371	1	46	0.0	0.0	47	40	301	69	M	M	06/30/85	(1)	10/13/88	
B-105	NCPLX	ASND LKR	IS/IP	306	0	23	0.0	0.0	23	0	40	266	P	MP	12/27/84	(1)	05/19/88	
B-106	NCPLX	SOUND	IS/IP	117	1	6	0.0	0.0	7	0	116	0	F	F	03/31/85	(1)	02/28/85	
B-107	NCPLX	ASND LKR	IS/IP	165	1	12	0.0	0.0	13	7	164	0	M	M	03/31/85	(1)	02/28/85	
B-108	NCPLX	SOUND	IS/IP	94	0	4	0.0	0.0	4	0	94	0	F	F	05/31/85	(1)	05/10/85	
B-109	NCPLX	SOUND	IS/IP	127	0	8	0.0	0.0	8	0	127	0	M	M	04/08/85	(1)	04/02/85	
B-110	NCPLX	ASND LKR	IS/IP	246	1	22	0.0	0.0	23	17	245	0	MP	MP	02/28/85	(1)	03/17/88	
B-111	NCPLX	ASND LKR	IS/IP	237	1	21	0.0	0.0	22	16	236	0	F	F	06/28/85	(1)	06/26/85	
B-112	NCPLX	ASND LKR	IS/IP	33	3	0	0.0	0.0	3	0	30	0	F	F	05/31/85	(1)	05/29/85	
B-201	NCPLX	ASND LKR	IS/IP	29	1	3	0.0	0.0	4	0	28	0	M	M	04/28/82		11/12/86	
B-202	NCPLX	SOUND	IS/IP	27	0	3	0.0	0.0	3	0	27	0	P	M	05/31/85	(1)	05/29/85	
B-203	NCPLX	ASND LKR	IS/IP	51	1	5	0.0	0.0	6	0	50	0	PM	PM	05/31/84	(1)	11/13/86	
B-204	NCPLX	ASND LKR	IS/IP	50	1	5	0.0	0.0	6	0	49	0	P	M	05/31/84	(1)	10/21/87	
16 SINGLE-SHELL TANKS				TOTALS	2057	15	164	0.0	0.0	179	80	1697	345					

E-10

WMC-EP-0182-74

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

TANK STATUS				LIQUID VOLUME							SOLIDS VOLUME		VOLUME DETERMINATION					
TANK	WASTE MATERIAL	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	DRAIN-ABLE		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 VOLUME UPDATE	SOLIDS UPDATE	SEE FOOTNOTES	
					SUPER-NATANT LIQUID (Kgal)	INTER-STIT. (Kgal)										SOURCE SEE FOOTNOTE	LAST PHOTO DATE	FOR THESE CHANGES
+++++ BX FARM STATUS +++++																		
BX-101	NCPLX	ASMD LKR	IS/IP	43	1	0	0.0	0.0	1	0	42	0	P	M	04/28/82		11/24/88	
BX-102	NCPLX	ASMD LKR	IS/IP	96	0	4	0.0	0.0	4	0	96	0	P	M	04/28/82		09/18/85	
BX-103	NCPLX	SOUND	IS/IP	66	4	0	0.0	0.0	4	0	62	0	P	F	11/29/83		10/31/86	
BX-104	NCPLX	SOUND	IS/IP	99	3	30	0.0	17.4	33	27	96	0	F	F	09/22/89	(1)	09/21/89	
BX-105	NCPLX	SOUND	IS/IP	51	5	6	0.0	15.0	11	4	43	3	F	S	09/03/86	(1)	10/23/86	
BX-106	NCPLX	SOUND	/PI	46	15	0	0.0	0.0	15	15	31	0	MP	PS	04/28/82		05/19/88	
BX-107	NCPLX	SOUND	IS/PI	345	1	29	0.0	23.1	30	23	344	0	MP	P	09/18/90	(2)	09/11/90	
BX-108	NCPLX	ASMD LKR	IS/IP	26	0	1	0.0	0.0	1	0	26	0	M	PS	07/31/79	(1)	05/05/94	
BX-109	NCPLX	SOUND	IS/PI	193	0	13	0.0	8.2	13	8	193	0	FP	P	09/17/90	(2)	09/11/90	
BX-110	NCPLX	ASMD LKR	IS/PI	198	0	15	0.0	4.0	17	6	189	9	MP	M	08/22/85	(1)	07/31/85	
BX-111	NCPLX	ASMD LKR	/PI	212	1	29	3.3	110.4	30	8	68	143	M	M	07/26/77		05/19/94	(a)
BX-112	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:	1540	31	134	3.3	182.2	167	93	1354	155					
+++++ BY FARM STATUS +++++																		
BY-101	NCPLX	SOUND	IS/IP	387	0	5	0.0	35.8	5	0	109	278	P	M	05/30/84		09/19/89	
BY-102	NCPLX	SOUND	/PI	341	0	39	2.3	125.6	39	20	0	341	MP	M	08/30/91	(2)	09/11/87	(b)
BY-103	NCPLX	ASMD LKR	/PI	400	0	160	0.0	78.5	160	137	5	395	MP	M	04/03/90	(2)	09/07/89	
BY-104	NCPLX	SOUND	IS/IP	406	0	18	0.0	329.5	18	0	40	366	P	M	04/28/82		04/27/83	
BY-105	NCPLX	ASMD LKR	/PI	503	0	192	0.0	0.0	192	169	44	459	P	MP	04/28/82		07/11/86	
BY-106	NCPLX	ASMD LKR	/PI	642	0	235	0.0	0.0	235	213	95	547	P	MP	04/28/82		11/04/82	
BY-107	NCPLX	ASMD LKR	IS/IP	266	0	25	0.0	56.4	25	0	60	206	P	MP	04/28/82		10/15/86	

MHC-EP-0182-74

Association for Information and Image Management
1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202

Centimeter

Inches

MANUFACTURED TO AIM STANDARDS
BY APPLIED IMAGE, INC.

2 of 2

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

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 VOLUME UPDATE	SOLIDS SOURCE SEE FOOTNOTE	LAST PHOTO DATE	SEE FOOTNOTES FOR THESE CHANGES
BY-108	NCPLX	ASND LKR	IS/IP	228	0	9	0.0	27.5	9	0	154	74	MP	M	04/28/82		10/15/86	
BY-109	NCPLX	SOUND	/PI	423	0	78	0.1	93.6	78	57	83	340	F	PS	08/30/91	(2)	10/15/86	(c)
BY-110	NCPLX	SOUND	IS/IP	398	0	9	0.0	213.3	9	0	103	295	M	S	09/10/79		07/26/84	
BY-111	NCPLX	SOUND	IS/IP	459	0	0	0.0	313.2	0	0	21	438	P	M	04/28/82		10/31/86	
BY-112	NCPLX	SOUND	IS/IP	291	0	8	0.0	116.4	8	0	5	286	P	M	04/28/82		04/14/88	
12 SINGLE-SHELL TANKS TOTALS:				4744	0	778	2.4	1389.8	778	596	719	4025						
+++++ C FARM STATUS +++++																		
C-101	NCPLX	ASND LKR	IS/IP	88	0	3	0.0	0.0	3	0	88	0	M	M	11/29/83		11/17/87	
C-102	DC	SOUND	/PI	423	0	37	0.0	11.6	37	19	423	0	F	FP	04/28/82		05/18/76	
C-103	NCPLX	SOUND	/PI	195	133	0	0.0	0.0	133	133	62	0	F	S	10/22/90	(2)	07/28/87	
C-104	CC	SOUND	IS/IP	295	0	11	0.0	0.0	11	5	295	0	FP	P	09/22/89	(1)	07/25/90	
C-105	NCPLX	SOUND	/PI	150	0	11	0.0	0.0	11	4	150	0	F	S	05/31/85		03/13/94	
C-106	NCPLX	SOUND	/PI	229	32	16	0.0	0.0	48	42	197	0	F	PS	04/28/82		04/05/79	
C-107	DC	SOUND	/PI	275	0	26	0.0	16.3	26	20	275	0	F	S	01/30/92	(2)	00/00/00	
C-108	NCPLX	SOUND	IS/IP	66	0	0	0.0	0.0	0	0	66	0	M	S	02/24/84	(1)	12/05/74	
C-109	NCPLX	SOUND	IS/IP	66	4	0	0.0	0.0	4	0	62	0	M	PS	11/29/83		01/30/76	
C-110	DC	ASND LKR	/PI	187	0	7	0.0	8.9	7	5	187	0	F	FMP	03/01/92	(2)	08/12/86	
C-111	NCPLX	ASND LKR	IS/IP	57	0	0	0.0	0.0	0	0	57	0	M	S	04/28/82		02/25/70	
C-112	NCPLX	SOUND	IS/PI	104	0	32	0.0	0.0	32	26	104	0	M	PS	09/18/90	(2)	09/18/90	

E-12

MHC-EP-0182-74

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

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 VOLUME UPDATE	SOLIDS SOURCE SEE FOOTNOTE	LAST PHOTO DATE	SEE FOOTNOTES FOR THESE CHANGES
C-201	NCPLX	ASMD LKR	IS/IP	2	0	0	0.0	0.0	0	0	2	0	P	MP	03/31/82		12/02/86	
C-202	EMPTY	ASMD LKR	IS/IP	1	0	0	0.0	0.0	0	0	1	0	P	M	01/19/79		12/09/86	
C-203	NCPLX	ASMD LKR	IS/IP	5	0	0	0.0	0.0	0	0	5	0	P	MP	04/28/82		12/09/86	
C-204	NCPLX	ASMD LKR	IS/IP	3	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 +++++														
S-101	NCPLX	SOUND	/PI	427	12	84	0.0	0.0	96	90	244	171	F	PS	09/16/80		03/18/88	
S-102	DSSF	SOUND	/PI	549	0	230	0.0	0.0	230	208	4	545	P	FP	04/28/82		03/18/88	
S-103	DSSF	SOUND	/PI	248	17	85	0.0	0.0	102	79	10	221	M	S	11/20/80		06/01/89	
S-104	NCPLX	ASMD LKR	IS/IP	294	1	28	0.0	0.0	29	23	293	0	M	M	12/20/84	(1)	12/12/84	
S-105	NCPLX	SOUND	IS/IP	456	0	35	0.0	114.3	35	13	2	454	MP	S	09/26/88		04/12/89	
S-106	NCPLX	SOUND	/PI	479	4	186	0.0	97.0	190	168	28	447	P	FP	12/31/93		03/17/89	
S-107	NCPLX	SOUND	/PI	376	14	45	0.0	0.0	59	52	293	69	F	PS	09/25/80		03/12/87	
S-108	NCPLX	SOUND	/PI	604	0	127	0.0	151.6	127	105	4	600	P	MP	04/28/82		03/12/87	
S-109	NCPLX	SOUND	/PI	568	0	141	0.0	111.0	141	119	13	555	F	PS	09/30/75		08/24/84	
S-110	NCPLX	SOUND	/PI	390	0	110	0.0	185.9	110	103	131	259	F	PS	05/14/92		03/12/87	
S-111	NCPLX	SOUND	/PI	596	10	195	0.0	3.3	205	134	139	447	P	FP	04/28/82		08/10/89	
S-112	NCPLX	SOUND	/PI	523	0	110	0.0	125.1	110	107	5	518	P	FP	12/31/93		03/24/87	
12 SINGLE-SHELL TANKS TOTALS:				5510	58	1376	0.0	788.2	1434	1201	1166	4286						

E-13

MHC-EP-0182-74

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

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 VOLUME UPDATE	SOLIDS UPDATE	SEE FOOTNOTES	
																SOURCE SEE FOOTNOTE	LAST PHOTO DATE	FOR THESE CHANGES
+++++ SX FARM STATUS +++++																		
SX-101 DC	SOUND		/PI	456	1	145	0.0	0.0	146	124	112	343	P	FP	04/28/82		03/10/89	
SX-102 DSSF	SOUND		/PI	543	0	183	0.0	0.0	183	177	117	426	P	M	04/28/82		01/07/88	
SX-103 NCPLX	SOUND		/PI	652	1	232	0.0	0.0	233	211	115	536	F	S	07/15/91		12/17/87	
SX-104 DSSF	ASMD LKR		/PI	614	0	201	0.0	113.2	201	195	136	478	F	S	07/07/89		09/08/88	
SX-105 DSSF	SOUND		/PI	683	0	261	0.0	0.0	261	238	73	610	P	F	04/28/82		06/15/88	
SX-106 NCPLX	SOUND		/PI	538	61	194	0.0	0.0	255	233	12	465	F	PS	10/28/80		06/01/89	
SX-107 NCPLX	ASMD LKR	IS/IP		104	0	5	0.0	0.0	5	0	104	0	P	M	04/28/82		03/06/87	
SX-108 NCPLX	ASMD LKR	IS/IP		87	0	5	0.0	0.0	5	0	87	0	P	M	12/31/93		03/06/87	
SX-109 NCPLX	ASMD LKR	IS/IP		250	0	10	0.0	0.0	10	0	0	250	P	M	10/05/93		05/21/86	
SX-110 NCPLX	ASMD LKR	IS/IP		62	0	0	0.0	0.0	0	0	62	0	M	PS	10/06/76		02/20/87	
SX-111 NCPLX	ASMD LKR	IS/IP		125	0	7	0.0	0.0	7	0	125	0	M	PS	05/31/74		03/10/87	
SX-112 NCPLX	ASMD LKR	IS/IP		92	0	3	0.0	0.0	3	0	92	0	P	M	04/28/82		03/10/87	
SX-113 NCPLX	ASMD LKR	IS/IP		26	0	0	0.0	0.0	0	0	26	0	P	M	04/28/82		03/18/88	
SX-114 NCPLX	ASMD LKR	IS/IP		181	0	14	0.0	0.0	14	0	181	0	P	M	04/28/82		02/26/87	
SX-115 NCPLX	ASMD LKR	IS/IP		12	0	0	0.0	0.0	0	0	12	0	P	M	04/28/82		03/31/88	
15 SINGLE-SHELL TANKS TOTALS:				4425	63	1260	0.0	113.2	1323	1178	1254	3108						

E-14

MHC-EP-0182-74

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

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 VOLUME UPDATE	SOLIDS UPDATE	SEE FOOTNOTES	
																SEE FOOTNOTE	LAST PHOTO DATE	FOR THESE CHANGES
+++++ T FARM STATUS +++++																		
E-15	T-101	NCPLX	ASMD LKR	IS/PI	102	1	16	0.0	25.3	17	0	101	0	F	S	04/14/93		04/07/93
	T-102	NCPLX	SOUND	IS/IP	32	13	0	0.0	0.0	13	13	19	0	P	FP	08/31/84		06/28/89
	T-103	NCPLX	ASMD LKR	IS/IP	27	4	0	0.0	0.0	4	0	23	0	F	FP	11/29/83	(1)	07/02/84
	T-104	NCPLX	SOUND	/PI	445	3	47	0.0	0.0	50	44	442	0	P	MP	04/28/82		06/29/89
	T-105	NCPLX	SOUND	IS/IP	98	0	23	0.0	0.0	23	17	98	0	P	F	05/29/87		05/14/87
	T-106	NCPLX	ASMD LKR	IS/IP	21	2	0	0.0	0.0	2	0	19	0	P	FP	04/28/82		06/29/89
	T-107	NCPLX	ASMD LKR	/PI	180	9	13	0.0	0.0	22	16	171	0	P	FP	08/31/84		07/12/84
	T-108	NCPLX	ASMD LKR	IS/IP	44	0	0	0.0	0.0	0	0	44	0	P	M	04/28/82		07/17/84
	T-109	NCPLX	ASMD LKR	IS/IP	58	0	0	0.0	0.0	0	0	58	0	M	M	12/30/84	(1)	02/25/93
	T-110	NCPLX	SOUND	/PI	379	3	39	0.0	0.0	42	36	376	0	P	FP	04/28/82		07/12/84
	T-111	NCPLX	ASMD LKR	/PI	453	0	55	3.1	3.1	55	49	453	0	P	FP	04/18/94	(2)	04/13/94
	T-112	NCPLX	SOUND	IS/IP	67	7	0	0.0	0.0	7	7	60	0	P	FP	04/28/82		08/01/84
	T-201	NCPLX	SOUND	IS/IP	29	1	3	0.0	0.0	4	0	28	0	M	PS	05/31/78		04/15/86
	T-202	NCPLX	SOUND	IS/IP	21	0	2	0.0	0.0	2	0	21	0	FP	P	07/12/81		07/06/89
	T-203	NCPLX	SOUND	IS/IP	35	0	4	0.0	0.0	4	0	35	0	M	PS	01/31/78		08/03/89
	T-204	NCPLX	SOUND	IS/IP	38	0	4	0.0	0.0	4	0	38	0	FP	P	07/22/81		08/03/89
16 SINGLE-SHELL TANKS				TOTALS:	2029	43	206	3.1	28.4	249	182	1986	0					

MHC-EP-0182-74

(d)

E-15

MHC-EP-0182-74

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

TANK STATUS				LIQUID VOLUME							SOLIDS VOLUME		VOLUME DETERMINATION					SEE	
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 VOLUME UPDATE	SOLIDS	LAST	FOR	
																UPDATE	PHOTO	THESE	
																SEE	DATE	CHANGES	
+++++ TX FARM STATUS +++++																			
TX-101	NCPLX	SOUND	IS/IP	87	3	2	0.0	0.0	5	0	84	0	F	P	02/02/84	(1)	10/24/85		
TX-102	NCPLX	SOUND	IS/IP	217	0	22	0.0	94.4	22	0	0	217	M	S	08/31/84		10/31/85		
TX-103	NCPLX	SOUND	IS/IP	157	0	15	0.0	68.3	15	0	157	0	F	S	08/14/80		10/31/85		
TX-104	NCPLX	SOUND	IS/IP	65	1	14	0.0	3.6	15	0	0	64	F	FP	04/06/84		10/16/84		
TX-105	NCPLX	ASMD LKR	IS/IP	609	0	20	0.0	121.5	20	0	0	609	M	PS	08/22/77		10/24/89		
TX-106	NCPLX	SOUND	IS/IP	453	0	10	0.0	134.6	10	0	0	453	M	S	08/29/77		10/31/85		
TX-107	NCPLX	ASMD LKR	IS/IP	36	1	1	0.0	0.0	2	0	0	35	FP	FP	01/20/84	(1)	10/31/85		
TX-108	NCPLX	SOUND	IS/IP	134	0	0	0.0	13.7	0	0	0	134	P	FP	05/30/83		09/12/89		
TX-109	NCPLX	SOUND	IS/IP	384	0	10	0.0	72.3	10	0	0	384	F	PS	05/30/83		10/24/89		
TX-110	NCPLX	SOUND	IS/IP	462	0	15	0.0	115.1	15	0	0	462	M	PS	05/30/83		10/24/89		
TX-111	NCPLX	ASMD LKR	IS/IP	370	0	9	0.0	98.4	9	0	0	370	M	PS	07/26/77		09/12/89		
TX-112	NCPLX	SOUND	IS/IP	649	0	24	0.0	94.0	24	0	0	649	P	PS	05/30/83		11/19/87		
TX-113	NCPLX	SOUND	IS/IP	607	0	16	0.0	19.2	16	0	0	607	M	PS	05/30/83		04/11/83		
TX-114	NCPLX	ASMD LKR	IS/IP	607	0	16	0.0	19.2	16	0	0	607	M	PS	05/30/83		04/11/83		
TX-115	NCPLX	ASMD LKR	IS/IP	535	0	15	0.0	104.3	15	0	0	535	M	PS	05/30/83		06/15/88		
TX-116	NCPLX	ASMD LKR	IS/IP	640	0	19	0.0	99.1	19	0	0	640	M	S	03/25/83		10/17/89		
TX-117	NCPLX	ASMD LKR	IS/IP	631	0	23	0.0	23.8	23	0	0	631	M	PS	03/31/72		04/11/83		
TX-118	NCPLX	ASMD LKR	IS/IP	626	0	8	0.0	54.3	8	0	0	626	M	PS	12/31/71		12/19/79		
TX-119	NCPLX	SOUND	IS/IP	347	0	27	0.0	89.1	27	0	0	347	F	S	11/17/80				
18 SINGLE-SHELL TANKS				TOTALS:	7009	5	250	0.0 1205.7	255	0	241	6763							

E-16

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

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 VOLUME UPDATE	SOLIDS UPDATE	SEE	FOR THESE CHANGES
																SOURCE SEE FOOTNOTE	LAST PHOTO DATE	
+++++ TY FARM STATUS +++++																		
TY-101	NCPLX	ASMD LKR	IS/IP	118	0	0	0.0	8.2	0	0	118	0	P	F	04/28/82		08/22/89	
TY-102	NCPLX	SOUND	IS/IP	64	0	14	0.0	6.6	14	0	0	64	P	FP	06/28/82		07/07/87	
TY-103	NCPLX	ASMD LKR	IS/IP	162	0	5	0.0	11.5	5	0	162	0	P	FP	07/09/82		08/22/89	
TY-104	NCPLX	ASMD LKR	IS/IP	46	3	12	0.0	0.0	15	0	43	0	P	FP	06/27/90	(1)	11/03/87	
TY-105	NCPLX	ASMD LKR	IS/IP	231	0	0	0.0	3.6	0	0	231	0	P	M	04/28/82		09/07/89	
TY-106	NCPLX	ASMD LKR	IS/IP	17	0	0	0.0	0.0	0	0	17	0	P	M	04/28/82		08/22/89	
6 SINGLE-SHELL TANKS				TOTALS:	638	3	31	0.0	29.9	34	0	571	64					
+++++ U FARM STATUS +++++																		
U-101	NCPLX	ASMD LKR	IS/IP	25	3	0	0.0	0.0	3	0	22	0	P	MP	04/28/82		06/19/79	
U-102	NCPLX	SOUND	/PI	374	18	126	0.0	0.0	144	122	43	313	P	MP	04/28/82		06/08/89	
U-103	NCPLX	SOUND	/PI	468	13	176	0.0	0.0	189	166	32	423	P	FP	04/28/82		09/13/88	
U-104	NCPLX	ASMD LKR	IS/IP	122	0	7	0.0	0.0	7	0	122	0	P	MP	04/28/82		08/10/89	
U-105	NCPLX	SOUND	/PI	418	37	142	0.0	0.0	179	157	32	349	FM	PS	09/30/78		07/07/88	
U-106	NCPLX	SOUND	/PI	226	15	68	0.0	0.0	83	61	26	185	F	PS	12/30/83		07/07/88	
U-107	DSSF	SOUND	/PI	406	31	147	0.0	0.0	178	156	15	360	F	S	12/30/83		10/27/88	
U-108	NCPLX	SOUND	/PI	468	24	172	0.0	0.0	196	174	29	415	F	S	12/30/83		09/12/84	
U-109	NCPLX	SOUND	/PI	463	19	163	0.0	0.0	182	160	48	396	F	F	11/13/77		07/07/88	
U-110	NCPLX	ASMD LKR	IS/PI	186	0	15	0.0	0.0	15	9	186	0	M	M	12/30/84	(1)	12/11/84	
U-111	DSSF	SOUND	/PI	329	0	122	0.0	0.0	122	99	26	303	PS	FPS	04/28/82		06/23/88	
U-112	NCPLX	ASMD LKR	IS/IP	49	4	0	0.0	0.0	4	0	45	0	P	MP	02/10/84	(1)	08/03/89	

E-17

MHC-EP-0182-74

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

TANK STATUS				LIQUID VOLUME							SOLIDS VOLUME		VOLUME DETERMINATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
TANK	WASTE MATERIAL	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER- NATANT LIQUID	DRAIN- ABLE INTER- STIT.	PUMPED THIS MONTH	TOTAL PUMPED	DRAIN- ABLE LIQUID REMAIN	PUMP- ABLE LIQUID REMAIN	SLUDGE (Kgal)	SALTCAKE (Kgal)	LIQUIDS VOLUME METHOD	SOLIDS VOLUME METHOD	SOLIDS VOLUME UPDATE	SOLIDS UPDATE	SEE FOOTNOTES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
					WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID						WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID	WASTE	LIQUID

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

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

The category "Interim Isolated" (II) was changed to "Intrusion Prevention" (IP) in June 1993. See section C. "Tank and Equipment Code and Status Definitions"

(1) WMC-SD-RE-TI-178 SST STABILIZATION RECORD, latest revision

(2) TANK FARMS COGNIZANT ENGINEER MONTHLY INPUT (Retained 10 yr in Monthly Summary Report author's office)

See next page for footnotes

MHC-EP-0182-74

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

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 VOLUME UPDATE	SOLIDS	SEE	
																UPDATE	FOOTNOTES	
																SOURCE	LAST	FOR
																SEE	PHOTO	FOR
				(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)	(Kgal)				FOOTNOTE	DATE	THESE
																		CHANGES

Footnotes:

(a) BX-111 - Following information from Cognizant Engineer, Stabilization:

Pumping began October 22, 1993, and was completed April 29, 1993.

Total waste: 211.7 Kgal

Supernate: 0.7 Kgal

Drainable Interstitial: 29 Kgal

Pumped this Month: 3.3 Kgal (3806 gallons less 521 gallon flushes) (Pumping restarted May 25, 1994, for flushing)

Total Pumped: 110.4 Kgal

Drainable Liquid Remaining: 30 Kgal

Pumpable Liquid Remaining: 8 Kgal

Sludge: 68 Kgal (no change)

Saltcake: 143 Kgal (No change)

Photos were taken May 19, 1994

(b) BY-102 - Following information from Cognizant Engineer, Stabilization:

Pumping restarted May 30, 1994

Total waste: 341 Kgal (no change)

Supernate: 0 Kgal (no change)

Drainable Interstitial Liquid: 38.7 Kgal

Pumped this Month: 2.3 Kgal (2371 gallons less 73 gallon flushes)

Total Pumped: 125.6 Kgal

Drainable Liquid Remaining: 38.7 Kgal

Pumpable Liquid Remaining: 19.7 Kgal

Sludge: 0 (No change)

Saltcake: 341 Kgal (no change)

TABLE E-5. INVENTORY AND STATUS BY TANK
SINGLE-SHELL TANKS
May 31, 1994

TANK STATUS			LIQUID VOLUME							SOLIDS VOLUME		VOLUME DETERMINATION					
TANK	WASTE TANK MATERIAL 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 VOLUME UPDATE	SOLIDS	SEE	FOR THESE CHANGES
															UPDATE	FOOTNOTES	
															SOURCE	LAST	
															SEE	PHOTO	
															FOOTNOTE	DATE	

(c) BY-109 - Following information from Cognizant Engineer, Stabilization:

Pumping restarted May 31, 1994
Total waste: 423 Kgal (no change)
Supernate: 0 Kgal (no change)
Drainable Interstitial Liquid: 78 Kgal
Pumped this Month: 0.1 Kgal
Total Pumped: 93.6 Kgal
Drainable Liquid Remaining: 77.9 Kgal
Pumpable Liquid Remaining: 56.9 Kgal
Sludge: 83 (no change)
Saltcake: 340 Kgal (no change)
Solids volume update: April 18, 1994

(d) T-111 - Following information from Cognizant Engineer, Stabilization:

Pumping began May 17, 1994
Total waste: 453
Supernate: 0 Kgal (pumping showed that the 9.0 Kgal supernate estimate was not accurate: 3.0 Kgal was more accurate.)
Drainable Interstitial Liquid: 55 Kgal
Pumped this Month: 3.1 Kgal (4200 gallons less 1100 gallon flushes)
Total pumped: 3.1 Kgal
Drainable Liquid Remaining: 55 Kgal
Pumpable Liquid Remaining: 49 Kgal
Sludge: 453 Kgal
Saltcake: 0 Kgal (no change)
Solids volume update: May 31, 1994

APPENDIX F
PERFORMANCE SUMMARY

This page intentionally left blank.

TABLE F-1. PERFORMANCE SUMMARY (Sheet 1 of 2)

WASTE VOLUMES (Kgallons)

May 31, 1994

INCREASES/DECREASES IN WASTE VOLUMES STORED IN DOUBLE-SHELL TANKS

SOURCE	THIS MONTH	FY1994 TO DATE
B PLANT	0	9
PUREX TOTAL (1)	0	41
PFP (1)	0	7
T PLANT (1)	0	0
S PLANT (1)	0	14
300/400 AREAS (1)	0	12
SULFATE WASTE - 100 N (2)	0	0
MINI-RUN (14)	0	67
TANK FARMS & SALTWELL LIQUID (6)	2	193
OTHER GAINS	42	204
Slurry increase (3)	0	
Condensate	31	
Instrument change (7)	0	
Unknown (5)	11	
OTHER LOSSES	-26	-303
Slurry decrease (3)	0	
Evaporation (4)	-12	
Instrument change (7)	0	
Unknown (5)	-14	
EVAPORATED	-1398	-2010
GROUTED	0	0
Total	-1380	-1766

+/-1 Kgal differences are the result of rounding

INCREASES/DECREASES IN WASTE VOLUMES STORED IN SINGLE-SHELL TANKS

SOURCE	THIS MONTH	FY1994 TO DATE
106-C (8) Gains	0	24
Losses	-5	-38
Total	-5 (*)	-14

(*) C-106 is undergoing a liquid-reduction process test to determine a new low level for future water addition. The process test is expected to be completed FY-94. No cooling water is added during the test.

CUMULATIVE EVAPORATION - 1950 TO PRESENT WASTE VOLUME REDUCTION

FACILITY	
242-B EVAPORATOR (9)	7172
242-T EVAPORATOR (1950's) (9)	9181
IN-TANK SOLIDIFICATION UNIT 1 (10)	11876
IN-TANK SOLIDIFICATION UNIT 2 (10)	15295
IN-TANK SOLID. UNIT 1 & 2 (10) (after conversion of Unit 1 to a cooler for Unit 2)	7965
242-T (Modified) (9)	24471
242-S EVAPORATOR (11)	41983
242-A EVAPORATOR (12)	67237
B PLANT (Cell 23) (13)	1185
REDOX (12)	12393
Total	198758

Note: 242-A Evaporator was restarted April 15, 1994.

TABLE F-1. PERFORMANCE SUMMARY
(Sheet 2 of 2)

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/contraction) because of 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 106-C to provide evaporative cooling. Losses due to evaporation are calculated assuming all losses are evaporative losses. 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 this tank, the assumption that all losses are due to evaporation will be reevaluated.

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 operative. The 242-A Evaporator-Crystallizer was started up March 1977, and shut down April 1989 because of regulatory issues, and remained shut down for subsequent upgrading. This evaporator operates under a vacuum, employing evaporative concentration with subsequent crystallization and precipitation of salt crystals (forming saltcake). The evaporator was restarted on April 15, 1994.
- (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.

APPENDIX G

**PUMPING RECORD
LIQUID STATUS AND PUMPABLE LIQUID
REMAINING IN TANKS**

This page intentionally left blank.

TABLE G-1. PUMPING RECORD

May 31, 1994

(K gallons)

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	3.3	114.4	182.2 (b)
BY	2.4	93.6	1389.8 (a)
C	0.0	0.0	36.8
Total	5.7	208.0	1772.3
WEST			
S	0.0	0.0	788.2
SX	0.0	0.0	113.2
SY	N/A	N/A	N/A
T	3.1	3.1	28.4
TX	0.0	0.0	1205.7
TY	0.0	0.0	29.9
U	0.0	0.0	0.0
Total	3.1	3.1	2165.4
TOTAL	8.8	211.1	3937.7

NA = Not Applicable

- (a) The total volume pumped was adjusted by the Single-Shell Tanks Cognizant 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.
- (b) Recheck of data sheets for January 1994 revealed incorrect totalizer reading was used in the calculations. Recalculation corrections by Single-Shell Tanks Cognizant Engineer for January and February are included in above volumes.

**TABLE G-2. LIQUID STATUS AND PUMPABLE LIQUID
REMAINING IN TANKS**

May 31, 1994

Waste Volumes (Kgallons)

TANK FARMS	SUPERNATANT LIQUID	DRAINABLE INTERSTITIAL LIQUID	DRAINABLE LIQUID REMAINING	PUMPABLE LIQUID REMAINING
EAST				
A	9	441	450	390
AN	4647	37	4684	N/A
AP	6393	0	6393	N/A
AW	3785	159	3944	N/A
AX	3	370	373	304
AY	1481	2	1483	N/A
AZ	1804	4	1808	N/A
B	15	164	179	80
BX	31	134	167	93
BY	0	778	778	596
C	169	143	312	254
Total	18337	2232	20571	1717
WEST				
S	58	1376	1434	1201
SX	63	1260	1323	1178
SY	876	237	1113	N/A
T	43	206	249	182
TX	5	250	255	0
TY	3	31	34	0
U	168	1138	1306	1104
Total	1216	4498	5714	3665
TOTAL	19553	6730	26285	5382 (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

APPENDIX H
CATCH TANKS AND SPECIAL
SURVEILLANCE FACILITIES

This page intentionally left blank.

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

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

May 31, 1994

FACILITY	LOCATION	PURPOSE (receives waste from:)	VOLUME OF CONTENTS MONITORED		REMARKS
			(Gallons)	BY	
EAST AREA					
241-A-302-A	A FARM	A-151 DB	1724	CASS/FIC	PUMPED 08/11/92
241-ER-311	B PLANT	ER-151, ER-152 DB	8504	CASS/FIC	PUMPED 05/29/91
241-AX-152	AX FARM	AX-152 DB	1751	MANUALLY	DIAL O/S, USING ZIP CORD, PUMPED 08/29/92
241-AZ-151	AZ FARM	AZ-152 DB, AZ LOOP SEAL	4050	CASS/FIC	VOLUME CHANGES DAILY
241-AZ-154	AZ FARM	AZ-102 HTG COIL STEAM CONDENSATE	0	CASS/MT	AUTOMATIC PUMP
244-BX-TK/SMP	BX COMPLEX	DCRT - RECEIVES FROM SEVERAL FARMS	20551	MANUALLY	USING MANUAL TAPE FOR TANK
244-A-TK/SMP	A COMPLEX	DCRT - RECEIVES FROM SEVERAL FARMS	7135	MCS	
AR-204	AY FARM	RR CARS DURING TRANSFER TO REC. TKS	360	DIP TUBE	ALARMS ON CASS
A-417	A FARM	A-702 PROCESS CONDENSATE	34220	DIP TUBE	
Vent Station Catch Tank		CROSS COUNTRY TRANSFER LINE	649	MT	
WEST AREA					
241-TX-302-C	TX FARM	TX-154 DB	3952	CASS/FIC	FIC REPAIRED
241-U-301-B	U FARM	U-151, U-152, U-153, U-252 DB	7007	CASS/FIC	RETURNED TO SERVICE 12/30/93
241-UX-302-A	U PLANT	UX-154 DB	12131	CASS/MFIC	
241-S-304	S FARM	S-151 DB	3844	RS	OPERATIONAL 10/91, REPLACED S-302-A
244-S-TK/SMP	S FARM	DCRT - RECEIVES FROM SEVERAL FARMS	11087	MANUALLY	CWF
244-TX-TK/SMP	TX FARM	DCRT - RECEIVES FROM SEVERAL FARMS	5887	MANUALLY	MT

Total active facilities 16

LEGEND: DB - Diversion Box
 DCRT - Double-Contained Receiver Tank
 TK - Tank
 SMP - Sump
 R - Usually denotes replacement
 FIC - Food Instrument Corporation measurement device
 RS - Robert Shaw Instrument measurement device
 MFIC - Manual FIC
 MT - Manual Tape
 CWF - Weight Factor/SpG = Corrected Weight Factor
 CASS - Computer Automated Surveillance System
 MCS - Monitor and Control System
 O/S - Out of Service

MHC-EP-0182-74

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

INACTIVE - no longer receiving waste transfers

May 31, 1994

VOLUME
OF
CONTENTS MONITORED
(Gallons) BY

REMARKS

FACILITY	LOCATION	RECEIVED WASTE FROM:	(Gallons)	BY	REMARKS
241-A-302-B	A FARM	A-152 DB	4150	CASS/MT	ISOLATED 1985, PROJECT B-138 INTERIM STABILIZED 1990
241-B-301-B	B FARM	B-151, B-152, B-153, B-252 DB	UNKNOWN	NM	ISOLATED 1985(1)
241-B-302-B	B FARM	B-154 DB	UNKNOWN	NM	ISOLATED 1985(1)
241-BX-302-A	BX FARM	BR-152, BX-153, BXR-152, BYR-152 DB	UNKNOWN	NM	ISOLATED 1985(1)
241-BX-302-B	BX FARM	BX-154 DB	UNKNOWN	NM	ISOLATED 1985(1)
241-BX-302-C	BX FARM	BX-155 DB	UNKNOWN	NM	ISOLATED 1985(1)
241-C-301-C	C FARM	C-151, C-152, C-153, C-252 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
244-BXR-TK/SMP-001	BX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED 1985(1)
244-BXR-TK/SMP-002	BX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED 1985(1)
244-BXR-TK/SMP-003	BX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED 1985(1)
244-BXR-TK/SMP-011	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
TK - Tank
SMP - Sump
R - Usually denotes replacement
NM - Not Monitored

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

WHC-EP-0182-74

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

INACTIVE - no longer receiving waste transfers

May 31, 1994

FACILITY	LOCATION	RECEIVED WASTE FROM:	VOLUME OF CONTENTS	BY	REMARKS
			(Gallons)		
241-S-302	S FARM	240-S-151 DB	2276	CASS/FIC *	ASSUMED LEAKER EPDA 85-04
241-S-302-A	S FARM	241-S-151 DB		CASS/FIC *	ASSUMED LEAKER TF-EFS-90-042
				* FIC in Intrusion mode	Partially filled with grout 2/91, determined still assumed leaker after leak test
241-S-302-B	S FARM	S ENCASEMENTS	UNKNOWN	NM	ISOLATED 1985(1)
241-SX-304(302)	SX FARM	SX-152 TRANSFER BOX, SX-151 DB	UNKNOWN	NM	ISOLATED 1985(1)
241-TX-302	TX FARM	TX-153 DB	UNKNOWN	NM	ISOLATED 1985(1)
241-TX-302-X-B	TX FARM	TX ENCASEMENTS	UNKNOWN	NM	ISOLATED 1985(1)
241-TX-302-B	TX FARM	TX-155 DB	1460	CASS/MT	NEW MT INSTALLED 7/16/93
241-TY-302-A	TY FARM	TX-153 DB	UNKNOWN	NM	ISOLATED 1985(1)
241-TY-302-B	TY FARM	TY ENCASEMENTS	UNKNOWN	NM	ISOLATED 1985(1)
244-U-TK/SMP	U FARM	DCRT - RECEIVES FROM SEVERAL FARMS	UNKNOWN	NM	NOT YET IN USE
244-UR VAULT	U FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED, MT REMOVED 1985(1)
244-UR-TK/SMP-001	U FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED, MT REMOVED 1985(1)
244-UR-TK/SMP-002	U FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED, MT REMOVED 1985(1)
244-UR-TK/SMP-003	U FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED, MT REMOVED 1985(1)
244-TXR VAULT	TX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED, MT REMOVED 1984(1)
244-TXR-TK/SMP-001	TX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED, MT REMOVED 1984(1)
244-TXR-TK/SMP-002	TX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED, MT REMOVED 1984(1)
244-TXR-TK/SMP-003	TX FARM	TRANSFER LINES	UNKNOWN	NM	INTERIM STABILIZED, MT REMOVED 1984(1)
361-T-TANK	T PLANT	DRAINAGE FROM T-PLANT	UNKNOWN	NM	ISOLATED 1985(1)
361-U-TANK	U PLANT	DRAINAGE FROM U-PLANT	UNKNOWN	NM	INTERIM STABILIZED, MT REMOVED 1985(1)

Total West Area inactive facilities 20

LEGEND: DB - Diversion Box
 DCRT - Double-Contained Receiver Tank
 TK - Tank
 SMP - Sump
 R - Usually denotes replacement
 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

WHC-EP-0182-74

This page intentionally left blank.

APPENDIX I
LEAK VOLUME ESTIMATES

WHC-EP-0182-74

This page intentionally left blank.

TABLE I-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES (4) (Sheet 1 of 6)

Tank No.	Date Declared Confirmed or Assumed Leaker (3)	Volume (2)(4) (Gallons)	Associated KiloCuries 137 cs (10)	Interim Stabilized Date (12)	Leak Estimate	
					Updated	Reference
241-A-103	1987	5500 (9)		6/88	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 (9)		9/88	1989	(h)
241-AX-104	1977	-- (7)		8/81	1989	(g)
241-B-101	1974	-- (7)		3/81	1989	(g)
241-B-103	1978	-- (7)		2/85	1989	(g)
241-B-105	1978	-- (7)		12/84	1989	(g)
241-B-107	1980	8000 (9)		3/85	1986	(d), (f)
241-B-110	1981	10000 (9)		3/85	1986	(d)
241-B-111	1978	-- (7)		6/85	1989	(g)
241-B-112	1978	2000		5/85	1989	(g)
241-B-201	1980	1200 (9)		8/81	1984	(e), (f)
241-B-203	1983	300 (9)		6/84	1986	(d)
241-B-204	1984	400 (9)		6/84	1989	(g)
241-BX-101	1972	-- (7)		9/78	1989	(g)
241-BX-102	1971	70000	50 (i)	11/78	1986	(g)
241-BX-108	1974	2500	0.5 (i)	7/79	1986	(d)
241-BX-110	1976	-- (7)		8/85	1989	(g)
241-BX-111	1984	-- (7)		N/A	1993	(g), (r)
241-BY-103	1973	<5000		N/A	1983	(a)
241-FY-105	1984	-- (7)		N/A	1989	(g)
241-BY-106	1984	-- (7)		N/A	1989	(g)
241-BY-107	1984	15100 (9)		7/79	1989	(g)
241-BY-108	1972	<5000		2/85	1983	(a)
241-C-101	1980	20000 (9,11)		11/83	1986	(d)
241-C-110	1984	2000		N/A	1989	(g)
241-C-111	1968	5500 (9)		3/84	1989	(g)
241-C-201 (5)	1988	550		3/82	1987	(d)
241-C-202 (5)	1988	450		8/81	1987	(d)
241-C-203	1984	400 (9)		3/82	1986	(d)
241-C-204 (5)	1988	350		9/82	1987	(i)
241-S-104	1968	24000 (9)		12/84	1989	(g)
241-SX-104	1988	6000 (9)		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 (9)		8/79	1989	(g)
241-SX-111	1974	500 to 2000	0.6 to 2.4 (i) (q)	7/79	1986	(d) (q)
241-SX-112	1969	30000	40 (i)	7/79	1986	(d)
241-SX-113	1962	15000	8 (i)	11/78	1986	(d)
241-SX-114	1972	-- (7)		7/79	1989	(g)
241-SX-115	1965	50000	21 (o)	9/78	1992	(o)
241-T-101	1992	7500 (9)		4/93	1992	(b)
241-T-103	1974	<1000 (9)		11/83	1989	(g)
241-T-106	1973	115000 (9)	40 (i)	8/81	1986	(g)
241-T-107	1984	-- (7)		N/A	1989	(g)
241-T-108	1974	<1000 (9)		11/78	1980	(f)
241-T-109	1974	<1000 (9)		12/84	1989	(g)
241-T-111	1979, 1994 (13)	<1000 (9)		N/A	1994	(x) (t)
241-TX-105	1977	-- (7)		4/83	1989	(g)
241-TX-107	1984	2500		10/79	1986	(d)
241-TX-110	1977	-- (7)		4/83	1989	(g)
241-TX-113	1974	-- (7)		4/83	1989	(g)
241-TX-114	1974	-- (7)		4/83	1989	(g)
241-TX-115	1977	-- (7)		9/83	1989	(g)
241-TX-116	1977	-- (7)		4/83	1989	(g)
241-TX-117	1977	-- (7)		3/83	1989	(g)
241-TY-101	1973	<1000 (9)		4/83	1980	(f)
241-TY-103	1973	3000	0.7 (i)	2/83	1986	(d)
241-TY-104	1981	1400 (9)		11/83	1986	(d)
241-TY-105	1960	35000	4 (i)	2/83	1986	(d)
241-TY-106	1959	20000	2 (i)	11/78	1986	(d)
241-U-101	1959	30000	20 (i)	9/79	1986	(d)
241-U-104	1961	55000	0.09 (i)	10/78	1986	(d)
241-U-110	1975	5000 to 8100 (9)	0.05 (q)	12/84	1986	(d) (q)
241-U-112	1980	8500 (9)		9/79	1986	(d)

67 Tanks <600,000 - 900,000 (8)

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

FOOTNOTES: SEE NEXT PAGE

TABLE I-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 2 of 4)

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 in accordance 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.
- (3) In many cases, a leak was suspected long before it was identified or confirmed. For example, reference (d) shows that Tank 241-U-104 was suspected of leaking in 1956. The leak was "confirmed" in 1961. This report lists the "assumed leaker" date as 1961. Using present standards, Tank 241-U-104 would have been declared as assumed leaker in 1956. 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. It is highly likely that there have been undetected leaks from single-shell tanks because of the nature of their design and instrumentation.
- (4) There has been an effort in the past two years 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 as part of the prior to FY 1994 budget planning.
- (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) 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.

TABLE I-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 3 of 4)

- (8) 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.
- (9) 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.
- (10) 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.
- (11) Tank 241-C-101 experienced a liquid level decrease in the late 1960s and was taken out of service and pumped to a "minimum heel" in December 1969. In 1970, the tank was classified as a "questionable integrity" tank. Liquid level data show decreases in level throughout the 1970s and the tank was saltwell pumped during the 1970s, ending in April 1979. The tank was reclassified as a "confirmed leaker" in January 1980. See reference (q) and (s): refer to reference (s) for information on the potential for there to have been leaks from other C-farm tanks (specifically, C-102, C-103, and C-109).
- (12) These dates indicate when the tanks were declared to be interim stabilized. In some cases, the official interim stabilization documents were issued at a later date. Also, in some cases, the field work associated with interim stabilization was completed at an earlier date.
- (13) An unexplained 0.30 inch level decrease was observed in 1974 and the tank was then declared "Questionable Integrity" and removed from service. Tank T-111 was declared an assumed re-leaker on February 28, 1994, due to a decreasing trend in surface level measurement.

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

References:

- (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.
- (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.
- (r) WHC, 1993, Occurrence Report, Single-Shell Underground Waste Storage Tank 241-BX-111 Surface Level Decrease and Change From Steady State Condition, RL-WHC-TANKFARM-1993-0035, Westinghouse Hanford Company, Richland, Washington.
- (s) WHC, 1993a, Assessment of Unsaturated Zone Radionuclide Contamination Around Single-Shell Tanks 241-C-105 and 241-C-106, WHC-SD-EN-TI-185, REV OA, Westinghouse Hanford Company, Richland, Washington.
- (t) WHC, 1994, Occurrence Report, "Apparent Liquid Level Decrease in Single Shell Underground Storage Tank 241-T-111; Declared an Assumed Re-Leaker," RL-WHC-TANKFARM-1994-0009, Westinghouse Hanford Company, Richland, Washington.

APPENDIX J
INTERIM STABILIZATION STATUS

This page intentionally left blank.

TABLE J-1. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS (Sheet 1 of 2)

May 31, 1994

Tank Number	Tank Integrity	Interim Stabilized Date (1)	Stabilized Method (2)(3)	Tank Number	Tank Integrity	Interim Stabilized Date (1)	Stabilized Method (2)(3)	Tank Number	Tank Integrity	Interim Stabilized Date (1)	Stabilized Method (2)(3)
A-101	SOUND	N/A		C-101	ASMD LKR	11/83	AR	T-108	ASMD LKR	11/78	AR
A-102	SOUND	03/85	SN	C-102	SOUND	N/A		T-109	ASMD LKR	12/84	AR
A-103	ASMD LKR	06/88	AR	C-103	SOUND	N/A		T-110	SOUND	N/A	
A-104	ASMD LKR	09/78	AR	C-104	SOUND	09/89	SN	T-111	ASMD LKR	N/A	
A-105	ASMD LKR	07/79	AR	C-105	SOUND	N/A		T-112	SOUND	03/81	AR
A-106	SOUND	08/82	AR	C-106	SOUND	N/A		T-201	SOUND	04/81	AR
AX-101	SOUND	N/A		C-107	SOUND	N/A		T-202	SOUND	08/81	AR
AX-102	ASMD LKR	09/88	SN	C-108	SOUND	03/84	AR	T-203	SOUND	04/81	AR
AX-103	SOUND	08/87	AR	C-109	SOUND	11/83	AR	T-204	SOUND	08/81	AR
AX-104	ASMD LKR	08/81	AR	C-110	ASMD LKR	N/A		TX-101	SOUND	02/84	AR
B-101	ASMD LKR	03/81	SN	C-111	ASMD LKR	03/84	SN	TX-102	SOUND	04/83	JET
B-102	SOUND	08/86	SN	C-112	SOUND	09/90	AR	TX-103	SOUND	08/83	JET
B-103	ASMD LKR	02/85	SN	C-201	ASMD LKR	03/82	AR	TX-104	SOUND	09/79	SN
B-104	SOUND	06/85	SN	C-202	ASMD LKR	08/81	AR	TX-105	ASMD LKR	04/83	JET
B-105	ASMD LKR	12/84	AR	C-203	ASMD LKR	03/82	AR	TX-106	SOUND	06/83	JET
B-106	SOUND	03/85	SN	C-204	ASMD LKR	09/82	AR	TX-107	ASMD LKR	10/79	AR
B-107	ASMD LKR	03/85	SN	S-101	SOUND	N/A		TX-108	SOUND	03/83	JET
B-108	SOUND	05/85	SN	S-102	SOUND	N/A		TX-109	SOUND	04/83	JET
B-109	SOUND	04/85	SN	S-103	SOUND	N/A		TX-110	ASMD LKR	04/83	JET
B-110	ASMD LKR	12/84	AR	S-104	ASMD LKR	12/84	AR	TX-111	SOUND	04/83	JET
B-111	ASMD LKR	06/85	SN	S-105	SOUND	09/88	JET	TX-112	SOUND	04/83	JET
B-112	ASMD LKR	05/85	SN	S-106	SOUND	N/A		TX-113	ASMD LKR	04/83	JET
B-201	ASMD LKR	08/81	AR	S-107	SOUND	N/A		TX-114	ASMD LKR	04/83	JET
B-202	SOUND	05/86	AR	S-108	SOUND	N/A		TX-115	ASMD LKR	09/83	JET
B-203	ASMD LKR	06/84	AR	S-109	SOUND	N/A		TX-116	ASMD LKR	04/83	JET
B-204	ASMD LKR	06/84	AR	S-110	SOUND	N/A		TX-117	ASMD LKR	03/83	JET
BX-101	ASMD LKR	09/78	AR	S-111	SOUND	N/A		TX-118	SOUND	04/83	JET
BX-102	ASMD LKR	11/78	AR	S-112	SOUND	N/A		TY-101	ASMD LKR	04/83	JET
BX-103	SOUND	11/83	AR	SX-101	SOUND	N/A		TY-102	SOUND	09/79	AR
BX-104	SOUND	09/89	SN	SX-102	SOUND	N/A		TY-103	ASMD LKR	02/83	JET
BX-105	SOUND	03/81	SN	SX-103	SOUND	N/A		TY-104	ASMD LKR	11/83	AR
BX-106	SOUND	N/A		SX-104	ASMD LKR	N/A		TY-105	ASMD LKR	02/83	JET
BX-107	SOUND	09/90	JET	SX-105	SOUND	N/A		TY-106	ASMD LKR	11/78	AR
BX-108	ASMD LKR	07/79	SN	SX-106	SOUND	N/A		U-101	ASMD LKR	09/79	AR
BX-109	SOUND	09/90	JET	SX-107	ASMD LKR	10/79	AR	U-102	SOUND	N/A	
BX-110	ASMD LKR	08/85	SN	SX-108	ASMD LKR	08/79	AR	U-103	SOUND	N/A	
BX-111	ASMD LKR	N/A		SX-109	ASMD LKR	05/81	AR	U-104	ASMD LKR	10/78	AR
BX-112	SOUND	09/90	JET	SX-110	ASMD LKR	08/79	AR	U-105	SOUND	N/A	
BY-101	SOUND	05/84	JET	SX-111	ASMD LKR	07/79	SN	U-106	SOUND	N/A	
BY-102	SOUND	N/A		SX-112	ASMD LKR	07/79	AR	U-107	SOUND	N/A	
BY-103	ASMD LKR	N/A		SX-113	ASMD LKR	11/78	AR	U-108	SOUND	N/A	
BY-104	SOUND	01/85	JET	SX-114	ASMD LKR	07/79	AR	U-109	SOUND	N/A	
BY-105	ASMD LKR	N/A		SX-115	ASMD LKR	09/78	AR	U-110	ASMD LKR	12/84	AR
BY-106	ASMD LKR	N/A		T-101	ASMD LKR	04/93	SN	U-111	SOUND	N/A	
BY-107	ASMD LKR	07/79	JET	T-102	SOUND	03/81	AR	U-112	ASMD LKR	09/79	AR
BY-108	ASMD LKR	02/85	JET	T-103	ASMD LKR	11/83	AR	U-201	SOUND	08/79	AR
BY-109	SOUND	N/A		T-104	SOUND	N/A		U-202	SOUND	08/79	SN
BY-110	SOUND	01/85	JET	T-105	SOUND	06/87	AR	U-203	SOUND	08/79	AR
BY-111	SOUND	01/85	JET	T-106	ASMD LKR	08/81	AR	U-204	SOUND	08/79	SN
BY-112	SOUND	06/84	JET	T-107	ASMD LKR	N/A					
LEGEND: AR = Administratively Interim Stabilized JET = Saltwell Jet pumped to remove drainable interstitial liquid SN = Supernate pumped (Non-Jet pumped) N/A = Not yet Interim Stabilized ASMD LKR = Assumed Leaker								Interim Stabilized Tanks 106 Not Yet Interim Stabilized 43 Total Single-Shell Tanks 149			

Footnotes: See next page

TABLE J-1. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS
(sheet 2 of 2)

Footnotes:

(1) These dates indicate when the tanks were actually interim stabilized. In some cases, the official interim stabilization documents were issued at a later date.

(2) The following six tanks do not meet current established supernatant and interstitial liquid interim stabilization criteria, but did meet the criteria in existence when they were declared interim stabilized :

B-104, 110, 111
T-102, 112
U-110

(3) Interim Stabilization data are missing on four tanks. These tanks were Administratively Interim Stabilized.

B-201, T-102, 112, 201

NOTE: C-105 & C-106 NOT INCLUDED IN THIS SCHEDULE

Figure J-1. Tri-Party Agreement Single-Shell Tank Stabilization Schedule

This page intentionally left blank

APPENDIX K
TANK FARM OPERATIONS SAMPLING SCHEDULE STATUS

This page intentionally left blank

TABLE K-1. TANK FARM OPERATIONS SAMPLING SCHEDULE STATUS (Sheet 1 of 3)

ACT ID	EARLY START	EARLY FINISH	JCS	FY94												FY95			
				OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
VS51 4	17NOV94	16NOV94	26 92 0154	■ TAKE SAMPLES SJ-4/SJ-4/5 Vapor C-103															
VS46 4	14DEC94	15DEC94	26 92 1760	■ C-103 VAPOR SAMPLE INS PROBE. TAKE SAMPLES SJ-6															
VS36 4	25JAN94	25JAN94	26 93 0485	■ C-103 VAPOR SAMPLE Using VSS Truck - SJ-6															
VS03 4	14FEB94	17FEB94	26 93 2240	■ C-105/106 VAPOR SAMPLE (B, C)															
VS01 4	23FEB94	30FEB94	26 93 2249	■ C-104 VAPOR SAMPLE (B, C)															
GS11 4	1MAY94	1MAY94	26 94 0244	■ T-111 GRAB SAMPLE (EMERGENT WORK)															
GS01 4	10MAY94	10MAY94	26 94 0251	■ SY-102 GRAB SAMPLE (EMERGENT WORK)															
GS51 3	21MAY94	27MAY94	26 94 0066	■ AP-108 START GRAB SAMPLE/EVAPORATION FEED 325															
VS08 4	24MAY94	25MAY94	26 94 0203	■ BY-108 VAPOR SAMPLE FeCh 1C/V															
VS97 4	25MAY94	26MAY94	26 94 0203	■ BY-107 VAPOR SAMPLE FeCh 1C/V															
VS01 4	11MAY94	3MAY94	26 92 1256	■ C-111 PUSH MODE SAMPLING Samples 2 & Seq 1 2225															
VS47 4	8MAY94	8MAY94	26 93 0447	■ C-103 VAPOR SAMPLE - SJ-7A															
GS55 4	4MAY94	19MAY94	26 94 0066	■ AM-107 SLUDGE SAMPLING															
VS12 3	5MAY94	5MAY94	26 93 0203	■ BY-104 RISER INSPECTION															
VS4 3	7MAY94	7MAY94	26 93 0276	■ BY-105 RISER INSPECTION VS (2)															
VS11 4	18MAY94	24MAY94	26 93 0276	■ BY-105 INSTALL HWP															
VS04 4	12MAY94	25MAY94	26 94 0582	■ C-103 VAPOR SAMPLE Using VSS Truck (4) SJ-7B															
VS15 3	12MAY94	12MAY94	26 94 0203	■ BY-106 RISER INSPECTION															
VS13 4	16MAY94	23MAY94	26 93 0276	■ BY-104 INSTALL HWP															
GS54 4	19MAY94	19MAY94	26 94 0348	■ S-110 PROCESS GRAB SAMPLE (Area Dry No Sample)															
VS11 4	18MAY94	14JUN94	26 92 1257	■ C-108 START PUSH MODE SAMPLING															
VS14 4	25MAY94	26MAY94	26 93 0276	■ BY-106 INSTALL HWP															
AS01 4	2JUN94	6JUN94	26 93 1125	■ SY-103 AUGER SAMPLE Samples 1												2225			
GS52 4	7JUN94	8JUN94	26 94 0065	■ AY-102 PROCESS GRAB SAMPLE												2225			
AS03 4	8JUN94	22JUN94	26 93 2241	■ BX-101 AUGER SAMPLING Samples 2 Segments 1 225															
VS30 8	16JUN94	27JUN94	26 93 2006	■ C RISER INSP C107 VS (2)															
VS30 8	17JUN94	27JUN94	26 93 2006	■ C RISER INSP C111 VS (2)															
GS07 4	20JUN94	20JUN94		■ T-107 PROCESS GRAB SAMPLING (CANCEL)												2225			
GS10 4	20JUN94	20JUN94		■ T-104 PROCESS GRAB SAMPLING (CANCEL)															
GS02 4	21JUN94	21JUN94	26 94 0835	■ BY-105 PROCESS GRAB SAMPLING (SUSPENDED)												2225			
GS15 4	21JUN94	21JUN94	26 94 0684	■ BY-106 PROCESS GRAB SAMPLING (SUSPENDED)												2225			
VS30 3	21JUN94	27JUN94	26 93 2006	■ C RISER INSP C102 VS (2)															
VS2 5	24JUN94	24JUN94	26 93 0276	■ BY-104 VAPOR SAMPLE (3)															
VS16 3	24JUN94	26JUN94	26 94 0203	■ BY-108 RISER INSPECTION															
GS51 4	27JUN94	26JUN94	26 94 0064	■ AP-108 COMP RURA GRAB SAMPLE/EVAPORATION FEED 222															
GS13 4	28JUN94	24JUN94	26 94 0670	■ T-112 PROCESS GRAB SAMPLING												2225			
VS10 2	28JUN94	30JUN94	26 93 2006	■ C RISER INSP C101 VS (2)															
VS13 3	28JUN94	29JUN94	26 94 0203	■ BY-103 RISER INSPECTION															
AS07 4	29JUN94	6JUL 94	26 94 0571	■ BX-108 AUGER SAMPLING Sample 2 Segments 1 2225															
VS10 5	1JUL 94	7JUL 94	26 93 2006	■ C RISER INSP C109 VS (2)															
GS18 4	7JUL 94	8JUL 94	26 94 0513	■ T-102 PROCESS GRAB SAMPLING												2225			
VS11 5	7JUL 94	13JUL 94	26 92 1257	■ C-108 COMPLETE PUSH MODE SAMPLING															
VS10 6	8JUL 94	12JUL 94	26 93 2006	■ C RISER INSP C109 VS (2)															
VS14 5	8JUL 94	13JUL 94	26 93 0276	■ BY-105 VAPOR SAMPLE (3)															
VS02 3	12JUL 94	13JUL 94	26 94 0203	■ BY-111 RISER INSPECTION VS (2) (OPTIONALITY)															
GS21 4	13JUL 94	19JUL 94	26 94 0671	■ AM-102 GRAB SAMPLING INTRA Samples 3												2225			
VS10 9	13JUL 94	13JUL 94	26 93 2006	■ C RISER INSP C112 VS (2)															
VS15 5	14JUL 94	19JUL 94	26 93 0276	■ BY-106 VAPOR SAMPLE (3)															
GS14 4	19JUL 94	19JUL 94	26 94 0674	■ S-102 GRAB SAMPLE VAPOR SAMPLE (A)												2225			
Activity Classification: GRAB SAMPLING				■ GRAB SAMPLE (E R From)															
■ Procedures				■ PUSH MODE SAMPLING (E A Cockpit)															
■ Asbestos Removal				■ AUGER SAMPLE (E I Jarecki)															
■ VAPOR SAMPLE (E E Revision)				■ Procedures															
				■ Equipment															
				■ Training															
Plot Date 28JUN94				Activity Bar/Early Dates															
Data Date 24JUN94				Critical Activity															
Project Start 10C193				Progress Bar															
Project Finish 10JUL 96				Milestone/Flag Activity															
Westinghouse Hanford Company				Revised Tank Farms Operations															
Baseline Schedule Rev 2																			
Developed D Healey 2 3698 for D Hamilton 3 0259																			
Date				Revision															
				Checked															
				Approve															
© Primavera Systems, Inc.																			

TABLE K-1. TANK FARM OPERATIONS SAMPLING SCHEDULE STATUS (Sheet 2 of 3)

ACT. ID	EARLY START	EARLY FINISH	JCS	FY94												FY95			
				OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
V567 4	19.AUG 94	19.AUG 94	2W 94 0506																
V562 4	22.AUG 94	25.AUG 94	2W 94 0504																
V562 5	25.AUG 94	27.AUG 94	2W 94 0504																
V569 4	29.AUG 94	1.AUG 94	2E 94 0367																
V562 6	26.AUG 94	27.AUG 94	2W 94 0504																
G506 4	29.AUG 94	1.AUG 94	2E 94 0763																
V560 7	2.AUG 94	4.AUG 94	2E 93 2006																
G508 4	4.AUG 94	5.AUG 94																	
G544 4	4.AUG 94	5.AUG 94																	
H508 4	5.AUG 94	18.AUG 94	2E 92 1810																
H502 4	5.AUG 94	18.AUG 94	2E 93 2200																
A509 4	8.AUG 94	11.AUG 94	2W 94 0621																
G509 4	8.AUG 94	9.AUG 94																	
A508 4	9.AUG 94	12.AUG 94	2E 94 0570																
G541 4	12.AUG 94	18.AUG 94	2E 94 0762																
H508 4	12.AUG 94	16.AUG 94	2E 94 0619																
V533 4	12.AUG 94	15.AUG 94	2W 94 0503																
V563 4	12.AUG 94	15.AUG 94	2W 94 0505																
V561 4	12.AUG 94	15.AUG 94	2E 94 0567																
A506 4	15.AUG 94	18.AUG 94	2E 93 2242																
H503 5	16.AUG 94	17.AUG 94	2W 94 0514																
V533 5	16.AUG 94	17.AUG 94	2W 94 0503																
V563 5	16.AUG 94	17.AUG 94	2W 94 0505																
V563 5	16.AUG 94	17.AUG 94	2E 94 0567																
H508 5	17.AUG 94	19.AUG 94	2E 94 0659																
V502 3	17.AUG 94	18.AUG 94	2E 94 0660																
H503 6	18.AUG 94	19.AUG 94	2W 94 0514																
V563 6	18.AUG 94	19.AUG 94	2W 94 0505																
V561 6	18.AUG 94	19.AUG 94	2E 94 0567																
A510 4	19.AUG 94	24.AUG 94	2E 94 0701																
H503 4	19.AUG 94	22.AUG 94	2W 94 0514																
V505 4	19.AUG 94	25.AUG 94	2E 93 0451																
H503 4	19.AUG 94	16.SEP 94	2E 93 0277																
V509 3	19.AUG 94	22.AUG 94	2W 94 0515																
G533 4	22.AUG 94	23.AUG 94	2E 94 0850																
H508 6	22.AUG 94	24.AUG 94	2E 94 0659																
V502 4	22.AUG 94	23.AUG 94	2E 94 0660																
V509 4	22.AUG 94	23.AUG 94	2W 94 0515																
A506 4	25.AUG 94	30.AUG 94	2E 94 0702																
H508 8	25.AUG 94	29.AUG 94	2E 94 0659																
H502 4	26.AUG 94	1.SEP 94	2W 94 0183																
V565 4	26.AUG 94	1.SEP 94																	
H508 9	30.AUG 94	1.SEP 94	2E 94 0659																
V502 6	30.AUG 94	31.AUG 94	2E 94 0660																
V509 5	30.AUG 94	31.AUG 94	2W 94 0515																
A506 4	31.AUG 94	6.SEP 94	2E 93 2194																
H508 4	27.SEP 94	7.SEP 94	2E 94 0659																
H506 4	27.SEP 94	9.SEP 94																	
H503 4	9.SEP 94	9.SEP 94																	
Activity Classification: CLASSIFICATION				GRAB SAMPLE (2 R. Room) GRAB SAMPLE (2 E. J. Room) PUSH MODE SAMPLING (2 A. Core/Well) Procedures HS Equipment Interlocks/110 VS (2) TRAINING															
Plot Date: 28.AUG 94 Data Date: 24.AUG 94 Project Start: 10C193 Project Finish: 10.AUG 96				Activity Bar/Key Dates Critical Activity Progress Bar Historical/Log Activity				WESTINGHOUSE HANFORD COMPANY REVISED TANK FARMS OPERATIONS BASELINE SCHEDULE REV 2				Developed D. Healey 2/86/98 for D. Hamilton 2/02/98 Date: _____ Revision: _____ Checked: _____ Approved: _____							

MHC-EP-0182-74

TABLE K-1. TANK FARM OPERATIONS SAMPLING SCHEDULE STATUS (Sheet 3 of 3)

ACT. ID	EARLY START	EARLY FINISH	JCS	FY94												FY95			
				OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
VS02-7	2SEP94	6SEP94	2F-94-0660																
GS07-4	6SEP94	7SEP94	2E-94-0066																
AS04-4	7SEP94	14SEP94																	
GS03-4	7SEP94	8SEP94	2E-94-0841																
HP08-8	8SEP94	12SEP94	2E-94-0659																
PS24-4	12SEP94	16SEP94																	
VS02-8	12SEP94	13SEP94	2E-94-0660																
VS02-9	14SEP94	15SEP94	2F-94-0660																
AS11-4	15SEP94	20SEP94																	
GS24-4	16SEP94	19SEP94	2W-94-0660																
VS02-A	16SEP94	19SEP94	2F-94-0660																
PS22-4	19SEP94	30SEP94																	
HS04-4	19SEP94	14OCT94																	
AS12-4	21SEP94	26SEP94																	
VS02-5	26SEP94	27SEP94	2E-94-0660																
GS03-4	30C194	30C194	2W-94-0274																
PS21-4	30C194	14OCT94																	
RS01-4	17OCT94	11NOV94																	
HS09-4	14NOV94	13DEC94																	
VS45-4	17NOV94	18NOV94	2E-94-0568																
RS08-4	14DEC94	27JAN95																	
RS07-4	30JAN95	24FEB95	2W-93-0726																
PS23-4	21FEB95	8FEB95																	

Type 1 -- Gas and vapor monitoring performed by industrial hygiene technicians to evaluate the flammability and/or worker health conditions of a waste tank. This includes headspace monitoring by the industrial hygiene technicians.

Type 2 -- In situ gas and vapor sampling performed by Field Analytical Services (FAS). This type of sampling is performed by lowering gas and vapor collection devices into the tank headspace, and requires a handcart of equipment.

Type 3 -- Gas and vapor sampling performed by FAS personnel using the vapor sampling system (VSS). This involves the mobile vapor sampling laboratory, heated transfer lines, and usually the installation of a water-heated vapor sampling probe in the tank.

Activity Classification CLASSIFICATION

☐ Procedures
☐ Assessment Removal
☐ Vapor Sample - CE E Neilson

☐ GRAB SAMPLE - CE R Brown
☐ AUGER SAMPLE - CE J Jarecki

☐ PUSH MODE SAMPLING - CE A Cockrell
☐ Procedures

☐ RS
☐ Equipment

☐ THERMOCOUPLE - B Dunelow
☐ TRAINING

Plot Date 28JAN94
 Data Date 24JUN94
 Project Start 10C193
 Project Finish 10JUL96

Activity Bar/Early Dates
 Critical Activity
 Progress Bar
 Milestone/Flag Activity

WESTINGHOUSE HANFORD COMPANY
 REVISED TANK FARMS OPERATIONS
 BASELINE SCHEDULE REV 2

Developed D Healey 2-3698 for D Hamilton 3-0259
 Date Revision Checked Approved

(c) Primavera Systems, Inc.

K-5

MHC-EP-0182-74

This page intentionally left blank

DISTRIBUTION

Number of copiesOFFSITE - USA

3

Congress of the United States

House of Representatives
1111 Longworth Building
Washington, DC 20515-3703

Ron Wyden, Member of Congress, 3rd District
Josh Kardon, Legislative Director

House of Representatives
1431 Longworth House Office Building
Washington D. C. 20515

Jay Inslee, Member of Congress, 4th District
Atten: Louis J. Alex, Legislative Assistant

18

U. S. Department of Energy-Headquarters

1000 Independence Avenue, SW
Washington, D. C. 20585

Jim Antizzo	EM-36	TREV II/364
Emile Bernard	EM-50	TREV II
H. Calley	EM-36	TREV II
Teresa Fryberger	EM-542	TREV II
Sherry Gibson	EM-55	TREV II
A. Griffith	EM-36	TREV II/341
L. Gunn	EM-36	TREV II
D. Gupta	EM-36	TREV II
Kenneth Lang	EM-36	TREV II
J. C. Lehr	EM-442	TREV II/160
G. Mellinger	EM-36	TREV II
C. O'Dell	EM-36	TREV II
D. Pepson	EM-36	TREV II
J. C. Tseng	EM-36	TREV II/364
S. Woodbury	EH-222	FORS/3G-092

19901 Germantown Rd,
Germantown, MD 20585

R. Lasky	EH-32.1	GTN/G-115
J. Psaras	NS-20 GTN	
P. Worthington	NS-20 GTN	

1

U. S. Department of Energy - Oak Ridge Operations Office

P. O. Box 2001
Oak Ridge, TN 37831

W. D. Adams EW-40

Distribution - continued

- 7 U. S. Department of Energy - Savannah River Site
P. O. Box A
Aiken, SC 29808
- C. Anderson 707-H
Michael Chandler 703-H
Mazen Shurrab 704-H
T. C. Temple
L. Sjostrom
W. R. West 704-8H
V. Wheeler 704-S
- 1 U. S. Environmental Protection Agency
Region 10
712 Swift Boulevard, Suite 5
Richland, WA 99352
- D. R. Sherwood
- 8 Washington State Department of Ecology
Nuclear & Mixed Waste Management Program
P.O. Box 47600
Olympia, WA 98504-7600
- M. T. Gordon
M. Lerchan
Scott McKinney
R. Stanley
Library
- P. O. Box 1386
Richland, WA 99352
- S. V. Moore
G. T. Tebb
Office Library
- 1 Washington State Department of Health
Radiation Protection Section
Industrial Park Building 5, LE-13
Olympia, WA 98504
- A. Conklin
- 1 General Accounting Office
P. O. Box 321
Richland, WA 99352
- C. R. Abraham

Distribution - continued

- 1 Oregon State Department of Energy
625 Marion St. N.E.
Salem, OR 97310

Janet Franco
- 1 Oregon State Water Resources Department
Ground Water Hanford Studies
3850 Portland Road
Salem, OR 97310

R. O. Patt
- 1 Lawrence Livermore National Laboratory
Box 808, East Avenue
Livermore, CA 94550

B. C. Hudson L-221
- 5 Oak Ridge National Laboratory
P. O. Box 2009
Oak Ridge, TN 37831-6385

C. Forsberg MS-6495
T. S. Kress MS-8088
Bldg 9108

Chemical Technology Division
P. O. Box 2008

Emory D. Collins
C. Phil McGinnis
Dr. Jack Watson
- 6 Los Alamos National Laboratory
P. O. Box 1663
Los Alamos, NM 87545

Stephen Agnew
Group INC-14 C-346
Phyllis Baca J-514
T. Larson C-915
Sylvia Lee K-557
H. Sullivan N-6
Dr. Reed Jensen J-565
- 5 Brookhaven National Laboratory
Upton, NY 11973

K. K. Bandyopadhyay, Bldg 475-C
M. K. Kaisser, Bldg 475-C
P. D. Kalb, Bldg. 703
M. Reich, Bldg 475-C
J. R. Weeks, Bldg 197-C

Distribution - continued

- 1 Brookhaven National Laboratory
1409 Jan Drive
Wilmington, DE 19803

Michael Streicher
- 2 Argonne National Laboratory
9700 South Cass Avenue
Argonne, IL 60439

Dr. Martin Steindler
Dr. George Vandergrift
- 5 Sandia National Laboratories
1515 Eubank, NE
P. O. Box 5800
Albuquerque, NM 87185

Scott Slezak, Division 6471
Leon D. Chapman, Program Manager
Industrial Waste Reduction Program
Dr. Margaret Chu, Organ #6622
Elmer Klavetter, Mail Stop 0709
Norman E. Brown, Mail Stop 0728
- 1 Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA 02139

Mujid S. Kazimi
Professor and Head
Department of Nuclear Engineering
- 2 BDM International, Inc.
20030 Century Blvd, Suite 101
Germantown, MD 20874

P. Kiang
K. J. Mahoney
- 9 SAIC
20300 Century Blvd, Suite 200B
Germantown, MD 20874

J. Bunting
C. Herrington
J. R. Pearring
R. A. Wullaert

102 Windham Road
Oak Ridge, TN 37830

D. O. Campbell

Distribution - continued

1845 Terminal Drive, Suite 130
Richland, WA 99352

J. Mishima

555 Quince Orchard Road
Gaithersburg, MD 20878

Donald Oakley
Paul Szerszen

507 Knight Street, Suite B
Richland, WA 99352

Pete Lowry

1 Harvard University
295 Upland Avenue
Newton Highlands, MA 02161

Melvin First

1 Syracuse University
334 Hinds Hall
Chemical Engineering & Materials Science Department
Syracuse, NY 13244

Dr. Larry Tavlarides

1 University of Washington
Chemical Engineering Department
Benson Hall, BF-10
Seattle, WA 98195

Professor Gene Woodruff

1 Washington State University
Department of Mechanical & Materials Engineering
Pullman, WA 99164-2920

Dr. Steve Antolovich, Chairman

1 Confederated Tribes, Umatilla Indian Reservation
P. O. Box 638
Pendleton, OR 97801

Rick George

Distribution - continued

- 4 West Valley Nuclear Services Co.
P. O. Box 191
West Valley, NY 14171
- K. K. Gupta MS-49
S. Ketola MS-191
Ram Shukla
Don Stroud
- 1 K & M Engineering & Consulting Corporation
Suite 500
2001 L St. NW
Washington, D. C. 20036
- Ryan Gill
- 5 Defense Nuclear Facilities Safety Board
625 Indiana Ave, N. W., Suite 700
Washington, D. C. 20004
- Ralph Arcaro
Lester Clemons Suite 700
Steven Stokes
Richard Tontodonato
Dermot Winters
- 3 Westinghouse Idaho Nuclear Corporation
P. O. Box 4000
Idaho Falls, ID 83404-4000
- B. Griebenow MS-5104
A. P. Hoskins MS-5217
Dr. Terry Todd
- 1 C. Abrams
1987 Virginia Drive
Idaho Falls, ID 83404
- 1 Fred N. Carlson
6965 North 5th West
Idaho Falls, ID 83401
- 1 Dr. A. Veletsos
Department of Civil Engineering
Rice University
P. O. Box 1892
Houston, TX 77252
- 2 Westinghouse Electric Corporation
1801 K Street NW, 8th floor
Washington DC, 20006
- Kevin Billings

Distribution - continued

6 Gateway Center
Pittsburgh, PA 15222

Steve Green, Manager
Westinghouse Environmental Affairs

- 1 Westinghouse Materials Company of Ohio
P. O. Box 398704
Cincinnati OH 45239-8704

David L. Jacoboski
Senior Engineer, Technology Demonstration

- 3 Westinghouse Savannah River Company
P. O. Box 616
Aiken, SC 29802

J. Marra, 703-H
F. G. McNatt, 704-8A
Dr. Major Thompson

1991 S. Centennial Ave.
Aiken, SC 29803

L. A. Wooten

- 1 Institute for Energy and Environmental Research
6935 Laurel Avenue
Takoma Park, MD 20912

Dr. Arjun Makhijani, President

- 1 SPAR Aerospace Ltd.
20 Avon Meadow Lane, Suite 220
Avon, CT 06001

Peter W. Kruse
Advanced Technology Systems Division

- 1 Redzone Robotics, Inc.
2425 Liberty Ave
Pittsburgh, PA 15222-4639

David W. White

- 6 National Research Council, National Academy of Sciences
2101 Constitution Ave., N. W.
Washington D. C. 20418

Robert S. Andrews, Senior Staff Officer
Board on Radioactive Waste Management

Distribution - continued

- 1 Converse Consultants
18 W. Mercer Street, Suite 300
Seattle, WA 98119

David Stanley
- 1 Brown & Caldwell
100 W. Harrison
Seattle, WA 98119

Hal Cooper
- 1 Benton County Department of Emergency Management
P.O. Box 6144
Kennewick, WA 99336

Gary Pira
- 1 BOVAY Northwest Inc.
660 Swift, Suite D
Richland, WA 99352

T. J. McLaughlin
- 1 Schilling Development, Inc.
1632 DaVinci Court
Davis, CA 95616

Wes Gerriets
- 1 T. S. Elleman
North Carolina State University
Department of Nuclear Energy
P. O. Box 7909
Raleigh, NC 27606
- 1 Mike Lingle
Stone & Webster
7677 E. Berry Ave
Englewood, CA 80111
- 1 Bryant Mather
Corps of Engineers
WESSV-Z
3909 Halls Ferry Rd
Vicksburg, MS 39180-6199
- 1 Paul Shewmon
Prof. Metallurgical Engineer
Ohio State University
2477 Lytham Road
Columbus, OH 43220

Distribution - continued

8

Waste Management External Advisory Committee Members

Dr. Frank L. Parker
Professor of Environmental and Water Resources Engineering
Vanderbilt University
P. O. Box 1596, Station B
Nashville, TN 37235

Dr. Bruce R. Kowalski
Professor of Chemistry, Co-director of Center for Process
Analytical Chemistry
University of Washington
Chemistry Department, Bldg 10
Seattle, WA 98195

Dr. Greg R. Choppin
Professor of Chemistry
Florida State University
Department of Chemistry, B-164
Tallahassee, FL 32306

Dr. Chester Grelecki
President, Chief Scientist
Hazards Research Corporation
200 Valley Road, Suite 301
Mt. Arlington, NJ 07856

Dr. Alfred Schneider
Professor Meritus of Nuclear Engineering
Georgia Institute of Technology
5005 Hidden Branches Dr.
Dunwoody, GA 30338

Dr. Gary Powers
President
Design Science, Inc.
163 Witherow Road
Sewickley, PA 15143

Joseph S. Byrd
University of South Carolina
Department of Electrical and Computer Engineering
Swearingen Engineering Center
Columbia, SC 29208

William R. Prindle
1556 Crestline Drive
Santa Barbara, CA 93105

Distribution - continued

- 3 Ames Laboratory
7 Spedding Hall
Iowa State University
Ames, IA 50011
- Bill Haas
R. B. Thompson
Dr. Paul Wang
- 1 RKK Ltd.
16404 Smokey Pt. Blvd, Suite 303
Arlington, WA 98223
- Chris Reno
- 1 MACTEC
8320 Centerbrook Place
Alexandria, VA 22308
- Stan Blacker
- 1 Engineering-Science, Inc.
1955 Jadwin Ave, Suite 470
Richland, WA 99352
- Matt Sakach
- 1 EBASCO Services, Inc.
1201 Jadwin Avenue, Suite 202
Richland, WA 99352-3429
- F. J. Young
- 1 ENSEARCH Environmental
1981 Snyder Rd, Suite 3
Richland, WA 99352
- Glen Cox
- 1 MTL Systems, Inc.
3481 Dayton-Xenia Road
Dayton, OH 45431-0299
- E. McDaniel
- 1 Nuclear Consulting Services, Inc.
7000 Huntley Road
P. O. Box 29151
Columbus, OH 43229
- Dr. J. Louis Kovach

Distribution - continued

- 1 Battelle Laboratories
505 King Avenue
Columbus, OH 43201-2693

Rob Taylor Jr., P.E.
Rm 13-6-016
- 1 Portland General Electric Co.
121 S. W. Salmon St.
Portland, OR 97204-2991

Wayne Lei, 3WTCBRO5
- 3 RUST Geotech Inc.
P. O. Box 14000
Grand Junction, CO 81502-5504

Brian Mathis
Michael C. Butherus
John R. Duray
- 1 ICF Kaiser Engineers
1800 Harrison St.
Oakland, CA 94612-3430

Chris G. Whipple, Ph.D
- 1 Neptune & Company
1505 15th St., Suite B
Los Alamos, NM 87544
Randy Ryti
- 1 John Hopkins University
1714 Eutaw Place
Baltimore, MD 21217

Morton Corn
- 1 Roberts Engineering Services, INC.
1980 East Ocean Boulevard
Stuart, FL 34916

Dr. Paul Roberts
- 1 Columbia River United Technical Consultant
P. O. Box 912
Bingen, WA 98605

Gregory de Bruler

Distribution - continued

- 1 Government Accountability Project
West Coast Office
1402 Third Avenue, Suite 1215
Seattle, WA 98101

Thomas E. Carpenter, Director
- 1 Heart of America Northwest
1305 Fourth Avenue
Cobb Building Suite 208
Seattle, WA 98101

Gerald M. Pollet, Executive Director
- 1 Dr. Viorica Lopez-Avila
Midwest Research Institute
625-B Clyde Ave
Mountain View, CA 94043
- 3 Los Alamos Technical Associates
8633 W. Gage Blvd.
Kennewick, WA 99336

D. S. Delorenzo
Karen Todd

750 Swift, Suite 12
Richland, WA 99352

Janet Jones
- 2 RAPIC
Bldg K-1210
P. O. Box 2003
Oak Ridge, TN 37831-7256

Lola Estes MS 72-56

OFFSITE - FOREIGN

- 1 British Nuclear Fuels Ltd
Risley Warrington
Cheshire WA3 6AS
United Kingdom

Howard A. Edwards
- 1 Ricardo Hitec Ltd
Club street Works, Bamber Bridge
Preston, PR5 6FN
United Kingdom

P. K. J. Smith

Distribution - continued

- 1 Telerobot
Conorzio Telerobot
Via Hermada 6
16154 Genova, Italy

Bruno Sessarego
- 4 SGN
1, rue des Herons, Montigny-le-Bretonneux
78182 Saint-Quentin-en-Yvelines Cedex,
France

Serge Merlin
Gilles Clement
Bernard Tousant
Eric Tchemitcheff
- i CEA - Saclay
DCC/DIR

Ba't 121
91190 GIF/Yvette Cedex
France

G. Baudin
- 1 SDMS-Chaudronnerie Blanche
B.P. 4-F-38160 Saint-Romans
France

Phillipe Monneau
- 1 GEA-Cadarache
SGDC/STDE
Boite Pastale 313
13115 Saint Paul Les Durance
France

Magali Ranchoux
- 1 Hans Walischmiller GmbH
D-7778 Markdorf/Bodensee
Germany

Wolfgang Walischmiller

ONSITE

- 1 BNFL INC.

Dr. Mike McKeon G3-02

Distribution - continued

1	<u>Stone & Webster Engineering Co.</u>	
	E. L. Richards	R2-83
4	<u>MACTEC</u>	
	S. D. Barry	S7-73
	R. Coppin	R3-77
	J. Janus	G6-18
	L. Soler	A4-35
1	<u>EBASCO</u>	
	D. J. Leigh-Manuell	G3-02
1	<u>Yakima Indian Nation</u>	
	John Brodeur	G1-02
26	<u>U. S. Department of Energy-Richland Operations Office</u>	
	G. E. Bishop	S7-54
	K. W. Bracken	R3-73
	S. T. Burnum	R3-74
	R. C. Cullison	A5-55
	J. J. Davis	R3-74
	L. Erickson	S7-53
	R. E. Gerton	R3-72
	M. Glasper	R3-72
	W. F. Hendrickson	S7-54
	R. L. Higgins	R3-72
	R. D. Hildebrand	A5-55
	A. Hon	R3-72
	P. E. LaMont	S7-53
	C. Z. Morgan	R3-72
	T. Noble	R3-72
	M. S. Peck	T4-07
	L. E. Petersen	R3-72
	G. W. Rosenwald	R3-72
	C. O. Ruud	S7-54
	G. H. Sanders	R3-74
	T. R. Sheridan	R3-73
	A. B. Sidpara	R3-73
	A. D. Toth	R3-72
	D. L. Vieth	R3-73
	D. J. Williams	S7-54
	J. K. Yerxa	A5-15
	Reading Room	A1-65
45	<u>Pacific Northwest Laboratories</u>	
	D. N. Anderson	K7-34
	W. J. Apley	K1-73
	D. B. Baird	K7-34

Distribution - continued

R. M. Bean	P8-08
D. W. Bennett	K5-17
P. R. Bredt	P7-25
J. C. Brown	K7-22
S. A. Bryan	P7-25
L. L. Burger	P7-25
J. B. Colson	K5-10
J. M. Creer	G6-01
P. G. Eller	B1-40
J. F. Fletcher	K7-97
E. A. Flores	K3-08
L. K. Holton Jr.	P7-43
V. L. Hunter	K7-94
P. R. Hrma	P8-37
J. Janata	K2-12
B. M. Johnson	K1-78
E. O. Jones	P8-38
D. E. Larson	G3-02
S. G. McKinley	P7-22
B. D. McVeety	K6-63
I. C. McVeety	K7-22
P. J. Mellinger	P7-22
B. E. Opitz	K6-79
M. D. Patridge	K7-94
M. S. Peffers	K7-94
R. K. Quinn	K1-73
W. G. Richmond	P7-41
J. M. Robbins	P7-22
R. D. Scheele	P7-25
E. A. Schmieman	B1-40
R. C. Schrotke	P7-18
P. A. Scott	P7-19
D. A. Seaver	K1-73
J. C. Spanner	K2-05
J. L. Straalsund	K1-79
K. L. Steinmaus	K6-84
J. L. Swanson	P7-25
K. M. Tominey	K7-97
J. D. Vienna (2)	P8-44
R. S. Wegeng	K7-97
P. D. Whitney	K7-34
T. W. Wood	K6-47

321

Westinghouse Hanford Company/Boeing Computer
Sciences Richland/ICF Kaiser Hanford Company

L. K. Ahrens	H6-07
A. T. Alstad	R1-49
W. T. Alumkal	R2-52
R. P. Anantatmula	R2-11
J. D. Anderson	N3-11
J. N. Appel	S4-58
I. J. Austin	T4-01
H. Babad	S7-30

Distribution - continued

J. J. Badden	S5-12
J. K. Bajwa	H4-63
R. A. Ballou	S4-58
T. J. Bander	H0-33
L. W. Barthoff	H5-53
A. D. Bates	T3-01
L. L. Barry	R1-67
G. D. Bazinet	L4-71
D. B. Bechtold	T6-09
D. L. Becker	H5-57
L. Bedford	S5-07
K. E. Bell	R1-12
R. V. Berg	R4-02
M. V. Berriochoa	B3-30
P. K. Bhatia	S4-58
K. R. Birney	H0-40
D. L. Bjorklund	S6-01
J. E. Bjorklund	R1-62
R. J. Blanchard	R1-17
J. W. Bloom	R2-34
D. C. Board	S1-57
K. D. Boomer	H5-49
G. L. Borsheim	R2-11
V. C. Boyles	R1-49
D. A. Bragg	R1-49
D. R. Bratzel	L5-31
W. R. Brooksher	L4-01
T. M. Brown	R2-12
R. G. Brown	R2-14
J. H. Bussell	L7-06
J. A. Caggiano Jr	H6-06
T. M. Cameron	H5-72
J. W. Carey	S5-07
K. G. Carothers	R1-51
B. C. Carpenter	R1-12
R. J. Cash	S7-15
T. Chiao	L0-06
G. Christensen	H4-21
K. L. Chubb	L6-86
R. H. Clements	S0-14
G. J. Coleman	T4-07
J. C. Conner	H4-61
R. B. Conrad	H5-09
W. L. Cowley	H4-61
D. W. Craig	S5-07
N. R. Croskrey	R1-30
G. M. Crummel	R1-51
J. M. Cruse	L5-63
D. S. Cunningham	S0-02
J. E. Daniels	S4-65
J. S. Davis	H4-64
S. J. Dechter	R2-54
C. DeFigh-Price	R2-31
J. L. Deichman	H4-19

Distribution - continued

T. A. Demitruk	H5-36
C. J. Denson	L4-95
S. E. Dieterle	S2-20
L. F. Dougherty	H4-62
J. G. Douglas	L5-55
G. L. Dunford	R1-51
R. F. Eggers	S4-58
D. R. Ellingson	H5-37
F. W. Ellis	B4-52
D. B. Engelman	R2-18
R. W. Ewert	R1-19
S. D. Estey	R2-11
W. G. Farley	H4-62
J. E. Fasso Jr.	S3-10
G. W. Faulk	T3-28
K. O. Fein	H4-63
L. A. Fort	S4-57
K. D. Fowler	R2-11
S. B. Fowler	L0-24
C. R. Fox	S4-60
G. L. Fox, Jr.	L5-01
H. P. Fox	R2-88
G. T. Frater	S7-30
E. A. Fredenburg	S4-55
J. R. Freeman-Pollard	H6-03
R. T. French	E6-61
L. A. Gaddis	G7-57
K. A. Gasper	G3-20
G. J. Gauck	R1-51
C. J. Geier	R2-50
P. W. Gibbons	S4-58
K. D. Gibson	H4-61
R. L. Gilchrist	L5-63
D. A. Gilles	S2-14
S. D. Godfrey	R1-51
D. E. Good	S3-97
A. Greenberg	S2-66
P. R. Golberg	B4-08
P. Greenbaum	S5-20
J. M. Grigsby	H4-62
R. D. Gustavson	R1-51
R. L. Guthrie	H4-61
J. H. Haberman	R1-30
K. D. Haggerty	T4-09
L. E. Hall	E6-25
V. W. Hall	H4-19
C. S. Haller	G6-04
D. W. Hamilton	S7-03
K. L. Hampsten	S4-53
B. M. Hanlon (25)	R1-80
J. M. Hanson	R2-85
M. S. Harrington	B4-53
J. P. Harris III	S4-55
G. A. Harvey	B4-52

Distribution - continued

F. J. Heard	H0-34
D. A. Healey	S7-04
J. M. Henderson	S4-55
D. W. Hendrickson	L5-31
M. C. Higginson	A4-25
K. S. Hoeft	G1-61
M. J. Holm	R1-80
C. S. Homi	R2-12
G. P. Hopkins	N2-40
J. D. Hopkins	R2-11
B. K. Horsager	B5-24
J. H. Huber	R1-49
J. L. Huckaby	S7-15
J. V. Hurley	R4-02
J. J. Huston	S1-54
J. E. Irvin	S7-83
M. N. Islam	R3-08
M. T. Jansky	H6-26
T. D. Jarecki	S7-12
P. Jennings	S0-14
D. W. Jeppson	L5-31
R. D. Jensen	B1-58
G. D. Johnson	S7-15
L. J. Julyk	H5-56
R. A. Karnesky	H0-39
D. L. Kelly	S5-20
R. A. Kirkbride	S4-58
P. F. Kison	S2-45
C. A. Kuhlman	B3-30
N. W. Kirch	R2-11
D. B. Klos	S0-14
A. G. Krasopoulos	A5-55
M. Kummerer	H4-62
M. J. Kupfer	H5-49
E. C. Ladd	R1-19
D. R. Lance	S0-09
J. L. Lee	S7-82
J. M. Light	B4-08
D. C. Lini	H3-56
B. H. Lueck Jr.	R3-12
P. J. Mackey	B3-15
G. T. MacLean	S4-58
R. M. Marusich	H4-60
V. D. Maupin	N1-73
T. B. McCall	H0-33
K. S. McCullough	H4-70
M. H. McGrath	S4-58
J. P. Menard	R2-40
W. C. Miller	S4-55
N. J. Milliken	H4-63
W. J. Millsap	H5-68
G. J. Miskho	R2-50
J. R. Mobley	H5-49
T. Moleff	R1-30

Distribution - continued

S. R. Morgan	R2-50
P. M. Morant	H4-19
K. L. Morris	H5-09
A. P. Mouse	S7-12
J. P. Mullally	B5-24
L. D. Muhlestein	H4-64
R. L. Nelson	R2-36
R. L. Newell	E6-31
D. J. Newland	R2-36
R. Ni	S5-07
P. C. Ohl	H1-30
P. A. Olsen	R3-12
D. L. Osowski	L6-10
V. M. Pacheco	R1-51
A. L. Pajunen	H5-49
R. B. Pan	H5-53
L. D. Parchen	B3-63
G. L. Parsons	S4-57
M. A. Payne	R2-50
L. T. Pedersen	N1-46
L. D. Pennington	T4-07
C. E. Petersen	R1-30
S. R. Pierce	R1-51
R. S. Popielarczyk	R1-30
E. A. Porter	R2-88
R. L. Powers	R1-49
T. B. Powers	H4-66
R. K. P'Pool	T1-30
G. R. Priddy Jr.	R3-12
T. E. Rainey	R4-02
G. F. Raphael	R2-12
R. E. Raymond (3)	R2-54
I. E. Reep	R2-08
M. A. Rezvani	H5-55
D. Richardson	R2-31
S. K. Rifaey	S6-12
R. R. Rios	R1-80
W. E. Ross	S5-07
J. A. Ryan	H5-55
P. Sathyanarayana	R2-12
C. C. Scaief	L7-06
F. A. Schmorde	B2-18
R. D. Schreiber	R2-12
C. P. Schroeder	L7-06
K. V. Scott	H5-52
N. J. Scott-Proctor	R1-80
O. Serrano	T4-01
L. K. Severud	R2-50
M. H. Shannon	H4-61
J. E. Shapley	H4-68
T. N. Shaw	S4-55
R. A. Shea	L8-16
E. M. Sheen	L7-03
E. J. Shen	S4-58

Distribution - continued

P. K. Shen	H0-39
D. J. Sherwood	R2-78
A. T. Shook	S2-01
E. R. Siciliano	H0-39
R. B. Simmons	R2-12
K. P. Slape	S0-11
C. M. Smith	H6-30
S. M. Stahl	H4-61
E. G. Stephan	A3-74
B. E. Stapley	R4-02
R. R. Stickney	R4-02
J. N. Strode	R2-11
D. G. Sutherland	L4-72
J. P. Summerhays	R2-88
M. J. Sutey	T4-08
S. L. Swaney	T4-08
L. M. Swanson	H5-49
C. L. Thomas	H4-19
J. F. Thompson	H5-68
J. D. Thomson	R1-30
S. R. Tifft	H6-26
J. A. Tilden (2)	L6-12
H. Toffer	H0-38
T. T. Tran	L7-04
J. W. Tritz	B1-32
D. P. Trott	R2-86
D. A. Turner	R2-78
L. A. Tusler	R2-11
C. J. Udell	L6-12
B. D. Valenzuela	R2-12
R. E. Van der Cook	H5-27
R. J. Van Vleet	H4-63
A. O. Vance	H5-33
N. J. Vermeulen	R1-80
D. T. Vladimiroff	G7-01
F. R. Vollert	H5-09
J. A. Voogd	R4-03
G. R. Walker	B2-16
O. S. Wang	R2-78
D. L. Wegener	R1-62
R. K. Welty (3)	R1-80
G. T. Wells	H6-26
K. A. White	R1-51
R. Whitman	H5-49
R. S. Whittman	B1-59
J. H. Wicks	T4-07
D. D. Wiggins	R1-49
L. S. Williams	S4-53
C. R. Wilson	H5-52
G. R. Wilson	R2-31
M. E. Witherspoon	E6-61
D. D. Wodrich	S7-84
K. L. Woodard	R4-02
R. D. Wojtasek	H6-27

Distribution - continued

G. D. Wright	G6-04
W. R. Wrzesinski	R3-74
P. A. Young	R2-14
F. A. Zak	R3-01
B. D. Zimmerman	L0-06
SDPC Docket File (2)	H5-36
272-AW Shift Office	S5-04
Central Files	L8-04
Tank Farms Info Center	R1-20
Information Release	
Administration	R1-05
Env Data Mgmt Center	H4-22
RL/TWRS Library	R3-72

DATE

FILMED

10/18/94

END