



LB# 4044

AIR 14-505

STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
OFFICE OF RADIATION PROTECTION  
309 Bradley Blvd., Suite 201 • Richland, Washington 99352  
TDD Relay Service: 1-800-833-6388

May 14, 2014

**CERTIFIED MAIL**

7011 2000 0002 2834 7443

Mr. Kevin W. Smith, Manager  
United States Department of Energy  
Office of River Protection  
P.O. Box 450, MSIN: H6-60  
Richland, Washington 99352

Dear Mr. Smith:

Pursuant to Washington Administrative Code (WAC) 246-247, your revised As Low As Reasonably Achievable Control Technology (ALARACT) agreement will be approved according to the enclosed ALARACT for:

**ALARACT 02.3, "Tank Farm ALARACT Demonstration for  
Low Purge Gas Core Sampling"**

The Washington State Department of Health (DOH) considers the conditions, controls, monitoring requirements, and limitations of the ALARACT integral to approval of your revision. ALARACT 02.3 "Low Purge Gas Core Sampling" will replace ALARACT 2.2, "Tank Farm ALARACT Demonstration for Installation/Operation/Removal of Push Mode Core Sampling Equipment"

This approval shall take effect, and a final approval letter issued, twenty-eight (28) days after you receive it unless you apply for an adjudicative proceeding, as described below.

If you accept the conditions and limitations of this approval and do not wish to apply for an adjudicative proceeding, but wish to proceed under this approval before the 28 days have elapsed, please notify us in writing and the DOH will issue the final approval letter. Your notice should be mailed or faxed to:

DOH - Office of Radiation Protection  
Radioactive Air Emissions Section  
309 Bradley Blvd., Suite 201  
Richland, Washington 99352  
FAX: (509) 946-0876



If there are concerns with the conditions and limitations of the approval, please notify the DOH. If attempts to resolve the concerns fail, the DOH will deny your application and you may contest the conditions and limitations of this approval, within 28 days of receipt, by filing the enclosed Request for Adjudicative Proceeding or a document providing substantially the same information with the DOH, Adjudicative Service Unit (ASU), in a manner that shows proof of service on the ASU. The ASU's address is:

DOH - Adjudicative Service Unit  
310 Israel Road SE  
P.O. Box 47879  
Olympia, Washington 98504-7879

You must include a copy of this approval with your application. FILING SHALL NOT BE DEEMED COMPLETE UNTIL THE ADJUDICATIVE SERVICE UNIT ACTUALLY RECEIVES YOUR APPLICATION.

If you have any questions regarding this draft approval, please contact John Schmidt at (509) 946-3874.

Sincerely,



John Martell, Manager  
Radioactive Air Emissions Section

Enclosures: (1) ALARACT 02.3 "Low Purge Gas Core Sampling"  
(2) Request for Adjudicative Proceeding

cc: Ruth Allen, WRPS  
Robert Anderson, MSA  
Matthew Barnett, PNNL  
Tom Beam, MSA  
Lee Bostic, BNI  
Dennis Bowser, USDOE-ORP  
Cliff Clark, USDOE-RL  
Jack Donnelly, WRPS  
Rick Engelmann, CHPRC  
Dennis Faulk, EPA  
Phil Gent, Ecology  
Robert Haggard, BNI  
Dale Jackson, USDOE-RL  
Paul Karschnia, CHPRC  
Steven Killoy, WRPS

Valarie Peery, Ecology  
Crystal Rau, Ecology  
Maria Skorska, Ecology  
Jeff Voogd, WRPS  
Joan Woolard, WRPS  
Davis Zhen, EPA  
Environmental Portal  
RAES Tracking line #874,  
ALARACT 02.3 will replace 02.2.  
(Resp. to IM# 8,067)

## ALARACT 02.3

### TANK FARM ALARACT DEMONSTRATION FOR LOW PURGE GAS CORE SAMPLING

#### 1. Description of Activity

*The Core Sampling System is used in single-shelled tanks (SSTs) and double-shelled tanks (DSTs) and miscellaneous tanks to obtain samples of waste for characterization purposes. The Core Sampling System operates in two drilling modes: Push Mode Core Sampling (PMCS) and Rotary Mode Core Sampling (RMCS). PMCS, the preferred mode, involves the hydraulic pushing of the bit through the tank waste without any intentional rotation of the drill bit. The RMCS mode involves intentional rotation of the bit and is used when the waste is more difficult to penetrate. The core sampling system can use a variety of bits for the drilling apparatus. Barrier fluids and purge gasses are used to prevent the release of tank vapors. The Core Sampler has a low purge gas flow rate (<10cfm) and a high purge gas rate (>10cfm) and <120 cfm). Core Sampling under this As Low As Reasonably Achievable Control Technology (ALARACT) will be conducted at purge gas flow less than 10 cfm. The Core Sampling System consists of the sample platform, pressurized nitrogen or compressed air supply, change out assembly, cable spray washer, and other support equipment.*

System set up and sampling is controlled by operating procedures. Riser access is executed in accordance with ALARACT 1.1, "Tank Farm ALARACT Demonstration For Riser Preparation/Opening", and continuous health physics technician (HPT) coverage is provided whenever the riser is open.

The operation of core sampling begins by inserting a drill string into the waste. The Core Sampling System contains a seal against the bottom of the core barrel to prevent back flow of tank waste into the drill string protecting the air pathway out of the tank. This system also has a seal at the top of the drill string to further protect the air pathway out of the tank. Nitrogen/air (or other fluid such as water with a lithium bromide tracer) is used only in amounts sufficient to maintain the hydrostatic head and prevent or minimize movement of tank waste into the core barrel. The drill string section connections are sealed to prevent air leaks and the shielded receiver and sampler have cam-locks to prevent the exposure of the sample to the air.

When the segment is complete, the drill string is disconnected from the Core Sampling System platform and is capped and connected to the shielded receiving vessel while protecting the air pathway. The platform then rotates to place the shielded receiver either directly over a shipping cask or the shielded receiver may be positioned over an x-ray machine to allow the sampler to be x-rayed.

While operating the Core Sampling System in push or rotary mode, water or air is used to maintain the hydrostatic head in the drill string minimizing waste entry into the sampling system. Once a complete core has been obtained, the platform can be repositioned on the same riser or moved to a different riser on the same tank to obtain additional cores. During breakdown, the drill string is sleeved as it is removed from the tank and placed into a waste container. When sampling is complete at one tank, the Core Sampling System will be disconnected and moved to the next tank or stored for later use.

#### 2. Controls

- a. When opening riser, use ALARACT demonstration controls for "Riser Preparation/Opening" (ALARACT 1).

- b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4).
- c. HPT coverage will be performed as specified in the Radiological Work Permit.
- d. If sustained wind speeds are >25 mph, then do not initiate sampling.
- e. A local wind speed device may be utilized in lieu of Hanford Meteorological Station readings, if local wind speed readings are taken in an unobstructed location representative of the work area.
- f. If a local wind speed device is used to measure wind speeds, then the use of the local wind speed device and the measured wind speed readings must be documented in the Work Record.
- g. Valves, caps, and plugs are used to minimize open riser time.
- h. Document core sampler drill string seal is in place to minimize exposure pathway.
- i. Secure threaded drill string section connections and/or shielded receiver and sampler cam-locks as necessary to minimize exposure pathway.
- j. Document passive or active high-efficiency particulate air filtration on tanks.
- k. Use approved Containment Selection Guide, Attachment A, from the latest revision of TFC-ESHQRP\_RWP-C-02, Radiological Containment.

**3. Monitoring**

- a. At a minimum, pre and post-job contamination surveys (smears) shall be taken.
- b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual.

**4. Records/Documentation**

- a. Work Package
- b. Radiological Work Permit
- c. Radiological survey report(s)

**5. Emission Pathway**

- a. Existing, active or passive point sources (Displacement gas is used in drill string which is a closed system and has minimal/no emission impact).

**6. Facility Description**

- a. All SSTs, DSTs and miscellaneous tanks.

**STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH PROGRAMS  
OFFICE OF RADIATION PROTECTION**

Docket No:  
**REQUEST FOR ADJUDICATIVE PROCEEDING**

In Re The Approval of:  
**ALARACT 02.3, "Tank Farm ALARACT Demonstration for Low Purge Gas Core Sampling"**

Draft Approval No:   **AIR 14-505**

THE STATE OF WASHINGTON TO:       **Mr. Kevin W. Smith, Manager  
United States Department of Energy  
Office of River Protection  
P.O. Box 450, MSIN: H6-60  
Richland, Washington 99352-0450**

If you wish to request an adjudicative proceeding, you or your attorney must COMPLETE AND FILE THIS FORM OR A DOCUMENT PROVIDING SUBSTANTIALLY THE SAME INFORMATION WITH THE DEPARTMENT OF HEALTH ADJUDICATIVE SERVICE UNIT WITHIN TWENTY-EIGHT (28) DAYS OF YOUR RECEIPT of this Request for Adjudicative Proceeding form and a copy of the Office of Radiation Protection's approval, **AIR 14-505**.

You must file your application in a manner that shows proof of service on the Adjudicative Service Unit, at the following address:

Department of Health  
Adjudicative Service Unit  
310 Israel Road S.E.  
P.O. Box 47879  
Olympia, WA 98504-7879

With your application, you must include a copy of the Office of Radiation Protection's approval.

**FILING SHALL NOT BE DEEMED COMPLETE UNTIL THE ADJUDICATIVE SERVICE UNIT ACTUALLY RECEIVES YOUR APPLICATION.**

YOU HAVE THE RIGHT TO a formal hearing in this matter conducted pursuant to Revised Code of Washington (RCW) 43.70.115, Chapter 34.05 RCW, and Chapter 246-10 of the Washington Administrative Code (WAC). Alternatively, you may waive the formal hearing and submit a written statement and supporting documents setting out your position, your defenses, and any mitigating circumstances that you wish to bring to the Department's attention.

You have the right to be represented by an attorney at your own expense.

I.

I WILL BE represented by an attorney. His/her name, address, and phone number are:

Name:

Address:

Phone:

I WILL NOT BE represented by an attorney.

*If after submitting this request, you obtain attorney representation or change attorneys, you must notify the Adjudicative Service Unit.*

## II.

I DO NOT waive my right to a formal hearing.

I DO waive my right to a formal hearing. I understand that if I waive my right to a formal hearing, the Department may decide this matter solely with reference to information in the Department's possession and to such written statements and supporting documents as I may have submitted.

If you choose to waive your right to a formal hearing, please complete the following:

I AM NOT submitting documents to the Department in support of my position.

I AM submitting a sworn statement and/or other documents to the Department in support of my position. Instructions - Please indicate your responses below:

If you are submitting documents to the Department, please list and briefly identify all such documents in the space provided below and on any additional sheet that may be necessary.

**III.**

ADMISSION/DENIAL OF CONDITIONS OR LIMITATIONS

The Office of Radiation Protection's approval **AIR 14-505**, dated **May 14, 2014**, contains conditions and limitations set out as numbered paragraphs. In the space below you must indicate, in good faith, whether you admit, or do not contest, or deny the conditions or limitations. Conditions or limitations denied or not contested may later be admitted. Conditions or limitations admitted or not contested shall be conclusively deemed true for further proceedings.

Instructions: I admit, deny, or do not contest the conditions or limitations as follows  
(fill in the appropriate paragraph number):

	<u>Admit</u>	<u>Deny</u>	<u>Do Not Contest</u>
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]
Paragraph _____	[ ]	[ ]	[ ]

Please attach any additional sheets that may be necessary to respond to all allegations.

If you have chosen not to waive your rights to a formal hearing, please state all grounds for contesting this matter in the space provided below and on any additional sheets that may be necessary.

IV.

You have the right to an interpreter, appointed at no cost, if you are a hearing impaired person or limited English speaking person. If any witness for you is a hearing impaired person or a limited English speaking person, an interpreter will be appointed at your expense.

I [DO] / [DO NOT] (circle one) request an interpreter be appointed. If an interpreter is requested, please indicate the person or persons for whom an interpreter is required and their primary language, and/or whether they are hearing impaired.

IF YOU FAIL TO FILE YOUR APPLICATION IN A TIMELY MANNER, OR IF YOU FILE YOUR APPLICATION TIMELY BUT FAIL TO APPEAR AT ANY SCHEDULED SETTLEMENT CONFERENCE, PREHEARING CONFERENCE, OR HEARING WITHOUT LEAVE TO DO SO, THE DEPARTMENT MAY DECIDE THIS MATTER WITHOUT YOUR PARTICIPATION AND WITHOUT FURTHER NOTICE TO YOU.

DATED this \_\_\_\_\_ day of \_\_\_\_\_,

\_\_\_\_\_  
Party

\_\_\_\_\_  
Party's Representative (if any)

WSBA #: \_\_\_\_\_



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PS Form 3800, August 2006 See Reverse for Instructions

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SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>■ Print your name and address on the reverse so that we can return the card to you.</li> <li>■ Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature <input checked="" type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p><i>[Signature]</i></p> <p>B. Received by (Printed Name) <input checked="" type="checkbox"/> C. Date of Delivery</p> <p><i>[Signature]</i> 5/20/14</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If YES, enter delivery address below:</p>
<p>1. Article Addressed to:</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>MR KEVIN W SMITH, MANAGER            USDOE - ORP            P.O. BOX 450, MSIN: H6-60            RICHLAND, WA 99352</p> </div>	
<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p>	
<p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service lat) <span style="font-size: 1.2em;">7011 2000 0002 2834 7443</span></p>	

