

Control #: D4-100N-0030**FACILITY STATUS CHANGE FORM**

for 100-N Area Ancillary Facilities, DOE/RL-2002-70, Revision 3. The Sampling Determination Form for the 1900-N Facility (SDF-100N-020 Rev 1) 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 1900-N Facility.

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

Several WDS sites are in the general proximity of the 1900-N Facility. Accepted waste sites will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD.

WIDS site 124-N-2 (accepted) was located on the east side of 182-N. It was the septic system for the 182-N and consisted of a septic tank and seepage pit (a.k.a. cesspool). The septic tank was previously pumped out and isolated, and later removed by D4 in 2009 (See Facility Status Change Form D4-100N-0025). The cesspool portion of the system was removed in conjunction with removal of the 182-N Basement walls to a level 3 feet below grade. Any further remediation and verification sampling of the 1607-N-2 WIDS site will be completed under the 100-NR-1/100-NR-2 OU Interim Action ROD.

WIDS site 100-N-7 (182-N Facility Liquid Unplanned Release) was not accepted. It was permitted under the National Pollutant Discharge Elimination System (NPDES), discharge point 005.

In addition to the WIDS sites listed above, various WIDS pipeline series associated with the operation of the 182-N facility are located adjacent to and intersecting the boundary of the 1900-N facility. These sites are 100-N-61:4 and 100-N-84 colon series 1,3,4, and 7. Remediation/removal of these lines will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD.

**Section 3: List of Attachments**

1. Facility Information - Building History and Characterization
2. Pre- and Post-Demolition Photographs
3. Pre- and Post-Demolition GPS Surveys
4. CCN 123355, Washington Closure Hanford IOM, Subject: Status Of The 1900-N Tanks At Completion of D&D Activities
5. Sampling Determination Form for the 1900-N Facility (SDF-100N-020 Rev 1). Includes visual inspection and post demolition Global Positioning Environmental Radiological Surveyor surveys.

Rudy Guercia

DOE-RL

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Lead Regulator

EPA

Ecology

Date

Date

11/1/2012

11/13/2012

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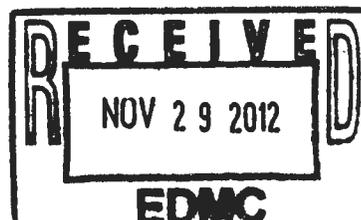
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## FACILITY STATUS CHANGE FORM

<b>Date Submitted:</b> Oct 2, 2012 <b>Originator:</b> David Warren <b>Phone:</b> (509) 539-6040	<b>Area:</b> 100-N <b>Facility ID:</b> 1900-N Water Supply Tanks below grade <b>Action Memorandum:</b> 100-N Ancillary Facilities	<b>Control #:</b> D4-100N-0030
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**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: Utility isolation was performed on 1900-N prior to beginning facility decontamination.

Decontamination and Decommissioning: Hazardous materials, primarily in the form of asbestos, was previously removed from the above grade portion of the facility by the Environmental Restoration Contractor (ERC), which performed the above grade demolition of the facility. There were no hazardous materials associated with the remaining below grade tank foundations (rings) and associated tank bedding material (oiled sands). Waste disposition was performed in accordance with *Removal Action Work Plan for 100-N Ancillary Facilities, DOE/RL-2002-70, Revision 3 (RAWP)*.

Demolition: Demolition of the above-grade structures was completed previously by the ERC in August of 2005, just prior to the expiration of ERC contract and the turnover of the 100-N Area to Washington Closure Hanford for initiation of the River Corridor Cleanup (RCC) contract. The above grade tanks were demolished to the tank foundations (rings) and the area was backfilled with clean fill. Attachment 4 (CCN 123355, Washington Closure IOM, Subject: Status Of The 1900-N Tanks At Completion of D&D Activities) summarizes the condition of the 1900-N area as it was left by the previous contractor. Demolition of the remaining 1900-N below-grade, including removal of the tank rings and oiled sands existing below grade, and associated piping within the excavation layback, began in May of 2012 and was complete in July of 2012. Size reduction of demolition debris and loadout activities spanned the entire time period. Demolition debris was disposed of at the Environmental Restoration Disposal Facility (ERDF). There were no potential contaminants of concern for demolition. There were no anomalies encountered during demolition of the below grade of the 1900-N facility.

#### **Description of Deferral (as applicable):**

No deferral is necessary, all D4 actions are complete.

### 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 below grade of the 1900-N facility was completely demolished as of July of 2012. The excavation required for removal of the tank foundations as bedding sands currently remains open and will be backfilled by Field Remediation (FR) following remedial actions to remove piping in the adjacent areas. Following removal of these pipelines, the area will be backfilled with clean borrow material by FR.

The Sampling Determination Form (Attachment 6) is part of a process implemented by the *Removal Action Work Plan*

**D4 Project Facility Completion Form**

**Attachment 1: Facility Information (4 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 below grade of the 1900-N Water Supply tanks formerly located at the 100-N Area.

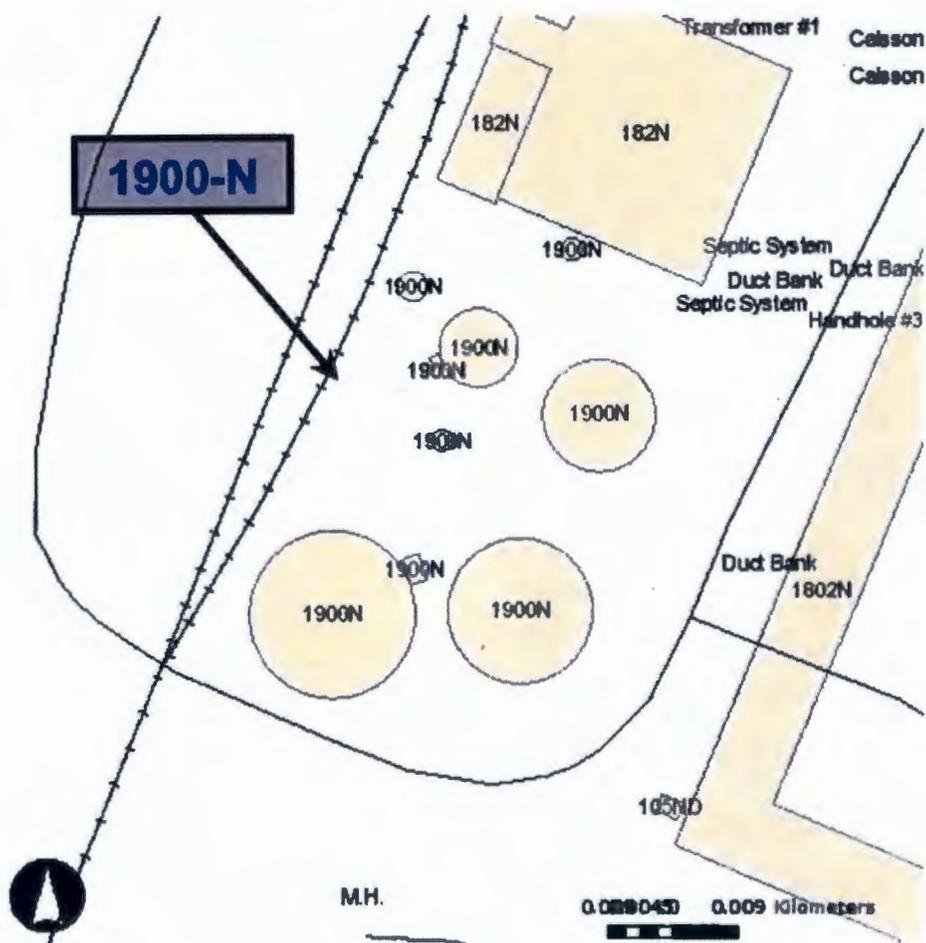
#### Site Information

The 1900-N Water Supply Tanks, located 722 ft southwest of the 105-N Reactor and about 492 ft from the Columbia River, consisted of four large above grade steel tanks on concrete ring foundations, a concrete silo, and associated above grade piping and valves. The After Heat Removal Water Storage Tank was 50 ft diameter by 36 ft high, the Demineralized Water Storage Tank was 75 ft in diameter by 32 ft high, the Filtered Water Storage Tank was 65 ft in diameter by 40 ft high, and the Emergency Raw Water Storage Tank was 35 ft in diameter ft by 35 ft high.

The tanks were used to store, receive, and distribute water to N Reactor and process systems. The Afterheat Removal Water Storage Tank was designed as a reservoir of demineralized water for makeup to the secondary loop for normal operation and for flooding of the secondary loop in the water-to-water operation. It also served as storage for water spilled for level control of the secondary loop, water not needed in the secondary loop after the water-to-water operation, and condensate returns from various plant heaters. The Demineralized Water Storage Tank was designed as a reservoir of effluent water from the demineralizer plant, and as the normal supply to the high and low pressure injection pumps. It also served as an emergency supply to the pumps of the afterheat removal fill system, the fog spray and fire protection pumping systems, the high lift emergency raw water pumping system, and the emergency raw water storage tank. The Filtered Water Storage Tank was designed for storage of filtered water pumped to it from the 183-N Building. The Emergency Raw Water Storage Tank was designed as a reservoir of tempered raw water for reactor emergency once-through cooling. The Silo was designed to supply raw water to the High Lift piping.

A map depicting the location of the 1900-N Water Supply Tanks is included in Figure 1 (Note: WIDS sites are not identified in the illustration). Photographs of the 1900-N Water Supply Tanks are included in Attachment 2.

D4 Project Facility Completion Form  
**Figure 1. Location of the 1900-N Water Supply Tanks**



**Radiological and Industrial Hygiene Surveys**

Table 1 summarizes the industrial hygiene, radiological control, and asbestos samples collected, or provides rationale as to why this information wasn't necessary, to support below grade demolition of the 1900-N Water Supply Tanks.

**Table 1. Summary of Samples/Surveys Collected for 1900-N**

Type	Quantity	Method Detection Limits	Results
Radiological Scoping Surveys	N/A	N/A	Radiological scoping surveys were not performed for the removal of the below grade of the 1900-N. The above grade of the facility had previously been demolished by another contractor and final surveys (see attachment 4) did not identify contamination.

**D4 Project Facility Completion Form**

<b>Type</b>	<b>Quantity</b>	<b>Method Detection Limits</b>	<b>Results</b>
Post Demolition Radiological Surveys	N/A	N/A	No down-posting survey was required for the below grade of the 1900-N Facility as the demolition was performed as radiologically clean.
Global Positioning Environmental Radiological Surveyor (GPERS) Surveys	2 Survey(s) 1 Recent 1 Historical	N/A	A total of 4633 data points were taken at the 1900-N footprint excavation. 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 recent GPERS survey map is included in Attachment 5. The historical GPERS map for removal of the above grade structure is included in Attachment 4.
Industrial Hygiene Surveys, Scoping and in Process	N/A	N/A	An Industrial Hygiene Baseline survey was not performed for below grade demolition of the 1900-N as the scope of work included removal of only the below grade components of the facility.
Asbestos – Thermal System Insulation and Miscellaneous Material	N/A	N/A	An asbestos inspection was not performed at the 1900-N facility as removal of Asbestos and demolition of the above grade structures of the 1900-N had been performed by a previous contractor. It should be noted that there was no Asbestos associated with the components on the remaining below grade structure.

**Civil Survey Information**

Post-demolition Global Positioning System (GPS) civil surveys were performed on the 1900-N Water Supply Tanks excavation. Copies of the GPS surveys are provided in Attachment 3.

**Anomalies Discovered During Demolition**

No anomaly was reported during the below grade demolition of the 1900-N Water Supply Tanks.

**Final Building Status and Underlying Soil**

The below grade of the 1900-N Water Supply Tanks, including the tank foundation rings, oiled bedding sands, and any process piping located within the excavation laybacks, was removed in entirety by the D4 organization. Demolition and load out was completed on July of 2012. The debris was loaded into roll-off containers and shipped to the Environmental Restoration Disposal Facility (ERDF) for disposal.

A GPERS survey and visual inspection (See Attachment 5) were performed at the excavated 1900-N footprint. No soil staining or radiological contamination was identified. Table 2 summarizes the Contaminants of Concern for facility demolition and assessment of no impact to the underlying soils.

**D4 Project Facility Completion Form**  
**Table 2. Contaminants of Concern for Facility Demolition**

<b>Contaminant of Concern</b>	<b>Management Practice/Determination of No Impact to the Soil</b>
None	There were no Hazardous Substances associated with the below grade demolition of the 1900-N facility. 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 survey maps and visual inspection are included in Attachment 5.

The excavation is currently open awaiting removal of adjacent WIDS identified pipelines slated for remediation. The site will be backfilled and graded to match the surrounding terrain by the Field Remediation Organization following removal of the pipelines and the completion of any required verification sampling.

**D4 Project Facility Completion Form**

**Attachment 2: Photographs (2 pages)**

**D4 Project Facility Completion Form**



**1900-N Water Supply Tanks prior to above grade demolition (July 2005)**



**1900-N Water Supply Tanks following above grade demolition and backfill**

1900-N Water Supply Tanks Completion

**D4 Project Facility Completion Form**



**1900-N Water Supply Tanks following below grade demolition**

**D4 Project Facility Completion Form**

**Attachment 3: GPS Civil Survey Information (5 pages)**

0636030

# GPS Post Demo Survey Report for 1900N Tank Pads

*Project : 1900\_tanks*

User name	maaye	Date & Time	4:57:40 PM 7/19/2012
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		

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Survey Project Name:	1900 Tank Pads - Post Demo Survey
Date:	7/18/2012
Equipment:	5800
Survey Purpose:	Post Demo Survey for 1900-N tank pads
Requested By:	Dave Warren, Clay McCurley
Location:	100N
Charge Code:	
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:	07/17/12
Fieldwork Completion Date:	07/17/12
Notes:	

Name	Northing	Easting	Elevation	Feature Code	Description:
1	149313.422m	571066.632m	139.202m	top	
2	149318.911m	571065.935m	139.397m	top	
3	149322.641m	571063.667m	139.708m	top	
4	149325.582m	571060.023m	139.841m	top	
5	149327.410m	571053.910m	139.862m	top	
6	149326.150m	571048.552m	139.876m	top	
7	149324.404m	571046.583m	139.738m	top	
8	149324.275m	571043.147m	139.791m	top	
9	149322.624m	571041.451m	139.827m	top	
10	149326.318m	571037.303m	139.672m	top	
11	149329.535m	571033.461m	139.784m	top	
12	149328.681m	571028.185m	139.786m	top	
13	149327.231m	571021.253m	139.527m	top	
14	149321.623m	571015.920m	139.745m	top	
15	149314.512m	571013.488m	139.873m	top	
16	149307.212m	571014.300m	139.727m	top	
17	149303.807m	571016.255m	139.716m	top	
18	149301.976m	571021.233m	139.870m	top	
19	149299.048m	571026.968m	139.674m	top	
20	149296.763m	571032.511m	139.597m	top	
21	149299.347m	571035.260m	139.589m	top	
22	149302.779m	571037.549m	139.730m	top	
23	149304.030m	571040.284m	139.856m	top	
24	149301.670m	571046.157m	139.862m	top	
25	149300.806m	571052.373m	139.327m	top	
26	149300.623m	571050.426m	140.131m	top	
27	149300.068m	571056.064m	139.319m	top	
28	149301.725m	571059.595m	139.129m	top	
29	149304.037m	571062.493m	139.195m	top	
30	149307.942m	571065.479m	139.183m	top	
31	149330.518m	571068.894m	139.524m	top	
32	149334.108m	571072.594m	139.618m	top	
33	149338.519m	571074.749m	139.436m	top	
34	149342.136m	571074.456m	139.422m	top	

35	149346.335m	571071.563m	139.494m	top
36	149349.132m	571064.851m	139.440m	top
37	149349.357m	571060.447m	139.534m	top
38	149347.973m	571057.924m	139.357m	top
39	149344.664m	571055.703m	139.131m	top
40	149340.208m	571053.921m	139.317m	top
41	149335.547m	571055.016m	139.618m	top
42	149332.203m	571058.558m	139.825m	top
43	149330.176m	571063.052m	139.969m	top
44	149329.339m	571065.981m	139.879m	top
45	149340.656m	571049.601m	139.206m	top
46	149340.605m	571045.601m	139.304m	top
47	149342.577m	571042.291m	139.354m	top
48	149346.311m	571039.733m	139.380m	top
49	149351.441m	571039.283m	139.391m	top
50	149355.822m	571041.311m	139.284m	top
51	149358.196m	571044.964m	139.224m	top
52	149356.633m	571050.909m	139.394m	top
53	149354.249m	571054.596m	139.440m	top
54	149350.615m	571056.508m	139.445m	top
55	149347.462m	571055.600m	139.223m	top
56	149344.546m	571054.022m	139.120m	top
57	149342.267m	571052.344m	139.266m	top
58	149308.056m	571041.810m	138.135m	toe
59	149307.053m	571045.025m	138.082m	toe
60	149304.052m	571049.371m	138.049m	toe
61	149303.065m	571054.254m	137.970m	toe
62	149302.686m	571057.583m	138.097m	toe
63	149306.242m	571061.697m	138.155m	toe
64	149309.727m	571062.967m	137.949m	toe
65	149313.701m	571063.737m	137.883m	toe
66	149317.087m	571063.635m	137.860m	toe
67	149320.140m	571060.686m	137.800m	toe
68	149322.744m	571057.249m	137.864m	toe
69	149323.658m	571053.350m	137.927m	toe
70	149322.130m	571050.048m	137.979m	toe
71	149320.868m	571047.260m	138.006m	toe
72	149318.224m	571045.667m	137.887m	toe
73	149315.860m	571043.201m	137.982m	toe
74	149313.972m	571041.910m	137.998m	toe
75	149316.711m	571038.063m	138.023m	toe
76	149320.743m	571035.811m	137.906m	toe
77	149324.578m	571031.598m	137.879m	toe
78	149324.195m	571026.137m	137.881m	toe
79	149323.012m	571022.640m	137.806m	toe
80	149322.415m	571021.204m	137.831m	toe
81	149319.667m	571018.885m	137.863m	toe
82	149315.381m	571017.543m	137.788m	toe
83	149310.992m	571017.361m	137.831m	toe
84	149307.266m	571017.999m	138.083m	toe
85	149304.643m	571021.913m	138.575m	toe
86	149302.869m	571026.036m	138.351m	toe
87	149301.143m	571029.152m	138.389m	toe
88	149299.081m	571031.025m	138.436m	toe
89	149301.341m	571032.483m	138.290m	toe
90	149304.538m	571034.719m	138.250m	toe
91	149307.019m	571037.747m	138.278m	toe
92	149308.143m	571031.636m	138.218m	topo
93	149307.691m	571028.270m	138.053m	topo
94	149308.131m	571025.050m	138.205m	topo
95	149309.514m	571020.141m	137.923m	topo
96	149315.647m	571021.339m	137.843m	topo
97	149312.857m	571027.120m	137.939m	topo
98	149316.770m	571028.437m	137.793m	topo
99	149319.292m	571023.587m	137.833m	topo
100	149319.497m	571030.395m	137.837m	topo
101	149315.808m	571034.151m	138.113m	topo
102	149314.893m	571028.721m	137.815m	topo
103	149310.815m	571033.299m	138.157m	topo
104	149310.918m	571037.369m	138.294m	topo
105	149310.131m	571041.969m	138.006m	topo

106	149312.401m	571042.963m	137.744m	topo
107	149313.276m	571046.682m	138.181m	topo
108	149315.881m	571050.392m	138.378m	topo
109	149317.782m	571055.997m	138.208m	topo
110	149313.388m	571059.259m	138.146m	topo
111	149308.079m	571057.347m	138.088m	topo
112	149308.134m	571051.901m	138.280m	topo
113	149311.893m	571052.537m	138.404m	topo
114	149313.743m	571056.224m	138.288m	topo
115	149341.267m	571057.183m	138.145m	toa
116	149337.028m	571057.243m	138.301m	toa
117	149334.124m	571060.476m	138.319m	toa
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119	149332.799m	571068.511m	138.322m	toa
120	149337.367m	571071.558m	138.287m	toa
121	149341.336m	571072.889m	138.530m	toa
122	149344.327m	571070.514m	138.533m	toa
123	149346.585m	571067.138m	138.497m	toa
124	149346.506m	571063.298m	138.413m	toa
125	149346.397m	571059.881m	138.268m	toa
126	149344.120m	571057.809m	138.213m	toa
127	149342.251m	571060.666m	138.285m	topo
128	149337.769m	571061.431m	138.376m	topo
129	149336.660m	571064.962m	138.355m	topo
130	149340.355m	571068.146m	138.467m	topo
131	149342.684m	571064.902m	138.412m	topo
132	149342.597m	571050.559m	138.592m	toa
133	149344.975m	571053.239m	138.693m	toa
134	149348.981m	571055.487m	138.851m	toa
135	149352.059m	571054.690m	138.793m	toa
136	149354.785m	571051.835m	138.683m	toa
137	149356.208m	571048.468m	138.585m	toa
138	149356.645m	571044.214m	138.490m	toa
139	149354.109m	571041.572m	138.444m	toa
140	149349.636m	571040.377m	138.404m	toa
141	149345.437m	571041.422m	138.499m	toa
142	149343.068m	571044.521m	138.416m	toa
143	149342.387m	571047.340m	138.386m	toa
144	149346.149m	571047.300m	138.505m	topo
145	149351.504m	571046.820m	138.504m	topo
146	149348.162m	571050.830m	138.663m	topo
147	149337.464m	571043.035m	139.523m	topo
148	149329.177m	571040.370m	139.647m	topo
149	149332.925m	571032.503m	139.736m	topo
150	149341.561m	571033.818m	139.516m	topo
151	149352.152m	571033.274m	139.483m	topo
152	149357.599m	571030.920m	139.599m	topo
153	149374.423m	571035.209m	139.229m	topo
154	149367.049m	571045.179m	139.493m	topo
155	149353.880m	571058.571m	139.696m	topo
156	149354.066m	571065.272m	139.541m	topo
157	149347.122m	571073.640m	139.565m	topo
158	149342.147m	571080.411m	139.594m	topo
159	149343.243m	571085.016m	139.574m	topo
160	149333.389m	571077.185m	139.499m	topo
161	149326.638m	571071.893m	139.214m	topo
162	149326.389m	571064.796m	139.906m	topo
163	149330.089m	571055.807m	139.917m	topo
164	149336.778m	571051.087m	139.585m	topo
165	149330.557m	571048.586m	139.837m	topo
166	149333.210m	571044.327m	139.684m	topo
167	149332.323m	571037.723m	139.598m	topo
168	149333.379m	571026.436m	139.695m	topo
169	149337.648m	571019.848m	139.131m	topo
170	149328.617m	571014.211m	139.564m	topo
171	149318.407m	571009.644m	139.800m	topo
172	149306.338m	571011.670m	139.730m	topo
173	149300.680m	571016.920m	139.720m	topo
174	149294.199m	571033.263m	139.490m	topo
175	149299.422m	571041.738m	139.694m	topo
176	149296.675m	571049.435m	139.373m	topo

177	149289.989m	571044.928m	139.317m	topo
178	149297.364m	571061.370m	139.203m	topo
179	149310.864m	571068.947m	139.171m	topo
180	149323.937m	571075.495m	139.241m	topo
181	149320.101m	571069.838m	139.253m	topo

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**D4 Project Facility Completion Form**

**Attachment 4: CCN 123355, Washington Closure Hanford IOM, Subject: Status Of The  
1900-N Tanks At Completion of D&D Activities  
(5 pages)**

**Interoffice Memorandum**

---

**TO:** R. R. Nielson, X5-50, w/a**DATE:** September 1, 2005**COPIES:** I. D. Jacques, L1-04, w/a  
WCH File, H0-33, w/a**FROM:** R. J. Nielson, L1-04  
*R. J. Nielson 9/1/05***SUBJECT: STATUS OF THE 1900-N TANKS AT COMPLETION OF D & D ACTIVITIES**

The 1900-N Water Supply Tanks consisted of four large steel tanks, a concrete silo, and associated above grade piping and valves. The after-heat removal water storage tank, demineralized water storage tank, filtered water storage tank, emergency raw water storage tank, and the concrete silo were located in the 100-N Area near the 182-N Building and were used to store, receive, and distribute water to the N-Reactor and process systems.

As of August 2005, the tanks, silo, and above grade piping have been removed and the area has been backfilled with clean fill and graded to the natural slope of the surrounding terrain. The concrete tank foundations and below grade piping still remain.

The following is information on the final status of the 1900-N Tanks at completion of D&D activities. This information may be used to update the WIDS database and to provide historical information to the remedial action organization to use when the concrete rings, below grade piping, and soils are removed.

- One oiled sand sample (J036N8) was collected from below the filtered water tank. The sample was collected to support the decision to leave the sand in place until the remedial action organization removes the concrete rings and surrounding soil. Sample collection is described in Logbook EL-1516-4, page 99. Final sample data (SDG H3163) has been reviewed and no contaminants exist that would require the sand be removed at time of demolition of the tanks. The oiled sand exists for each of the four tanks.
- Two water samples were collected from piping associated with the 1900-N tanks. The samples were collected to support the decision to use the water for dust suppression at the 1900-N site. One sample (J030N8) was collected from piping associated with the filtered water tank. Sample collection is described in Logbook EL-1516-4, pages 90-91. One sample (J03748) was collected from piping associated with the Emergency Raw Water and the Afterheat Removal tanks. Sample collection is described in Logbook EL-1516-5, page 24. Sample data from SDG H3125 and SDG H3178 were reviewed and approval was given by the Environmental Lead to use the water as dust suppression during the demo of the 1900-N tanks.

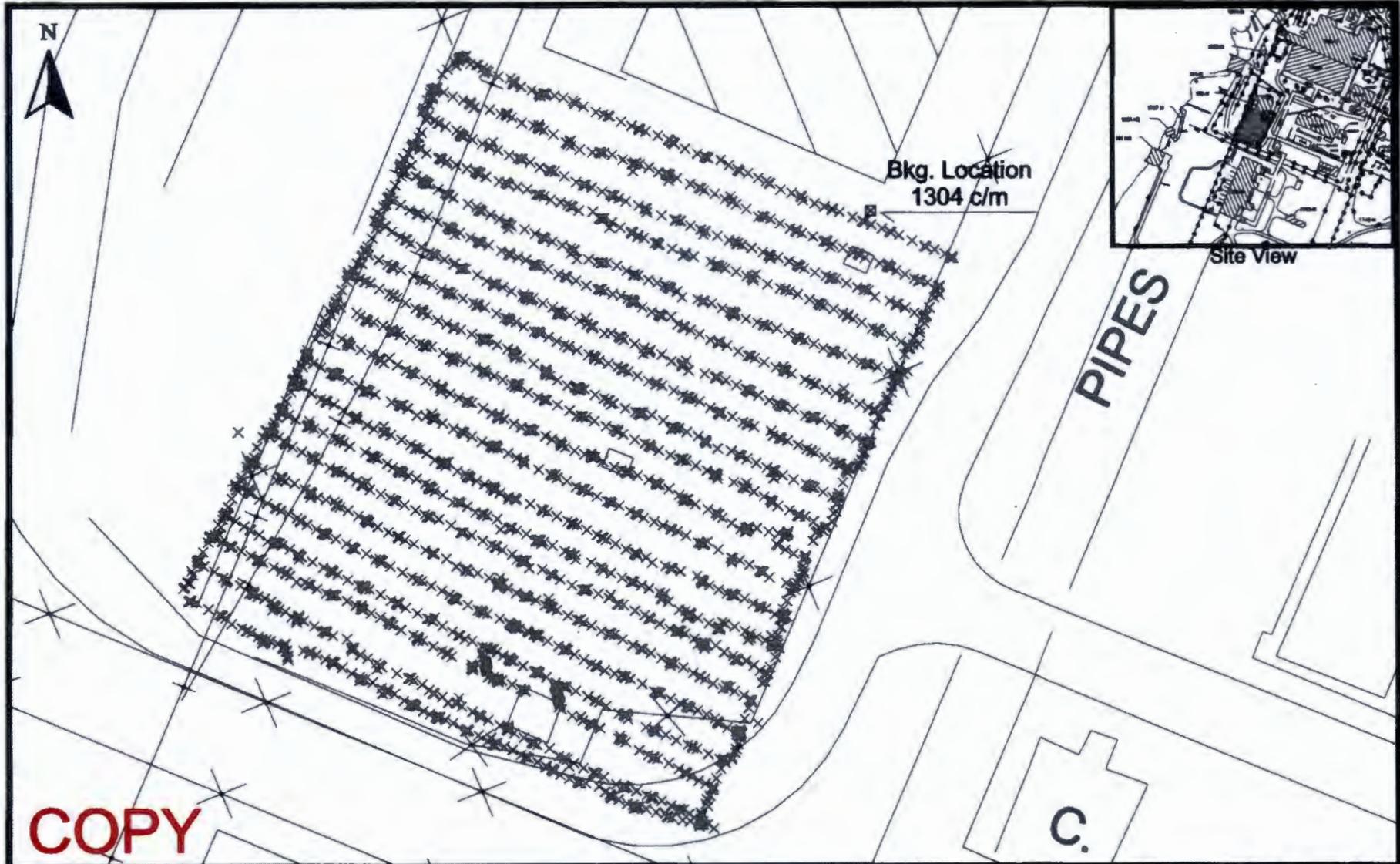
- A global positioning environmental radiological survey (GPERS) was conducted after the tanks and silo was removed and the area was backfilled with clean material. The GPERS survey documents the level of contamination remaining following D&D activities of the 1900-N tanks and silo. There was no radiological contamination detected above background. The GPERS map is attached.
- A global positioning system (GPS) survey using Washington State Plane coordinates was conducted on some of the pipes associated with the 1900-N tanks. A portion of the survey was performed after the pipes were cut and backfilled, therefore making it difficult to locate all pipes. Not all of the pipes are identified on the GPS survey. The 1900-N piping system drawings should be used to identify all pipes that remain below grade. A copy of the Survey Project Log is attached.
- The Characterization Summary Report for the 1900-N tanks, CCN# 116918, provides historical information about the tanks including information used to develop the waste profile (WP-1900N001) for the waste generated during D&D of the tanks.
- Two Waste Information Data Systems (WIDS) sites are located near where the 1900-N tanks existed. The WIDS site number, name, and classification are as follows:
  - 100-N-7, 182-N Facility Liquid Unplanned Release (remediated) – rejected.
  - 124-N-2, 124-N-2 Septic Tank, 100-N Sanitary Sewer System No. 2 – accepted.

All debris from the demolition of the tanks and silo have been removed and disposed of at the Environmental Restoration Disposal Facility (ERDF). The 1900-N site has been covered with approximately 18-inches of clean fill and is posted as an underground radioactive material (URM) area.

Should you have any questions or need any additional information, please call me on 372-9106.

RJN/ads

Attachments: 1. 100N Remedial Action 1900N GPERS Radiological Survey Gamma Track Map  
2. Survey Project Log



**COPY**

Legend	Summary Statistics
CPM	Coverage File: N217
×	Number of Data Pnts: 5083
●	Type of Survey: 'Gamma'
●	Max GCPM: 1542
●	Avg Bkg CPM: 1304
●	Survey Date: 08/05/2005
●	Area Surveyed: 4170 m2
●	Project File: N217
●	Pdf File: ESRFRM050188C

**100N Remedial Action**  
**1900N**  
**GPERS Radiological Survey**  
**Gamma Track Map**

10 0 10 Meters

*Survey Map Prepared By: Marc Wendling - ESI*

# Survey Project Log

**Project : 930**

<b>User name</b>	h0056253	<b>Date &amp; Time</b>	1:31:32 PM 7/26/2005
<b>Coordinate System</b>	US State Plane 1983	<b>Zone</b>	Washington South 4602
<b>Project Datum</b>	NAD 1983 (Conus)		
<b>Vertical Datum</b>		<b>Geoid Model</b>	Geoid03
<b>Coordinate Units</b>	Meters		
<b>Distance Units</b>	Meters		
<b>Height Units</b>	Meters		

Survey Project Name/Title:	930
Survey Purpose:	Survey Pipes at 1900N Tank Farm and 1314N
Requested By:	Dave Encke
Requested By:	ERC
General Site Location:	100N
Charge Code:	R1900N 2F00, 9 hrs 6/21/05; 13 hrs 7/25 & 26/05
Number of Points Surveyed:	77
Estimated Horizontal Precision:	<=0.015m
Estimated Vertical Precision:	<=0.020m
Estimated Accuracy @ 1 Sigma:	2cm + 10E-6 X Length of Baseline
Surveyor:	Tim Johnson
Computer Software Used:	Trimble Geomatics Office 1.5
Computer Hardware Used:	WC79347
Survey Equipment Used:	Trimble 5800 Receiver
Control Monuments Used:	S324, HSWB-041
Survey Method:	PPK, RTK, Laser
Fieldwork Start Date:	June 21, 2005
Fieldwork Completion Date:	July 25, 2005

Name	Northing	Easting	Elevation	Feature Code	Description
P1494	149729.890	571244.800	147.340	1314N	
P1495	149715.319	571233.733	147.370	1314N	
P1496	149721.057	571226.152	147.366	1314N	
P1497	149733.981	571252.395	140.224	CNR	
P1498	149719.294	571241.182	140.087	CAISSON	
P1499	149714.375	571237.688	140.084	CAISSON	
P1500	149709.381	571234.107	140.074	CAISSON	
P1501	149706.433	571232.080	140.080	CAISSON	
P1502	149701.345	571228.553	140.084	CAISSON	
P1503	149696.340	571224.917	140.093	CAISSON	
P1504	149686.630	571218.044	140.057	CAISSON	
P1505	149681.469	571215.148	140.220	CORNER	
P1506	149680.516	571216.605	140.175	CORNER	
1071	149342.736	571078.754	143.299	6" Pipe	
1072	149347.674	571074.032	142.983	6" Pipe	
1073	149352.290	571074.715	142.199	6" Pipe	
1074	149357.633	571071.531	136.548	6" Pipe	
1075	149365.728	571059.607	146.412	40" Pipe	
1076	149386.810	571060.532	150.434	4" Pipe	
1077	149371.013	571043.429	144.705	40" Pipe	

*1900-N Tanks*

1078	149376.314	571140.928	136.187	mon	
1079	148640.980	571961.449	142.220	S324	Observed
S324	148641.070	571961.243	143.564	Published	
CREFC001	141087.701	579578.168	328.536	Gable Mt	
1093	150168.441	571820.313	144.948		
HSWB-041	150168.446	571820.328	144.626		
1094	149715.372	571233.586	140.255	1314N	
1095	149302.517	571051.059	139.792	FW South Right Pipe	
1096	149303.330	571051.631	139.773	FW Loop Overflow	
1097	149303.611	571047.323	139.786	FW South Left Pipe	
1098	149322.330	571065.856	139.725	FW Feed	
1099	149324.683	571065.724	139.356	FW Return	
1100	149325.468	571066.580	139.425	FW Overflow	
1101	149325.973	571055.295	139.688	FW Large Pipe	
1102	149323.609	571048.361	139.695	FW Return	
1103	149328.562	571029.354	139.588	DMW Exit	
1104	149321.281	571040.114	139.462	DMW Northeast	
1105	149320.382	571040.829	139.657	DMW Northeast	
1106	149320.527	571039.773	139.630	DMW Northeast	
1107	149346.884	571054.941	139.886	RW East 12"	
1108	149345.570	571073.041	139.691	AHR 6" Northeast	
1109	149336.454	571073.184	139.665	AHR-18" East	
1110	149696.060	571230.698	139.983	C1	
1111	149672.803	571210.722	140.043	C2	

1900-N Tanks

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**D4 Project Facility Completion Form**

**Attachment 5: Sampling Determination Form for the 1900-N Water Supply Tanks  
(SDF-100N-020 Rev. 1)  
(10 pages)**

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-020 Rev.1

*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.*

Building Name: Water Supply Tanks

Building Number: 1900-N

WDS Sites Associated or Adjacent:

- 100-N-7 (Not Accepted)
- 100-N-61:4 (Accepted)
- 100-N-84:1, 3, 4, 7 (Accepted, colon 7 was reclassified as No Action)

Other:

The 1900-N facility consisted of a concrete silo, four above-grade steel tanks, and associated pipelines (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N). The four tanks consisted of the After Heat Removal Water Storage Tank, the Demineralized Water Storage Tank, the Filtered Water Storage Tank, and the Emergency Raw Water Storage Tank (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N). The 1900-N facility received water from, and supplied water to, the 105-N Reactor and various reactor process systems (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N).

Demolition of the above grade portions of the 1900-N facility occurred from April to August of 2005 (EL-1589 pgs. 5-98). The silo, four tanks, and associated above-grade piping were removed and the footprint was backfilled with approximately 18 inches of clean soil (CCN 123355 pgs. 1 & 2). Demolition debris were disposed of at the Environmental Restoration Disposal Facility (ERDF) (CCN 123355 pg. 2).

A second demolition effort was performed at the 1900-N facility in May-July of 2012 to remove the concrete tank foundations, below-grade piping, and contaminated soils (oil stained sands) that were previously left in place. The foundations were entirely removed and portions of the below-grade piping and adjacent contaminated soils within the layback of the excavation were removed. The Field Remediation (FR) organization will remove all residual portions of the below-grade piping that weren't removed by the D4 organization.

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

Historical Site Assessment: N/A

Site Walkdown: Visual Inspection of 1900-N excavation soils: CCN 166744

IH Characterization Report: N/A

Radiological Survey: Global Positioning Environmental Radiological Surveyor (GPERS) Surveys: ESR-FRM-05-0188C ESRFRM120113C

IHC/FHC Document:

• 100-N Ancillary Facilities  
Preliminary Hazard Classification:  
CCN 095435

• Initial Hazard Categorization (IHC)  
Documentation Form for 1900-N:  
IHC-2005-0005

• RCC Stewardship Information System (SIS)  
WDS/SIS: Facility Summary Report for 1900-N

PDSR: N/A

Facility Inspection: Facility Inspection Summary for 1900-N  
Water Supply Tanks: CCN 116918

Waste Characterization Checklist: N/A

Summary Report: Status of the 1900-N Tanks at  
Completion of D & D Activities: CCN  
123355

Other:

- Environmental Restoration Disposal Facility Waste Profile Datasheet for 1900-N, Rev. 2: WP-1900N001
- ERC Surveillance Report on Asbestos Spill Clean Up at 1900-N: SH-2005-S-014
- Logbook for 1900-N Demolition: EL-1589

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-020 Rev.1

- "Pre-Existing" Conditions Survey of Hanford Site Facilities Phase II, Rev. 0: BHI-00221
- Radiological Survey Records: RSR-100SMT-04-0291 & RSR-107N-05-0353
- Photographs of the 1900-N Facility Pre-Demolition, No Time Stamp: SIS Facility Summary Report for 1900-N pgs. 4-11
- Photographs of the 1900-N Facility Demolition, Time-Stamped: SIS Facility Summary Report for 1900-N pgs. 12 & 13 (4/28/2005)
- Photograph of the 1900-N Facility Post-Demolition, No Time Stamp: SIS Facility Summary Report for 1900-N pg. 14
- Photograph of the 1900-N Facility Post-Demolition, Time Stamped: CCN 166744, pgs. 2,3,5, and 6 (7/12/2012)

Check all that apply:

- None       Asbestos containing material       Lead       PCBs/PCB Articles       Oils/Greases  
 Chemicals    List: Silver Lead based paint on exterior of the Filtered Water Storage Tank (CCN 116918 pg. 5)  
 Radiological Contamination     Mercury/Mercury Devices  
 Other: Coal tar paint inside the Filtered Water Storage Tank (CCN 116918 pg. 4)

References/Comments:

- Asbestos containing material: Asbestos was present on tank exteriors and associated piping and possibly gasket material (IHC-2005-0005 pg. 2, SH-2005-S-014 pg. 1, and CCN 116918 pg. 5). At least some of this asbestos was friable (BHI-00221 pg. 3-113).
- Lead: Lead paint was present on tank exteriors (CCN 116918 pgs. 4 & 5).
- Oils/Greases: Soil beneath the facility tanks was stained with oil (CCN 116918 pg. 6). The stained soil was determined to be oil impregnated sand utilized to inhibit corrosion of the bottom surfaces of the tanks.
- Radiological Contamination: Facility piping was potentially radiologically contaminated when contaminated water was transferred to the facility tanks (CCN 095435 Table A-1 pg. 8). The tanks were labeled "Potentially Internally Contaminated" (IHC-2005-0005 pg. 2 & CCN 116918 pg. 5). There was a potential for low levels of radiological contamination to be present in the After Heat Removal Tank because it received secondary reactor cooling water (CCN 116918 pg. 5).

Liquids:  Yes     No

If yes, describe source and nature of liquids:

This facility contained four water storage tanks and associated piping (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N). The piping transported water between the tanks and the 105-N Reactor and various reactor process systems (BHI-00221 pg. 3-113 & SIS Facility Summary Report for 1900-N). The water at the facility was potentially radiologically contaminated (CCN 095435 Table A-1 pg. 8, IHC-2005-0005 pg. 2, and CCN 116918 pg. 5).

Were the hazardous substances removed from the facility prior to demolition?     Yes     No

As verified by what documentation:

Asbestos was removed from the exteriors of the tanks and above-grade piping prior to demolition (IHC-2005-0005 pg. 2, SH-2005-S-014 pg. 1). A piece of asbestos, measuring approximately 324 sq. in., was discovered during demolition and was cleaned up as a spill (SH-2005-S-014 pg. 1).

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition?     Yes     No     N/A

References/Comments:

Paint flakes were knocked off of facility tanks during demolition. The tank exteriors had been painted with lead paint and at least one of the tanks had an elevated lead concentration (CCN 116918 pgs. 4-5).

List any hazardous materials left in the building for demolition:

- Silver paint on exterior of the Filtered Water Storage Tank
- Coal tar paint inside the Filtered Water Storage Tank
- Lead paint present on tank exteriors
- Oil-stained soil beneath the facility tanks
- Potentially radiologically contaminated piping and tanks

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?

Historical knowledge of processes associated with this facility support the conclusion that the facility was not chemically or radiologically contaminated. However, demolition of the above grade tank structures and components in 2005

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-020 Rev.1

appeared to have contributed to leaving paint flakes containing high lead concentration in the facility footprint soils following demolition. The soils, and presumably the soil contaminated with paint chips, have since been removed with the remainder of the below grade of the facility.

**Chemical:**

Paint flakes created during demolition of the tanks would likely have been removed with the remainder of the below grade of the facility. The oil-impregnated sands present beneath the tanks was located within the facility foundations, which were removed during below grade demolition.

**Radiological:**

One radiological survey performed at the 1900-N facility did not detect contamination, while another radiological survey identified contamination on the exterior of the Demineralized Water Storage Tank (RSR-107N-05-0353 & RSR-100SMT-04-0291). The GPERS survey of the 1900-N facility footprint, following demolition of the above grade tanks did not detect radiological contamination

(ESR-FRM-05-0188C & RSR-107N-05-0353). Accordingly, any radiological contamination present in the facility tanks or piping would have been removed during demolition.

The GPERS survey of the excavation following removal of the tank foundation rings and oil impregnated sands did not detect radiological contamination (ESRFRM120113C).

**Comments:**

Based on sample analysis, it was determined that removal of the oiled sands within the tank foundations was not necessary during above grade demolition of the tanks in 2005 (CCN 123355 pg. 1).

Based on sample analysis, water from piping associated with the 1900-N facility was approved for use as dust suppression (CCN 123355 pg. 1).

Pertinent design drawings include H-1-30541 Rev. 5, H-1-30542 Rev. 6, H-1-37147, H-1-37148, and H-1-45007 Sheets 9, 10, 16, and 17.

Were any stained soils/anomalies discovered during or after demolition of the facility?  Yes  No

**References/Comments:**

See visual inspection CCN 166744 (attached).

Were samples taken of the stained soils/anomalies?  Yes  No  N/A

**References/Comments:**

Do results of the samples indicate that chemical contamination exists?  Yes  No  N/A

**References/Comments:**

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

Did radiological surveys (GPERS or equivalent) identify contamination?  Yes  No

**References/Comments:**

One radiological survey record documented the presence of radiological contamination on the exterior of the Demineralized Water Storage Tank (RSR-100SMT-04-0291). No other reviewed radiological survey identified contamination. Radiological contamination was not detected during the GPERS survey of the facility footprint following removal of the above grade tanks (ESR-FRM-05-0188C). Additionally, the GPERS survey performed following removal of the tank foundation rings and oil impregnated sands did not identify contamination (ESRFRM120113C).

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-020 Rev.1

Were samples taken of the radiologically contaminated soils?  Yes  No  N/A

**References/Comments:**

This question is not applicable because the identified radiological contamination was not present in facility soils, but on the Demineralized Water Storage Tank (RSR-100SMT-04-0291).

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

The GPERS survey of the facility footprint, or of the excavation following removal of the oil impregnated sands did not detect radiological contamination (ESR-FRM-05-0188C and ESRFRM120113C ).

Were the contaminated materials removed?  Yes  No  N/A

**References/Comments:**

The Demineralized Water Storage Tank was removed during demolition and disposed at the ERDF (CCN 123355 pgs. 1 & 2). The tank foundation was subsequently demolished and removed in 2012.

Were there any WIDS sites affected by D4 activities?  Yes  No

**If yes, list the WIDS sites:**

124-N-2: This site was a septic tank. Movement of heavy equipment during 1900-N demolition caused a partial collapse of 124-N-2 (EL-1589 pg. 87 & SIS Facility Summary Report for 1900-N pgs. 1 & 2). The septic tank portion of the system was removed by D4 in 2005, the cesspool section of the system was removed by D4 in 2012 in conjunction with demolition of the 182-N Building.

100-N-61:4 and 100-N-84:1, 3, 4, 7: These sites consist of pipelines existing underneath and adjacent the 1900-N tanks. The portion of these pipelines that fell within the excavation layback boundary were removed during D4 activities at the 1900-N facility.

Were the WIDS site(s) completely removed?  Yes  No

**References/Comments:**

124-N-2: The collapsed portion of 124-N-2 was filled with rock and soil (EL-1589 pg. 87 & SIS Facility Summary Report for 1900-N pgs. 1 & 2). It was not removed during D4 activities at the 1900-N facility, however, the site was removed by D4 at a later date.

100-N-61:4 and 100-N-84:1, 3, 4, 7: The FR organization is responsible to close out this WIDS site.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site?  Yes  No

**References/Comments:**

The FR organization is responsible to close out WIDS sites 100-N-61:4, 100-N-84:1, 3, 4, and 7. As such, any portion of 100-N-61:4 that has not been removed by the D4 organization will be removed and verification sampled (if required) by the FR organization. Deferral will not be necessary since the sites are already within the scope of an FR remedial action.

### CONTAMINATED SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

None  SVOC  VOC  Metals  TPH  Rad  PCBs

Other (Specify): \_\_\_\_\_

Comments:

Summary of in-process soil sampling requirements:

N/A

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-020 Rev.1

Constituents detected / concentrations / rationale  
Consult Sample Collection Summary below

### Sample Collection Summary

- Oiled sand at 1900-N: Sample (HEIS) Number J036N8 (CCN 123355 pg. 1)
- Water at 1900-N: Sample (HEIS) Numbers J030N8 and J03748 (CCN 123355 pg. 1)
- Paint at 1900-N: Sample (HEIS) Numbers J103C8, J103C9, and J03379
- Demolition Debris from 1900-N: Sample (HEIS) Number J030D2 (WP-1900N001 pg. 1)

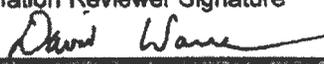
Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):  
Visual Inspection of 1900-N excavation soils on 7/12/2012: CCN 166744

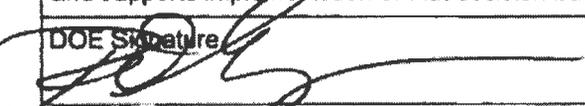
Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?  Yes  No

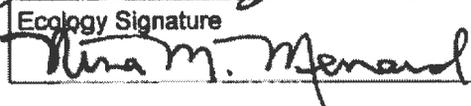
Based on the above information it was determined that sampling:  will  will not be required in order to demonstrate that cleanup criteria have been met.

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 	Printed Name David Warren	Date 9/5/12
---	------------------------------	----------------

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 	Printed Name RF Guerra	Date 9/5/2012
---	---------------------------	------------------

Ecology Signature 	Printed Name NINA M Menard	Date 9/11/2012
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**1900-N Tanks Pads Removal Visual Inspection Photographs**



**1900-N Excavation Looking West (view from Southeast tank ring excavation to Southwest excavation)**



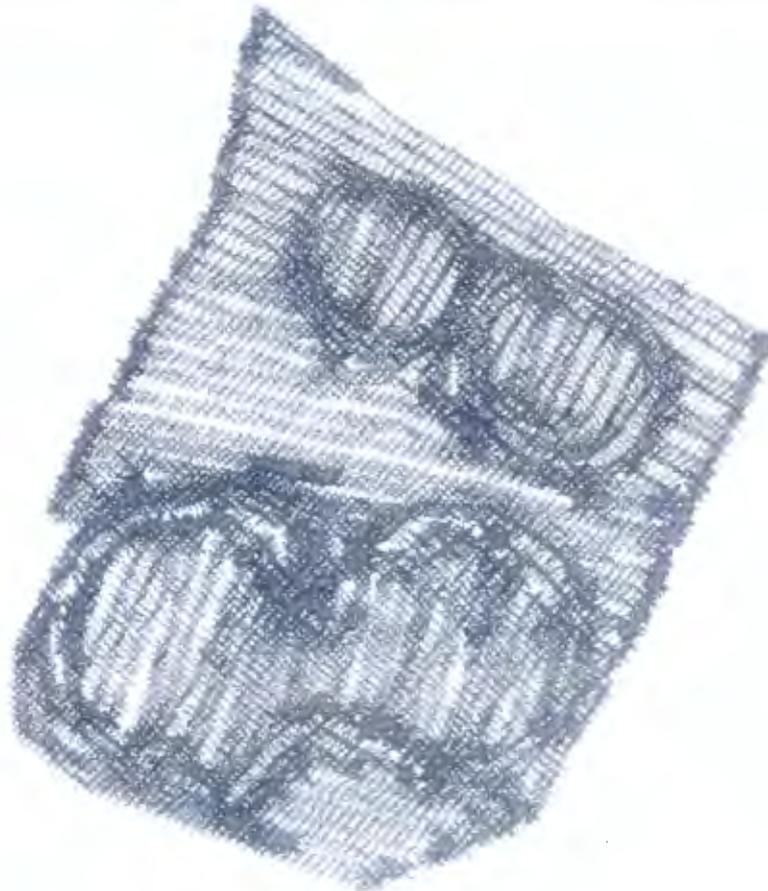
**1900-N Excavation Looking West (view from Northeast tank ring excavation to Northwest excavation)**



**1900-N Excavation Looking East (view from Northwest tank ring excavation to Northeast excavation)**

1900-N Excavation Looking South-Southwest (view from Southwest tank ring excavation)





Site View

Copy

Bkg Location  
635 meters E →  
1144 cpm

**Legend**

**NET CPM**

- X <1718
- 1718 - 8000
- 6000 - 10000
- 10000 - 25000
- 25000

**Summary Statistics**

Coverage File: N188  
Number of Data Pts: 4898  
Type of Survey: gamma  
Max GCPI: 1808  
Avg Bkg CPM: 1144  
Survey Date: 7/17/2012  
Area Surveyed: 3,834 m<sup>2</sup>  
Project File: ESRFRM120113  
Pdf File: ESRFRM120113C

**100N D4  
1900-N  
GPERS Radiological Survey  
Gamma Track Map**

0 5 10 15 20 25  
Meters



Survey Map Prepared By Bruce Coomer, ESI