



1246350  
[0068226H]

**OFFICE OF RIVER PROTECTION**

P.O. Box 450, MSIN H6-60  
Richland, Washington 99352

**OCT 04 2017**

17-TF-0081

Ms. Alexandra K. Smith, Program Manager  
Nuclear Waste Program  
Washington State  
Department of Ecology  
3100 Port of Benton Blvd.  
Richland, Washington 99354

Ms. Smith:

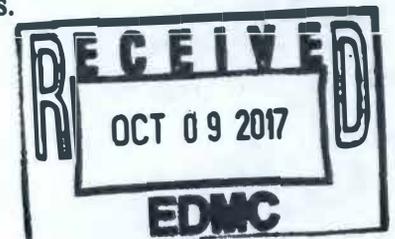
THE U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION  
TRANSMITTAL OF RPP-RPT-60241, *TANK 241-AY-102 MONTHLY MONITORING REPORT  
JUNE 2017*, REV. 00, IN RESPONSE TO SECTION II.B.13 OF THE 241-AY-102  
SETTLEMENT AGREEMENT

Reference: Pollution Control Hearings Board, State of Washington, 241-AY-102 Settlement  
Agreement, PCHB No. 14-041c, signed and submitted September 29, 2014,  
effective October 2, 2014.

The purpose of this letter is to transmit the Tank 241-AY-102 Monthly Monitoring Report for  
June 2017 to the Washington State Department of Ecology.

The 241-AY-102 Settlement Agreement (Reference) signed by the parties and submitted  
to the Pollution Control Hearings Board (Board), became effective upon issuance of the  
Board's Order dismissing the appeal. The Settlement Agreement requires a number of  
documents and actions regarding Tank 241-AY-102, including the following provision in  
Section II.B.13:

Monthly: Provide written reports to Ecology on all Tank 241-AY-102 annulus  
inspection and monitoring results conducted according to the Monitoring Plan  
(provided under requirement B.7 above) and the SY Settlement Agreement. These  
documents shall include reporting on annulus ventilation performance and status,  
images of the annulus, CAM readings, ENRAF readings, CAM and ENRAF  
calibration results, sample analysis results, waste heat monitoring results,  
including any interpretations and conclusions based on the results.



Ms. Alexandra K. Smith  
17-TF-0081

-2-

If you have any questions, please contact Glyn D. Trenchard, Assistant Manager for Tank Farms Project, Office of River Protection, (509) 373-4016, or Jessica A. Joyner, Environmental Protection, Washington River Protection Solutions LLC, (509) 376-7533.



Mark A. Lindholm,  
President and Project Manager  
Washington River Protection Solutions LLC



Kevin W. Smith, Manager  
Office of River Protection

TF:RLE

Attachment

cc w/attach:

N.M. Menard, Ecology  
R.J. Utley, WDOH  
R.M. Allen, WRPS  
R.D. Cantwell, WRPS  
S.B. Cherry, WRPS  
N.R. Davis, WRPS  
R.D. Greenwell, WRPS  
R.E. Gregory, WRPS  
S.P. Guillot, WRPS  
J.A. Joyner, WRPS  
D.L. Klages, WRPS  
M.A. Lindholm, WRPS  
R.B. McPherson, WRPS  
D.A. Smith, WRPS  
D.W. Strasser, WRPS  
M.F. Tavelli, WRPS  
**Administrative Record**  
Environmental Portal, LMSI  
WRPS Correspondence Control

cc w/out attach:

R. Skeen, CTUIR  
S. Hudson, HAB  
G. Bohnee, NPT  
R. Jim, YN

cc electronic w/attach:

C. Cress, AGO  
K.T. Wood, AGO  
D.B. Bartus, EPA  
D.A. Faulk, EPA  
S.S. Lowe, Ecology  
J.J. Lyon, Ecology  
J.W. Mathey, Ecology  
N.M. Menard, Ecology  
J.B. Price, Ecology  
C.L. Whalen, Ecology  
K.J. Wold, Ecology  
K. Niles, ODOE

**ATTACHMENT**

**17-TF-0081**

**TANK 241-AY-102 June 2017**

**MONTHLY MONITORING REPORT**

# DOCUMENT RELEASE AND CHANGE FORM

Release Stamp

Prepared For the U.S. Department of Energy, Assistant Secretary for Environmental Management  
 By Washington River Protection Solutions, LLC, PO Box 850, Richland, WA 99352  
 Contractor For U.S. Department of Energy, Office of River Protection, under Contract DE-AC27-06RV14800

TRADEMARK DISCLAIMER: Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States government or any agency thereof or its contractors or subcontractors. Printed in the United States of America.



1. Doc No: RPP-RPT-60241 Rev. 00

2. Title:  
Tank 241-AY-102 Monthly Monitoring Report June 2017

3. Project Number:  N/A T1P97

4. Design Verification Required:  
 Yes  No

5. USQ Number:  N/A RPP-27195

6. PrHA Number Rev.  N/A

Clearance Review Restriction Type:  
public

7. Approvals

Title	Name	Signature	Date
Clearance Review	MEEGAN, ERIN C	MEEGAN, ERIN C	09/13/2017
Document Control Approval	PORTER, MARY	PORTER, MARY	09/13/2017
Environmental Protection	KLAGES, DEANNA L	KLAGES, DEANNA L	09/11/2017
Originator	KLAGES, DEANNA L	KLAGES, DEANNA L	09/11/2017
Responsible Manager	JOYNER, JESSICA A	JOYNER, JESSICA A	08/12/2017

8. Description of Change and Justification

Initial Release

9. TBDs or Holds  N/A

10. Related Structures, Systems, and Components

a. Related Building/Facilities <input type="checkbox"/> N/A	b. Related Systems <input type="checkbox"/> N/A	c. Related Equipment ID Nos. (EIN) <input type="checkbox"/> N/A
241-AY 241-AY-102 241-AY-102A	241-TMAC 241-VT 241-VTA 241-VTP 241-WST 241-WSTA	AY102-WSTA-CAM-102 AY102-WSTA-LDT-151 AY102-WSTA-LDT-152 AY102-WSTA-LDT-153 AY102-WST-LIT-101

11. Impacted Documents - Engineering  N/A

Document Number	Rev.	Title

12. Impacted Documents (Outside SPF):  
N/A

13. Related Documents  N/A

Document Number	Rev.	Title
RPP-PLAN-60074	05	TANK 241-AY-102 Monitoring Plan
RPP-PLAN-60810	02	Tank 241-AY-102 Contingency Plan - Operations Phase
RPP-RPT-60130	00	Tank 241-AY-102 Monthly Monitoring Report April 2017

14. Distribution

Name	Organization
BAIDE, DAN	TFP ENGINEERING
CATO, DIANE M	BASE OPERATIONS ENGINEERING
CHERRY, STEVE	GENERAL COUNSEL
FOLLETT, JORDAN R	RETRIEVAL PROCESS ENGINEERING
GREENWELL, DOUG	PROJECT OPERATIONS
GREGORY, ROB	TANK FARM PROJECTS
HANSON, CARL E	AY-102 RETRIEVAL ENGRNG
JOYNER, JESSICA A	ENVIRONMENTAL PROTECTION
KLAGES, DEANNA L	ENVIRONMENTAL PROTECTION
LINDHOLM, MARK A	
MENDOZA, RUBEN E	WASTE STORAGE & TECH SUPPORT ENGINEERING
MEYERS, GEORGE H	
MORGAN, NATHAN J	FUNCTIONAL ORGS PROJ CNTRLS
SMITH, DONALD (KENT)	PRODUCTION OPERATIONS
STRASSER, DAVID W	A/AX/AY/AZ FARM TEAM
TAVELLI, MARK F	ENGINEERING
TEMPLETON, ANDREW M	TNK WST INVENTORY & CHARACTZTN
VOOGD, JEFFRY A	BASE OPS ENV COMPLIANCE

## INFORMATION CLEARANCE REVIEW AND RELEASE APPROVAL

### Part I: Background Information

Title: **Tank 241-AY-102 Monthly Monitoring Report June 2017**

Information Category:

- Abstract     Journal Article     Summary  
 Internet     Visual Aid     Software  
 Full Paper     Report     Other

Publish to OSTI?     Yes     No

Trademark/Copyright "Right to Use" Information or Permission Documentation

Yes    NA

Document Number: RPP-RPT-60241 Revision 00

Date: August 2017

Author: Klages, Deanna L

### Part II: External/Public Presentation Information

Conference Name:

Sponsoring Organization(s): Environmental Protection

Date of Conference:

Conference Location:

Will Material be Handed Out?     Yes     No    Will Information be Published?     Yes     No    *(If Yes, attach copy of Conference format instructions/guidance.)*

### Part III: WRPS Document Originator Checklist

Description	Yes	N/A	Print/Sign/Date
Information Product meets requirements in TFC-BSM-AD-C-01?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Document Release Criteria in TFC-ENG-DESIGN-C-25 completed? (Attach checklist)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If product contains pictures, safety review completed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

### Part IV: WRPS Internal Review

Function	Organization	Date	Print Name/Signature/Date
Subject Matter Expert	WRPS	09/01/2017	Klages, Deanna L    IDMS Data File att.
Responsible Manager	WRPS	08/21/2017	Joyner, Jessica A    IDMS Data File att.
Other:			

### Part V: IRM Clearance Services Review

Description	Yes	No	Print Name/Signature
Document Contains Classified Information?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If Answer is "Yes," ADC Approval Required  _____
Document Contains Information Restricted by DOE Operational Security Guidelines?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reviewer Signature:  _____
Document is Subject to Release Restrictions? <i>If the answer is "Yes," please mark category at right and describe limitation or responsible organization below:</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Document contains: <input type="checkbox"/> Applied Technology <input type="checkbox"/> Protected CRADA <input type="checkbox"/> Personal/Private <input type="checkbox"/> Export Controlled <input type="checkbox"/> Proprietary <input type="checkbox"/> Procurement - Sensitive <input type="checkbox"/> Patentable Info. <input type="checkbox"/> OOU <input type="checkbox"/> Predecisional Info. <input type="checkbox"/> UCNI <input type="checkbox"/> Restricted by Operational Security Guidelines <input type="checkbox"/> Other (Specify) _____
Additional Comments from Information Clearance Specialist Review?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Information Clearance Specialist Approval <div style="border: 1px solid black; padding: 2px; display: inline-block; margin: 5px;"> <b>APPROVED</b>  <small>By Janis Aardal at 7:10 am, Sep 05, 2017</small> </div> _____

When IRM Clearance Review is Complete - Return to WRPS Originator for Final Signature Routing (Part VI)

**INFORMATION CLEARANCE REVIEW AND RELEASE APPROVAL**

**Part VI: Final Review and Approvals**

Description	Approved for Release		IDMS Data File att	Print Name/Signature
	Yes	N/A		
WRPS External Affairs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	IDMS Data File att	Britton, John C
WRPS Office of Chief Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	IDMS Data File att	Cherry, Steve
DOE – ORP Public Affairs/Communications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	IDMS Data File att	Marshall, Richard
Other: ORP SME	<input checked="" type="checkbox"/>	<input type="checkbox"/>	IDMS Data File att	Eakins, Reggie L
Other: DOE OCC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	IDMS Data File att	Silberstein, Mark D

Comments Required for WRPS-Indicate Purpose of Document:

**June 2017 Monthly Monitoring Report submittal for Tank 241-AY-102 Settlement Agreement Section II.B.13 (PCHB No. 14-041c)**

**APPROVED**  
By Janis Aerdal at 7:11 am, Sep 05, 2017

**Approved for Public Release;  
Further Dissemination Unlimited**

**Information Release Station**

Was/Is Information Product Approved for Release?  Yes  No

If Yes, what is the Level of Releaser?  Public/Unrestricted  Other (Specify) \_\_\_\_\_

Date Information Product Stamped/Marked for Release: 09/05/2017

Was/Is Information Product Transferred to OSTI?  Yes  No

**Forward Copies of Completed Form to WRPS Originator**

```

- <workflow name="(JDA) Expedite - RPP-RPT-60241 R0_6/2017 Mthly Rpt AY102"
  id="214884439">
- <task name="Clearance Process" id="0" date-initiated="20170821T1148"
  performer="Janis D Aardal" performer-id="267960" username="h0090683">
  <comments>Due Thursday, 8/24/2017 - COB Please approve the, June 2017
  Monthly Monitoring Report submittal for Tank 241-AY-102 Settlement
  Agreement Sec II.B.13 (PCHB No. 14-041c), by Deanna Klages for public
  release. Thank you, Janis Aardal Information Clearance</comments>
</task>
<task name="Add XML" id="1" date-done="20170821T1148" />
<task name="Expedite - Manager Approval" id="6" date-due="20170823T1148"
  date-done="20170821T1651" performer="Jessica A Joyner" performer-
  id="149552018" username="h1801793" disposition="Approve"
  authentication="true" />
<task name="Expedite - Document Reviewer1" id="16" date-
  due="20170823T1651" date-done="20170822T0753" performer="John C
  Britton" performer-id="63214817" username="h0084103" disposition="Public
  Release" authentication="true" />
<task name="Expedite - Document Reviewer2" id="17" date-
  due="20170823T1651" date-done="20170830T0652" performer="Stephen B
  Cherry" performer-id="1382719" username="h0374767" disposition="Public
  Release" authentication="true" />
<task name="Doc Owner Clearance Review" id="13" date-due="20170831T0652"
  date-done="20170830T0839" performer="Deanna L Klages" performer-
  id="5225435" username="h0088972" disposition="Send On"
  authentication="true" />
<task name="Milestone 1" id="24" date-done="20170830T0839" />
- <task name="ORP Document Reviewer1" id="57" date-due="20170901T0839"
  date-done="20170831T0754" performer="Richard A Marshall" performer-
  id="203862915" username="h4535783" disposition="Public Release"
  authentication="true">
  <reviewer performer="Reggie Jr L Eakins" performer-id="185793045"
  username="h8850669" />
  <reviewer performer="Mark D Silberstein" performer-id="158207236"
  username="h5490246" />
  <comments>Reviewer's Comments Date: 08/30/2017 09:02 AM Step Name:
  RPP-RPT-60241 Tank 241-AY-102 Monthly Monitoring Report June 2017
  Performer: Eakins, Reggie Jr (h8850669) Reviewed. Reviewer's
  Comments Date: 08/31/2017 07:49 AM Step Name: RPP-RPT-60241 Tank
  241-AY-102 Monthly Monitoring Report June 2017 Performer: Silberstein,
  Mark (h5490246) approve</comments>
</task>
<task name="Doc Owner Reviews ORP Comments" id="61" date-
  due="20170901T0754" date-done="20170901T0811" performer="Deanna L
  Klages" performer-id="5225435" username="h0088972" disposition="Send On"
  authentication="true" />
<task name="Milestone 2" id="62" date-done="20170901T0811" />
<task name="Verify Doc Consistency" id="4" date-due="20170904T0810" date-
  done="20170905T0658" performer="Janis D Aardal" performer-id="267960"
  username="h0090683" disposition="Cleared" authentication="true" />
</workflow>

```

RPP-RPT-60241, Rev. 00

# Tank 241-AY-102 Monthly Monitoring Report June 2017

Deanna L. Klages

Richland, WA 99352  
U.S. Department of Energy Contract DE-AC27-08RV14800

EDT/ECN:	N/A	UC:	N/A
Cost Center:	N/A	Charge Code:	N/A
B&R Code:	N/A	Total Pages:	15

**Key Words:** Tank, monthly monitoring report, AY-102, Settlement Agreement PCHB No. 14-041c

**Abstract:** June 2017 Monthly Monitoring Report submittal for Tank 241-AY-102 Settlement Agreement Section II.B.13 (PCHB No. 14-041c)

**TRADEMARK DISCLAIMER.** Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

**APPROVED**  
By Erin C. Meegan at 9:28 am, Sep 13, 2017

Release Approval

Date

**DATE:**  
Sep 13, 2017



**HANFORD  
RELEASE**

Release Stamp

## Approved For Public Release

RPP-RPT-60241, Rev. 00

**EXECUTIVE SUMMARY**

Monthly monitoring reports are generated for Tank 241-AY-102 pursuant to Section II.B.13 of the Settlement Agreement in *Washington River Protection Solutions and U.S. Department of Energy, Office of River Protection v. State of Washington, Department of Ecology* PCHB No. 14-041c, effective on October 2, 2014.

Tank 241-AY-102 tank waste retrieval was shut down on April 30, 2016, so that an additional retrieval technology could be installed. AY-102 retrieval using extended reach sluicers was completed in February 2017.

Tank 241-AY-102 Environmental Notifications during the month of June 2017 are detailed in Table 5.

**TABLE OF CONTENTS**

1.0 INTRODUCTION ..... 1

    1.1 PURPOSE..... 1

    1.2 SUMMARY ..... 1

2.0 ANNULUS VISUAL AND VIDEO INSPECTIONS ..... 1

3.0 MONITORING..... 6

4.0 ESTIMATE OF ANNULUS MATERIAL VOLUME..... 7

5.0 LEAK DETECTION PIT PH AND LIQUID LEVEL RESULTS ..... 9

6.0 TANK PUMPING OPERATIONS..... 9

7.0 REFERENCES ..... 9

**LIST OF FIGURES**

Figure 1. AY-102 Dome Penetration Diagram Showing Inspection Locations ..... 4

Figure 2. Waste Accumulation Monitoring through Riser 87 (Comparison between 6/5/2017, 6/12/2017, and 6/27/2017)..... 5

Figure 3. Total Annulus Material Volume..... 8

Figure 4. AY-102 Annulus Enraf Liquid Level Readings ..... 8

**LIST OF TABLES**

Table 1. Visual Inspection Evaluation of Conditions Indicating a Potential Worsening Leak Rate from the Primary Tank..... 3

Table 2. Summary of June 2017 Monitoring and Calibration for AY-102 ..... 6

Table 3. AY-102 Annulus Enraf Measurements and Estimated Waste Volume ..... 7

Table 4. Leak Detection Pit pH and Liquid Level Readings for June 2017 ..... 9

Table 5. Tank Pumping Operations Environmental Notifications..... 9

### ABBREVIATIONS AND ACRONYMS

AY-102  
CAM  
Enraf  
Ecology  
Settlement Agreement  
TOC

Tank 241-AY-102  
continuous air monitor  
Enraf-Nonius Series 854  
Washington State Department of Ecology  
*Settlement Agreement and Stipulated Order of Dismissal*  
Tank Operations Contractor

## 1.0 INTRODUCTION

### 1.1 PURPOSE

The June 2017 monthly monitoring report for Tank 241-AY-102 (AY-102) is submitted pursuant to Section II.B.13 of the Settlement Agreement in *Washington River Protection Solutions and U.S. Department of Energy, Office of River Protection v. State of Washington, Department of Ecology* (Ecology) PCHB No. 14-041c, effective on October 2, 2014. This provision states as follows:

*Monthly: Provide written reports to Ecology on all Tank 241-AY-102 annulus inspection and monitoring results conducted according to the Monitoring Plan (provided under requirement B.7 above) and the SY Settlement Agreement. These documents shall include reporting on annulus ventilation performance and status, images of the annulus, CAM readings, ENRAF readings, CAM and ENRAF calibration results, sample analysis results, waste heat monitoring results, including any interpretations and conclusions based on the results.*

The June 2017 monthly monitoring report contained herein, applies only to AY-102. This report for June 2017 covers the time period from June 1 through 30, 2017.

### 1.2 SUMMARY

As described in RPP-PLAN-60074, "Tank 241-AY-102 Monitoring Plan," this document provides the results of visual and video annulus inspections, primary and annulus ventilation performance and status, continuous air monitor (CAM) readings, Enraf<sup>1</sup> readings, CAM and Enraf calibration results, leak detection pit pH and liquid level results, waste temperature monitoring results, and including any interpretations and conclusions based on the results. Monitoring activities during tank pumping operations, as detailed in RPP-PLAN-60074, are also provided in this document. A summary of the visual and video annulus inspections is in Section 2.0, monitoring readings, calibration, and ventilation performance are in Section 3.0, estimate of annulus material volume is in Section 4.0, leak detection pit monitoring is in Section 5.0, and tank pumping operations equipment status is in Section 6.0.

## 2.0 ANNULUS VISUAL AND VIDEO INSPECTIONS

Visual and video inspections of the AY-102 annulus for the June 2017 reporting period are summarized below.

Sections II.B.12.a and b of the Settlement Agreement state:

- a. *Every two months: Conduct video inspections of the entire annulus or at least 95 percent of the annulus space.*

---

<sup>1</sup> Enraf 854 XTG is a registered trademark of Enraf B.V., Delft, Netherlands.

RPP-RPT-60241, Rev. 00

- b. Every two weeks: Conduct video inspections of all currently known waste accumulations in the Tank AY-102 annulus and, as they are discovered, all newly discovered waste accumulations.*

The June 2017 monthly monitoring report includes only the results for the video inspections performed every two weeks in accordance with the Settlement Agreement. The results for the video inspections performed every two months during the June 2017 – July 2017 inspection period will be provided in the July 2017 monthly monitoring report.

Figure 1 provides riser locations and inspection frequencies. Dates of inspection are provided in Table 1. Pictures of the video inspections performed in June 2017 are provided in Figure 2.

As stated in RPP-PLAN-60610, "Tank 241-AY-102 Contingency Plan – Operations Phase," three conditions indicating a potential worsening leak rate from the primary tank will be observable through video inspections. The three conditions are evaluated during each video inspection and results are provided in Table 1.

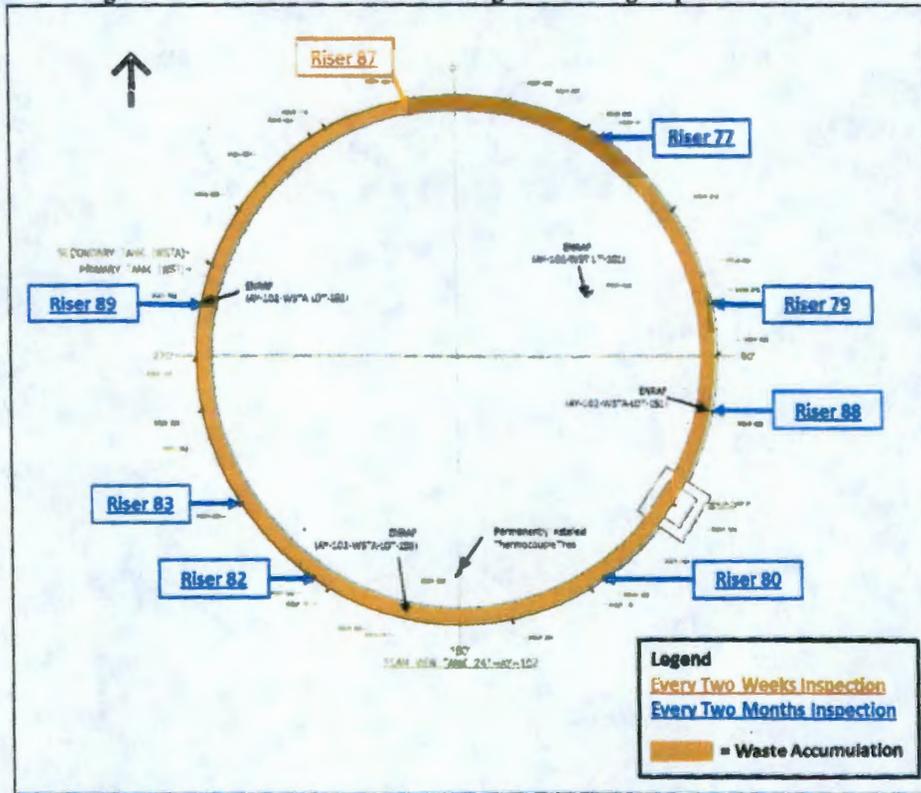
RPP-RPT-60241, Rev. 00

**Table 1. Visual Inspection Evaluation of Conditions Indicating a Potential Worsening Leak Rate from the Primary Tank**

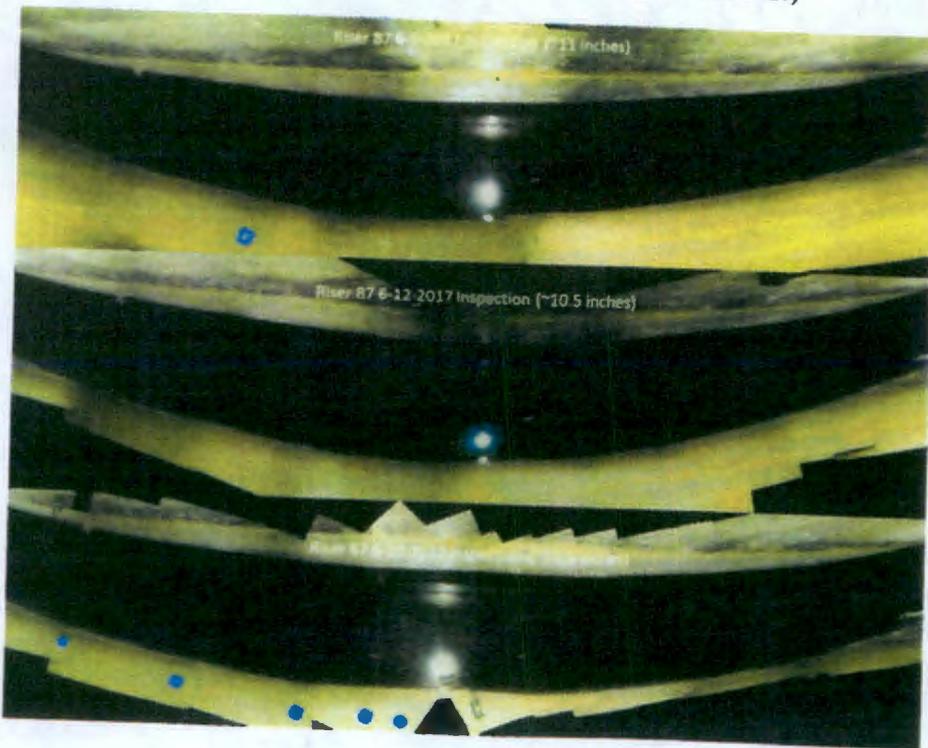
Condition	Inspection #1 6/5/2017	Inspection #2 6/12/2017
Video Evidence of a Change in Condition within the Viewable Ventilation Channels	Ventilation channels were submerged below annulus waste level during inspection.	Ventilation channels were submerged below annulus waste level during inspection.
Video Evidence of Significant Waste Accumulation Rate Increase <sup>1</sup>	The average annulus ENRAF measurement was 11.03 inches. Slow decrease in level noted due to evaporation and refractory absorption.	The average annulus ENRAF measurement was 10.89 inches. Slow decrease in level noted due to evaporation and refractory absorption.
Video Evidence of "Active Flow"	Ventilation channels were not visible during the video inspection. Waste now flows readily through the tank bottom to the annulus.	Ventilation channels were not visible during the video inspection. Waste now flows readily through the tank bottom to the annulus.

<sup>1</sup>A significant leak rate increase would constitute an order of magnitude volume change between inspection reports, based on video surveillance.

Figure 1. AY-102 Dome Penetration Diagram Showing Inspection Locations



**Figure 2. Waste Accumulation Monitoring through Riser 87  
(Comparison between 6/5/2017, 6/12/2017, and 6/27/2017)**



5

RPP-RPT-60241, Rev. 00

### 3.0 MONITORING

Table 2 provides AY-102 annulus and primary ventilation performance and status, CAM readings, Enraf readings, CAM and Enraf calibration results, waste heat monitoring results, and interpretations and conclusions based on the monitoring results for June 2017.

**Table 2. Summary of June 2017 Monitoring and Calibration for AY-102**

Description	Data Source	Instrument(s)	Calibration Results	In Service Dates <sup>2</sup>	Interpretations and Conclusions
Primary Tank Surface Level	TMACS	Enraf (Riser 39) AY102-WST-LIT-101	Last: 11/30/16 Next: 10/26/17  Note 1.	6/1-30/17	Level Readings for June ranged between 6.99" and 7.11". The primary surface level was 7.11" on 6/30/17.
Annulus Surface Level	TMACS	Enraf (Riser 88) AY102-WSTA-LDT-151	Last: 10/3/16 Next: 8/29/17	6/1-30/17	Level Readings for June were between 11.13" and 10.80". The annulus level was 10.80" on 6/30/17.
		Enraf (Riser 89) AY102-WSTA-LDT-152	Last: 7/7/16 Next: 8/4/17	6/1-30/17	Level Readings for June were between 10.97" and 10.55". The annulus level was 10.55" on 6/30/17. Note 1. Manual readings taken from 5/22/17 - 6/25/17.
		Enraf (Riser 91) AY102-WSTA-LDT-153	Last: 6/30/16 Next: 7/24/17  Note 2.	6/1-30/17	Level Readings for June were between 11.08" and 10.75". The annulus level was 10.75" on 6/30/17.
Primary Tank Waste Temperatures Note 3.	MCS	Thermocouples at 4" height -  TE-047 (ALC) TE-074—R 70 TC1 TE-073—R 72 TC1 TE-071—R 40 TC1 TE-062—R 41 TC1 TE-065—R 42 TC1 TE-068—R 43 TC1	Supplemental manual readings taken by calibrated M&TE	6/1-30/17	Average Solid/Sludge Temperature change for June 2017 is +2.14° F (from 72.55 to 74.69° F).  The temperatures do not exceed the DST waste temperatures as documented in HNF-IP-1266.
Annulus Leak Detection (CAM)	SACS	Continuous Air Monitor (CAM) AY102-WSTA-CAM-102	Last: 9/3/15 Next: On demand <sup>2</sup>	Not in service.	No readings. CAM was not operated during the month of June. The annulus exhaust is now routed through the AY/AZ primary exhauster. Annulus air no longer is routed past the annulus CAM air inlet.
<b>Description</b>	<b>Percent Operated</b>		<b>Interpretations and Conclusions</b>		
Primary Tank Ventilation	100%		Dates of Operation: 6/1-30/17		
Annulus Tank Ventilation	0%		Dates of Operation: Not in Service. Note 4.		

## RPP-RPT-60241, Rev. 00

<sup>1</sup>Supplemental manual readings taken by calibrated M&TE.

<sup>2</sup>Equipment is inspected daily in order to maintain operability, including days when equipment is not in service.

<sup>3</sup>Temperature monitoring is a Technical Safety Requirement Administrative Control Key Element to ensure that waste temperatures do not increase to temperatures greater than that assumed in the Tank Farms DST Time to Lower Flammability Limit analysis.

<sup>4</sup>The annulus exhaust is now routed through the AY/AZ primary exhaust.

#### 4.0 ESTIMATE OF ANNULUS MATERIAL VOLUME

The previous monthly reporting period, May 1 through 31, 2017, estimated approximately 4260 gallons of waste in the annulus at the end of the month. The total estimated material volume in the annulus at the end of the current monthly reporting period, June 1 through 30, 2017, is approximately 4070 gallons, as defined in Table 3. Figure 3 shows the total estimated annulus material volume over the last twelve reporting months.

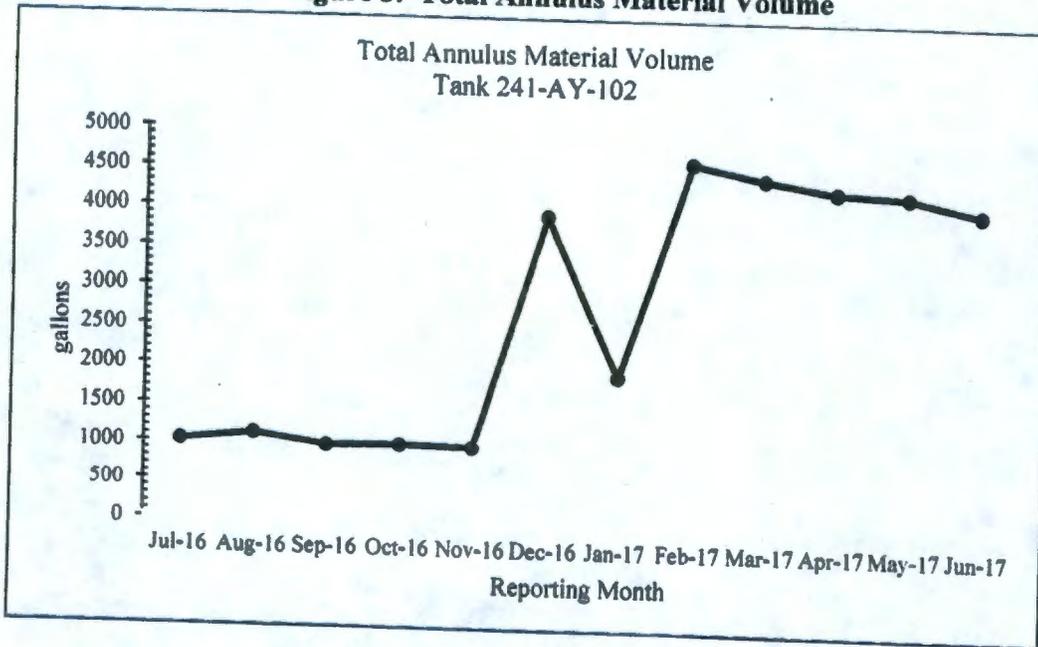
Annulus level behavior for the month of June 2017 is provided in Figure 4.

**Table 3. AY-102 Annulus Enraf Measurements and Estimated Waste Volume**

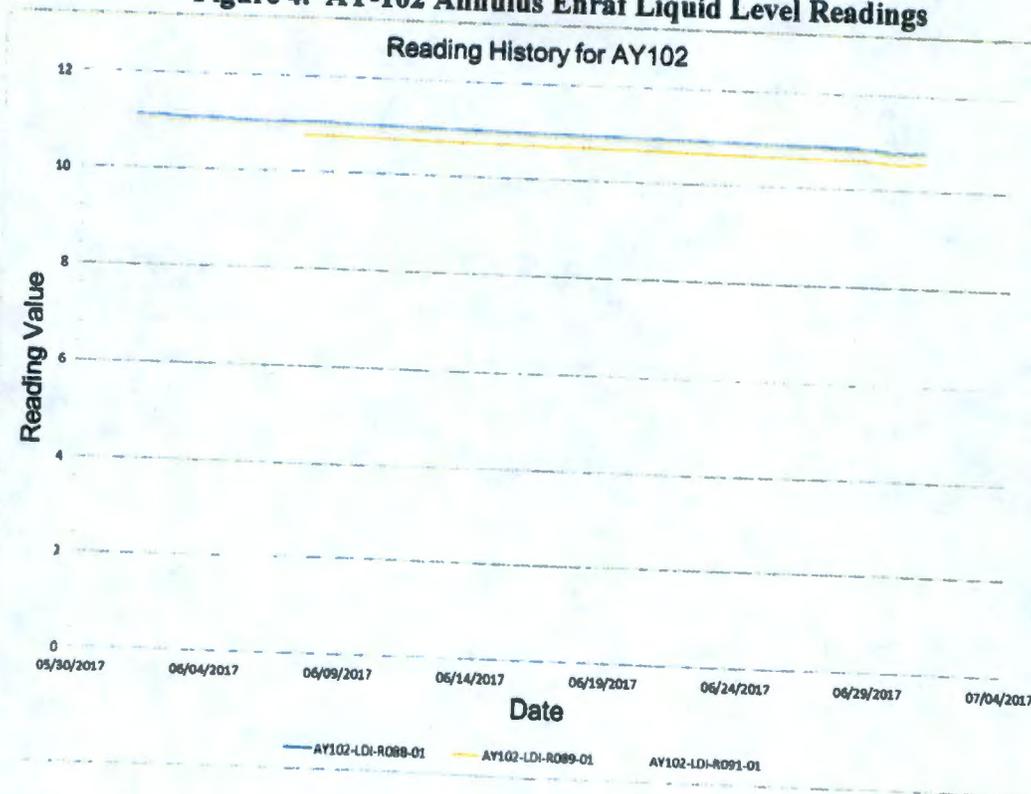
Annulus Enraf Measurements <sup>a</sup> (inches)	6/1/2017	Inspection #1	Inspection #2	6/30/2017
		6/5/2017	6/12/2017	
Riser 88 (Inches)	11.12	11.06	10.98	10.79
Riser 89 (Inches)	Unavailable	Unavailable	10.74	10.57
Riser 91 (Inches)	11.06	10.99	10.94	10.75
<b>Average Measurement (Inches)</b>	11.09	11.03	10.89	10.70
<b>Estimated Annulus Volume (Gallons)</b>	4250	4220	4150	4070

<sup>a</sup>Annulus Enraf Measurements are obtained from the Surveillance Data Display System.

**Figure 3. Total Annulus Material Volume**



**Figure 4. AY-102 Annulus Enraf Liquid Level Readings**



RPP-RPT-60241, Rev. 00

## 5.0 LEAK DETECTION PIT PH AND LIQUID LEVEL RESULTS

The AY-102 leak detection pit pH is taken at least monthly and the AY-102 leak detection pit liquid level is taken at least weekly. Results of the first and last readings of the month are given in Table 4.

**Table 4. Leak Detection Pit pH and Liquid Level Readings for June 2017**

Monitoring	Date	Reading	Interpretations and Conclusions
pH	6-12-2017	5.0	pH is within acceptable range.
Liquid Level	6-5-2017	1.10 in.	Liquid level is within acceptable range.
	6-27-2017	0.84 in.	

## 6.0 TANK PUMPING OPERATIONS

Table 5 provides the environmental notifications announcing the changes in equipment status in June of 2017. In-service dates for all monitoring equipment is provided in Table 2.

**Table 5. Tank Pumping Operations Environmental Notifications**

Environmental Notification	Date	Equipment Status
None*	N/A	N/A

\*Waste retrieval was completed in February 2017.

## 7.0 REFERENCES

HNF-IP-1266, "Tank Farm Operations Administrative Controls," as amended, Washington River Protection Solutions, LLC, Richland, Washington.

RPP-PLAN-60610, 2016, "Tank 241-AY-102 Contingency Plan – Operations Phase," Rev. 02, U.S. Department of Energy, Office of River Protection, Washington River Protection Solutions, Richland, Washington.

RPP-PLAN-60074, 2016, "Tank 241-AY-102 Monitoring Plan," Rev. 05, U.S. Department of Energy, Office of River Protection, Washington River Protection Solutions, Richland, Washington.