



1218521

1/2/13

**RICHLAND OPERATIONS OFFICE
P.O. BOX 550
RICHLAND, WASHINGTON 99352**

Heather, PLS add
to Admin Record,
~~3~~ 100-NR-1 0U

Thanks

A large, stylized handwritten signature in purple ink, appearing to be "R. L." followed by a long horizontal stroke.

FACILITY STATUS CHANGE FORM

1218521

| | | |
|--------------------------------------|---|-----------------------------------|
| Date Submitted: 11/28/2012 | Area: 100-N | Control #: D4-100N-0044 |
| Originator: David Warren | Facility ID: 1926-N Valve Pit | |
| Phone: 539-6040 | Action Memorandum: 100-N Ancillary Facilities | |

This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.

Section 1: Facility Status

- All D4 operations required by action memo complete.
- D4 operations required by action memo partially complete, remaining operations deferred.

Description of Completed Activities and Current Conditions:

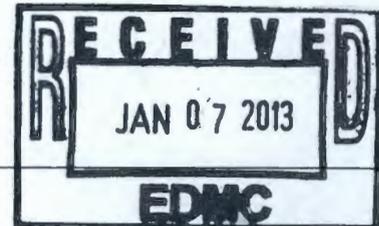
Deactivation: If required, utility isolation was performed at each facility prior to beginning deactivation.

Decontamination and Decommissioning: If present, the following hazardous materials were removed prior to facility demolition: batteries, light bulbs, oils, grease, asbestos-containing material, mercury, refrigerant, and polychlorinated biphenyls. Hazardous material removal and waste disposition was performed in accordance with the *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70. The only Hazardous Materials associated with the 1926-N Valve Pit was the asbestos coating on the underground piping that fed it.

Demolition: Demolition of the 1926-N was performed by Field Remediation (FR) in conjunction with the remediation/removal of a section of 100-N-63:2 Resource Conservation Recovery Act (RCRA) piping that fed the never used/constructed gable mountain crib. Waste was loaded out and transported to the Environmental Restoration Disposal Facility (ERDF), where it was disposed of. Based on past uses of this facility, and especially since this leg of pipeline was never used, radiological contamination was not expected during demolition. However, because demolition of these sites required digging in a Underground Radioactive Material Area (URMA), demolition was performed under radiological controls as a precautionary measure.

Description of Deferral (as applicable):

N/A

**Section 2: Underlying Soil Status**

- No waste site(s) present. No additional actions anticipated.
- Documented waste site(s) present. Cleanup and closeout to be addressed under Record of Decision.
- Potential waste site discovered during D4 operations. Waste site identification number <to be> assigned. Cleanup and closeout to be addressed under Record of Decision.

Description of Current/As-Left Conditions:

The 1926-N Valve Pit was excavated, demolished, and disposed of at the ERDF. A visual inspection of the excavation was made to identify any soil staining. GPS was performed to document the extent of the excavation. The site is currently open awaiting backfill approval for the 100-N-63:2 RCRA piping excavation, at which time the valve pit excavation will also be backfilled and graded to match the surrounding terrain.

The results of the civil survey(s) are in Attachment 4. The area(s) are currently clear of Industrial Hygiene or Radiological postings, however they do lie within the 100-N general Underground Radioactive Area (URMA).

Identification of Documented Waste Site(s) or Nature of Potential Waste Site Discovery (as applicable):

There was one WIDS sites associated with the 1926-N Valve Pit, that being the 100-N-63:2 RCRA piping. FR removed

FACILITY STATUS CHANGE FORM

the 1926-N Valve Pit in conjunction with removal of the 100-N-63:2 Piping. FR also performed verification sampling for the 100-N-63:2 WIDS site for which one of the sample points was located in the footprint of the 1926-N facility (See Attachment 5, Sampling Determination Form). In all likelihood this facility would not require verification sampling because it was never used. However, the data for the sample point from the FR verification instruction is being used as verification for the soils beneath the 1926-N Facility. The data indicate that four contaminants were detected in concentrations that exceed the Groundwater and River Protection Remedial Action Goals. However, each of these contaminants has a Kd value that is sufficient to eliminate the risk of it contaminating either the river or groundwater at the present concentration. The remainder of the 100-N-63:2 piping will be verification sampled and closed out by FR with the appropriate documentation (i.e. Closeout Verification Package).

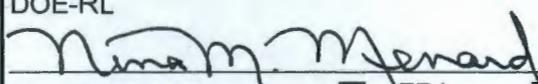
The Sampling Determination Form (Attachment 5) is part of a process implemented by the *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70, Revision 3. The Sampling Determination Form for the 1926-N Facility (SDF-100N-013) represents a regulatory agreement between DOE and the Lead Regulator (Ecology), and indicates that the requirements of the Action Memorandum have been met with respect to demonstrating that cleanup criteria, MTCA Method B for Chemical Constituents and 15 mRem above Hanford Site background for Radiological Constituents, have been achieved for soils and structures remaining after facility removal. Further action will not be required by the D4 organization to demonstrate that cleanup criteria have been met for the 1926-N Facility.

Section 3: List of Attachments

1. Facility information (building history and characterization)
2. Project photographs
3. Global Positioning Environmental Radiological Surveys (GPERS)
4. Civil Survey Information
5. Sampling Determination Form for the 1926-N Facility (SDF-100N-013)


DOE-RL

11/28/2012
Date


Lead Regulator

EPA

Ecology

12/13/2012
Date

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FR EPL: Dan Saueressig, N3-30

D4 Project Facility Completion Form

Attachment 1: Facility Information (3 pages)

D4 Project Facility Completion Form

Facility Information

Introduction

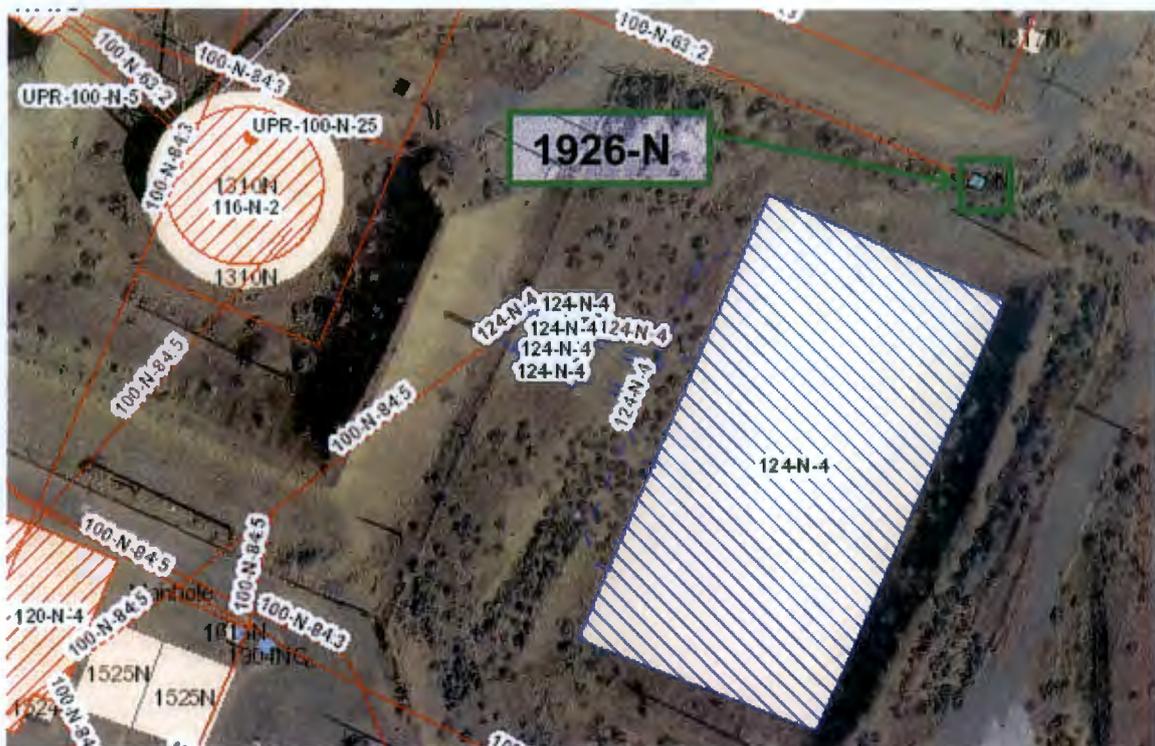
This document provides information regarding the history, characterization, and final status at the completion of deactivation, decontamination, decommissioning, and demolition (D4) activities of the 1926-N Valve Pit formerly located at the 100-N Area.

Site Information

The 1926-N Valve Pit was a 5.8 foot by 4.8 foot by 5.2 foot reinforced concrete structure constructed below grade in 1963. It was reinforced with 2 inch thick construction-grade lumber and 16 gauge aluminum sheeting on its top and edges. It was located east of the 1310-N Radioactive Liquid and Waste Treatment Facility and northeast of the 105-N Reactor.

The 1926-N Valve Pit was designed to transport chemical waste from the 1310-N facility to a crib at Gable Mountain, which was never constructed. A 4 inch chemical waste line ran from the 1310-N silo to the 1926-N Valve Pit. This line was never used and accordingly the 1926-N Valve Pit did not receive any waste. A map of the 1926-N Valve Pit is included in Figure 1. Photographs of the 1926-N Valve Pit are included in Attachment 2.

Figure 1. Location of the 1926-N Valve Pit



D4 Project Facility Completion Form

Radiological and Industrial Hygiene Surveys

Table 1 summarizes the industrial hygiene, radiological control, and asbestos samples collected from the 1926-N Valve Pit.

Table 1. Summary of Samples/Surveys Collected for 1926-N

| Type | Quantity | Method Detection Limits | Results |
|--|-----------|---|--|
| Radiological Scoping Surveys | N/A | Beta-gamma – 1,000 removable/ 5,000 fixed ^a Alpha – 20 removable/ 100 fixed ^a | No radiological scoping survey was performed at the 1926-N Valve Pit. |
| Pre Demolition and in Process Radiological Surveys | N/A | Beta-gamma – 1,000 removable/ 5,000 fixed ^a Alpha – 20 removable/ 100 fixed ^a | No pre-demolition or in process radiological survey was performed at the 1926-N Valve Pit. |
| Post Demolition Radiological Surveys | N/A | Beta-gamma – 1000 removable/ 5,000 fixed ^a | A post-demolition health and safety based radiological survey was not performed on the footprint of the 1926-N Valve Pit. No radiological down-posting survey was required for this facility. |
| Global Positioning Environmental Radiological Surveyor (GPERS) Surveys | 2 Surveys | N/A | A total of 1201 data points were taken at the 1926-N footprint. All results were less than 1.5 times background. It should be noted that readings that are under 1.5 times the background count are considered to be insignificant. The GPERS survey maps are included in Attachment 3. |
| Industrial Hygiene Surveys, Scoping and in Process | N/A | N/A | Industrial Hygiene surveys were not performed as the 1926-N Valve Pit did not possess any unique IH Hazard. |
| Asbestos – Thermal System Insulation and Miscellaneous Material | N/A | 1% asbestos content | No certified asbestos inspection was performed for the 1926-N Valve Pit. There was no presumed asbestos based on the construction design and visual inspection. |
| ^a – dpm/100 cm ² | | | |

Civil Survey Information

Pre and post-demolition Global Positioning System (GPS) civil surveys were performed on the 1926-N Valve Pit and its excavation. Copies of the GPS surveys are provided in Attachment 4.

Anomalies Discovered During Demolition

No anomaly was discovered during the demolition of the 1926-N Valve Pit.

D4 Project Facility Completion Form

Final Building Status and Underlying Soil

The 1926-N Valve Pit was demolished and removed by the Field Remediation organization (FR) as part of the removal of the 100-N-63:2 pipelines, a subsite of Waste Information Data System (WIDS) site 100-N-63. Demolition and load out of the 1926-N Valve Pit was completed on November 3, 2011. The debris was loaded into roll-off containers and shipped to the Environmental Restoration Disposal Facility (ERDF) for disposal.

A 100-N-63:2 pipeline was the only portion of a WIDS site in the vicinity of the 1926-N Valve Pit. This pipeline was removed with the 1926-N Valve Pit. Accordingly no WIDS site remains in the underlying soil.

No anomaly was reported during demolition or removal of the 1926-N Valve Pit. A visual inspection and GPERS surveys were performed at the excavated 1926-N footprint. No soil staining or radiological contamination was identified.

Following removal of the 1926-N Valve Pit, the soil remaining in the facility footprint was verification sampled by FR as part of verification sampling for the 100-N-63:2 pipelines. The data from this sampling is being used to verify cleanup of the soil beneath the 1926-N Valve Pit. The remainder of the 100-N-63:2 WIDS site will be verification sampled and closed out by FR with the appropriate documentation.

The site is currently open awaiting backfill approval for the 100-N-63:2 pipeline excavation. Once approval is obtained, the 1926-N Valve Pit excavation will be backfilled and graded to match the surrounding terrain.

Table 2. Contaminants of Concern for Facility Demolition

| Contaminant of Concern | Management Practice/Determination of No Impact to the Soil |
|-------------------------------|---|
| N/A | The 1926-N Valve Pit did not contain hazardous substances. No anomaly or stained soil was identified during visual inspections and the GPERS surveys of the facility footprint did not detect radiological contamination. The GPERS surveys are included in Attachment 3. |

D4 Project Facility Completion Form

Attachment 2: Photographs (2 pages)

D4 Project Facility Completion Form



1926-N Valve Pit Pre-Demolition



1926-N Valve Pit Post-Demolition

D4 Project Facility Completion Form



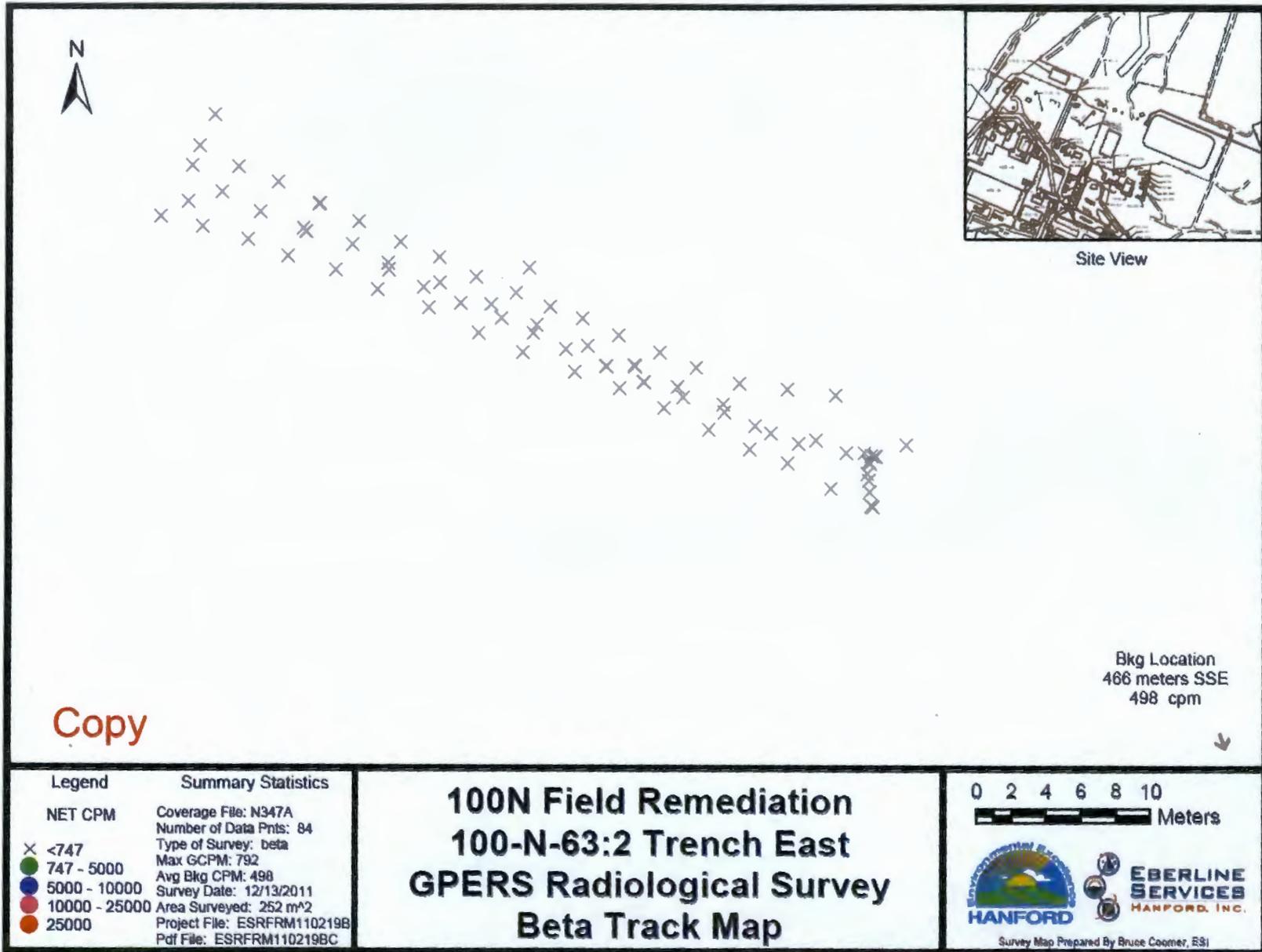
1926-N Valve Pit Post-Demolition

1926-N Facility Completion

D4 Project Facility Completion Form

Attachment 3: GPERS Surveys (2 pages)

D4 Project Facility Completion Form





D4 Project Facility Completion Form

Attachment 4: GPS Civil Survey Information (3 pages)

D4 Project Facility Completion Form

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GPS Post Demolition Survey for 1926N Building

Project : 100N-022812

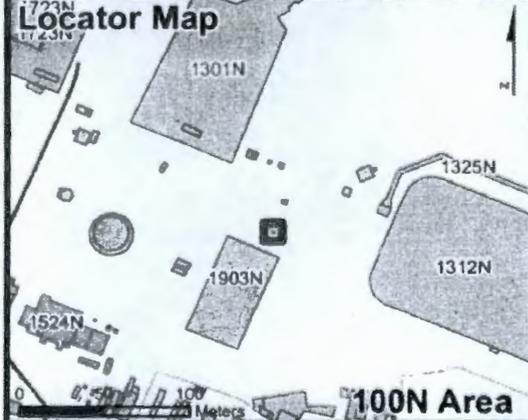
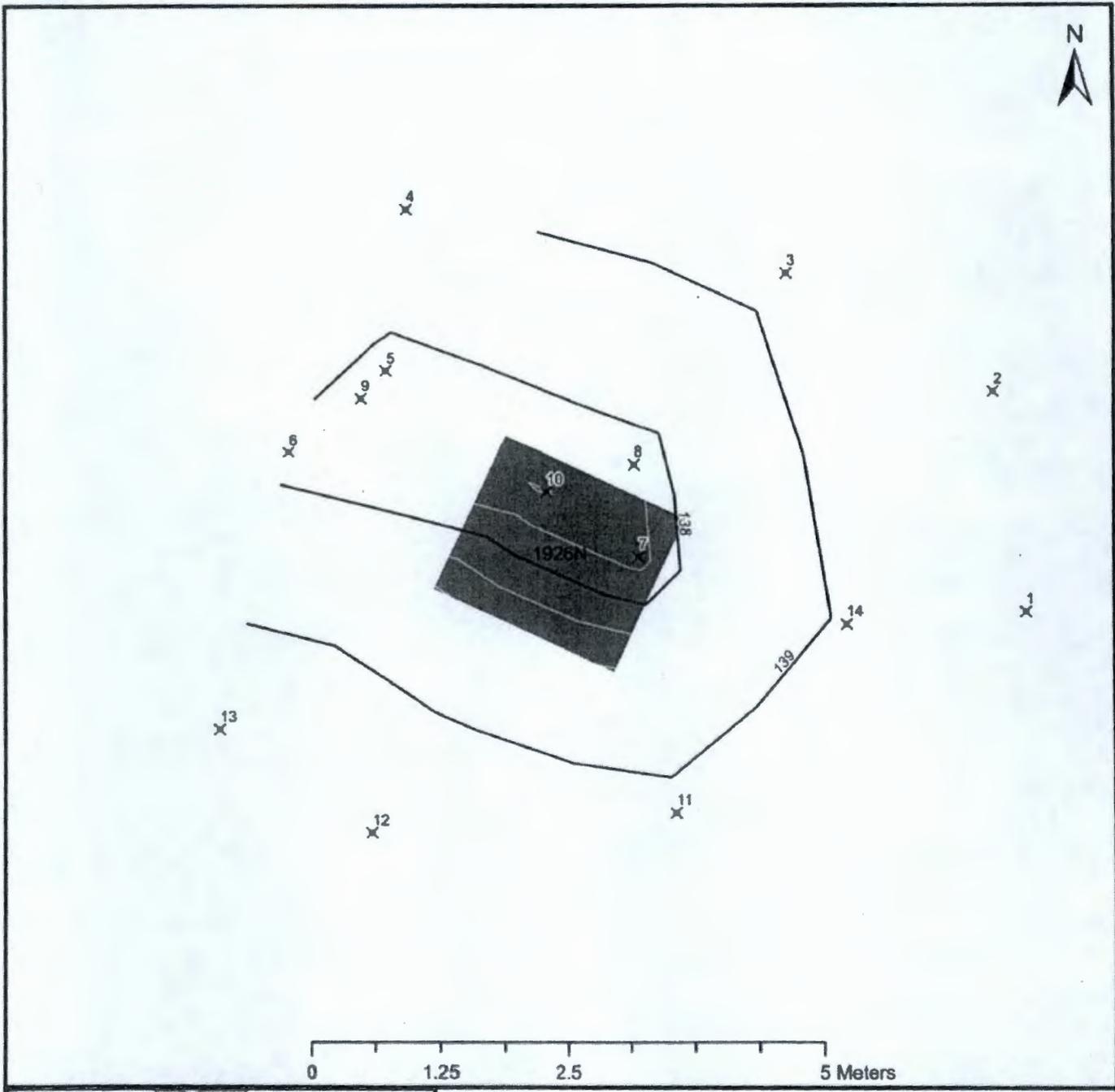
| | | | |
|-------------------|---------------------|-------------|-----------------------|
| User name | maaye | Date & Time | 11:59:34 AM 3/1/2012 |
| Coordinate System | US State Plane 1983 | Zone | Washington South 4602 |
| Project Datum | (WGS 84) | | |
| Vertical Datum | NAVD88 | Geoid Model | Not selected |
| Coordinate Units | Meters | | |
| Distance Units | Meters | | |
| Height Units | Meters | | |

Survey Project Name: Post Demo Survey for 186N and 1902N
 Date: 2/29/2012
 Equipment: 5800
 Survey Purpose: Map current topography for demolition site
 Requested By: Thomas Yamamoto
 Location: 100N
 Charge Code: 01.01.R186NON400, 01.01.R1926NN400
 Field Surveyor: Margo Aye
 Survey Software Used: Trimble Survey Controller, and Geomatics Office v.11
 Survey Equipment Used: 5800
 Control Monuments Used: N-2
 Survey Method: RTK
 Horizontal Precision: .020m
 Vertical Precision: .050m
 Fieldwork Start Date: 2/28/12
 Fieldwork Completion Date: 2/28/12
 Notes:

| GPS Name | Northing | Easting | Elevation | Feature Code | Time/Date |
|----------|-------------|-------------|-----------|--------------|----------------------|
| 1 | 149615.263m | 571510.972m | 139.804m | top | 14:04:11 28 Feb 2012 |
| 2 | 149617.464m | 571510.664m | 139.743m | top | 14:04:26 28 Feb 2012 |
| 3 | 149618.654m | 571508.640m | 139.308m | top | 14:09:06 28 Feb 2012 |
| 4 | 149619.283m | 571504.922m | 138.838m | top | 14:09:25 28 Feb 2012 |
| 5 | 149617.677m | 571504.725m | 137.737m | top | 14:09:48 28 Feb 2012 |
| 6 | 149616.853m | 571503.770m | 137.763m | top | 14:10:23 28 Feb 2012 |
| 7 | 149615.807m | 571507.213m | 137.722m | toe | 14:10:45 28 Feb 2012 |
| 8 | 149616.724m | 571507.166m | 137.741m | toe | 14:11:00 28 Feb 2012 |
| 9 | 149617.401m | 571504.480m | 137.659m | toe | 14:11:14 28 Feb 2012 |
| 10 | 149616.451m | 571506.293m | 137.593m | toe | 14:12:05 28 Feb 2012 |
| 11 | 149613.276m | 571507.572m | 139.205m | top | 14:12:48 28 Feb 2012 |
| 12 | 149613.077m | 571504.588m | 139.770m | top | 14:14:05 28 Feb 2012 |
| 13 | 149614.099m | 571503.084m | 139.767m | top | 14:14:36 28 Feb 2012 |
| 14 | 149615.142m | 571509.219m | 139.108m | top | 14:15:14 28 Feb 2012 |

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D4 Project Facility Completion Form



Post Demo GPS Report For 1926N

- GPS Post Demolition Survey Points:**
- × See Survey Report for Point Details
 - Major Contour 1 Meter Interval
 - Minor Contour .2 Meter Interval
 - Building Location (Pre Demolition)

US State Plane 1983; Zone: Washington South 4602;
 NAD83, NAVD88; Units are in Meters

W:\D:\07\119\Map\ArcMap\100N\locatoma_1926.mxd 11:50:40 AM

D4 Project Facility Completion Form

**Attachment 5: Sampling Determination Form for the 1926-N Valve Pit (SDF-100N-013)
(11 pages)**

D4 Project Facility Completion Form

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100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-013

A. INSTRUCTIONS

This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.

B. GENERAL INFORMATION

Building Name: Valve Pit Building Number: 1926-N

WIDS Sites Associated or Adjacent:
100-N-63:2

Other:
The 1926-N Facility was removed/demolished by the Field Remediation organization in 2011 as part of removal of a section of the 100-N-63:2 pipeline (RCRA piping). One of the sample locations (J1MXD7) for closure of the 100-N-63:2 (Verification Sampling Work Instruction 0100N-WI-G0022) is located within the footprint of the 1926-N and will be used for verification purpose of the 1926-N soils. See attached table for comparison of the sample data versus the Remedial Action Goals (RAGs).

C. INFORMATION SOURCES

Available information (list document number for each if applicable):

| | |
|--|--|
| Historical Site Assessment: <u>N/A</u> | Site Walkdown: <u>N/A</u> |
| IH Characterization Report: <u>N/A</u> | Global Positioning Environmental Radiological Surveyor (GPERS) surveys (Beta and Gamma Track) for 100-N-63:2 Trench East (ESRFRM110219G and ESRFRM110219B). Both included in PDSR. |
| IHC/FHC Document: <u>N/A</u> | WIDS/SIS: <u>RCC Stewardship Information System (SIS) Facility Summary Reports: 1926-N</u> |
| PDSR: <u>Post Demolition Summary Report for the 1926-N Valve Pit (CCN# not assigned as of yet)</u> | Facility Inspection: <u>N/A</u> |
| Waste Characterization Checklist: <u>N/A</u> | Summary Report: <u>N/A</u> |

Other:

- FR Daily Report #288
- Verification Sampling of the 100-N Treatment Storage and Disposal Unit Pipelines: 100-N-63:2, Pipelines Between 109-N, 105-N, 107-N, 1310N, 1322N, 1926N, and 36" Process Drain to Outfall: 0100N-WI-G0022. Results for Sample (HEIS) Number J1MXD7.
- Photograph of 1926-N Facility Pre-Demolition, No Time Stamp: SIS Facility Summary Report for 1926-N pg. 2
- Photographs of 1926-N Facility before, during, and following Demolition, Date and Time stamped: 11/3/2011 1141, 1240, and 1322

D. HAZARDOUS SUBSTANCES

Check all that apply:

- None
 Asbestos containing material
 Lead
 PCBs/PCB Articles
 Oils/Greases
 Chemicals List: _____
 Radiological Contamination
 Mercury/Mercury Devices
 Other: _____

References/Comments:
The 1926-N was a concrete valve pit that was constructed to direct waste to the planned but never built gable mountain crib. There were no hazardous substances associated with the construction except for asbestos mastic coating on the 100-N-63:2 pipelines that fed it.

D4 Project Facility Completion Form

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| 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM | | Determination Number SDF-100N-013 |
|---|--|--------------------------------------|
| Liquids: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe source and nature of liquids: The 1926-N facility was a valve pit for the chemical waste line which originated from the 1310-N facility (SIS Summary Report for 1926-N pg. 1, See attached GIS Map for location). The valve pit was built to direct waste to the planned but never constructed gable mountain crib. The line was never used thus there was little potential for liquids to be present. | | |
| Were the hazardous substances removed from the facility prior to demolition? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No As verified by what documentation: There were no hazardous substances associated with this structure as it was never used. | | |
| Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A References/Comments: There was no potential to introduce hazardous substances as there were none associated with construction of the structure and the waste lines were never used. Verification sampling for the 100-N-63:2 WIDS site included the 1926-N facility via sampling location S-17 (0100N-WI-G0022 Figure 2-attached to this form). The sample number for this location is J1MXD7. See attached table for comparison of the sample data versus the Remedial Action Goals (RAGs) | | |
| List any hazardous materials left in the building for demolition: N/A | | |
| Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility? N/A | | |
| Comments: Verification sampling for the 100-N-63:2 WIDS site included the 1926-N facility via sampling location S-17 (0100N-WI-G0022 Figure 2-attached to this form). The sample number for this location is J1MXD7. See attached table for comparison of the sample data versus the Remedial Action Goals (RAGs). The sample locations were pre-determined as part of the RCRA TSD sampling agreement with Ecology. Pertinent design drawings for this facility are H-1-32232 & H-1-45007 Sheet 56. | | |
| E. FIELD OBSERVATIONS | | |
| Visual Inspection | | |
| Were any stained soils/anomalies discovered during or after demolition of the facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No References/Comments: FR Daily Report #288. Date and time stamped photographs of excavation following removal. | | |
| Were samples taken of the stained soils/anomalies? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A References/Comments: No samples were taken of stained soils/anomalies as none were observed. | | |
| Do results of the samples indicate that chemical contamination exists? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A References/Comments: | | |
| Is the area potentially a discovery site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No References/Comments: | | |
| Radiological Surveys | | |
| Did radiological surveys (GPERS or equivalent) identify contamination? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No References/Comments: GPERS Surveys ESRFRM110219G and ESRFRM110219B | | |

D4 Project Facility Completion Form

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| 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM | | Determination Number SDF-100N-013 |
|---|--|--------------------------------------|
| Were samples taken of the radiologically contaminated soils? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| References/Comments: | | |
| Is the area potentially a discovery site? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| References/Comments: | | |
| Were the contaminated materials removed? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| References/Comments: | | |
| This questions is not applicable as no contaminated materials were discovered. | | |
| F. WIDS SITES | | |
| Were there any WIDS sites affected by D4 activities? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| If yes, list the WIDS sites: This facility was removed by the FR organization in conjunction with removal of the 100-N-63:2 pipelines. | | |
| Were the WIDS site(s) completely removed? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| References/Comments: | | |
| D4 did not completely remove any WIDS sites, however, FR has completely removed the section of 100-N-63:2 pipeline between the 1310-N and 1926-N, including removal of the 1926-N. | | |
| Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| References/Comments: | | |
| One of the sample locations (J1MXD7) for closure of the 100-N-63:2 (Verification Sampling Work Instruction 0100N-WI-G0022) is located within the footprint of the 1926-N and will be used for verification purpose of the 1926-N soils. See attached table for comparison of the sample data versus the Remedial Action Goals (RAGs). | | |
| G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION | | |
| What are the potential contaminants of concern for the remaining below-grade soil? | | |
| <input checked="" type="checkbox"/> None <input type="checkbox"/> SVOC <input type="checkbox"/> VOC <input type="checkbox"/> Metals <input type="checkbox"/> TPH <input type="checkbox"/> Rad <input type="checkbox"/> PCBs | | |
| <input type="checkbox"/> Other (Specify): _____ | | |
| Comments: | | |
| N/A | | |
| Summary of in-process soil sampling requirements: | | |
| N/A | | |
| Constituents detected / concentrations / rationale | | |
| N/A | | |
| Sample Collection Summary | | |
| See attached table for comparison of the sample data versus the RAGS for samples taken by FR as part of closure of the 100-N-63:2 WIDS site. | | |
| H. NOTES / ADDITIONAL INFORMATION | | |
| <input checked="" type="checkbox"/> Check here if additional information / data / maps / sketches are attached to this form. | | |
| If checked, list the attachment(s): | | |
| <ul style="list-style-type: none"> • Table Comparing results for Sample (HEIS) Number J1MXD7 against RAGs • Verification Sampling Work Instruction Figure: 0100N-WI-G0022 Figure 2 | | |

D4 Project Facility Completion Form

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| | |
|--|--------------------------------------|
| 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM | Determination Number SDF-100N-013 |
|--|--------------------------------------|

• GIS Map

I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards? Yes No

Based on the above information it was determined that sampling: will will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

| | | |
|---|------------------------------|-----------------|
| Information Reviewer Signature <i>David Ware</i> | Printed Name David Warren | Date 4/30/12 |
|---|------------------------------|-----------------|

The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

| | | |
|--|--------------------------------|-------------------|
| DOE Signature <i>[Signature]</i> | Printed Name R. F. Guerra | Date 4/30/2012 |
| Ecology Signature <i>Nina M. Menard</i> | Printed Name NINA M. MENARD | Date 5/1/2012 |

D4 Project Facility Completion Form

Sample J1MXD7 results compared to non radiological RAGS

| Contaminant | Sample Result (mg/kg) | Kd Value (mL/g) | Soil Cleanup Levels, (mg/kg) ^a | | |
|---|-----------------------|-----------------|---|---------------------------|-------------------------|
| | | | Direct Exposure | Protective of Groundwater | Protective of the River |
| Metals | | | | | |
| Antimony | 0.34 U | 1.4 | 32 ^b | 5 ^c | 5 ^c |
| Arsenic | 1.5 | 3 | 20 ^c | 20 ^c | 20 ^c |
| Barium | 45 X | 25 | 5,600 ^b | 200 | 400 |
| Beryllium | 0.03 U | 790 | 10.4 ^e | 1.51 ^c | 1.51 ^c |
| Boron | 0.88 U | 3 | 7,200 ^b | 320 | NA |
| Cadmium | 0.12 B | 30 | 13.9 ^e | 0.81 ^c | 0.81 ^c |
| Chromium, Total | 6.6 X | 200 | 80,000 | 18.5 ^c | 18.5 ^c |
| Chromium VI | | 0 | 2.1 ^e | 4.8 | 2 |
| Cobalt | 8.6 X | 50 | 24 ^b | 15.7 | NA |
| Copper | 12.9 | 22 | 2,960 ^b | 59.2 | 22.0 ^c |
| Lead | 3 | 30 | 353 ^f | 10.2 ^c | 10.2 ^c |
| Lithium | -- | 50 | 160 ^b | 33.5 ^c | NA |
| Manganese | 277 X | 50 | 3,760 ^b | 512 ^c | NA |
| Mercury | | 30 | 24 ^b | 0.33 ^c | 0.33 ^c |
| Molybdenum | 0.23 U | 20 | 400 ^b | 8 | NA |
| Nickel | 8.6 X | 65 | 1,600 ^b | 19.1 ^c | 27.4 |
| Selenium (trace) | 0.77 U | 150 | 400 ^b | 5 | 1 |
| Silver (trace) | 0.14 U | 90 | 400 ^b | 8 | 0.73 ^c |
| Strontium | -- | 15 | 48,000 | 960 | NA |
| Thallium | -- | 71 | 5.6 | 0.5 ^c | 0.5 ^c |
| Tin | -- | 130 | 48,000 | 960 | NA |
| Uranium | -- | 2 | 240 | 3.21 ^c | 3.21 ^c |
| Vanadium | 53.3 X | 1,000 | 560 ^b | 85.1 ^c | NA |
| Zinc | 40.7 X | 30 | 24,000 ^b | 480 | 67.8 ^c |
| Inorganics and TPH | | | | | |
| Chloride | 2 U | 0 | NA | 25,000 | NA |
| Cyanide | -- | 0 | 1,600 ^b | 20 | 1.04 |
| Fluoride | 1 B | 150 | 4,800 | 96 | 400 |
| Nitrate (as Nitrogen) | 0.98 B | 0 | 128,000 | 1,000 | 2,000 |
| Nitrite (as Nitrogen) | 0.34 U | 0 | 8,000 | 100 | 200 |
| Sulfate | 4.3 BC | 2 | NA | 25,000 | NA |
| Sulfide | -- | 0 | NA | NA | NA |
| TPH C10-C36 | 5.9 | 50 | 200 | 200 | 200 |
| TPH C10-C28 | 3.40 J | 50 | 200 | 200 | 200 |
| Semivolatiles | | | | | |
| Acenaphthene | 0.010 U | 4.9 | 4,800 ^b | 96 | 129 |
| Acenaphthylene ^h | 0.0093 U | 6.12 | 4,800 ^b | 96 | 129 |
| Anthracene | 0.053 | 23.5 | 24,000 ^b | 240 | 1,920 |
| Benzo(a)anthracene | 0.120 | 360 | 1.37 ^d | 0.015 ^c | 0.015 ^c |
| Benzo(a)pyrene | 0.058 | 969 | 0.137 | 0.015 ^c | 0.015 ^c |
| Benzo(b)fluoranthene | 0.057 X | 880 | 1.37 ^d | 0.015 ^c | 0.015 ^c |
| Benzo(k)fluoranthene | 0.033 | 2,020 | 1.37 | 0.015 ^c | 0.015 ^c |
| Benzo(g,h,i)perylene ^h | 0.018 J | 2,680 | 2,400 ^b | 48 | 192 |
| Bis(2-chloro-1-methylethyl) ether | -- | 0.0392 | 14.3 ^d | 0.92 ^c | 7.50 |
| Bis(2-chloroethoxy)methane ^h | 0.023 U | 0.00277 | 0.909 ^d | 0.33 ^c | 0.33 ^c |

D4 Project Facility Completion Form

Sample J1MXD7 results compared to non radiological RAGS

| Contaminant | Sample Result (mg/kg) | Kd Value (mL/g) | Soil Cleanup Levels, (mg/kg) ^a | | |
|--|-----------------------|-----------------|---|---------------------------|-------------------------|
| | | | Direct Exposure | Protective of Groundwater | Protective of the River |
| Bis(2-chloroethyl) ether | 0.016 U | 0.0760 | 0.909 ^d | 0.33 ^c | 0.33 ^c |
| Bis(2-ethylhexyl)phthalate | 0.045 U | 110 | 71.4 ^d | 0.6 | 0.36 |
| Bromophenylphenyl ether; 4- | 0.019 U | 4.16 | NA | NA | NA |
| Butylbenzylphthalate | 0.043 U | 13.8 | 16,000 ^b | 320 | 250 |
| Carbazole | 0.036 U | 200 | 50 ^d | 0.437 | NA |
| Chloro-3-methylphenol; 4- ^h | -- | NA | 4,000 ^b | 80 | NA |
| Chloroaniline; 4- | 0.081 U | 0.0725 | 320 ^b | 6.4 | NA |
| Chloronaphthalene; 2- | 0.0099 U | 2.98 | 6,400 ^b | 6.4 | 2.06 |
| Chlorophenol; 2- | 0.021 U | 0.388 | 400 ^b | 8.00 | 19.34 |
| Chlorophenylphenyl ether; 4- | 0.021 U | NA | NA | NA | NA |
| <i>Chrysene</i> | 0.084 | 200 | 13.7 | 0.12 | 0.1 ^c |
| <i>Dibenzo(a,h)anthracene</i> | 0.011 U | 1,790 | 1.37 | 0.03 ^c | 0.03 ^c |
| Dibenzofuran | 0.020 U | 11.3 | 160 ^b | 3.20 | NA |
| Dichlorobenzene; 1,2- | 0.022 U | 0.379 | 7,200 ^b | 60.0 | 540 |
| Dichlorobenzene; 1,3- | 0.012 U | 0.434 | 2,400 ^b | 24.0 | 80 |
| Dichlorobenzene; 1,4- | 0.013 U | 0.616 | 41.7 ^d | 0.33 ^c | 0.972 |
| Dichlorobenzidine; 3,3'- | 0.089 U | 0.724 | 2.22 ^d | 0.33 ^c | 0.33 ^c |
| Dichlorophenol; 2,4- | 0.099 U | 0.147 | 240 ^b | 4.80 | 18.6 |
| Diethylphthalate | 0.026 U | 0.0820 | 64,000 ^b | 1,280 | 4,600 |
| Dimethylphthalate | 0.079 JB | 0.0371 | 80,000 ^b | 1,600 | 14,400 |
| Dimethylphenol; 2,4- | 0.065 U | 0.209 | 1,600 ^b | 32.0 | 110.6 |
| Di-n-butylphthalate | 0.029 U | 1.57 | 8,000 ^b | 160 | 540 |
| Di-n-octylphthalate | 0.014 U | 83,200 | 1,600 ^b | 32 | NA |
| Dinitro-2-methylphenol; 4,6- | 0.330 U | 0.6015 | 8.00 ^b | 0.33 ^c | NA |
| Dinitrophenol; 2,4- | 0.330 U | 0.00001 | 160 ^b | 3.20 | 14 |
| Dinitrotoluene; 2,4- | 0.065 U | 0.0955 | 160 ^b | 3.20 | 0.33 ^c |
| Dinitrotoluene; 2,6- | 0.028 U | 0.0692 | 80.0 ^b | 1.60 | 136 |
| Ethylene glycol | -- | 0.001 | 160,000 | 320 | NA |
| <i>Fluoranthene</i> | 0.280 | 49.1 | 3,200 ^b | 64 | 18.0 |
| <i>Fluorene</i> | 0.021 J | 7.71 | 3,200 ^b | 64 | 260 |
| Hexachlorobenzene | 0.029 U | 80 | 0.625 ^d | 0.33 ^c | 0.33 ^c |
| Hexachlorobutadiene | 0.0099 U | 53.7 | 12.8 ^d | 0.33 ^c | 0.33 ^c |
| Hexachlorocyclopentadiene | 0.049 U | 200 | 480 ^b | 5 | 48 |
| Hexachloroethane | 0.021 U | 1.78 | 71.4 ^d | 0.313 | 0.38 |
| Hydrazine | -- | 0.0143 | 0.333 ^d | 0.33 ^c | NA |
| <i>Indeno(1,2,3-cd)pyrene</i> | 0.026 J | 3,470 | 1.37 ^d | 0.33 ^c | 0.33 ^c |
| Isophorone | 0.017 U | 0.0468 | 1,050 ^d | 9.21 | 1.68 |
| Methylnaphthalene; 2- | 0.019 U | 2.98 | 320 ^b | 3.2 | NA |
| Methylphenol; 2- (cresol;o-) | 0.13 U | 0.434 | 4,000 ^b | 80.0 | NA |
| Methylphenol; 4- (cresol;p-) | 0.033 U | 0.434 | 400 ^b | 8.00 | NA |
| <i>Naphthalene</i> | 0.012 U | 1.19 | 1,600 ^b | 16.0 | 988 |
| Nitroaniline; 2- | 0.049 U | 0.0527 | 240 ^b | 2.4 | NA |
| Nitroaniline; 3- | 0.072 U | 0.0516 | 24 ^b | 0.33 ^c | NA |
| Nitroaniline; 4- | 0.072 U | 0.0516 | 47.6 ^d | 0.33 ^c | NA |
| Nitrobenzene | 0.022 U | 0.119 | 160 | 1.6 | 3.40 |
| Nitrophenol; 2- | 0.0099 U | NA | NA | NA | NA |
| Nitrophenol; 4- | 0.096 U | 0.309 | 640 | 12.8 | 1,254 |
| Nitroso-di-n-propylamine;N- | 0.031 U | 0.0240 | 0.33 ^c | 0.33 ^c | 0.33 ^c |

D4 Project Facility Completion Form

Sample J1MXD7 results compared to non radiological RAGS

| Contaminant | Sample Result (mg/kg) | Kd Value (mL/g) | Soil Cleanup Levels, (mg/kg) ^a | | |
|---------------------------|-----------------------|-----------------|---|---------------------------|-------------------------|
| | | | Direct Exposure | Protective of Groundwater | Protective of the River |
| Nitrosodiphenylamine;N- | 0.021 U | 1.29 | 204 ^d | 1.79 | 1.946 |
| Pentachlorophenol | 0.330 U | 0.592 | 8.33 ^d | 0.33 ^c | 0.33 ^c |
| Phenanthrene ^h | 0.220 | 23.5 | 24,000 ^b | 240 | 1,920 |
| Phenol | 0.018 U | 0.0288 | 24,000 ^b | 960 | 4,200 |
| Pyrene | 0.260 | 68 | 2,400 ^b | 48 | 192 |
| Tributyl Phosphate | -- | 18.9 | 185 ^d | 3.3 ^c | NA |
| Trichlorobenzene; 1,2,4- | 0.028 U | 1.66 | 800 ^b | 7 | 45.4 |
| Trichlorophenol; 2,4,5- | 0.0099 U | 1.60 | 8,000 ^b | 160 | NA |
| Trichlorophenol; 2,4,6- | 0.0099 U | 0.381 | 90.9 ^d | 0.795 | 0.42 |

CAS = Chemical Abstract System.

Kd = Distribution Coefficient discussed in DOE-RL 2009, the 100 Area RDR/RAWP, Appendix E. Except for the N-Area specific Sr-90 Kd of 15 mL/g (DOE-RL 2001, pg B-10), Kd values are obtained from the 100 Area RDR/RAWP, Table 2-5, Table D-2, and Appendix E as available. When unavailable from the 100 Area RDR/RAWP, Kd values are taken from the Ecology CLARC Database on the Internet at < <https://fortress.wa.gov/ecy/clarc> > or from the Risk Assessment Information System database maintained by the Oak Ridge National Laboratory on the Internet at < <http://risk.lsd.ornl.gov> >.

NA = Not available.

^a Values from the last column of Tables B-1, B-2, or B-3, as appropriate. Calculated using the appropriate formulas from Ecology 1996, WAC 173-340-740, with toxicity values updated through 2/25/2009, from the EPA Integrated Risk Information System (IRIS) at <http://www.epa.gov/iris> or from the Risk Assessment Information System (RAIS) database of the Oak Ridge National Laboratory (ORNL) on the Internet at <http://risk.lsd.ornl.gov>.

^b Noncarcinogenic cleanup level calculated from WAC 173-340-740(3), Method B, Ecology 1996.

^c Where cleanup levels are less than background or RDLs, cleanup levels default to background or RDLs per Ecology 1996, WAC 173-340-700(4)(d) and WAC 173-340-707(2), respectively. The Washington State Department of Ecology has established a cleanup level of 20 ppm for arsenic in soil at most hazardous waste sites. The arsenic cleanup level of 20 mg/kg has been agreed to by the Tri-Party Agreement Project Managers.

^d Carcinogenic cleanup level calculated per WAC 173-340-740(3), Method B, 1996.

^e Carcinogenic cleanup level calculated based on the inhalation exposure pathway; WAC 173-340-750(3), 1996.

^f Use EPA, 1994, *Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children*, EPA/540/R-93/081, Publication No. 9285.7, U.S. Environmental Protection Agency, Washington, D.C.

^g Common laboratory contaminant unlikely to be found in soil. If detected in soil, all analyses of blanks, duplicates, and splits should be checked and the original soil sample reanalyzed.

^h Toxicity data for this chemical are not available. Cleanup levels are based on surrogate chemicals:

Contaminant: acenaphthylene; surrogate: acenaphthene

Contaminant: benzo(g,h,i)perylene; surrogate: pyrene

Contaminant: bis(2-chloroethoxy)methane; surrogate: bis(2-chloroethyl)ether

Contaminant: chloro-3-methylphenol; 4-; surrogate: methylphenol; 3-

Contaminant: dichloroprop (pesticide); surrogate: Dichlorophenoxyacetic acid; 2,4-; (2,4-D)

Contaminant: phenanthrene; surrogate: anthracene

D4 Project Facility Completion Form

| Radionuclides | Hanford-Specific Background Activity (pCi/g) ^a | Sample Result in pCi/g | Soil Activity for 15 mrem/yr Dose (pCi/g) | Soil Concentration Protective of Groundwater (pCi/g) | Cleanup Levels Summary (pCi/g) | |
|---------------------------|---|------------------------|---|--|--------------------------------|-------------------------|
| | | | | | Shallow Zone Cleanup Level | Deep Zone Cleanup Level |
| Ag (silver)-108m | NA | -- | 2.38 | NV | 2.38 | NV |
| Americium-241 | NA | -0.00048 U | 31.1 | NV | 31.1 | NV |
| Carbon-14 | NA | -- | 8.69 | NV | 8.69 | NV |
| Cesium-137 | 1.1 | 0.0736 | 6.2 | 1,465 | 6.2 | 1,465 |
| Cobalt-60 | 0.008 | 0.00827 U | 1.4 | 13,900 | 1.4 | 13,900 |
| Curium-243 | NA | -- | 22.1 | NV | 22.1 | NV |
| Europium-152 | NA | 0.00817 U | 3.3 | NV | 3.3 | NV |
| Europium-154 | 0.033 | 0.00817 U | 3.0 | NV | 3.05 | NV |
| Europium-155 | 0.054 | 0.0429 U | 125 | NV | 125 | NV |
| Iodine-129 | NA | -- | 0.228 | 0.0046 | 2 ^f | 2 ^f |
| Neptunium-237 | NA | -- | 2.44 | 0.90 | 1 ^f | 1 ^f |
| Nickel-63 | NA | 6.91 U | 4,013 | 83 | 83 | 83 |
| Niobium-94 | NA | | 2.43 | NV | 2.43 | NV |
| Plutonium-238 | 0.004 | -0.0016 U | 38.8 | NV | 38.8 | NV |
| Plutonium-239/240 | 0.025 | 0.015 U | 33.9 | NV | 33.9 | NV |
| Potassium-40 ^e | 16.6 | | 8.15 | 0.032 | 16.6 ^g | 16.6 ^g |
| Radium-226 | 0.815 | 0.487 | 1.04 | NV | 1.04 | NV |
| Radium-228 | NA | | 1.69 | NV | 1.69 | NV |
| Strontium-90 | 0.18 | 0.0379 U | 4.5 | 27.6 | 4.5 | 27.6 |
| Technetium-99 | NA | -- | 8.5 | 0.46 | 15 ^f | 15 ^f |
| Thorium-228 | NA | 0.389 | 2.26 | NV | 2.26 | NV |
| Thorium-230 | NA | 0.28 | 2.95 | NV | 2.95 | NV |
| Thorium-232 | 1.3 | 0.456 | 1.0 | NV | 1.3 ^g | NV |
| Tritium (H-3) | NA | 0.0288 U | 459 | 12.6 | 12.6 | 12.6 |
| Uranium-233/234 | 1.1 | 0.205 | 0.57 | 0.185 | 1.1 ^g | 1.1 ^g |
| Uranium-235 | 0.11 | -0.0012 U | 0.61 | 0.185 | 0.61 | 0.5 ^f |
| Uranium-238 | 1.1 | 0.132 U | 0.61 | 0.185 | 1.1 ^g | 1.1 ^g |

NA = Not available; contaminant was not evaluated during the Hanford Site background study.

NV = No value; modeling using RESRAD version 6.3 predicts the contaminant will not reach groundwater within 1,000 years.

^a Background concentrations are 90th percentile values of the log normal distribution of Hanford Site soil background data from DOE-RL 1996, *Hanford Site Background: Part 2, Soil Background for Radionuclides*. However, when comparing maximum activities at a site to background it is appropriate to use the 95th percentile UCL values from Table 5-1 of DOE-RL 1996.

^b No RDL has been established for these isotopes. Values shown represent expected performance relative to defined RDLs for cesium-137 and cobalt-60.

^c Curium-243 is not resolvable from curium-244. The laboratory reports the total of curium-243 and curium-244

^d This RDL is not available via rapid turnaround; it is only available via a method requiring a longer turnaround time.

^e Naturally occurring radionuclide material. Should not be reported as a COC.

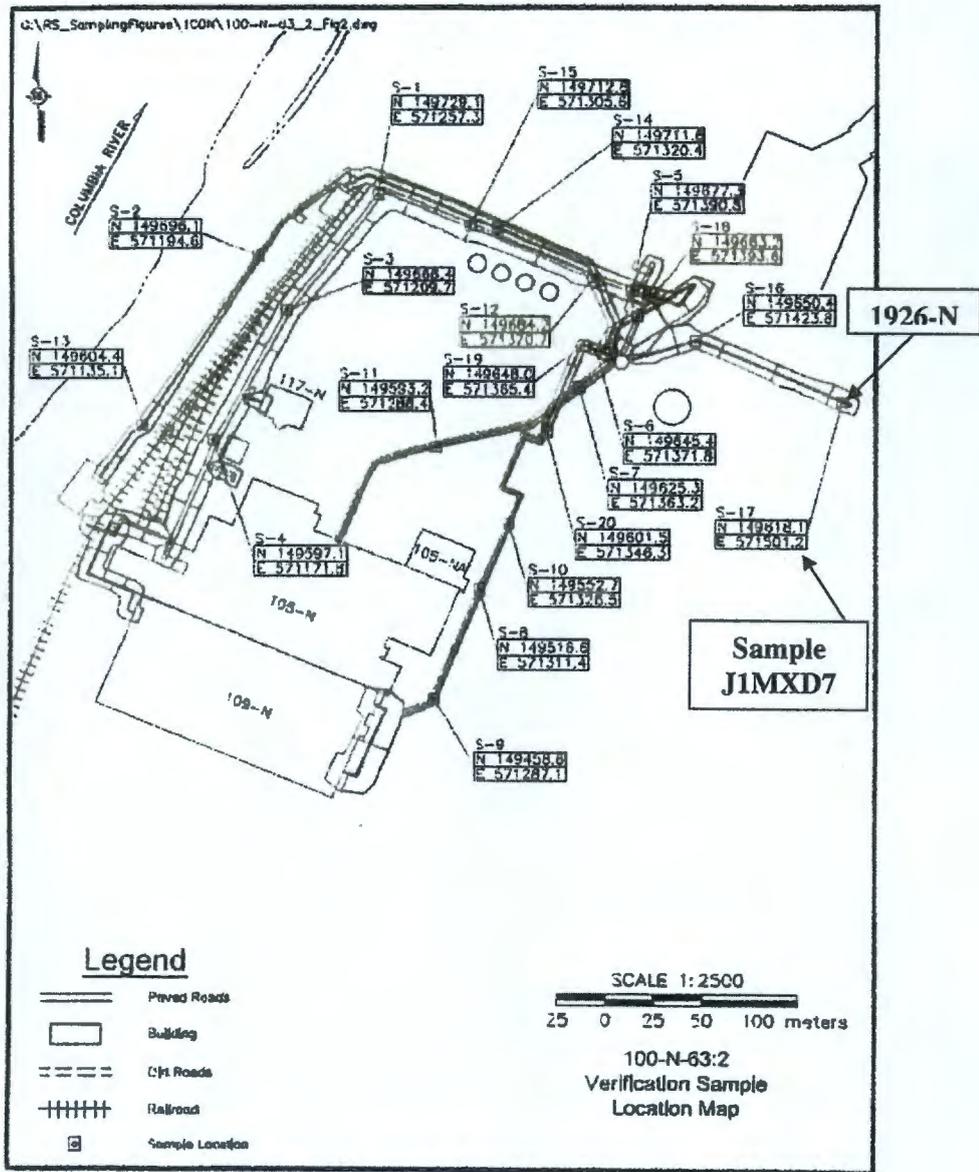
^f The remedial action goal is below the RDL. The value presented is the RDL.

^g The remedial action goal is below the Hanford-specific soil background concentration in column 2. The value presented is the Hanford-specific soil background concentration.

D4 Project Facility Completion Form

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Figure 2. 100-N-63:2 Focused Sample Location Map.



D4 Project Facility Completion Form

Map



Hydrant Names

Fire Hydrants



WasteSitePoints

- Sitecode Missing in SIS

WasteSitesLine (continued)

- Accepted, Interim Closed Out
- Accepted, No Action
- Accepted, Rejected
- Discovery,
- Not Accepted,

Waste Polygon Labels

Waste Line Labels

Main Roads



D4 Project Facility Completion Form

- Accepted,
 - + Accepted, Closed Out
 - ▲ Accepted, Consolidated
 - + Accepted, Interim Closed Out
 - + Accepted, No Action
 - + Accepted, Rejected
 - Discovery
 - Not Accepted,
- WasteSitesLine
- Sitecode Missing in SIS
 - Accepted,
 - Accepted, Closed Out

- WasteSitePolys
- ☒ Sitecode Missing in SIS
 - ☒ Accepted,
 - ☒ Accepted, Closed Out
 - ☒ Accepted, Consolidated
 - ☒ Accepted, Deleted From NPL
 - ☒ Accepted, Interim Closed Out
 - ☒ Accepted, No Action
 - ☒ Accepted, Rejected
 - ☒ Discovery,
 - ☒ Not Accepted (Proposed),
 - ☒ Not Accepted,

- Railroads
-
- Roads
-
- Buildings
- ☐ Unknown
 - ☐ Active
 - ☐ Demolished
 - ☐ Inactive
 - ☐ Removed
- Building Labels