

**Document(s) responsive to Item 1**

**ENVIRONMENTAL NOTIFICATION FORM**Date: 02/15/2013Notification No.: TOC-ENV-NOT- 2013-0019Name: D.L. DyekmanRevision No. 0**Section 1. Spills**NA ☐Chemical Name: See Section 3 belowMSDS No.: n/aRegulated per 40 CFR 302: Yes ☒ No ☐EPCRA EHS: Yes ☒ No ☐CAS No.: n/a Quantity Released: up to 300gal/yr Reportable Quantity (RQ): \_\_\_\_\_

CAS No.: \_\_\_\_\_ Quantity Released: \_\_\_\_\_ Reportable Quantity (RQ): \_\_\_\_\_

CAS No.: \_\_\_\_\_ Quantity Released: \_\_\_\_\_ Reportable Quantity (RQ): \_\_\_\_\_

Resource Conservation and Recovery Act Contingency Plan Implemented: Yes ☐ No ☒National Response Center Staff Name: Brent Taliaferro, Report No.1038621National Response Center Report No.: aboveTank Waste Release: Yes ☒ No ☐**Section 2. Emission Control Equipment Deviation**NA ☒

Stack ID/Facility: \_\_\_\_\_

Location: \_\_\_\_\_

Airborne Release: Yes ☐ No ☐Personnel Contamination: Yes ☐ No ☐

Work Space Air Sample: \_\_\_\_\_ DAC

Description of Occurrence:

Date and Time of Discovery: \_\_\_\_\_

**Section 3. RCRA Compliance**NA ☐Double-Shell Tank Leak Detection System Yes ☐ No ☐Single-Shell Tank Leak Assessment Process Yes ☒ No ☐Single-Shell Tank Drywell Logging Yes ☐ No ☐Double-Shell Tank Inadvertent Waste Transfer Yes ☐ No ☐Location: T-111Date and Time of Discovery: 2/15/2013

Description of Occurrence:

OFFICE OF RIVER PROTECTION CONFIRMS A DECREASE OF LIQUID LEVEL IN HANFORD SINGLE-SHELL TANK

RICHLAND - The U.S. Department of Energy (DOE) Office of River Protection (ORP) and its Tank Farms operations contractor Washington River Protection Solutions (WRPS) have determined that liquid levels in Hanford single-shell tank (SST) T-111 are decreasing. The specific cause of the liquid level decrease in Tank T-111 has not been determined.

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Monitoring wells in the T Tank Farm, where Tank T-111 is located, have not identified significant changes in concentrations of chemicals or radionuclides in the soil. DOE is continuing to monitor its network of monitoring wells in the area of T Tank Farm and is evaluating possible next steps.

This tank was classified as an assumed leaker in 1979. In February 1995, interim stabilization was completed for this tank. In order to achieve interim stabilization, the pumpable liquids were removed in accordance with agreements with the State of Washington.

Data indicates the current rate of loss of liquids from the tank could be in the range of 150 to 300 gallons over the course of a year.

Tank T-111 is a 530,000-gallon capacity underground storage tank built between 1943-44, and put into service in 1945. T-111 currently contains approximately 447,000 gallons of sludge, a mixture of solids and liquids with a mud-like consistency. There are a total of 177 tanks at the Hanford site.

The cleanup of radioactive and chemical tank waste at Hanford and protection of the environment, public and workers remains a top priority for the Department and its Environmental Management mission. The Department will continue to work closely with the State of Washington, Congress and other key stakeholders to address this situation and continue progress on this important mission at Hanford.

The CERCLA Reportable Quantity thresholds were exceeded for Sr90, Pu239, Pu240, and Am241.

**Section 4. Permit Deviation**NA ☒Air Emission Limit Exceeded: Yes ☐ No ☐

Emission: \_\_\_\_\_ Limit: \_\_\_\_\_ Release Amount: \_\_\_\_\_

ST4511 Permit Non-Compliance (G.11): Yes ☐ No ☐ST4511 Permit Upset (S.8): Yes ☐ No ☐RCRA Permit: Yes ☐ No ☐

Location: \_\_\_\_\_

Date and Time of Discovery: \_\_\_\_\_

Description of Occurrence:

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Check all applicable distribution lists:

☒ **Section 1:**

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- DL-WRPS-NOT-MGMT
  - DL-WRPS-NOT-WDOH
  - DL-WRPS-NOT-ORP
  - DL-WRPS-NOT-ECY
  - Team Line Management
  - ^WRPS Occurrence Reporting

☐ **Section 2:**

- E-mail:
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  - DL-WRPS-NOT-MGMT
  - DL-WRPS-NOT-ORP
  - Team Line Management

☐ **Section 3**

- Phone: • Ecology 1-509-575-2490
- E-mail:
- DL-WRPS-NOT-ECY
  - DL-WRPS-NOT-MGMT
  - DL-WRPS-NOT-ORP
  - Team Line Management

☐ **Section 4:**

- E-mail:
- DL-WRPS-NOT-ECY
  - DL-WRPS-NOT-MGMT
  - DL-WRPS-NOT-ORP
  - Team Line Management

**Breshears, Jerralee A**

---

**From:** Dyekman, Dale L  
**Sent:** Friday, February 15, 2013 12:27 PM  
**To:** DL - WRPS-NOT-MGMT; DL - WRPS-NOT-WDOH; DL - WRPS-NOT-ORP; DL - WRPS-NOT-ECY; DL - WRPS-NOT-ST; DL - WRPS-NOT-HOA; ^WRPS Occurrence Reporting  
**Cc:** Olds, Theodore E (Erik); Gamache, Lori M; DBOH461@ECY.WA.GOV; Trenchard, Glyn D; Little, David B; Burandt, Mary E  
**Subject:** TOC-ENV-NOT-2013-0019: DECREASE OF LIQUID LEVEL IN HANFORD SINGLE-SHELL TANK T-111  
**Attachments:** TOC-ENV-NOT-2013-0019 Decrease of Liquid Level in T-111.pdf

### **OFFICE OF RIVER PROTECTION CONFIRMS A DECREASE OF LIQUID LEVEL IN HANFORD SINGLE-SHELL TANK**

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**Dale Dyekman**  
 Environmental Compliance  
 (509) 372-2678



Figure 1. National Response Center Notification.

TOC-ENV-NOT- 2013-0019

## Section 1: Occurrence Information

1. Initiate call by stating: "This is a report of a spill of hazardous material in excess of a Reportable Quantity level"
2. On-Call Individual: Name and work phone number
3. Reporting Party: Washington River Protection Solutions LLC
4. Responsible Party: Department of Energy – Office of River Protection
5. ORP Address: P. O. Box 450, Richland, Washington, 99352
6. Description (ensure the following are reported):
  - a. Release of a hazardous material exceeding a Reportable Quantity:  
 Initials/date/time JAW 2/15/13 1210 This is a release from an underground storage tank. Initially identified as leaking tank in 1979, pumpable liquids removed to the extent practical in 1995, identified as continuing to leak February 2013
  - i. Time of release - continuing
  - b. Material is a: Initials/date/time JAW 2/15/13 1210
    - i. radioactive hazardous waste
    - ii. hazardous waste
    - iii. hazardous substance
  - c. Material released from: Initials/date/time JAW 2/15/13 1210
    - i. hazardous waste storage tank
    - ii. hazardous waste storage tank piping system
    - iii. hazardous waste storage drum
    - iv. Product container/tank
  - d. Reportable Quantity Exceeded: Initials/date/time JAW 2/15/13 1210
    - i. RQ#1 Sr-90
    - ii. RQ#2 Pu-239
    - iii. RQ#3 Cs-137
    - iv. RQ#4 Am-241
    - v. RQ#5 Pu-241
  - e. Volume (if known, estimate may be given) up to 300 gallons/yr, continuing  
 Initials/date/time JAW 2/15/13 1210
  - f. Cause (if known) Initials/date/time unknown – most likely stress corrosion cracking
  - g. Help needed Yes        No X Initials/date/time JAW 2/15/13 1210
  - h. Actions Taken: Initials/date/time       
    - i. Spill/leak stopped Yes        No X
    - ii. Personnel evacuated Yes        No X
    - iii. Personnel sheltered Yes        No X
  - i. Resource Conservation and Recovery Act Permit number WA 7890008967  
 Initials/date/time JAW 2/15/13 1210
7. Incident location: "DOE-ORP's Hanford Site located approximately 25 miles north of Richland, Washington in Benton County." Initials/date/time JAW 2/15/13 1210

NOTE: The NRC staff will ask additional questions. Ensure the NRC staff members need for information does not block the reporting of the information in Items 1 through 7 above. Items 1 through 7 are required to meet the Environmental Protection Agency expectations for reporting.

Section 2: NRC Contact

1. NRC staff member Brent Salafson - National Response Center
2. NRC report number 1038621

## Tank 241-T-111

**Summary:** Tank 241-T-111 was declared to be of questionable integrity in 1974 based upon a small liquid level decrease and the supernatant removed. It was classified as an assumed leaker in 1984. The tank appeared to be leaking again in 1994 and saltwell jet pumped. In 2007 the interstitial liquid level (ILL) began decreasing again, with the rate from 2011 to 2012 estimated at 300 gal/yr.

### Specifics:

- 530,000 gal capacity tank built in 1943-1944
- Currently contains approximately 447,000 of sludge
- Sludge is estimated to contain 38,000 of drainable interstitial liquid
- T-111 was declared a questionable integrity tank in 1974 and the supernatant liquid removed
- The tank was pumped between 1976 and 1979 to remove additional liquid via a saltwell screen
- Tank showed a slow rate of intrusion (~.14 in./yr) between 1979 and 1993
- The level again began to decrease in 1993 and T-111 was stated in February 1994 to be re-leaking. Residual liquid removed with a jet pump until operation was halted at 0.04 gal/min.
- In 1993 the tank was placed on the list of Organic Watch List tanks
- T-111 was declared interim stabilized in February 1995. Interim stabilization criteria include having <5,000 gal supernatant liquid and <50,000 gal drainable liquid.
- T-111 showed a slow rate of intrusion (~.14 in./yr) between 1995 and 2007, when the level began to decrease
- In November 2012 the ILL decrease in T-111 exceeded the trend baseline, and PER 2012-1977 was issued on 11/27/12. This PER was closed on 1/28/13 and a new PER, 2013-0056 issued to track the T-111 level decrease evaluation.
- In 2011 tank level changes were reviewed for all 149 single shell tanks. RPP-RPT-50799 documented this review, with the focus being on water intrusion
- Tank level changes were re-evaluated in the summer of 2012 and a plan provided to DOE (WRPS-1203139 R1) describing the intrusion evaluation. Twenty tanks were recommended for further review. The evaluation requires an in-tank video to be taken in each tank. Twelve tanks were to have videos in FY-2013 and the remainder in FY-2014. This evaluation plan was presented to Ecology in August-September 2012.
- During the re-evaluation in 2012 the presence of level decreases in some tanks was noted. Both the LOW and the Enraf gauge in T-111 showed similar decreases. The decrease was within the ILL and surface level trend baselines established for the tank. It was apparent that if the rate of decrease continued the ILL value would exceed the decrease baseline late in 2012. Level decreases were discussed with Ecology in September-October. At this time it was decided to be proactive and substitute a video in T-111 for one of the planned FY-2013 intrusion videos. A video was needed for T-111 to determine what surface the Enraf level gauge plummet was resting on and to estimate the fraction of the waste surface that was liquid.
- The T-111 video was taken on 2/11/13. It shows the Enraf plummet resting on a small pool of liquid just below the sludge surface. The reading is valid. The tank also has a small pool estimated at ~20 ft. diameter located around the saltwell screen in the center of the tank.

- It is estimated that the tank has lost about 300 gal/yr at the average rate of decrease the past 2 years.
- The tank has been, and is, monitored for intrusion in compliance with the requirements agreed to with the Washington State Department of Ecology delineated in RP-9937, *Single-Shell Tank System Leak Detection and Monitoring Functions and Requirements Document*. The requirement is to obtain a quarterly LOW reading. In September 2012 the T-111 LOW frequency was increased to monthly to better track the change. T-111 also has daily surface level readings taken with an Enraf level gauge. The ILL and surface levels track each other very closely, despite the LOW and Enraf being located on opposite sides of the tank.
- RPP-9937 specifies the response to leaks occurring in interim stabilized SSTs as follows:
  - “Section 4.1.3 A.2. SSTs that meet interim stabilization criteria shall not require responses to leaks...”
- Interim stabilized tanks can still leak liquid to the soil column.
- According to HNF-EP-0182, Rev. 297, Waste Tank Summary Report for Month Ending December 31, 2012 there is an estimated 2,726,000 gallons of drainable liquid remaining in the SSTs, including 967,000 gallons in SSTs classified as “Assumed Leakers”

From: **Christopher, Stephanie J**  
 To: **Voogd, Jeffrey A; Kirch, Nicholas W (NICK)**  
 Cc: **Little, David B; Reynolds, Jacob G; Sams, Terry L**  
 Subject: **RE: Tank T-111 top radionuclides in the solid waste from the best-basis inventory**  
 Date: **Thursday, February 14, 2013 4:34:43 PM**  
 Attachments: **image001.gif**

Tank Name	Analyte	Waste Phase	Waste Type	Qualifier	Inventory	Inventory Units	Inventory RSD	Basis	Inventory Formula	Total Tank Volume (tL)	Total Tank Volume (tgal)	Curies in 300 gallons
241-T-111	90Sr	Total			7.77E+03	Ci		S	( )	1691	446.76	5.22E+00
241-T-111	90Y	Total			7.77E+03	Ci		C	(Based on 90Sr)	1691	446.76	5.22E+00
241-T-111	239Pu	Total			2.61E+02	Ci		C	(Based on 239/240Pu and Template isotopic distributions)	1691	446.76	1.75E-01
241-T-111	137Cs	Total			1.95E+02	Ci		S	( )	1691	446.76	1.31E-01
241-T-111	137mBa	Total			1.84E+02	Ci		C	(Based on 137Cs)	1691	446.76	1.24E-01
241-T-111	241Am	Total			9.82E+01	Ci		S	( )	1691	446.76	6.59E-02
241-T-111	241Pu	Total			4.46E+01	Ci		C	(Based on 239Pu and Template isotopic distributions)	1691	446.76	2.99E-02
241-T-111	240Pu	Total			3.02E+01	Ci		C	(Based on 239/240Pu and Template isotopic distributions)	1691	446.76	2.03E-02
241-T-111	151Sm	Total			1.81E+01	Ci		TE		1691	446.76	1.22E-02
241-T-111	99Tc	Total			1.66E+01	Ci		S	( )	1691	446.76	1.11E-02

Thank you,  
**Stephanie Harrington, PhD**  
 Chemical Process Engineer  
 Washington River Protection Solutions  
 contractor to the United States Department of Energy  
 2750E Room A219  
 (509) 376-1336


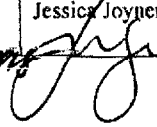
From: **Harrington, Stephanie J**  
 Sent: **Thursday, February 14, 2013 4:23 PM**  
 To: **Voogd, Jeffrey A; Kirch, Nicholas W (NICK)**  
 Cc: **Little, David B; Reynolds, Jacob G; Sams, Terry L**  
 Subject: **Tank T-111 top radionuclides in the solid waste from the best-basis inventory**

Tank Name	Analyte	Waste Phase	Waste Type	Qualifier	Inventory	Inventory Units	Inventory RSD	Basis	Inventory Formula
241-T-111	90Sr	Total			7.77E+03	Ci		S	( )
241-T-111	90Y	Total			7.77E+03	Ci		C	(Based on 90Sr)
241-T-111	239Pu	Total			2.61E+02	Ci		C	(Based on 239/240Pu and Template isotopic distributions)
241-T-111	137Cs	Total			1.95E+02	Ci		S	( )
241-T-111	137mBa	Total			1.84E+02	Ci		C	(Based on 137Cs)
241-T-111	241Am	Total			9.82E+01	Ci		S	( )
241-T-111	241Pu	Total			4.46E+01	Ci		C	(Based on 239Pu and Template isotopic distributions)
241-T-111	240Pu	Total			3.02E+01	Ci		C	(Based on 239/240Pu and Template isotopic distributions)
241-T-111	151Sm	Total			1.81E+01	Ci		TE	
241-T-111	99Tc	Total			1.66E+01	Ci		S	( )

Thank you,  
**Stephanie Harrington, PhD**  
 Chemical Process Engineer  
 Washington River Protection Solutions  
 contractor to the United States Department of Energy  
 2750E Room A219  
 (509) 376-1336

Intentionally Blank

(1) Document Number: TOC-ENV-NOT-2013-0019		(2) Revision Number: 1	(3) Effective Date: 08/27/2013
(4) Document Type: <input type="checkbox"/> Digital Image <input type="checkbox"/> Hard copy <input checked="" type="checkbox"/> PDF <input type="checkbox"/> Video		(a) Number of pages (including the DRF) or number of digital images: 07	
(5) Release Type: <input checked="" type="checkbox"/> New <input type="checkbox"/> Cancel		<input type="checkbox"/> Page Change <input type="checkbox"/> Complete Revision	
(6) Document Title: Environmental Notification for the decrease of liquid level in T-111 - Correction to Page Count		(7) USQ No.: R- <input checked="" type="checkbox"/> N/A USQ Evaluator    Sign/Date	
(8) Change/Release Description: N/A			
(9) Change Justification: N/A			
(10) Associated Structure, System, and Component (SSC) and Building Number:	(a) Structure Location: N/A		(c) Building Number: N/A
	(b) System Designator: N/A		(e) Project Number: N/A
(11) Impacted Documents:	(a) Document Type	(b) Document Number	(c) Document Revision
	N/A	N/A	N/A
(12) Approvals:			
(a) Author (Print/Sign): Jerralee Breshears		Date: 8.27.2013	
(b) Reviewer (Optional, Print/Sign):			
N/A		Date: _____	Date: _____
		Date: _____	Date: _____
		Date: _____	Date: _____
(c) Responsible Manager (Print/Sign): Jessica Joyner		Date: 8/27/2013	
(13) Distribution:			
(a) Name	(b) MSIN	(a) Name	(b) MSIN
^WRPS ENV Records	N/A		
Release Stamp			
(14) Clearance	(a) Cleared for Public Release <input type="checkbox"/> Yes <input type="checkbox"/> No	(b) Restricted Information? <input type="checkbox"/> Yes <input type="checkbox"/> No	(c) Restriction Type:
(15) Clearance Review (Print/Sign):			Date:

<b>Tank Operations Contractor (TOC)</b> <b>RECORD OF REVISION</b>		(1) Document Number: <b>TOC-ENV-NOT-2013-0019</b>	Page <u>1</u>
(2) Title: Environmental Notification for the Decrease of Liquid Level in T-111			
<b>Change Control Record</b>			
(3) Revision	(4) Description of Change – Replace, Add, and Delete Pages	Authorized for Release	
		(5) Author. (print/sign/date)	(6) Resp. Mgr. (print/sign/date)
1	Delete Pages 5 – 9 of Rev.0	Jerralee Breshears 8/27/2013 	Jessica Joyner 8/27/2013 

## Environmental Notification for a decrease of liquid in Single-Shell Tank T111

Author Name:

**Dale Dyekman**

Washington River Protection Solutions

Richland, WA 99352

U.S. Department of Energy Contract DE-AC27-08RV14800

EDT/ECN: DRF

UC:

Cost Center:

Charge Code:

B&R Code:

Total Pages: 05

Key Words: Environmental, Notification, TOC-ENV-NOT-2013-0019 Rev 1, T111, SST

Abstract: Environmental Notification for a decrease of liquid in Single-Shell Tank T111

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Release Approval

Date

Release Stamp

**Approved For Public Release**

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Description of Occurrence:

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Emission: \_\_\_\_\_ Limit: \_\_\_\_\_ Release Amount: \_\_\_\_\_

ST4511 Permit Non-Compliance (G.11): Yes ☐ No ☐ST4511 Permit Upset (S.8): Yes ☐ No ☐RCRA Permit: Yes ☐ No ☐

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**Section 2:**

- E-mail:
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  - DL-WRPS-NOT-ORP
  - Team Line Management

**Section 3**Phone: • Ecology 1-509-575-2490

- E-mail:
- DL-WRPS-NOT-ECY
  - DL-WRPS-NOT-MGMT
  - DL-WRPS-NOT-ORP
  - Team Line Management

**Section 4:**

- E-mail:
- DL-WRPS-NOT-ECY
  - DL-WRPS-NOT-MGMT
  - DL-WRPS-NOT-ORP
  - Team Line Management

**Breshears, Jerralee A**

---

**From:** Dyekman, Dale L  
**Sent:** Friday, February 15, 2013 12:27 PM  
**To:** DL - WRPS-NOT-MGMT; DL - WRPS-NOT-WDOH; DL - WRPS-NOT-ORP; DL - WRPS-NOT-ECY; DL - WRPS-NOT-ST; DL - WRPS-NOT-HOA; ^WRPS Occurrence Reporting  
**Cc:** Olds, Theodore E (Erik); Gamache, Lori M; DBOH461@ECY.WA.GOV; Trenchard, Glyn D; Little, David B; Burandt, Mary E  
**Subject:** TOC-ENV-NOT-2013-0019: DECREASE OF LIQUID LEVEL IN HANFORD SINGLE-SHELL TANK T-111  
**Attachments:** TOC-ENV-NOT-2013-0019 Decrease of Liquid Level in T-111.pdf

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Data indicates the current rate of loss of liquids from the tank could be in the range of 150 to 300 gallons over the course of a year.

Tank T-111 is a 530,000-gallon capacity underground storage tank built between 1943-44, and put into service in 1945. T-111 currently contains approximately 447,000 gallons of sludge, a mixture of solids and liquids with a mud-like consistency. There are a total of 177 tanks at the Hanford site.

The cleanup of radioactive and chemical tank waste at Hanford and protection of the environment, public and workers remains a top priority for the Department and its Environmental Management mission. The Department will continue to work closely with the State of Washington, Congress and other key stakeholders to address this situation and continue progress on this important mission at Hanford.

**Dale Dyekman**  
 Environmental Compliance  
 (509) 372-2678



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## ENVIRONMENTAL OPERATIONAL ACTIVITIES NOTIFICATION

Date: 3-14-2013

TOC-ENV-NOT: 2013-0025

Name: J.A. Voogd

Revision No.: 0

Regulatory Requirement: Written Follow-up Notification Pursuant to 40 CFR 355.40(b)

RE: Notification 1038621, Hanford Tank T-111 Level Decrease

### Notification Information:

On February 15, 2013 notification was made by the U.S. Department of Energy (DOE) Office of River Protection (ORP) and the Tank Farms Operations Contractor, Washington River Protection Solutions (WRPS), to the National Response Center reporting a release of hazardous mixed waste and radioactive material in excess of a Reportable Quantity (RQ) level (National Response Center report # 1038621). No extremely hazardous substances were involved in the event. The event is identified as occurring from equipment identified as tank 241-T-T111. This tank is totally buried below the ground surface. The following table lists the substances exceeding RQ levels during this event.

Americium 241	6.59E-02Ci
Plutonium 239	1.75E-01Ci
Plutonium 240	2.03E-02Ci
Strontium 90	5.22E+00Ci
Sodium	8.19E+01Kg

DOE ORP and WRPS determined that liquid levels in Hanford single-shell tank (SST) T-111 are decreasing. The specific cause of the liquid level decrease in Tank T-111 has not been determined. The concern for a tank with a decreasing level trend is that the tank may be leaking. Additionally, T-111 is classified as an assumed leaker. It is a reasonable conclusion that if the tank has leaked the liquid has likely reached the soil column beneath the ground surface.

The Hanford Site occupies 586 square miles (1,518 km<sup>2</sup>) in Benton County, Washington (centered on Coordinates: 46°38'51"N 119°35'55"W 46.64750°N 119.59861°W). This land is currently uninhabited and is closed to the general public. It is a desert environment receiving less than 10 inches of annual precipitation, covered mostly by shrub-steppe vegetation. The Columbia River flows along the site for approximately 50 miles (80 km), forming its northern and eastern boundary. Hanford site is located approximately 25 miles north of the city of Richland, in the state of Washington.

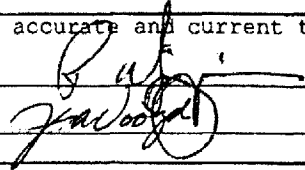
Tank T-111 is located in the 200W area of Hanford and is one of 18 tanks in the T Tank Farm. Tank T-111 is a 530,000-gallon capacity underground storage tank built between 1943-1944, and put into service in 1945. T-111 currently contains approximately 447,000 gallons of sludge, a mixture of solids and liquids with a mud like consistency. This tank was classified as an assumed leaker in 1979. In 1994 the tank was declared an "assumed re-leaker". In February 1995, interim stabilization was completed for this tank. An interim stabilized tank is a tank which contains less than 50 Kilogallons of drainable interstitial liquid and less than 5 Kilogallons of supernatant. In order to achieve interim stabilization, the pumpable liquids were removed in accordance with the agreements with the State of Washington and the Environmental Protection Agency. Recent data indicates the measured liquid level is consistent with a rate of loss in the range of 150 to 300 gallons over the course of a year. Due to the nature of the tank design and underground location, the rate and continuity of leakage is estimated based upon tank waste surface level measurements, in-tank liquid observation wells and in-tank camera inspections.

Corrective actions for the waste from Tank T-111 are subject to Hanford Federal Facility Agreement and Compliance Order (HFFACO) and are being discussed with Washington State Department of Ecology. Actions taken to monitor, respond to, and contain a release from this event will be addressed through the HFFACO. At this time there are no known health risks attributed to this event.

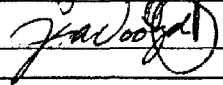
Monitoring wells for the T Tank Farm, where T-111 is located, have not identified significant changes in concentrations of chemicals or radionuclides. DOE is continuing to monitor its network of monitoring wells in the area of the T Tank Farm and is evaluating possible next steps.

### ENVIRONMENTAL OPERATIONAL ACTIVITIES NOTIFICATION (continued)

The above information is accurate and current to the best of my knowledge.

Signature R.L. Higgins / 

Date 3/14/2013

Contact: J.A. Voogd 

Phone 509-373-4101

**Distribution of this form shall be completed to the following groups.**  
Check all applicable distribution lists

☒ Environmental Records

☐ Team Line Management

☒ Other: Environmental Protection Agency - Region 10, Washington State Department of Ecology - Central Regional Office, Washington Emergency Response Commission, Oregon State Emergency Response Commission, ORP, WRPS Management, Ecology

Attach a copy of original notification email and any applicable information when submitting Environmental Notification to Document Control.

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## ENVIRONMENTAL OPERATIONAL ACTIVITIES NOTIFICATION

Date: 3-14-2013

TOC-ENV-NOT: 2013-0025

Name: J.A. Voogd

Revision No.: 0

Regulatory Requirement: Written Follow-up Notification Pursuant to 40 CFR 355.40(b)

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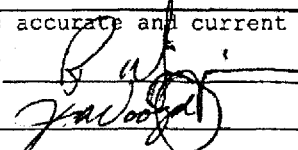
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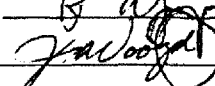
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**ENVIRONMENTAL OPERATIONAL ACTIVITIES NOTIFICATION (continued)**

The above information is accurate and current to the best of my knowledge.

Signature R.L. Higgins / 

Date 3/14/2013

Contact: J.A. Voogd 

Phone 509-373-4101

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Attach a copy of original notification email and any applicable information when submitting Environmental Notification to Document Control.

Document(s) responsive to Item 3

## **Barnes, Nada**

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**From:** Voogd, Jeffry A  
**Sent:** Tuesday, March 12, 2013 11:17 AM  
**To:** Huffman, Lori A  
**Subject:** FW: Reporting Continuous Releases

**From:** Herrera, Daniel C  
**Sent:** Monday, March 11, 2013 6:23 PM  
**To:** Voogd, Jeffry A  
**Subject:** Reporting Continuous Releases

Jeff,

Here is the reporting clarification for 30-Day Follow-up Notifications under 40 CFR Parts 302 and 355. This information came out of the [EPA Reporting Requirements for Continuous Releases of Hazardous Substances Guide](#). I found a recommended form on the EPA website for Continuous Release Reporting. In Section II of the form, there is a note stating "NOTE that unanticipated events, such as spills, pipe ruptures, equipment failures, emergency shutdowns, or accidents, do not qualify for reduced reporting under CERCLA section 103(f)(2). Unanticipated events are not incidental to normal operations and, by definition are not sufficiently predictable or regular to be considered stable in quantity and rate."

Based on the information provided it in the guide, I do not believe we need to Report a Continuous Release (30-Follow-up Notification unless we can provide an accurate basis stating that the release is stable in quantity and rate. The plot and other information that Schofield provided does not indicate a stable release. Future events/releases from Tank-111 should be reported on a per-occurrence basis.

We can discuss this further, in the mean time I will continue with the 30 Day Notification preparation.

Thanks

### **What is the continuous release reduced reporting option?**

CERCLA Section 103(f)(2) and EPA's implementing regulations at 40 CFR Parts 302 and 355, provide a special reduced reporting option for "continuous" releases of CERCLA hazardous substances and EHSs. This CERCLA and EPCRA reporting relief applies to facilities that release CERCLA hazardous substances or EHSs that are "continuous" and "stable in quantity and rate" under the regulatory definition of 40 CFR 302.8(b). For these types of releases, reporting facilities can choose either to: 1) report on a per occurrence basis, or 2) report as a "continuous" release in accordance with the Continuous Release Rule, "Reporting Continuous Releases of Hazardous Substances" (55 FR 30166) published on July 24, 1990, which amended 40 CFR Parts 302 and 355.

The purpose of CERCLA Section 103(f)(2) is to reduce reporting of predictable release notifications. CERCLA Section 103(f)(2), however, does not eliminate the requirement to report. Government response officials need to receive some notification of each hazardous substance release that equals or exceeds an RQ on a continuous basis, so that the release can be evaluated and if necessary, a response action can be taken.

### **What is a continuous release?**

A "continuous release" is a release of a hazardous substance that is "continuous" and "stable in quantity and rate" under the regulatory definitions of these terms defined below. A continuous release may be a release that occurs 24 hours a day (e.g., a radon release from a stockpile) or a release that occurs during a certain process (e.g., benzene released during the production of polymers) or a release that occurs intermittently (e.g., the release of a hazardous substance from a tank vent each time the tank is filled).

***NOTE that unanticipated events, such as spills, pipe ruptures, equipment failures, emergency shutdowns, or accidents, do not qualify for reduced reporting under CERCLA section 103(f)(2). Unanticipated events are not incidental to normal operations and, by definition are not sufficiently predictable or regular to be considered stable in quantity and rate.***

#### **Definitions :**

**Definition of Continuous.** A continuous release is a release that occurs without interruption or abatement, or that is routine (i.e., occurs during normal operating procedures or processes), anticipated, intermittent, and incidental to normal operations.

**Stable in quantity and rate.** A release that is stable in quantity and rate is a release that is predictable and regular in the amount and rate of emission.

Some releases resulting from malfunctions may also qualify for reduced reporting as continuous releases under Section 103(f)(2) if they are incidental to normal plant operations or treatment processes, are stable in quantity and rate, and either (1) occur without interruption or abatement or (2) are routine anticipated, and intermittent. For example, fugitive emissions from valves that occur at different rates over the course of a production cycle may be a malfunction that qualifies for reduced reporting. The determinative question of whether any release, including a malfunction, qualifies for reporting under Section c103(f)(2) is whether the release satisfies the definitions of "continuous" and "stable in quantity and rate."

Releases must be sufficiently predictable and regular so that the person in charge, or the owner or operator of the facility can provide a full description of the release to government authorities. Upon receipt of continuous release information, government officials will evaluate the risk associated with the release and determine the need for a response action.

#### **Do releases that result from unanticipated events qualify for reduced reporting as continuous releases?**

Releases of CERCLA hazardous substances that are the result of unanticipated incidents do not qualify for reduced reporting under Section 103(f)(2). Such episodic incidents include spills, equipment failures, or the emergency shutdown of equipment. Also included are releases from malfunctions that are not continuous or stable, such as pipe ruptures. Although these releases may occur with some regular statistical frequency, unanticipated incidents by their nature do not produce releases that are continuous or sufficiently regular or predictable in quantity and rate to satisfy the requirements for reporting them as continuous releases. If you are aware that such an episodic release of a CERCLA hazardous substance has occurred in a quantity equal to or greater than an RQ, you must report the release immediately to the NRC, SERC, and LEPC.

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**Barnes, Nada**

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**From:** Voogd, Jeffry A  
**Sent:** Thursday, March 14, 2013 2:04 PM  
**To:** Trenchard, Glyn D  
**Cc:** Huffman, Lori A; Gamache, Lori M; Holloway, Jerry N  
**Subject:** RE: T-111 EPCRA Report DRAFT 3-12.docx

Thanks for the input. Change made.

**From:** Trenchard, Glyn D  
**Sent:** Thursday, March 14, 2013 1:44 PM  
**To:** Voogd, Jeffry A  
**Cc:** Huffman, Lori A; Gamache, Lori M  
**Subject:** T-111 EPCRA Report DRAFT 3-12.docx

Minor revision. Highlighted on the attached

DOE ORP and WRPS determined that liquid levels in Hanford single-shell tank (SST) T-111 are decreasing. The specific cause of the liquid level decrease in Tank T-111 has not been determined. The concern for a tank with a decreasing level trend is that the tank may be leaking. Additionally, T-111 is classified as an assumed leaker. It is a reasonable conclusion that if the tank has leaked the liquid has likely reached the soil column beneath the ground surface.

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**Barnes, Nada**

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**From:** Voogd, Jeffry A  
**Sent:** Monday, March 18, 2013 2:59 PM  
**To:** Lyon, Jeffery  
**Cc:** 'McLerran.Dennis@EPA.gov'; Tynan, Johnie (ECY); DeBow, Steve (MIL); 'Sue.otjen@state.or.us'; Killoy, Steven E; Huffman, Lori A  
**Subject:** RE: TOC-ENV-NOT-2013-0025 Written Follow-Up Report Pursuant to 40 CFR 355.40 (b) for NRC Notification 1038621

Jeff,

Sorry for not responding, but my e:mail is not showing a message from last week.

The regulatory basis for the reportable quantities is taken from the "Consolidated List of Lists" – October 2012 Version, available on the EPA web site. This information was compared against 300 gallons of T-111 inventory.

Jeff Voogd  
373-4101

**From:** Lyon, Jeffery (ECY) [mailto:JLYO461@ecy.wa.gov]  
**Sent:** Monday, March 18, 2013 1:16 PM  
**To:** Voogd, Jeffry A; 'McLerran.Dennis@EPA.gov'; Tynan, Johnie (ECY); DeBow, Steve (MIL); 'Sue.otjen@state.or.us'  
**Subject:** RE: TOC-ENV-NOT-2013-0025 Written Follow-Up Report Pursuant to 40 CFR 355.40 (b) for NRC Notification 1038621

I sent an e-mail last week, and ask what regulation identified the reportable quantities, did you respond?

**From:** Voogd, Jeffry A [mailto:Jeffry\_A\_Voogd@rl.gov]  
**Sent:** Thursday, March 14, 2013 2:25 PM  
**To:** 'McLerran.Dennis@EPA.gov'; Tynan, Johnie (ECY); DeBow, Steve (MIL); 'Sue.otjen@state.or.us'  
**Cc:** DL - WRPS-NOT-ORP; DL - WRPS-NOT-MGMT; DL - WRPS-NOT-ECY; Higgins, Richard L; Herrera, Daniel C; Holloway, Jerry N; Gamache, Lori M  
**Subject:** TOC-ENV-NOT-2013-0025 Written Follow-Up Report Pursuant to 40 CFR 355.40 (b) for NRC Notification 1038621

To:

Environmental Protection Agency- Region 10  
Attn: Dennis McLerran

Washington State Department of Ecology  
Central Regional Office  
Attn: Johnie Tynan

Washington Emergency Response Commission  
C/o Department of Ecology  
Community Right-to-Know Unit  
Attn: Steve DeBow

Oregon State Emergency Response Commission  
c/o Community Right to Know Unit

Attn: Sue Otjen

Attached is the follow-up report for the National Response Center Notification #1038621 regarding the Hanford Tank T-111 level decrease.

Should you have questions in regard to this report, you may contact me at (509) 373-4101.

Thank you

Jeff Voogd  
Manager, Base Operations - Environmental Compliance  
Washington River Protection Solutions

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**Barnes, Nada**

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**Sent:** Thursday, March 14, 2013 2:25 PM  
**To:** 'McLerran.Dennis@EPA.gov'; 'Johnie.Tynan@ecy.wa.gov'; 'S.DeBow@emd.wa.gov'; 'Sue.otjen@state.or.us'  
**Cc:** DL - WRPS-NOT-ORP; DL - WRPS-NOT-MGMT; DL - WRPS-NOT-ECY; Higgins, Richard L; Herrera, Daniel C; Holloway, Jerry N; Gamache, Lori M  
**Subject:** TOC-ENV-NOT-2013-0025 Written Follow-Up Report Pursuant to 40 CFR 355.40 (b) for NRC Notification 1038621

To:

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Attn: Dennis McLerran

Washington State Department of Ecology  
Central Regional Office  
Attn: Johnie Tynan

Washington Emergency Response Commission  
C/o Department of Ecology  
Community Right-to-Know Unit  
Attn: Steve DeBow

Oregon State Emergency Response Commission  
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Attn: Sue Otjen

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Should you have questions in regard to this report, you may contact me at (509) 373-4101.

Thank you

Jeff Voogd  
Manager, Base Operations - Environmental Compliance  
Washington River Protection Solutions



T-111 EPCRA  
Report.pdf

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**Barnes, Nada**

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**From:** Mulkey, Charles H  
**Sent:** Wednesday, February 27, 2013 8:20 AM  
**To:** Voogd, Jeffry A; Peloquin, Michael G; Herrera, Daniel C  
**Subject:** RQ Reporting Requirements  
**Attachments:** Short synopsis of the reporting requirements for releases.docx

Jeff,

Attached is a synopsis of the various drivers and the reporting requirements. A 30 day report is required under CERCLA for continuous releases (40 CFR 302.8(c)(2) & (e)) and a written report for other release is required under EPCRA (40 CFR 355.40(b)). There is no time specified for the single release report other than as soon as practicable.

Please let me know if you need more detail or have any questions.

Chuck

## Short synopsis of the reporting requirements for releases

2/27/13

### Designation, reportable Quantities and Notification ( 40 CFR 302) Implements CERCLA 102(a) requirements

1. 302.6 states notification requirements.
2. 302.6(a) requires that any person who has knowledge of a release must immediately report the release to the National Response Center
3. 302.6(b)(2) specifies when radionuclides are subject to the reporting requirements

### Continuous Releases (40 CFR 302.8) Implements CERCLA requirements of section 103

1. Releases must be routine and within a normal range
2. Initial telephone notification (c)(1), (d)
3. Initial written notification within 30 days of telephone notification (c)(2), (e)
4. Follow-up notification within 30 days of the first anniversary date of initial written notification(c)(3),(f)
5. Notifications of changes to composition or rate of releases (c)(4 &5), (g), (h)
6. Annual evaluation of releases (i)

### Emergency Planning and Notification (40 CFR 355) Subpart C Emergency Release Notification (implements EPCRA Section 304

1. 355.21(b) exempts federally permitted releases
2. 355.21(d) exempts releases that does not meet the definition of release under CERCLA
3. 355.21(e) exempts releases of radionuclides from natural activities such as farming and mining
4. 355.32 apply to continuous releases and include requirements similar to 302.8 for changes to quantities or content.
5. **355.40(b) requires written follow-up of emergency notifications**
6. Transportation related releases do not require the written follow-up notification
7. 355.42 specifies to whom the written notification must be sent.
8. 355.43(b) specifies that the written report must be submitted as soon as practicable after the release.

### Emergency Planning and Notification (40 CFR 355) Subpart D Additional Provisions

1. 355.60 describe the relationship between these requirements and the notification requirements under CERCLA.
2. 355.61 contains some key definitions

Intentionally Blank

## Barnes, Nada

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**From:** Miskho, Anthony G  
**Sent:** Monday, March 25, 2013 2:08 PM  
**To:** Voogd, Jeffry A  
**Cc:** Killoy, Steven E; Flasch, Michael P; Guberski, John D; Herrera, Daniel C; Waters, Shaun F; Thompson, Leo E; Washenfelder, Dennis J; Tucker, Ronald P; Miskho, Anthony G; Cooley, Troy A  
**Subject:** RE: Wyden Letter Question #4 3-22.pptx  
**Attachments:** Wyden Letter Question #4 3-22 agm 2013-03-25.pptx

Jeff:

Per our discussions, changes in red text.

Changed RCRA to Dangerous Waste Regulations and used interim status requirements for 40 CFR 265. Added that RPP-9937 addresses WAC 173-303 reporting for SST since the presentation was broader than SSTs. Change slide header from CERCLA to EPCRA.

Thanks

Tony

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**From:** Voogd, Jeffry A  
**Sent:** Friday, March 22, 2013 3:24 PM  
**To:** Thompson, Leo E; Miskho, Anthony G; Washenfelder, Dennis J; Tucker, Ronald P  
**Cc:** Killoy, Steven E; Flasch, Michael P; Guberski, John D; Herrera, Daniel C; Waters, Shaun F  
**Subject:** Wyden Letter Question #4 3-22.pptx

Leo, Tony, Dennis and Ron;

Attached is my cut at the information needed for the Question 4. Please look it over. Feedback is welcome.

Jeff

# Wyden Letter Question # 4

What are the current reporting protocols for DOE and WRPS to report tank problems to regulators and stakeholders?

J.A. Voogd  
March 2013

# Presentation Outline

- Regulatory Reporting Requirements
- Tank Measurement Data Process
- Notification Process
  - (Environmental and Occurrence)
- T-111 Notifications

# Reporting Protocols

## Driven from Requirements

- Dangerous Waste Regulations (aka RCRA)
- CERCLA
- EPCRA
- Heart of America Settlement Agreement
- DOE Occurrence Reporting
- DOE Emergency Plan Implementation Procedures

# Dangerous Waste Regulations (aka RCRA)

## Requirements for Reporting Tank Problems

- WAC 173-303-400(3) requires compliance with 40 CFR 265.196(d) to operations under interim status requirements.
- *Notifications, reports.* (1) Any release to the environment, except as provided in paragraph (d)(2) of this section, must be reported to the *Department* within 24 hours of detection. If the release has been reported pursuant to 40 CFR part 302, that report will satisfy this requirement.
- (2) A leak or spill of hazardous waste that is:
  - (i) Less than or equal to a quantity of one (1) pound, and
  - (ii) Immediately contained and cleaned-up is exempted from the requirements of this paragraph.
- (3) Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the *Department*:
  - (i) through (v) *identify report elements*

# Dangerous Waste Regulations (aka RCRA)

Reporting under WAC 173-303 for the SSTs is determined by RPP-9937 Section 4.1.3:

- No response to leaks (interpreted to mean notification) is required for interim stabilized tanks (4.1.3(A)(2))
- Response to leaks from tanks not meeting interim stabilization criteria is required: (a) remove tank from service, (b) contain and inspect leaks, (c) report to Ecology (4.1.3(A)(3))

# CERCLA

## Requirements for Notification

- **40 CFR 302 Designation, Reportable Quantities, and Notification**

### 302.6 Notification Requirements

(a) Any person ... (with) ...knowledge of any release ... of a hazardous substance ... in a quantity equal to or exceeding the reportable quantity determined by this part in any 24-hour period, immediately notify the National Response Center...

# ERCRA

## Emergency Planning and Notification

- 40 CFR 355 Emergency Planning and Notification
  - 355.10 Purpose: Establishes the list of extremely hazardous substances, threshold planning quantities, and facility notification responsibilities ...
  - 355.40(b)(1) ... immediately notify the community emergency coordinator ...
  - 355.40(b)(3) ...provide a written follow-up emergency notice ...

# Heart of America Settlement Agreement

## Reporting Requirements

- “For releases where immediate written notification is provided to regulatory agencies ... provide a copy of any written notification provided under the statutes and regulation cited above to Plaintiffs (HOA) by facsimile within one business day...”

# Occurrence Reporting

- DOE O 232.2, Occurrence Reporting and Processing of Operations Information
  - Contractor Requirements Document
    - Occurrence Reporting Criteria (Attachment 2)
- DOE-0223, Richland Operations Office, Emergency Plan Implementing Procedures
  - RLEP 3.24, Notification, Reporting, and Processing of Operations Information
    - Abnormal Events (Appendix B)

# Occurrence Reporting

## DOE Order 232.2, Contractor Requirements Document

The contractor is responsible for:

- Event or Condition Identification and Response
- Event or Condition Categorization
- Prompt Notifications
- Occurrence Report Processing
- Occurrence Investigation and Analysis

# Occurrence Reporting

## Richland Emergency Procedure (RLEP) 3.24

### Notification, Reporting, and Processing of Operations Information

- Hanford contractors shall report events or conditions that meet the category list in Appendix B, Abnormal Event Category List
- Hanford contractors shall notify the appropriate ORP Facility Representative of categorized Abnormal Events

# Tank Liquid Level Measurement

## Data Collection and Reporting

- ENRAF Liquid Level Readings
- Liquid Observation Well Readings
- Surveillance Data Reviews / Trend Evaluation
- Tank Leak and Intrusion Evaluation

# Operational Data Gathering

- Field procedures for tank surface level readings (ENRAF) provide record evidence of measurements.
- Anomalies are “Red Circled” for out of range conditions.

<u>Procedure</u>	<u>Title</u>	<u>SST Facilities/Tanks</u>
• TF-OR-WR-AN	AN Weekly Rounds	B/BX/BY/C SSTs
• TF-OR-QR-AN	AN Quarterly Rounds	B/BX/BY/C SSTs
• TF-OR-WR-AZ	AZ Weekly Rounds	A/AX SSTs
• TF-OR-QR-AZ	AZ Quarterly Rounds	A/AX SSTs
• TF-OR-WR-ST	ST Weekly Rounds	S/SX/T/TX/TY/U SSTs
• TF-OR-QR-ST	ST Quarterly Rounds	S/SX/T/TX/TY/U SSTs

# Procedures Implementing Reporting Requirements

- TFC-OPS-OPER-C-56 Response to an Abnormal Environmental Condition or Event

## 4.2.4 Condition: SST Level change (not in retrieval) or drywell anomaly (during retrieval)

1. Confirm the level change in Single Shelled Tank (SST) and verify the reading.
2. Initiate the action per OSD-T-151-00031.
3. Notify the Environmental On-Call Staff if a level change is confirmed.

# **Liquid Observation Well Data**

## **Procedure TO-040-333**

Liquid Observation Well (LOW) Surveillance Van Startup and Operation

- Measures subsurface (interstitial) liquid level via neutron and/or gamma scan
- Data gathered electronically from field instruments to LOW Van computer.
- Preliminary data check performed in the field per procedure.
- Data loaded into LOW Van computer system and downloaded to central computer for Engineering check (see TFC-ENG-CHEM-D-20).

# Liquid Observation Well Data Review

## TFC-ENG-CHEM-D-20

- “...provides instructions for analyzing, reviewing, recording, and reporting Liquid Observation Well (LOW) data collected by Operations in single-shell tanks as required by OSD-T-151-00031, “Operating Specifications for Tank Farm Leak Detection and Single Shell Tank Intrusion Detection.”
- If a rerun has been obtained that verifies the ILL exceeds the operating specification after correction for barometric pressure, then follow the steps for reporting a specification violation described in OSD-T-151-00031 and TFC-ENG-CHEM-D-42, Section 4.1.

# Process Engineering Waste Surveillance Data Review

## TFC-ENG-CHEM-D-21

- Provides instructions for logging, reviewing, analyzing, verifying and reporting surveillance data from tank farms.
- Round Sheet data is reviewed by the Shift Manager before finalizing.
- Administrative Specialist records round sheet readings into the Surveillance Analysis Computer System (SACS) database.
- Responsible System Engineer performs trend analysis and data review and documents review results in the SACS database.
- If an abnormal liquid level data trend is suspected to be caused by instrument error, contact the responsible Engineering organization and initiate troubleshooting (i.e., recalibration) of the liquid level instrumentation.
- If an abnormal level data trend indicates a possible tank leak, follow the leak assessment process outlined in TFC-ENG-CHEM-D-42.
- If an abnormal level data trend is indicative of intrusion, notify the Shift Manager and Responsible Engineering Manager. A PER should be issued.

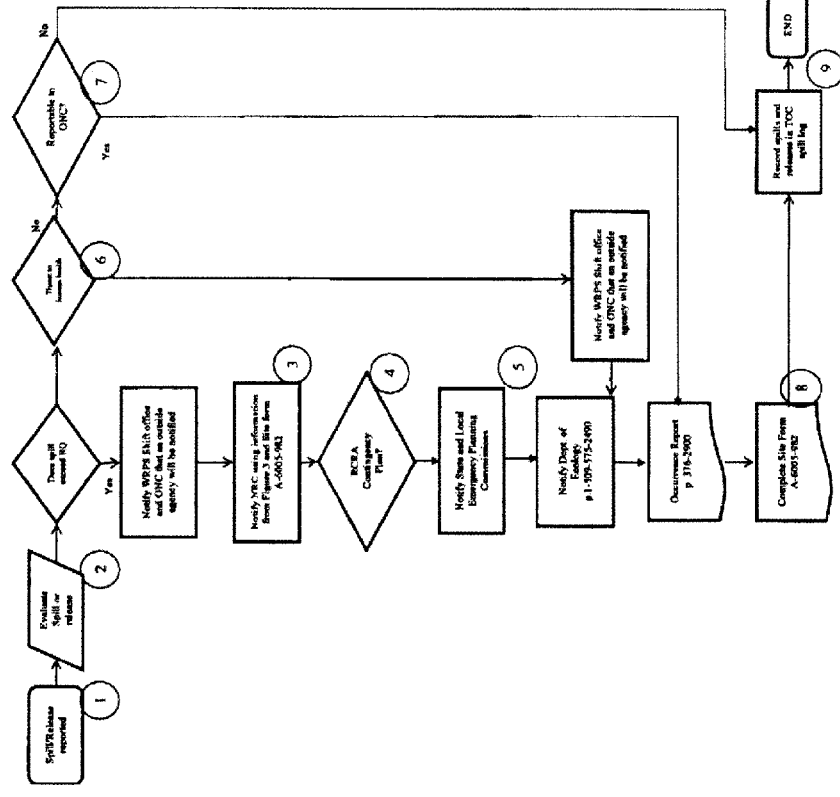
# **Tank Leak Assessment Process**

## **TFC-ENG-CHEM-D-42**

- Present results of the panel assessment and the panel's leak integrity recommendation to the Executive Safety Review Board.
- Notify the U.S. Department of Energy Office of River Protection (ORP) Tank Farms Programs Division Federal Project Manager of the ESRB decision.
- Request that the Base Operation Central Shift Manager notify the Environmental On-Call representative in accordance with TFC-OPS-OPER-C-56, to notify Ecology of the ESRB decision.
- Notify Tank Waste Inventory & Characterization Engineering Manager of the ESRB decision for update of the HNF-EP-0182, "Waste Tank Summary Report," including the "Stoplight Chart."
- Document the ESRB decision in the PER and close the PER.

# Environmental Notification Process

## TFC-ESHQ-ENV\_FS-C-01



Circled numbers correspond to Flow Chart Instructions

# Environmental Notifications

## Actions for T-111

- National Response Center (2/15/13)
  - Phone: Report # 1038621
- Washington State Department of Ecology (2/15/13)
  - TOC-ENV-NOT-2013-0019
- Heart of America (2/15/13)
  - TOC-ENV-NOT-2013-0019
- Occurrence Notification Center (2/15/13)
  - Phone and e:mail
- Tank Farm Central Shift Office notified (2/15/13)
  - Phone and e:mail
- 30 Day Follow Up Report (3/14/13)
  - E:mail TOC-ENV-NOT-2013-0025

# **Occurrence Reporting and Processing of Operations Information**

**Procedure TFC-OPS-OPER-C-24**

- **EM-RP--WRPS-TANKFARM-2013-0003 was submitted to DOE 2/15/2013 conveying**
  - Tank T-111 met the Environmental occurrence reporting criteria of DOE O 232.2
  - Tank T-111 met the Environmental abnormal event category list of DOE-0223

# Back Up Slides

# Requirements for Reporting (Backup)

- **WAC 173-303-145 Spills and discharges into the environment**
  - (2) Notification. Any person who is responsible for a spill or nonpermitted discharge must immediately notify the individuals and authorities described for the following situations:
    - (a) For spills or discharges onto the ground or into groundwater or surface water, notify all local authorities in accordance with the local emergency plan...

## **OSD-T-151-00031**

### **Operating Specifications for Tank Farm Leak Detection and Single-Shell Tank Intrusion Detection**

- **Recovery Action:**
  - ...”For all verified corrected data that exceeds the specification limits established in this document, the process outlined in TFC-CHEM-D-42, "Tank Leak Assessment Process" shall be followed.”

**Barnes, Nada**

---

**From:** Voogd, Jeffry A  
**Sent:** Wednesday, April 24, 2013 10:51 AM  
**To:** Herrera, Daniel C  
**Subject:** FW: EPCRA reporting for tank leak - we can use the 335.31(a) exemption

**From:** Miskho, Anthony G  
**Sent:** Monday, April 22, 2013 7:55 AM  
**To:** Voogd, Jeffry A  
**Cc:** Miskho, Anthony G  
**Subject:** FW: EPCRA reporting for tank leak - we can use the 335.31(a) exemption

Jeff:

I was wrong on my analogy between the definition of facility between EPCRA and CERCLA. Wayne considers the EPCRA facility definition more akin to the RCRA definition than the CERCLA definition.

I would prefer to not report SST leaks any more under EPCRA. Let me know what you would like to do.

Thanks

Tony

---

**From:** Toebe, Wayne E  
**Sent:** Thursday, April 18, 2013 4:27 PM  
**To:** Miskho, Anthony G  
**Subject:** RE: EPCRA reporting for tank leak

Yes I do. The facility for purposes of 40 CFR Part 355 is "*all buildings, equipment...that are located...on a single site or on contiguous or adjacent sites and that are owned or operated by the same person...*" This definition is broader than the CERCLA definition used in 40 CFR 300, which is limited to the areal extent of a release and suitable areas in very close proximity for response. If a release from a tank does not expose anyone beyond the contiguous boundary of the Hanford Site, then it should qualify for the exemption in 355.31(a).

Hope this helps!

---

**From:** Miskho, Anthony G  
**Sent:** Thursday, April 18, 2013 7:13 AM  
**To:** Toebe, Wayne E  
**Cc:** Miskho, Anthony G  
**Subject:** RE: EPCRA reporting for tank leak

Yea, thanks but do you think I can apply the exemption in 355.31(a) to a leaky sst? The key to me is whether a tank a facility and is a leaky tank is considered outside the facility?

Non Responsive

Thanks as always.

-----Original Message-----

**From:** Toebe, Wayne E

**Sent:** Wednesday, April 17, 2013 03:38 PM Pacific Standard Time  
**To:** Miskho, Anthony G  
**Subject:** RE: EPCRA reporting for tank leak

Facility is defined broadly in part 355...see 355.61 for definitions.

*Facility* means all buildings, equipment, structures, and other stationary items that are located on a single site or on contiguous or adjacent sites and that are owned or operated by the same person (or by any person that controls, is controlled by, or under common control with, such person). *Facility* includes manmade structures, as well as all natural structures in which chemicals are purposefully placed or removed through human means such that it functions as a containment structure for human use. For purposes of emergency release notification, the term includes motor vehicles, rolling stock, and aircraft.

Does this help?

---

**From:** Miskho, Anthony G  
**Sent:** Wednesday, April 17, 2013 3:26 PM  
**To:** Toebe, Wayne E  
**Cc:** Miskho, Anthony G  
**Subject:** EPCRA reporting for tank leak

Hey Wayne:  
I hope this is an easy question. If not, I apologize

Would you report a SST below ground leak under EPCRA? I was looking at the exclusion for "within the facility" under 355.31(a).

It looks like the "facility" definition is like the "CERCLA" definition which lead me to the question. It is definitely not an off-site release.

Thanks!  
Tony

Non Responsive

---

**From:** ^ORP Office of Communications  
**Sent:** Wednesday, November 06, 2013 2:26 PM  
**Subject:** Status of Single-Shell Tanks with Level Decreases

## **ANNOUNCEMENT**

Department of Energy  
Office of River Protection  
P.O. Box 450  
Richland, Washington 99352

**ORP No.:** 13-103

**Issued:** 11-6-2013

**To:** All ORP Employees and Support Staff

**Subject:** Status of Single-Shell Tanks with Level Decreases

The U.S. Department of Energy's Office of River Protection tank farm contractor, Washington River Protection Solutions LLC, has determined that 19 of the 20 single-shell tanks showing decreased liquid levels at the Hanford Site are not actively leaking. The one tank previously identified as leaking, T-111, appears to be stabilizing.

The cleanup of tank waste at Hanford's nuclear facilities and protection of the workers, the public, and the environment remains a high priority for the Department. We will continue to keep the State of Washington, Congress, and other key stakeholders apprised of the situation as we continue to monitor the liquid levels inside the single-shell tanks.

Final evaluation documents are available at  
<http://www.hanford.gov/page.cfm/SingleShellTankEvaluations>.

Non Responsive

---

**From:** Gamache, Lori M  
**Sent:** Thursday, March 14, 2013 12:08 PM  
**To:** Trenchard, Glyn D  
**Cc:** Huffman, Lori A; Johnson, Jeremy M  
**Subject:** RE: T-111 EPCRA Report DRAFT 3-12.docx  
**Importance:** High

I just got a call from jeff Voogd. He is looking for language from me. See edits below – is that what we want?

\*\*\*\*\*

DOE ORP and WRPS determined that liquid levels in Hanford single-shell tank (SST) T-111 are decreasing. The specific cause of the liquid level decrease in Tank T-111 has not been determined. The concern for a tank with a decreasing level trend is that the tank may be leaking. (b)(5)

(b)(5)

(b)(5) It is a reasonable conclusion that if the tank has leaked the liquid has likely reached the soil column beneath the ground surface.

**From:** Gamache, Lori M  
**Sent:** Wednesday, March 13, 2013 12:39 PM  
**To:** Trenchard, Glyn D  
**Cc:** Huffman, Lori A; Johnson, Jeremy M  
**Subject:** RE: T-111 EPCRA Report DRAFT 3-12.docx

Glyn,

This is what we said to the OIG. The response has gone out.

Thanks,  
Lori

- Evaluation has been completed on 1 tank, T-111, and it was determined to be leaking. T-111 is one of the 67 identified assumed leakers.

**From:** Trenchard, Glyn D  
**Sent:** Wednesday, March 13, 2013 8:59 AM  
**To:** Gamache, Lori M  
**Cc:** Huffman, Lori A; Johnson, Jeremy M  
**Subject:** T-111 EPCRA Report DRAFT 3-12.docx

Lori – (b)(5)  
(right)? Look at what I highlighted in yellow and I will stop by to discuss

Glyn

Non Responsive

---

**From:** Gamache, Lori M  
**Sent:** Wednesday, March 13, 2013 12:39 PM  
**To:** Trenchard, Glyn D  
**Cc:** Huffman, Lori A; Johnson, Jeremy M  
**Subject:** RE: T-111 EPCRA Report DRAFT 3-12.docx

Glyn,

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**From:** Trenchard, Glyn D  
**Sent:** Wednesday, March 13, 2013 8:59 AM  
**To:** Gamache, Lori M  
**Cc:** Huffman, Lori A; Johnson, Jeremy M  
**Subject:** T-111 EPCRA Report DRAFT 3-12.docx

Lori – (b)(5)  
(right)? Look at what I highlighted in yellow and I will stop by to discuss

Glyn

Non Responsive

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**From:** Silberstein, Mark

**Sent:** Wednesday, March 13, 2013 11:18 AM

**To:** Voogd, Jeffry A; Huffman, Lori A; Stubblebine, Scott D; Killoy, Steven E; Johnson, Jeremy M; Johnson, Gloria J

**Subject:** RE: follow-up reporting on TK T-111

Jeff,

After conferring with S. Stubblebine, we do not believe that (b)(5)

(b)(5)

Thank you,

-Mark

Mark D. Silberstein

Attorney

Office of Chief Counsel

Richland Operations Office/Office of River Protection

U.S. Department of Energy

(Office-RL/ORP): (509) 376-2380

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**From:** Voogd, Jeffry A

**Sent:** Tuesday, March 12, 2013 2:35 PM

**To:** Huffman, Lori A; Stubblebine, Scott D; Silberstein, Mark; Mattlin, Ellen M; Trenchard, Glyn D; Killoy, Steven E; Johnson, Jeremy M; Johnson, Gloria J; Burandt, Mary E

**Cc:** Herrera, Daniel C; Washenfelder, Dennis J

**Subject:** RE: follow-up reporting on TK T-111

<< File: T-111 EPCRA Report DRAFT 3-12.docx >>

Attached is the drafted T-111 report for review at tomorrow's meeting

-----Original Appointment-----

**From:** Huffman, Lori A

**Sent:** Tuesday, March 12, 2013 11:30 AM

**To:** Huffman, Lori A; Stubblebine, Scott D; Silberstein, Mark; Mattlin, Ellen M; Trenchard, Glyn D; Voogd, Jeffry A; Killoy, Steven E; Johnson, Jeremy M; Johnson, Gloria J; Burandt, Mary E

**Subject:** follow-up reporting on TK T-111

**When:** Wednesday, March 13, 2013 9:00 AM-10:00 AM (UTC-08:00) Pacific Time (US & Canada).

**Where:** 2440 room TBD

When: Wednesday, March 13, 2013 9:00 AM-10:00 AM (GMT-08:00) Pacific Time (US & Canada).

Where: 2440 room TBD

Note: The GMT offset above does not reflect daylight saving time adjustments.

\*~\*~\*~\*~\*~\*~\*~\*~\*~\*

The purpose of this meeting is to discuss the follow-up reporting for the t-111 tank leak announcement pursuant to CERCLA and EPCRA.

Non Responsive

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**From:** Trenchard, Glyn D  
**Sent:** Wednesday, March 13, 2013 8:59 AM  
**To:** Gamache, Lori M  
**Cc:** Huffman, Lori A; Johnson, Jeremy M  
**Subject:** T-111 EPCRA Report DRAFT 3-12.docx

Lori – (b)(5)  
(right)? Look at what I highlighted in yellow and I will stop by to discuss



T-111 EPCRA  
Report DRAFT 3-...

Glyn

DRAFT

TO: Region 10  
Environmental Protection Agency  
1200 Sixth Avenue, Suite 900  
Seattle, WA 98101

Central Regional Office  
Washington State Department of Ecology  
15 West Yakima Ave -- Suite 200  
Yakima, WA 98902-3452

Washington Emergency Response Commission  
C/o Department of Ecology  
Community Right-to-Know Unit  
P.O. Box 47659  
Olympia, WA 98504-7659

Oregon State Emergency Response Commission  
c/o Community Right to Know Unit  
4760 Portland Rd. NE  
Salem, OR 97305-1760

Subject: Written Follow-up Notification Pursuant to 40 Code of Federal Regulations 40 CFR 355.40(b) and 40 (CFR) 302.8(e).

The U.S. Department of Energy, Office of River Protection (ORP) is providing a written report following the notification to the National Response Center report # 1038621 on February 15, 2013. This report provides follow-up information pursuant to Title 40 Code of Federal Regulations 40 CFR 355.40(b)(3) Emergency Planning and Community Right-to-Know Act (EPCRA). This citation requires update of information from a reported release within a practicable time following the initial verbal notification.

At this time the leakage from Tank T-111 does not meet the EPA definition for continuous release as noted in EPA guidance document "EPA Reporting Requirements for Continuous Release of Hazardous Substances Guide" and associated form OMB No. 2050-0086:

***"NOTE that unanticipated events, such as spills, pipe ruptures, equipment failures, emergency shutdowns, or accidents, do not qualify for reduced reporting under CERCLA section 103(f)(2). Unanticipated events are not incidental to normal operations and, by definition are not sufficiently predictable or regular to be considered stable in quantity and rate."***

This report does address information required in the citations above including:

DRAFT

40 CFR 302.8(e)

- (i) Name and location of the facility or vessel;
- (ii) Population density within a one-mile radius of the facility or vessel;
- (iii) Identity and location of sensitive populations and ecosystems within a one-mile radius of the facility;
- (iv) For each hazardous substance release:
  - (A) Name/identity of the hazardous substance.
  - (B) Upper and lower bounds of the normal range of the release over the previous year.
  - (C) Source(s) of the release.
  - (D) Frequency of the release and the fraction of the release from each release source and the specific period over which it occurs.
  - (E) Brief statement describing the basis for stating that the release is continuous and stable in quantity and rate.
  - (F) Estimate of the total annual amount that was released in the previous year (in pounds or kilograms) (Curies).
  - (G) Environmental medium (a) affected by the release.
  - (H) A signed statement that the hazardous substance release(s) is (are) continuous and stable in quantity and rate under the definitions in paragraph (b) of this section and that all reported information is accurate and current to the best knowledge of the person in charge.

40 CFR 355.40(b)(3)

- (i) Actions taken to respond and contain the release.
- (ii) Any known or anticipated acute or chronic health risks associated with the release.
- (iii) Where appropriate, advice regarding medical attention necessary for exposed individuals.

Response:

On February 15, 2013 notification (National Response Center report # 1038621) was made by the U.S. Department of Energy (DOE) Office of River Protection (ORP) and its Tank Farms operations contractor Washington River Protection Solutions (WRPS) to the National Response Center reporting a release of hazardous mixed waste and radioactive material in excess of a Reportable Quantity (RQ) level. No extremely hazardous substances were involved in the release. The release is identified as occurring from equipment identified as tank 241-T-T111. This tank is totally buried below the ground surface. The following table lists the substances exceeding RQ levels during this release.

Radionuclide	Curies in 300 gallons	Chemical	Kilograms in 300 gallons
Americium 241	6.59E-02	Sodium	8.19E+01
(b)(5)		(b)(5)	
Plutonium 239	1.75E-01		
Plutonium 240	2.03E-02		
(b)(5)			
Strontium 90	5.22E+00		

DRAFT

(b)(5)	-	-
	-	-

DOE ORP and WRPS determined that liquid levels in Hanford single-shell tank (SST) T-111 are decreasing. The specific cause of the liquid level decrease in Tank T-111 has not been determined. The concern for a tank with a decreasing level trend is that the tank may be leaking. (b)(5)

(b)(5)

(b)(5)

It is a reasonable conclusion that if the tank has leaked the liquid has likely reached the soil column beneath the ground surface.

The Hanford Site occupies 586 square miles (1,518 km<sup>2</sup>) in Benton County, Washington (centered on Coordinates: 46°38'51"N 119°35'55"W 46.64750°N 119.59851°W). This land is currently uninhabited and is closed to the general public. It is a desert environment receiving less than 10 inches of annual precipitation, covered mostly by shrub-steppe vegetation. The Columbia River flows along the site for approximately 50 miles (80 km), forming its northern and eastern boundary. Hanford site is located approximately 25 miles north of the city of Richland, in the state of Washington.

Tank T-111 is located in the 200W area of Hanford and is one of 18 tanks in the T Tank Farm. Tank T-111 is a 530,000-gallon capacity underground storage tank built between 1943-1944, and put into service in 1945. T-111 currently contains approximately 447,000 gallons of sludge, a mixture of solids and liquids with a mud like consistency.

This tank was classified as an assumed leaker in 1979. In 1994 the tank was declared an "assumed re-leaker". In February 1995, interim stabilization was completed for this tank. An interim stabilized tank is a tank which contains less than 50 Kilogallons of drainable interstitial liquid and less than 5 Kilogallons of supernatant. In order to achieve interim stabilization, the pumpable liquids were removed in accordance with the agreements with the State of Washington and the Environmental Protection Agency, as part of the Hanford Federal Facility Agreement and Consent Order (HAFFCO) (Also referred to as the Tri-Party Agreement). In mid-February 2013 DOE ORP and WRPS determined that liquid level measurements were decreasing. Data indicates the measured liquid level is consistent with a rate of loss in the range of 150 to 300 gallons over the course of a year. Due to the nature of the tank design and underground location, the rate and continuity of leakage is estimated based upon tank waste surface level measurements, in-tank liquid observation wells and in-tank camera inspections.

Corrective actions for the waste from Tank T-111 are subject to Hanford Facility Agreement and Consent Order and are being discussed with Washington State Department of Ecology. Actions taken to respond to and contain the release will be addressed through HAFFCO. At this time there are no known health risks attributed to this event.

Monitoring wells for the T Tank Farm, where T-111 is located, have not identified significant changes in concentrations of chemicals or radionuclides in the soil. DOE is continuing to monitor its network of monitoring wells in the area of the T Tank Farm and is evaluating possible next steps.

DRAFT

The above information is accurate and current to the best of my knowledge.

Signature (TBD) \_\_\_\_\_ Date \_\_\_\_\_

Contact: \_\_\_\_\_ Phone \_\_\_\_\_

DRAFT

Non Responsive

---

**From:** Guberski, John D  
**Sent:** Monday, March 11, 2013 11:41 AM  
**To:** Voogd, Jeffry A; Huffman, Lori A; Killoy, Steven E; Washenfelter, Dennis J; Johnson, Gloria J  
**Cc:** Herrera, Daniel C  
**Subject:** RE: T-111 30 Day notification

My comments in redline/strike out.  
Goober

**From:** Voogd, Jeffry A  
**Sent:** Friday, March 08, 2013 3:35 PM  
**To:** Huffman, Lori A; Killoy, Steven E; Washenfelter, Dennis J; Johnson, Gloria J  
**Cc:** Herrera, Daniel C; Guberski, John D  
**Subject:** FW: T-111 30 Day notification

Attached is a draft 30 day Notice to WA State Department of Ecology and EPA for the T-111 release.

Please review and provide comments to Daniel Herrera and myself by noon Monday, 3/11.

Thanks  
Jeff Voogd  
373-4101

**From:** Herrera, Daniel C  
**Sent:** Friday, March 08, 2013 3:21 PM  
**To:** Voogd, Jeffry A  
**Subject:** T-111 30 Day notification



30 Day Follow-up  
Notification ...

## DRAFT Day Follow-up Notification

TO: US Environmental Protection Agency

TO: Washington Emergency Response Commission[jdg1]  
C/o Department of Ecology  
Community Right-to-know Unit  
P.O. Box 47659  
Olympia, WA 98504-7659[jdg2]

This 30-day follow-up notification is pursuant to 40 CFR 302.8(f[jdg3]) and 40 CFR 355.40(b). These citations require update of information from a continuous release within 30 days of the date of the initial verbal notification on February xx, 2013 to the National Response Center (National Response Center report # 1038621). This reporting requirement is necessary for leakage meeting the definition of "continuous release" as defined in 40 CFR 302.8(b). At this time ORP and WRPS is reporting without judgment as to whether the leakage meets the definition of continuous. This report addresses information identified in the [jdg4] citations above including:

- (1) Name and location of the facility or vessel;
- (2) Population density within a one-mile radius of the facility or vessel;
- (3) Identity and location of sensitive populations and ecosystems within a one-mile radius of the facility;
- (4) For each hazardous substance release:
  - (i) Name/identity of the hazardous substance.
  - (ii) Upper and lower bounds of the normal range of the release over the previous year.
  - (iii) Source(s) of the release.
  - (iv) Frequency of the release and the fraction of the release from each release source and the specific period over which it occurs.
  - (v) Brief statement describing the basis for stating that the release is continuous and stable in quantity and rate.
  - (vi) Estimate of the total annual amount that was released in the previous year (in pounds or kilograms) (Curies).
  - (vii) Environmental medium (a) affected by the release.
  - (viii) A signed statement that the hazardous substance release(s) is (are) continuous and stable in quantity and rate under the definitions in paragraph (b) of this section and that all reported information is accurate and current to the best knowledge of the person in charge.

NRC Case Number 1038621[jdg5].

On February 15, 2013 a notification was made by the U.S. Department of Energy (DOE) Office of River Protection (ORP) and its Tank Farms operations contractor Washington River Protection Solutions (WRPS) to the National Response Center reporting a release of hazardous mixed waste and radioactive material in excess of a Reportable Quantity (RQ) level. The release is identified as occurring from

## DRAFT Day Follow-up Notification

equipment identified as tank 241-T-111. This tanks totally buried below the ground surface. The following table lists the reported substances exceeding RQ levels (b)(6)(b)(7).

Analyte	Curies in 300 gallons
Americium 241	6.59E-02
(b)(5)	
Plutonium 239	1.75E-01
Plutonium 240	2.03E-02
(b)(5)	
Strontium 90	5.22E+00
(b)(5)	
(b)(5)	

DOE ORP and WRPS determined that liquid levels in Hanford single-shell tank (SST) T-111 are decreasing. The specific cause of the liquid level decrease in Tank T-111 has not been determined. However, it is reasonable conclusion that the liquid has likely reached the soil column beneath the ground surface.

The Hanford Site occupies 586 square miles (1,518 km<sup>2</sup>) in Benton County, Washington (centered on Coordinates: 46°38'51"N 119°35'55" (W46.64750°N 119.59861°W). This land is currently uninhabited and is closed to the general public. It is a desert environment receiving less than 10 inches of annual precipitation, covered mostly by shrub-steppe vegetation. The Columbia River flows along the site for approximately 50 miles (80 km), forming its northern and eastern boundary. The site is located approximately 25 miles North of the city of Richland, in the state of Washington.

Monitoring wells in for the T Tank Farm, where T-111 is located, have not identified significant changes in concentrations of chemicals or radionuclides in the soil. DOE is continuing to monitor its network of monitoring wells in the area of the T Tank Farm and is evaluating possible next steps.

This tank was classified as an assumed leaker in 1979. In 1994 the tank was declared an "assumed releaker". In February 1995, interim stabilization was completed for this tank. In order to achieve interim stabilization, the pumpable liquids were removed in accordance with the agreements with the State of Washington and the Environmental Protection Agency, as part of the Hanford Federal Facility Agreement and Consent Order (also referred to as the Tri-Party Agreement). In mid- February 2013 DOE ORP and WRPS determined that liquid levels were decreasing. Data indicates the current rate of loss of liquids from the tank could be in the range of 150 to 300 gallons over the course of a year.

Tank T-111 is a 530,000-gallon capacity underground storage tank built between 1943-1944, and put into service in 1945. T-111 currently contains approximately 447,000 gallons of sludge, a mixture of solids and liquids with a mud like consistency (b)(6)(b)(7).

Due to the nature of the tank design and underground location, the rate and continuity of leakage is estimated based upon surface level measurements, in-tank liquid observation wells and in-tank camera inspections. The above information is accurate and current to the best of my knowledge.

## DRAFT Day Follow-up Notification

Signature (TBD[jdg9]) \_\_\_\_\_ Date[jdg10]

DRAFT

## DRAFT Day Follow-up Notification

TO: US Environmental Protection Agency

TO: Washington Emergency Response Commission  
C/o Department of Ecology  
Community Right-to-know Unit  
P.O. Box 47659  
Olympia, WA 98504-7659

This 30-day follow-up notification is pursuant to 40 CFR 302.8(f) and 40 CFR 355.40(b). These citations require update of information from a continuous release within 30 days of the date of the initial notification (National Response Center report # 1038621). This reporting requirement is necessary for leakage meeting the definition of "continuous release" as defined in 40 CFR 302.8(b). At this time ORP and WRPS is reporting without judgment as to whether the leakage meets the definition of continuous. This report addresses information identified in the citations above including:

- (1) Name and location of the facility or vessel;
- (2) Population density within a one-mile radius of the facility or vessel;
- (3) Identity and location of sensitive populations and ecosystems within a one-mile radius of the facility;
- (4) For each hazardous substance release:
  - (i) Name/identity of the hazardous substance.
  - (ii) Upper and lower bounds of the normal range of the release over the previous year.
  - (iii) Source(s) of the release.
  - (iv) Frequency of the release and the fraction of the release from each release source and the specific period over which it occurs.
  - (v) Brief statement describing the basis for stating that the release is continuous and stable in quantity and rate.
  - (vi) Estimate of the total annual amount that was released in the previous year (in pounds or kilograms) (Curies).
  - (vii) Environmental medium (a) affected by the release.
  - (viii) A signed statement that the hazardous substance release(s) is (are) continuous and stable in quantity and rate under the definitions in paragraph (b) of this section and that all reported information is accurate and current to the best knowledge of the person in charge.

NRC Case Number 1038621.

On February 15, 2013 a notification was made by the U.S. Department of Energy (DOE) Office of River Protection (ORP) and its Tank Farms operations contractor Washington River Protection Solutions (WRPS) to the National Response Center reporting a release of hazardous mixed waste and radioactive material in excess of a Reportable Quantity (RQ) level. The following table lists the reported substances exceeding RQ levels.

## DRAFT Day Follow-up Notification

Analyte	Curies in 300 gallons
Americium 241	6.59E-02
(b)(5)	
Plutonium 239	1.75E-01
Plutonium 240	2.03E-02
(b)(5)	
Strontium 90	5.22E+00
(b)(5)	

DOE ORP and WRPS determined that liquid levels in Hanford single-shell tank (SST) T-111 are decreasing. The specific cause of the liquid level decrease in Tank T-111 has not been determined.

The Hanford Site occupies 586 square miles (1,518 km<sup>2</sup>) in Benton County, Washington (centered on Coordinates: 46°38'51"N 119°35'55"W 46.64750°N 119.59861°W). This land is currently uninhabited and is closed to the general public. It is a desert environment receiving less than 10 inches of annual precipitation, covered mostly by shrub-steppe vegetation. The Columbia River flows along the site for approximately 50 miles (80 km), forming its northern and eastern boundary.

Monitoring wells in the T Tank Farm, where T-111 is located, have not identified significant changes in concentrations of chemicals or radionuclides in the soil. DOE is continuing to monitor its network of monitoring wells in the area of the T Tank Farm and is evaluating possible next steps.

This tank was classified as an assumed leaker in 1979. In 1994 the tank was declared an "assumed releaker". In February 1995, interim stabilization was completed for this tank. In order to achieve interim stabilization, the pumpable liquids were removed in accordance with the agreements with the State of Washington. In February 2013 DOE ORP and WRPS determined that liquid levels were decreasing. Data indicates the current rate of loss of liquids from the tank could be in the range of 150 to 300 gallons over the course of a year.

Tank T-111 is a 530,000-gallon capacity underground storage tank built between 1943-1944, and put into service in 1945. T-111 currently contains approximately 447,000 gallons of sludge, a mixture of solids and liquids with a mud like consistency.

Due to the nature of the tank design and underground location, the rate and continuity of leakage is estimated based upon surface level measurements, in-tank liquid observation wells and in-tank camera inspections. The above information is accurate and current to the best of my knowledge.

Signature (TBD) \_\_\_\_\_ Date \_\_\_\_\_

Non Responsive

**From:** Charboneau, Stacy L  
**Sent:** Thursday, February 14, 2013 2:36 PM  
**To:** Gamache, Lori M; Fletcher, Thomas W; Olds, Theodore E (Erik); Stubblebine, Scott D; Huffman, Lori A  
**Subject:** RE: T-111

Yes.

**From:** Gamache, Lori M  
**Sent:** Thursday, February 14, 2013 2:35 PM  
**To:** Charboneau, Stacy L; Fletcher, Thomas W; Olds, Theodore E (Erik); Stubblebine, Scott D; Huffman, Lori A  
**Subject:** FW: T-111

Ecology is aware – did you all know?

**From:** Bohrmann, Dieter (ECY) [<mailto:DBOH461@ecy.wa.gov>]  
**Sent:** Thursday, February 14, 2013 2:34 PM  
**To:** Gamache, Lori M  
**Subject:** T-111

Let's talk.

Dieter Bohrmann  
Communications manager  
Washington Department of Ecology  
Nuclear Waste Program  
509.372.7954  
509(b)(6) c)

Non Responsive

**From:** Olds, Theodore E (Erik)  
**Sent:** Thursday, February 14, 2013 2:00 PM  
**To:** Burandt, Mary E; Gamache, Lori M; Fletcher, Thomas W; Trenchard, Glyn D  
**Cc:** Meyer, Carrie C; Stubblebine, Scott D; Huffman, Lori A  
**Subject:** RE: SST T111 Liquid Level Decrease

My thoughts and edits – (b)(5)

(b)(5)

**From:** Burandt, Mary E  
**Sent:** Thursday, February 14, 2013 1:55 PM  
**To:** Gamache, Lori M; Fletcher, Thomas W; Trenchard, Glyn D  
**Cc:** Olds, Theodore E (Erik); Meyer, Carrie C; Stubblebine, Scott D; Huffman, Lori A  
**Subject:** RE: SST T111 Liquid Level Decrease

I made comments on the previous one.  
MB

**From:** Gamache, Lori M  
**Sent:** Thursday, February 14, 2013 1:08 PM  
**To:** Fletcher, Thomas W; Trenchard, Glyn D  
**Cc:** Olds, Theodore E (Erik); Meyer, Carrie C; Stubblebine, Scott D; Huffman, Lori A; Burandt, Mary E  
**Subject:** SST T111 Liquid Level Decrease  
**Importance:** High

Tom and Glyn,

Based on our conversation with Stacy earlier today, attached for your review and edit is a copy of the draft release. Please provide your edits back to me by 3 pm today so I can make them and get this to Ben/Stacy/Kevin this afternoon.

I am also working on Q&As which I will send soon.

Thanks,



SST T111 Liquid  
Level Decrease...

Lori



# U.S. DEPARTMENT OF **ENERGY**

**MEDIA CONTACTS:**  
Lori Gamache, ORP, (509) 372-9130

**FOR IMMEDIATE RELEASE:**  
**January XX, 2013**

## **LIQUID LEVEL CHANGE SEEN IN HANFORD SINGLE-SHELL TANK** *Data Trends Show A Decrease In Liquid Level*

**RICHLAND** – Washington River Protection Solutions (WRPS) has advised the U.S. Department of Energy (DOE) that a video inspection performed in Hanford's single-shell tank (SST) T-111 indicate the instruments are tracking the liquid level correctly. The instruments have been tracking a decrease in liquid levels.

"Tank T-111 has a history of liquid level increases and decreases," said XXXX. "In 1979, this tank was classified as an assumed leaker and in 1994 it was classified as an assumed re-leaker."

Data indicates the current rate of loss could be up to 300 gallons per year.

SST level changes were evaluated in 2012 as part of an effort to support potential water intrusion and through that process level decreases were noted in this tank. Twenty SSTs were identified as needing further evaluation. DOE worked with Washington State Department of Ecology to determine of those 20 SSTs which 12 would be visually inspected this year.

T-111 was one of those tanks identified to be visually inspected because it showed potential signs of a change in liquid level. It is the fourth tank to have visual inspections completed. Results from inspections of the other three tanks show evidence of water intrusion in one of those inspected to-date.

Tank T-111 is a 530,000 gallon capacity tank built between 1943-1944 and was put into service in 1945. In February 1995 the tank was classified as interim stabilized, which means there is less than 5,000 gallons of supernatant liquid and less than 50,000 gallons of drainable interstitial liquid.

This SST currently contains approximately 447,000 gallons of sludge, a mixture of solids and liquids with a mud-like consistency. The sludge is estimated to contain 38,000 gallons of drainable interstitial liquid.

"Visual inspections taken of T-111 do not show any indication of current water intrusion but there is evidence of past intrusion," said XXX. "Our focus remains on completing the engineering evaluation of the video and determining the most appropriate course of action."

###

Non Responsive

**From:** Gamache, Lori M  
**Sent:** Thursday, February 14, 2013 1:46 PM  
**To:** Fletcher, Thomas W; Trenchard, Glyn D  
**Cc:** Olds, Theodore E (Erik); Meyer, Carrie C; Stubblebine, Scott D; Huffman, Lori A; Burandt, Mary E  
**Subject:** RE: SST T111 Liquid Level Decrease  
**Importance:** High

Tom and Glyn,

I've revised this release. Please disregard my previous version and review this one.

Thanks!  
Lori

**From:** Gamache, Lori M  
**Sent:** Thursday, February 14, 2013 1:08 PM  
**To:** Thomas W Fletcher ([Thomas\\_W\\_Fletcher@orp.doe.gov](mailto:Thomas_W_Fletcher@orp.doe.gov)); Trenchard, Glyn D  
**Cc:** Erik Olds ([Theodore\\_E\\_Erik\\_Olds@orp.doe.gov](mailto:Theodore_E_Erik_Olds@orp.doe.gov)); Meyer, Carrie C; Stubblebine, Scott D; Huffman, Lori A; Mary E Burandt ([Mary\\_E\\_Burandt@orp.doe.gov](mailto:Mary_E_Burandt@orp.doe.gov))  
**Subject:** SST T111 Liquid Level Decrease  
**Importance:** High

Tom and Glyn,

Based on our conversation with Stacy earlier today, attached for your review and edit is a copy of the draft release. Please provide your edits back to me by 3 pm today so I can make them and get this to Ben/Stacy/Kevin this afternoon.

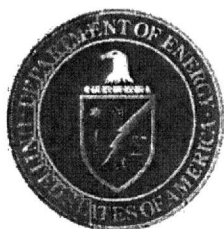
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SST T111 Liquid  
Level Decrease...

Lori



# U.S. DEPARTMENT OF ENERGY

**MEDIA CONTACTS:**  
Lori Gamache, ORP, (509) 372-9130

**FOR IMMEDIATE RELEASE:**  
**January XX, 2013**

## **LIQUID LEVEL CHANGE SEEN IN HANFORD SINGLE-SHELL TANK** *Data Trends Show A Decrease In Liquid Level*

**RICHLAND** – The U.S. Department of Energy (DOE) Office of River Protection (ORP) and its Tank Farms operations contractor Washington River Protection Solutions (WRPS) have has advised the U.S. Department of Energy (DOE) of a determined that decrease in liquid levels inef Hanford's single-shell tank (SST) T-111 are decreasing. ORP and WRPS haves performed recent video inspections of T-111 that and confirmed the reliability of the instrumentations that measures tracking the liquid level in the tank.

"Tank T-111 has a history of liquid level increases and decreases," said XXXX. "In 1979, this tank was classified as an assumed-leaker and in 1994 it was classified as an assumed re-leaker."

Data indicates the current rate of loss could be up to 300 gallons per year.

Tank T-111 is a 530,000 gallon capacity underground storage tank built between 1943-1944, and was put into service in 1945. T-111 This SST currently contains approximately 447,000 gallons of sludge, a mixture of solids and liquids with a mud-like consistency.

In February 1995 the tank was classified as interim stabilized, which means there is less than 5,000 gallons of supernatant liquid and less than 50,000 gallons of drainable interstitial liquid remained. The sludge in tank T-111 is estimated to still contain approximately 38,000 gallons of drainable interstitial liquid.

While the cause of the liquid level decrease in Tank T-111 has not been fully determined, ORP is evaluating next steps.

"Visual inspections taken of T-111 do not show any indication of current water intrusion but there is evidence of past intrusion," said XXX. "Our focus remains on completing the engineering evaluation of the video and determining the most appropriate course of action."

###



# U.S. DEPARTMENT OF **ENERGY**

**MEDIA CONTACTS:**  
Lori Gamache, ORP, (509) 372-9130

**FOR IMMEDIATE RELEASE:**  
~~January XX, 2013~~

## **LIQUID LEVEL CHANGE SEEN IN HANFORD SINGLE-SHELL TANK** *Data Trends Show A Decrease In Liquid Level*

**RICHLAND** – Washington River Protection Solutions (WRPS) has advised the U.S. Department of Energy (DOE) of a decrease in liquid levels of Hanford's single-shell tank (SST) T-111. WRPS has performed video inspection and confirmed the reliability of the instrumentations tracking the liquid level.

"Tank T-111 has a history of liquid level increases and decreases," said XXXX. "In 1979, this tank was classified as an assumed leaker and in 1994 it was classified as an assumed re-leaker."

Data indicates the current rate of loss could be up to 300 gallons per year.

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In February 1995 the tank was classified as interim stabilized, which means there is less than 5,000 gallons of supernatant liquid and less than 50,000 gallons of drainable interstitial liquid. The sludge in tank T-111 is estimated to contain 38,000 gallons of drainable interstitial liquid.

"Visual inspections taken of T-111 do not show any indication of current water intrusion but there is evidence of past intrusion," said XXX. "Our focus remains on completing the engineering evaluation of the video and determining the most appropriate course of action."

###



# U.S. DEPARTMENT OF **ENERGY**

**MEDIA CONTACTS:**

Lori Gamache, ORP, (509) 372-9130

**FOR IMMEDIATE RELEASE:**

January 15, 2013

## **OFFICE OF RIVER PROTECTION CONFIRMS A DECREASE OF LIQUID LEVEL IN HANFORD SINGLE-SHELL TANK**

**RICHLAND** – The U.S. Department of Energy (DOE) Office of River Protection (ORP) and its Tank Farms operations contractor Washington River Protection Solutions (WRPS) have determined that liquid levels in Hanford single-shell tank (SST) T-111 are decreasing. The specific cause of the liquid level decrease in Tank T-111 has not been determined.

Monitoring wells in the T Tank Farm, where Tank T-111 is located, have not identified significant changes in concentrations of chemicals or radionuclides in the soil. DOE is continuing to monitor its network of monitoring wells in the area of T Tank Farm and is evaluating possible next steps.

This tank was classified as an assumed leaker in 1979. In February 1995, interim stabilization was completed for this tank. In order to achieve interim stabilization, the pumpable liquids were removed in accordance with agreements with the State of Washington.

Data indicates the current rate of loss of liquids from the tank could be in the range of 150 to 300 gallons over the course of a year.

Tank T-111 is a 530,000-gallon capacity underground storage tank built between 1943-44, and put into service in 1945. T-111 currently contains approximately 447,000 gallons of sludge, a mixture of solids and liquids with a mud-like consistency. There are a total of 177 tanks at the Hanford site.

The cleanup of radioactive and chemical tank waste at Hanford and protection of the environment, public and workers remains a top priority for the Department and its Environmental Management mission. The Department will continue to work closely with the State of Washington, Congress and other key stakeholders to address this situation and continue progress on this important mission at Hanford.

###



# U.S. DEPARTMENT OF **ENERGY**

**MEDIA CONTACTS:**

Lori Gamache, ORP, (509) 372-9130

**FOR IMMEDIATE RELEASE:**

February 15, 2013

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