

## FACILITY STATUS CHANGE FORM

<b>Date Submitted:</b> 12/12/2012  <b>Originator:</b> David Warren  <b>Phone:</b> 539-6040	<b>Area:</b> 100-N  <b>Facility ID:</b> 1903-N Sanitary Sewer System  <b>Action Memorandum:</b> 100-N Ancillary Facilities	<b>Control #:</b> D4-100N-0045
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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: 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.

Demolition: Demolition of the 1903-N Sanitary Sewer System was performed by the Field Remediation Organization (FR) in conjunction with the remediation/removal of Waste Information Data System (WIDS) site 124-N-4. Demolition was completed on January 16, 2011 and all debris load out was completed by July 25, 2011. Waste was transported to the Environmental Restoration Disposal Facility (ERDF), where it was disposed. Based on historical presence of radiological contamination, demolition was performed under radiological controls.

**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 1903-N Sanitary Sewer System was demolished, excavated, and disposed of at the ERDF. A post-demolition civil survey was performed to document the extent of the excavation. The excavation underwent multiple Global Positioning Environmental Radiological Surveyor (GPERS) surveys. One GPERS survey identified radiological contamination within the 1903-N excavation boundary. This location was focused sampled as part of verification sampling of the 1903-N footprint, which was performed by FR for closeout of the 124-N-4 WIDS site. The results of the verification samples indicated levels below the Remedial Action Goals for radiological constituents. The excavation has been backfilled, graded to match the surrounding terrain, and revegetated.

The results of the GPERS surveys are shown in Attachment 3 and the results of the civil surveys are shown in Attachment 4. All WIDS sites underlying the 1903-N facility have been removed.

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

There were two WIDS sites present within the 1903-N facility footprint. WIDS subsite 100-N-84:5 consists of various pipelines, a portion of which was present underneath the 1903-N facility. WIDS site 124-N-4 consisted of all below grade

1219393

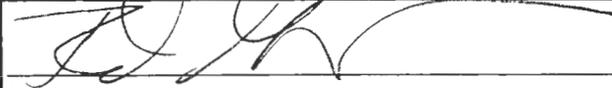
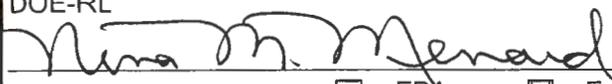
# FACILITY STATUS CHANGE FORM

portions of 1903-N as well as the underlying soils. FR removed WIDS site 124-N-4 and the underlying portion of WIDS site 100-N-84:5 in conjunction with removal of the 1903-N facility. FR performed verification sampling for the 124-N-4 WIDS site. Fifteen of the sample points were located within the footprint of the 1903-N facility, with three of the fifteen consisting of focused samples pertaining to the 1903-N septic tanks and the location where radiological contamination was detected during GPERS surveying (See Attachment 5, Sampling Determination Form). The results of this verification sampling have been addressed in the cleanup verification package (CVP) for WIDS site 124-N-4, and corresponding Waste Site Reclassification Form #2012-011.

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 1903-N Sanitary Sewer System (SDF-100N-015) 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 1903-N Facility as the facility footprint, also known as WIDS 124-N-4, has already undergone verification sampling and closeout by the Field Remediation Organization.

### Section 3: List of Attachments

1. Facility Information
2. Photographs
3. Global Positioning Environmental Radiological Surveyor (GPERS) Surveys
4. Civil Surveys
5. Sampling Determination Form for the 1903-N Sanitary Sewer System (SDF-100N-015)

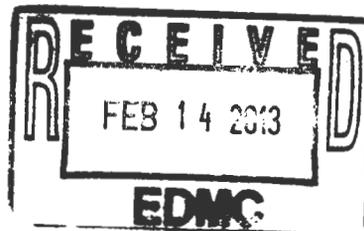
 _____ DOE-RL	Date <u>1/23/13</u>
 _____ Lead Regulator	Date <u>2/4/13</u>
Lead Regulator <input type="checkbox"/> EPA <input checked="" type="checkbox"/> Ecology	

### DISTRIBUTION:

EPA: Dennis Faulk, B1-46  
 Ecology: Wanda Elliott, H0-57  
 DOE: Rudy Guercia, A3-04  
 Document Control, H0-30

SIS Coordinator: Benjamin Cowin, H4-22  
 D4 EPL: David Warren, X5-50  
 Sample Design/Cleanup Verification: Theresa Howell, H4-22  
 FR Engineering: Rich Carlson, N3-30  
 FR EPL: Dan Saueressig, N3-30

Administrative Record, H6-08 (100-NR-10U)



D4 Project Facility Completion Form

**Attachment 1: Facility Information (5 pages)**

# D4 Project Facility Completion Form

## Facility Information

### Introduction

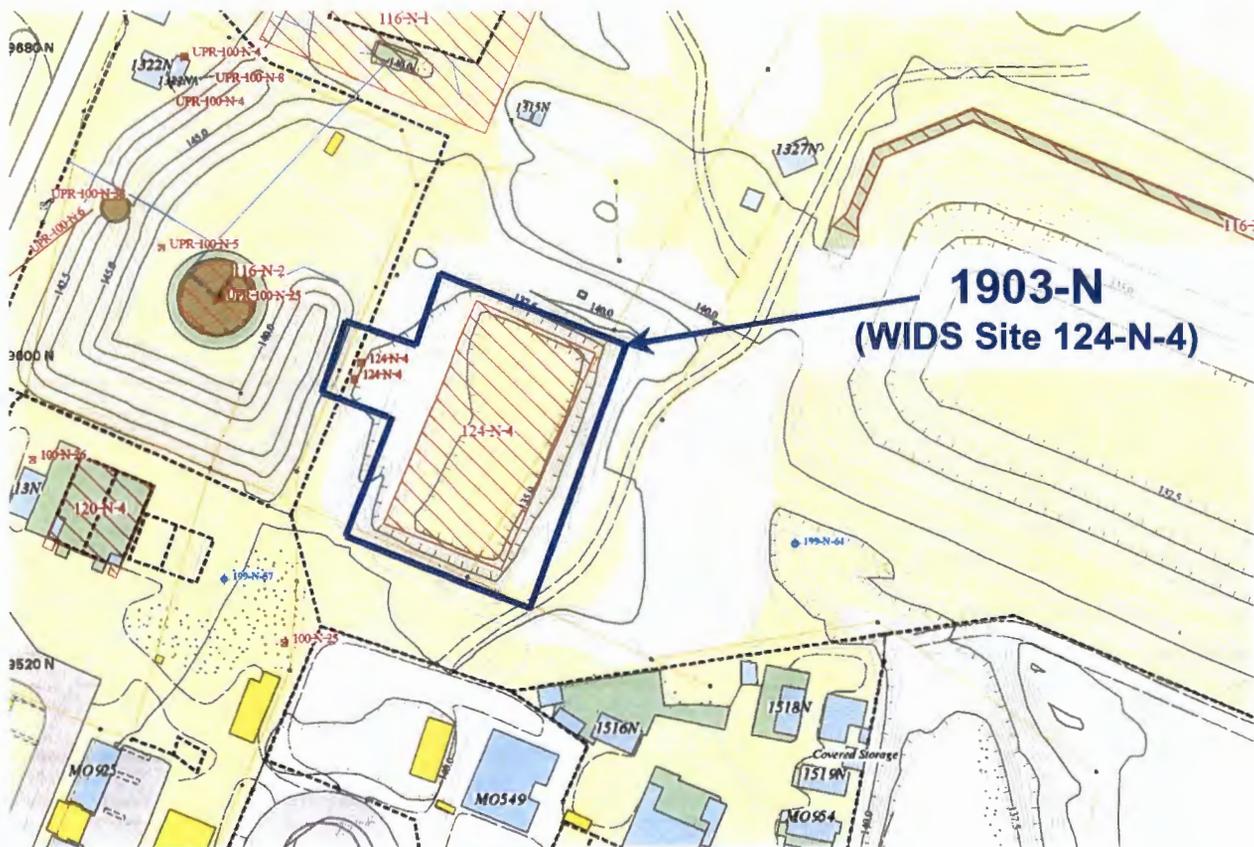
This document provides information regarding the history, characterization, and final status at the completion of deactivation, decontamination, decommissioning, and demolition activities of the 1903-N Sanitary Sewer System, formerly located at the 100-N Area.

### Site Information

The 1903-N Sanitary Sewer System consisted of a drain field and two septic tanks located approximately 500 feet northeast of the 105-N Reactor. It was constructed in 1963 as part of the original N Reactor complex and was used to receive and process sanitary sewage. The 1903-N Sanitary Sewer System was the primary sewer system in the 100-N Area from 1963 to 1987. The drain field had an 8,900 square foot infiltration surface area and each septic tank had a 14,000 gallon capacity. The facility received a daily average of 30,000 gallons of sanitary sewage. Waste Information Data System (WIDS) site 124-N-4, 100-N Sanitary Sewer System No. 4, envelops the entire 1903-N facility footprint.

A map of the 1903-N Sanitary Sewer System is included in Figure 1. Photographs are included in Attachment 2.

**Figure 1. Location of the 1903-N Sanitary Sewer System**



## D4 Project Facility Completion Form

### Radiological and Industrial Hygiene Surveys

Table 1 below summarizes the radiological and industrial hygiene scoping surveys performed at the 1903-N Sanitary Sewer System.

**Table 1: Summary of Radiological and Industrial Hygiene Scoping Samples/Surveys**

<b>Type</b>	<b>Quantity</b>	<b>Method Detection Limits</b>	<b>Results</b>
Radiological Scoping Surveys	Undetermined	Beta-gamma – 1,000 removable/ 5,000 fixed <sup>a</sup>  Alpha – 20 removable/ 500 fixed <sup>a</sup>	Historical radiological surveys associated with the 1903-N Sanitary Sewer System detected radiological contamination. The 1903-N facility was under radiological control during demolition.
Industrial Hygiene Scoping Surveys	1 Survey	N/A	The contaminants of concern (COCs) for the 1903-N facility were based on the COCs for the 1310-N Radioactive Liquid and Waste Treatment Facility. Based on historical documentation, no unique industrial hygiene concern was associated with the 1903-N Sanitary Sewer System beyond what was associated with the 1310-N facility.
<sup>a</sup> – dpm/100 cm <sup>2</sup>			

### Post-Demolition Radiological Surveys

Radiological contamination was not detected during work progress down-posting radiological surveys performed at the 1903-N footprint. These surveys are summarized in Table 2 below.

Four sets of Global Positioning Environmental Radiological Surveyor (GPERS) surveys were performed at the 1903-N footprint and adjacent waste staging pile between June and August of 2011. The GPERS surveys performed at the 1903-N footprint and the waste staging pile did not detect radiological contamination. However, one of the GPERS surveys performed at the 1903-N excavation layback detected two points of radiological contamination near the 1903-N septic tanks on the west side of the facility. It is thought that this contamination was caused by disruption of the survey probe as subsequent re-surveying of the location did not detect contamination. A focused sample was taken from this location as part of verification sampling for the 124-N-4 WIDS site. The GPERS surveys are included in Attachment 3. The surveys are summarized in Table 2 below.

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**Table 2: Summary of Post-Demolition Radiological Surveys**

Type	Quantity	Method Detection Limits	Results
Work Progress Down-Posting Radiological Surveys	11 Surveys	Beta-gamma – 1,000 removable/ 5,000 fixed <sup>a</sup>  Alpha – 20 removable/ 500 fixed <sup>a</sup>	Radiological contamination was not detected in any of the 11 formal down-posting surveys. Additionally, 20% of the excavated material was surveyed with handheld radiological instruments. No elevated instrument reading was recorded during excavation that would have indicated that radiological contamination was present.
GPERS Surveys	8 Surveys	N/A	23,360 data points were taken at the 1903-N excavation and adjacent staging pile. With the exception of two data points, all results were less than 1.5 times the background count. It should be noted that readings that are under 1.5 times the background count are considered to be insignificant. It was determined that the two data points that exceeded 1.5 times the background count were likely caused by disruption of the survey probe.  The GPERS survey maps are included in Attachment 3.
<sup>a</sup> – dpm/100 cm <sup>2</sup>			

**Verification Sampling of Underlying Soil**

The 1903-N Sanitary Sewer System footprint was enveloped in entirety by WIDS site 124-N-4, 100-N Sanitary Sewer System No. 4. Accordingly, the Field Remediation Organization (FR) has performed verification sampling of the soils remaining within the 1903-N footprint. Verification samples were taken from the footprints of the 1903-N facility and the staging pile used to store the excavated material. Additionally, three focused samples were taken; one from each of the two septic tank footprints, and one from the location near the septic tanks in which radiological contamination was detected during a GPERS survey.

**Demolition**

Demolition of the 1903-N Sanitary Sewer System was completed on February 16, 2011 by FR. As a waste staging pile was used for 1903-N removal, facility debris was either loaded directly into roll-off containers or stored within the staging pile area immediately east of the 1903-N footprint. Load out of roll-off container debris was completed on February 16, 2011. Load out of staging pile debris was completed on July 25, 2011. All debris was sent to the Environmental Restoration Disposal Facility (ERDF) for disposal.

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### Contaminants of Concern

The contaminants of concern (COCs) for the 1903-N facility were based on the COCs for the 1310-N Radioactive Liquid and Waste Treatment Facility. Based on historical documentation, no unique industrial hygiene concern was associated with the 1903-N Sanitary Sewer System beyond what was associated with the 1310-N facility. With the exception of radionuclides, no industrial hygiene concern was encountered during demolition of the 1903-N Sanitary Sewer System.

### Civil Survey Information

A pre-demolition civil survey was performed at the 1903-N Sanitary Sewer System in March of 2010. A post-demolition civil survey was performed at the 1903-N footprint in April of 2011. Copies of these civil surveys are provided in Attachment 4.

### Anomalies

No anomaly was encountered during demolition or removal of the 1903-N Sanitary Sewer System.

### Status of Associated/Adjacent WIDS Sites

Table 3 below provides information on the WIDS sites that were associated with, and/or adjacent to, the 1903-N Sanitary Sewer System.

**Table 3: Associated/Adjacent WIDS Sites for 1903-N**

Site Number	Site Name	Description & Status	Affected During 1903-N Removal
100-N-84:5 (subsite)	100-N Area Sanitary Pipelines	<p>This subsite consists of pipelines used for transporting sanitary water, sewer water, storm drain water, and disposal field water.</p> <p><u>Classification:</u> Accepted</p>	<p>Yes: The portion of this subsite that existed within the 1903-N excavation boundary was removed.</p>
124-N-4	100-N Sanitary Sewer System No. 4	<p>This site consisted of two septic tanks and an associated tile field (drain field), which served as the primary septic system for the majority of the 100-N Area buildings. Multiple 8-inch diameter cast iron sewer lines connected the two septic tanks to the tile field. They were segments of the 100-N-85:5 miscellaneous piping.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> Interim Closed Out</p>	<p>Yes: This site was completely removed with the 1903-N facility.</p> <p>As this site has received an Interim Closed Out reclassification status, no additional work is expected for its closeout.</p>

**Final Building Status and Underlying Soil**

Demolition of the 1903-N Sanitary Sewer System was completed on February 16, 2011 by FR. Resulting debris was either loaded into roll-off containers or stored within the staging pile area. Load out of the roll-off container debris was completed on February 16, 2011.

Prior to placing material within the staging pile boundary, FR covered the surface soil within the boundary with clean fill and straw. This allowed personnel to distinguish the soil underlying the staging pile from the excavated material. Load out of the staging pile was completed on July 25, 2011. All excavated material was sent to the ERDF for disposal.

No anomaly was encountered during demolition or removal of the 1903-N Sanitary Sewer System. GPERS surveys were performed at the 1903-N excavation. Radiological contamination was detected in two of the GPERS data points from the western portion of the excavation. No other radiological contamination was detected during the GPERS surveys. Table 4 below summarizes the contaminants of concern for 1903-N removal. Photographs are included in Attachment 2. GPERS surveys are included in Attachment 3.

No WIDS site or WIDS subsite remains within the 1903-N footprint following facility demolition and load out. FR has performed verification sampling of the soil remaining within the 1903-N footprint as WIDS site 124-N-4 enveloped the 1903-N footprint in entirety. The verification sampling included the footprint of the 1903-N excavation, the footprint of the staging pile used to store excavated material, and three focused samples; one from each of the two septic tank footprints, and one from the location of radiological contamination detected during a GPERS survey. The results of this verification sampling have been addressed in the cleanup verification package (CVP) for WIDS site 124-N-4, and corresponding Waste Site Reclassification Form #2012-011.

The 1903-N excavation has been backfilled and revegetated.

**Table 4: Contaminants of Concern for Facility Demolition**

Contaminant of Concern	Management Practice/Determination of No Impact to the Soil
Radionuclides	<p>Radionuclides were the only contaminants of concern encountered during demolition of the 1903-N Sanitary Sewer System. Radiological controls were in place during 1903-N demolition and load out.</p> <p>No anomaly was identified during demolition or removal. However, one of the GPERS surveys of the excavation footprint detected radiological contamination. Accordingly, a focused sample was taken from the area where contamination was detected. This focused sample was part of the verification sampling of the 1903-N footprint, which has been classified as WIDS site 124-N-4. The GPERS survey maps are included in Attachment 3.</p>

D4 Project Facility Completion Form

**Attachment 2: Photographs (2 Pages)**

D4 Project Facility Completion Form



**1903-N Pre-Demolition**



**1903-N Pre-Demolition**

1903-N Sanitary Sewer System Completion

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**1903-N During Demolition**



**1903-N Post-Demolition**

1903-N Sanitary Sewer System Completion

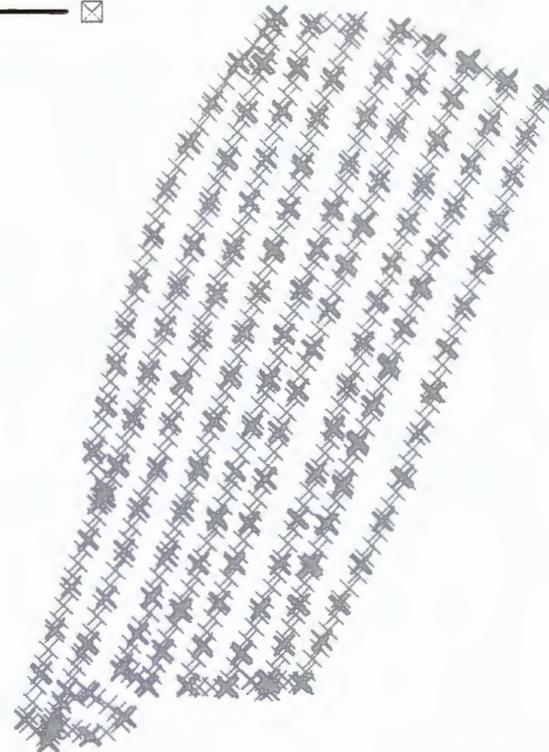
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**Attachment 3: GPERS Surveys (8 Pages)**

D4 Project Facility Completion Form



Bkg Location X  
457 cpm



Site View

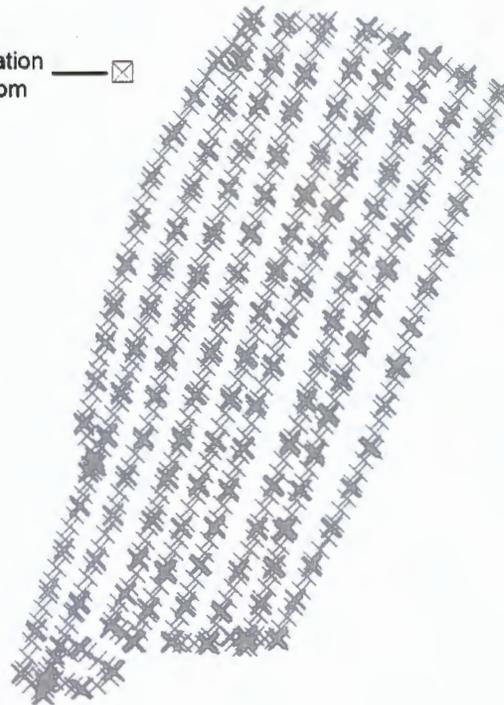
Copy

<p><b>Legend</b></p> <p>NET CPM</p> <ul style="list-style-type: none"> <li>X &lt;685</li> <li>● 685 - 5000</li> <li>● 5000 - 10000</li> <li>● 10000 - 25000</li> <li>● 25000</li> </ul>	<p><b>Summary Statistics</b></p> <p>Coverage File: N173                  Number of Data Pnts: 1932                  Type of Survey: beta                  Max GCPM: 682                  Avg Bkg CPM: 457                  Survey Date: 6/22/2011                  Area Surveyed: 1416 m<sup>2</sup>                  Project File: ESRFRM110148B                  Pdf File: ESRFRM110148BC</p>	<p><b>100N Field Remediation                  124-N-4 Stockpile                  GPERs Radiological Survey                  Beta Track Map</b></p>	<p>0 5 10 15 20 25                  Meters</p>
Survey Map Prepared By Bruce Coomer, ESI			

D4 Project Facility Completion Form



Bkg Location  
1288 cpm



Site View

Copy

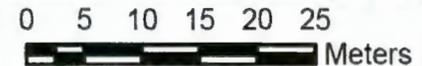
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- x <1932
  - 1932 - 5000
  - 5000 - 10000
  - 10000 - 25000
  - 25000

Summary Statistics

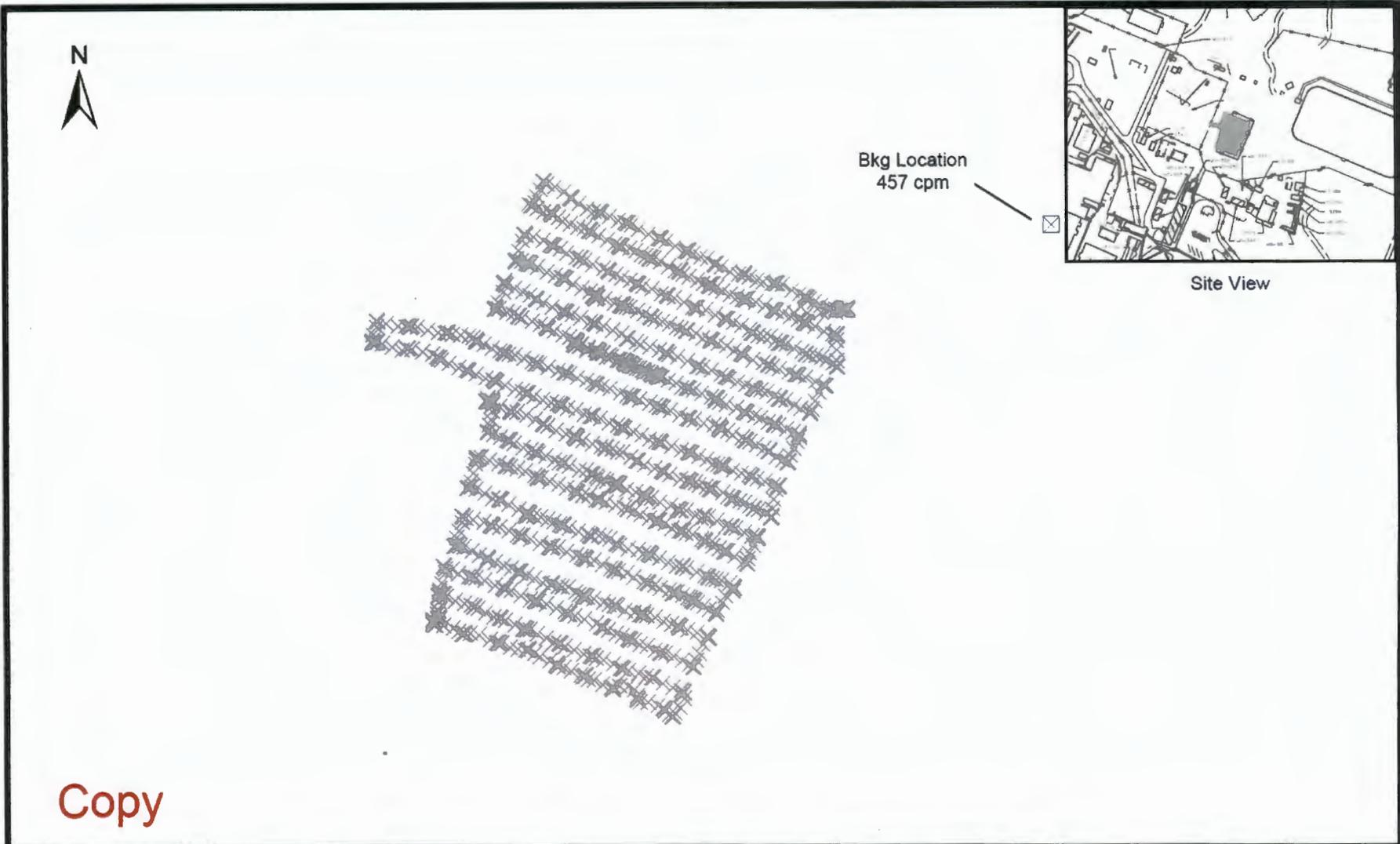
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 Type of Survey: gamma  
 Max GCPM: 1971  
 Avg Bkg CPM: 1288  
 Survey Date: 6/22/2011  
 Area Surveyed: 1416 m<sup>2</sup>  
 Project File: ESRFRM110148G  
 Pdf File: ESRFRM110148GC

**100N Field Remediation  
 124-N-4 Stockpile  
 GPERs Radiological Survey  
 Gamma Track Map**



Survey Map Prepared By Bruce Coomer, ESI

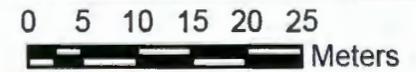
D4 Project Facility Completion Form



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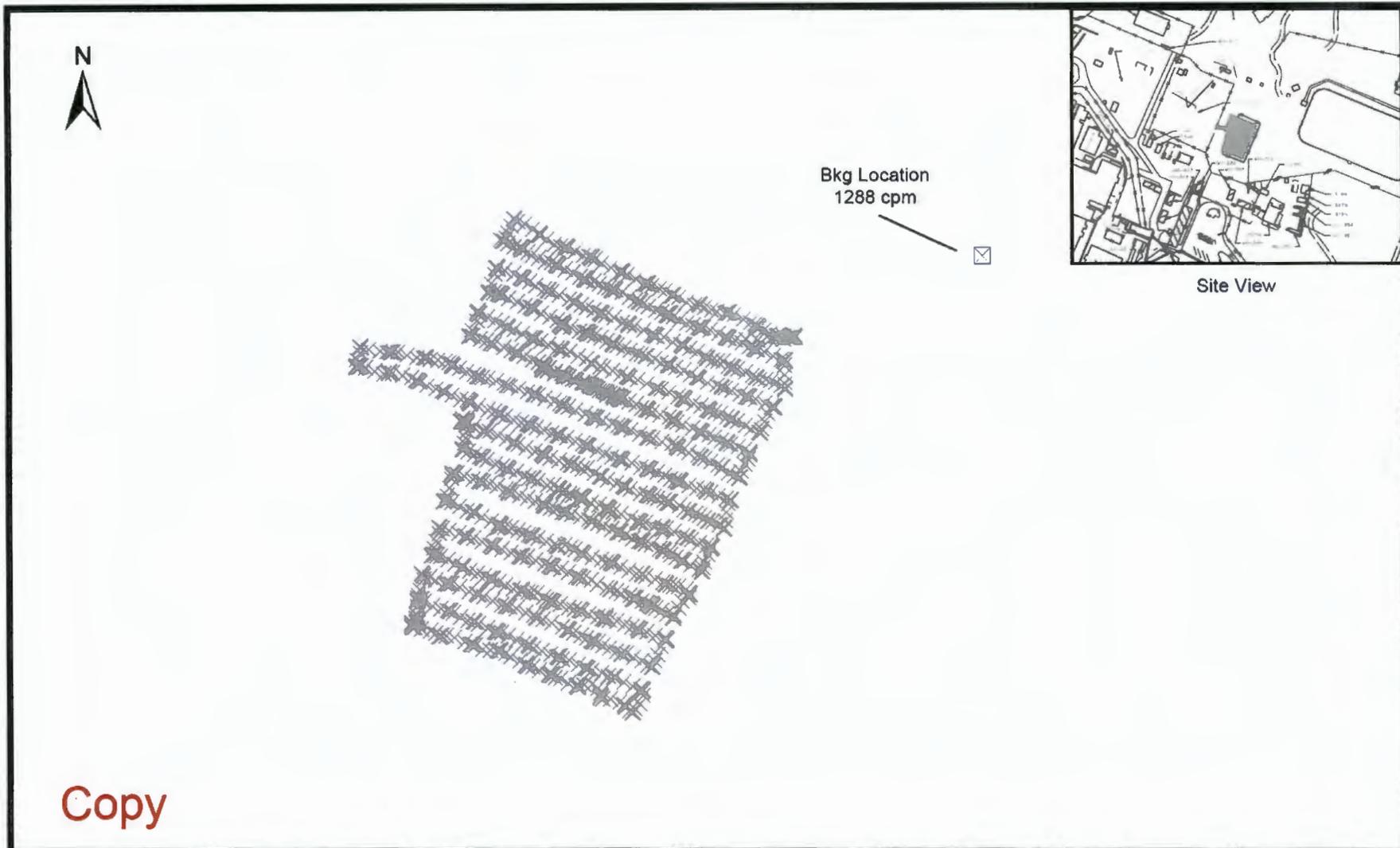
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× <685	Number of Data Pnts: 2735
● 685 - 5000	Type of Survey: beta
● 5000 - 10000	Max GCPM: 653
● 10000 - 25000	Avg Bkg CPM: 457
● 25000	Survey Date: 6/22/2011
	Area Surveyed: 2078 m <sup>2</sup>
	Project File: ESRFRM110149B
	Pdf File: ESRFRM110149BC

**100N Field Remediation  
124-N-4 Floor Bottom  
GPERS Radiological Survey  
Beta Track Map**



Survey Map Prepared By Bruce Coomer, ESI

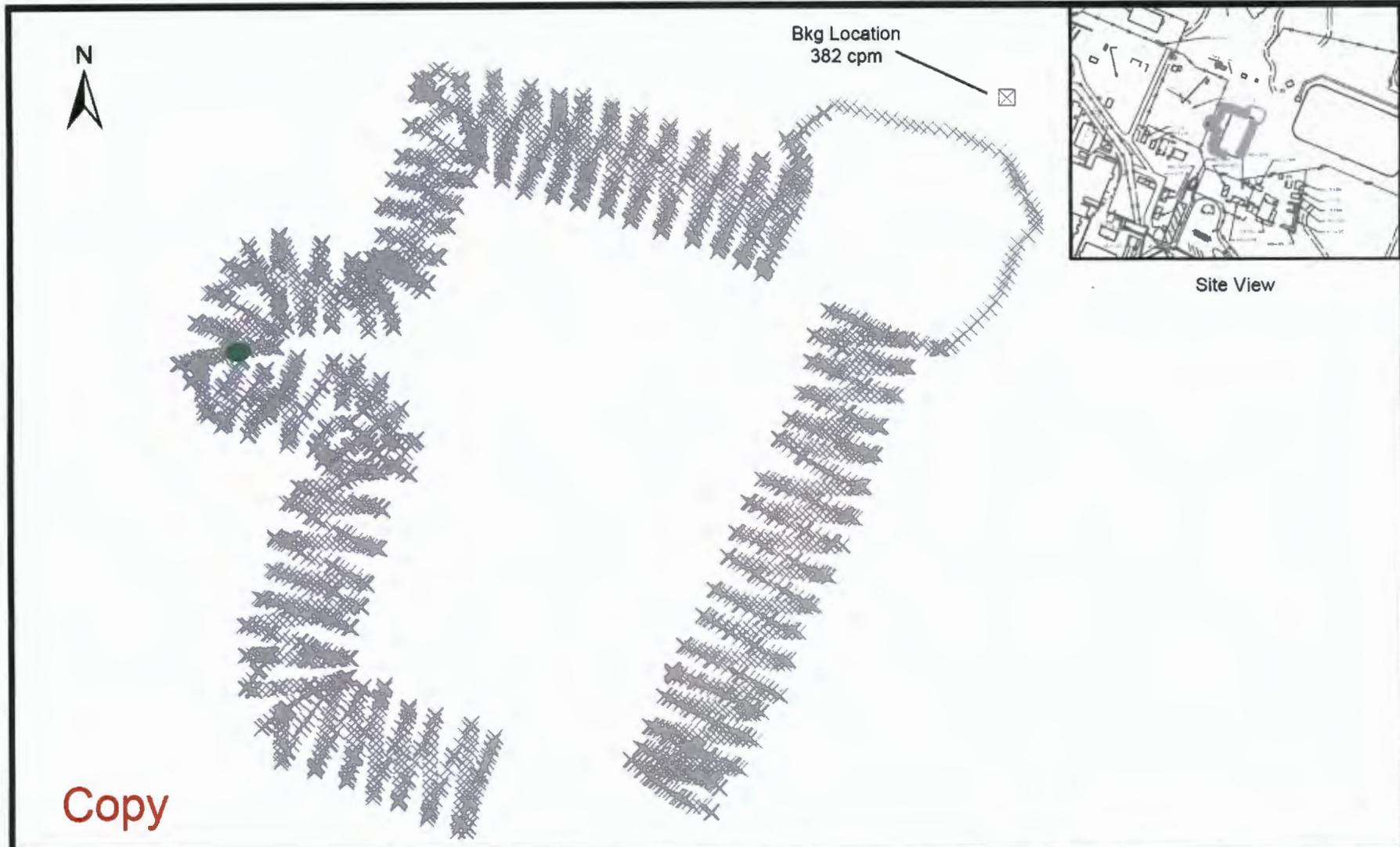
D4 Project Facility Completion Form



Copy

<p><b>Legend</b></p> <p>NET CPM</p> <ul style="list-style-type: none"> <li>X &lt;1932</li> <li>● 1932 - 5000</li> <li>● 5000 - 10000</li> <li>● 10000 - 25000</li> <li>● 25000</li> </ul> <p><b>Summary Statistics</b></p> <p>Coverage File: N173A                  Number of Data Pnts: 2735                  Type of Survey: gamma                  Max GCPM: 2105                  Avg Bkg CPM: 1288                  Survey Date: 6/22/2011                  Area Surveyed: 2078 m<sup>2</sup>                  Project File: ESRFRM110149G                  Pdf File: ESRFRM110149GC</p>	<p><b>100N Field Remediation                  124-N-4 Floor Bottom                  GPERs Radiological Survey                  Gamma Track Map</b></p>	<p>0 5 10 15 20 25                  Meters</p> <p>Survey Map Prepared By Bruce Coomer, ESI</p>
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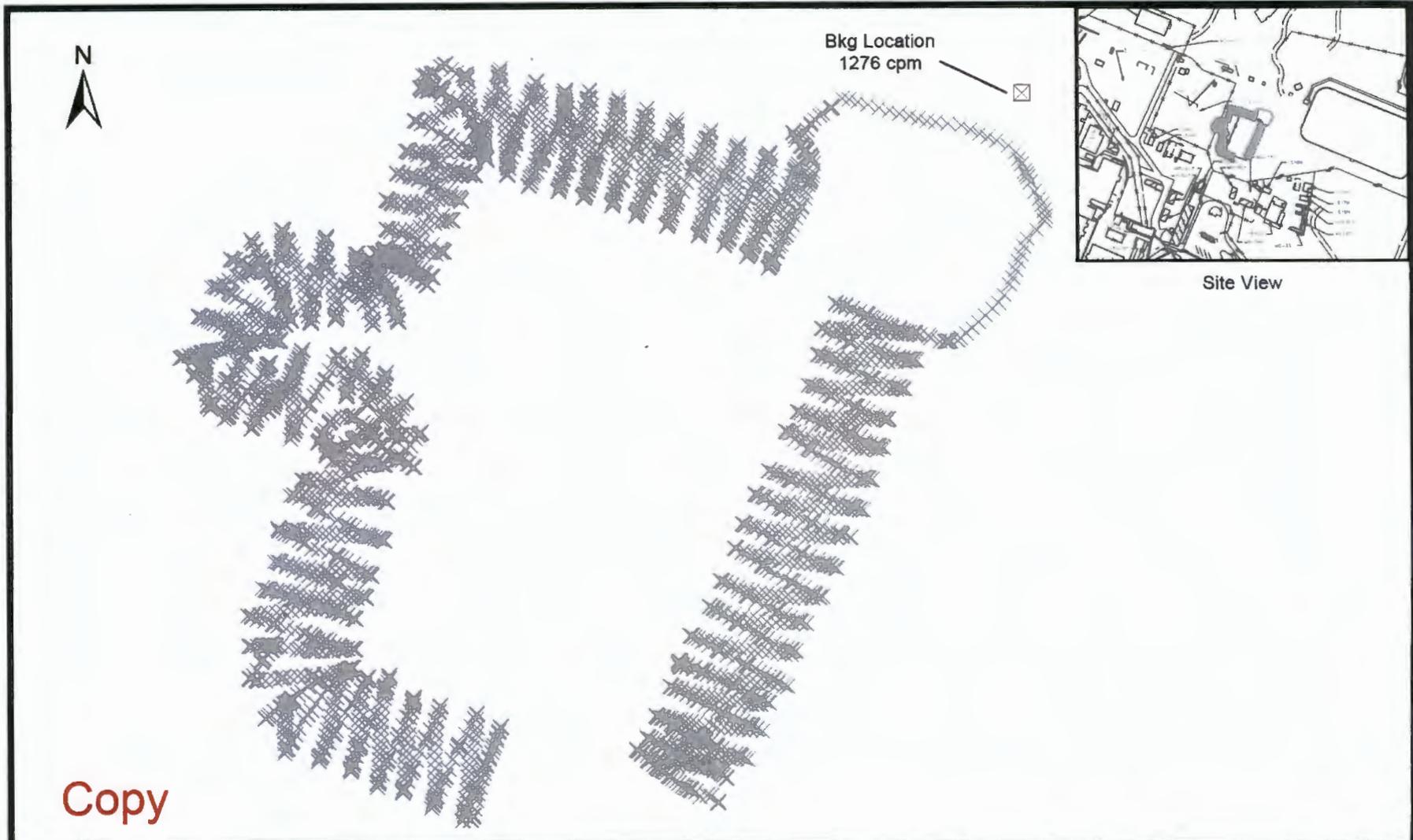
D4 Project Facility Completion Form



Copy

<p><b>Legend</b></p> <p>NET CPM</p> <ul style="list-style-type: none"> <li>× &lt;573</li> <li>● 573 - 5000</li> <li>● 5000 - 10000</li> <li>● 10000 - 25000</li> <li>● 25000</li> </ul>	<p><b>Summary Statistics</b></p> <p>Coverage File: N174                  Number of Data Pnts: 5576                  Type of Survey: beta                  Max GCPM: 3620                  Avg Bkg CPM: 382                  Survey Date: 6/23/2011                  Area Surveyed: 2397 m<sup>2</sup>                  Project File: ESRFRM110150B                  Pdf File: ESRFRM110150BC</p>	<p style="text-align: center;"><b>100N Field Remediation                  124-N-4 Slopes                  GPERS Radiological Survey                  Beta Track Map</b></p> <p style="text-align: center;">0 5 10 15 20                  Meters</p> <p style="text-align: center;">   </p> <p style="text-align: center; font-size: small;">Survey Map Prepared By Bruce Coomer, ESI</p>
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D4 Project Facility Completion Form



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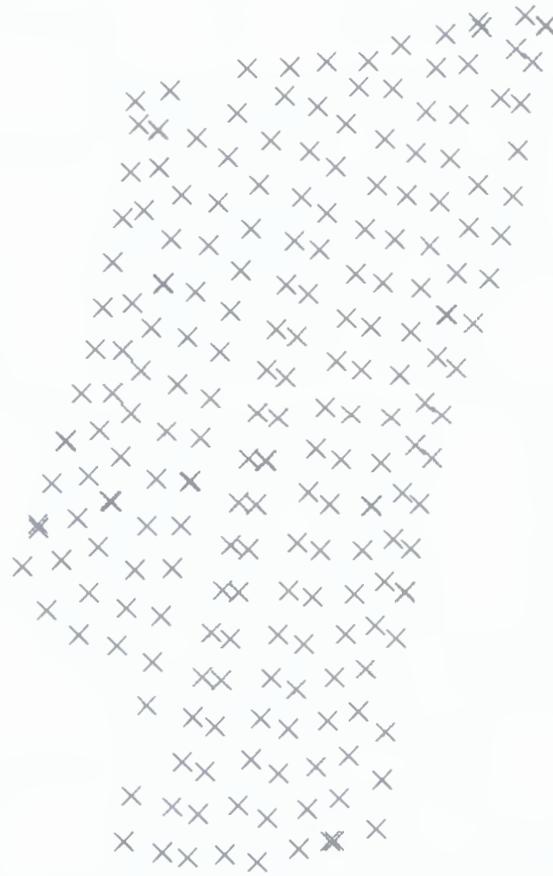
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● 1914 - 5000	Type of Survey: gamma
● 5000 - 10000	Max GCPM: 3030
● 10000 - 25000	Avg Bkg CPM: 1276
● 25000	Survey Date: 6/23/2011
	Area Surveyed: 2397 m <sup>2</sup>
	Project File: ESRFRM110150G
	Pdf File: ESRFRM110150GC

**100N Field Remediation**  
**124-N-4 Slopes**  
**GPERS Radiological Survey**  
**Gamma Track Map**

0 5 10 15 20  
Meters

Survey Map Prepared By Bruce Coomer, ESI

D4 Project Facility Completion Form



Site View

Bkg Location  
395 meters SSE  
418 cpm



Copy

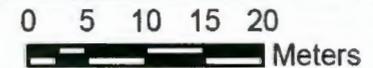
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- × <627
- 627 - 5000
- 5000 - 10000
- 10000 - 25000
- 25000

Summary Statistics

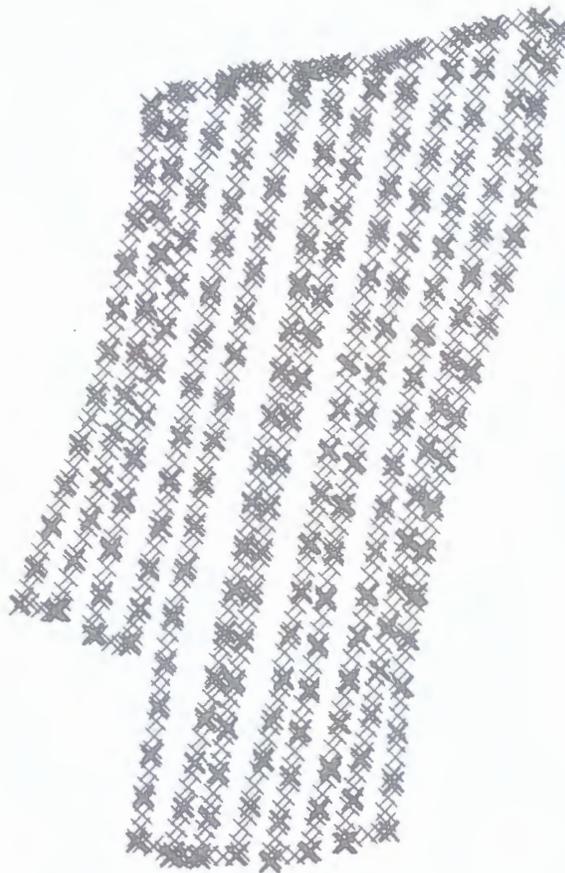
Coverage File: N231  
 Number of Data Pnts: 215  
 Type of Survey: beta  
 Max GCPM: 849  
 Avg Bkg CPM: 418  
 Survey Date: 8/19/2011  
 Area Surveyed: 418 m<sup>2</sup>  
 Project File: ESRFRM110177B  
 Pdf File: ESRFRM110177BC

**100N Field Remediation  
 124-N-4  
 GPERS Radiological Survey  
 Beta Track Map**



Survey Map Prepared By Bruce Coomer, ESI

D4 Project Facility Completion Form



Site View

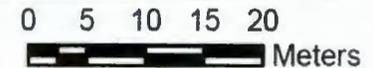
Bkg Location  
395 meters SSE  
1642 cpm



Copy

Legend	Summary Statistics
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	Number of Data Pnts: 2659
	Type of Survey: gamma
x <2463	Max GCPM: 2102
● 2463 - 5000	Avg Bkg CPM: 1642
● 5000 - 10000	Survey Date: 8/19/2011
● 10000 - 25000	Area Surveyed: 2237 m <sup>2</sup>
● 25000	Project File: ESRFRM110177
	Pdf File: ESRFRM110177GC

**100N Field Remediation  
124-N-4  
GPERS Radiological Survey  
Gamma Track Map**



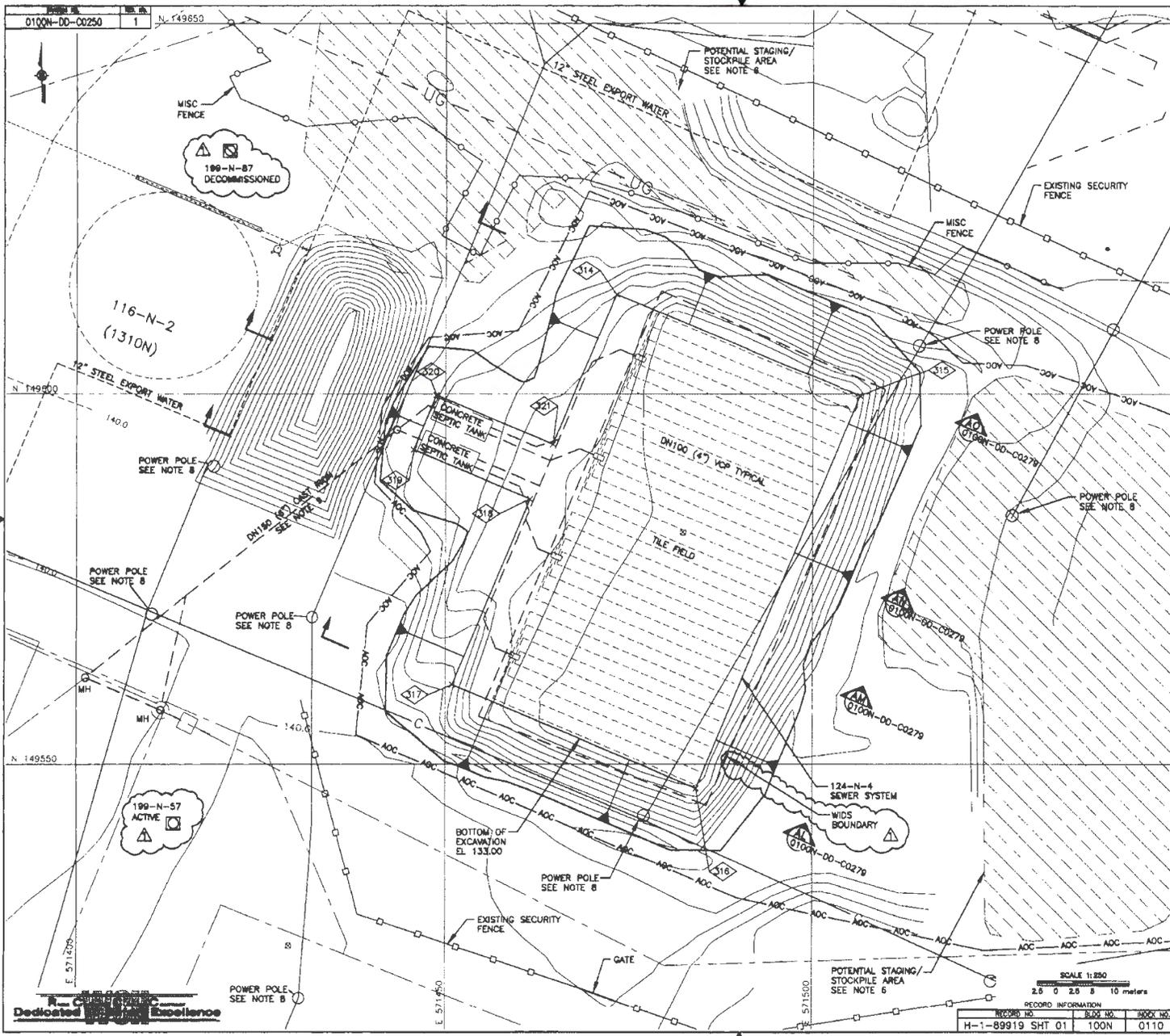
**EBERLINE  
SERVICES**  
HANFORD, INC.

Survey Map Prepared By Bruce Coomer, ESI

D4 Project Facility Completion Form

**Attachment 4: Civil Surveys (2 Pages)**

# D4 Project Facility Completion Form



### NOTES

1. SEE DRAWING 0100N-DD-G0023 FOR GENERAL ABBREVIATIONS AND SYMBOLS LIST.
2. LOCATION, GROUND SURFACE AND DIMENSIONS PROVIDED WERE TAKEN FROM HANFORD SITE RECORDS AND DRAWINGS, H-1-45007, SHEET 1 THROUGH 83, COMPOSITE UNDERGROUND LINES, ESSENTIAL DRAWING, GEOPHYSICAL SITE INVESTIGATIONS, G1#0580014, G1#0580015, G1#0580016, G1#0579929, G1#0580014, G1#0580015, G1#0580016, G1#0580017, G1#0580019, AND G1#0580104. ACTUAL LOCATIONS AND DIMENSIONS SHALL BE VERIFIED BY THE SUBCONTRACTOR. AS-BUILT CONSTRUCTION MAY VARY FROM NEAT-LINES SHOWN ON DRAWINGS.
3. ALL ELEVATIONS AND DIMENSIONS ARE IN METERS EXCEPT AS SPECIFICALLY SHOWN.
4. LIMITS OF EXCAVATION ARE SHOWN ASSUMING A 1.5 H:1.0 V CUT SLOPE. ACTUAL EXCAVATION LIMITS SHALL BE THE RESPONSIBILITY OF THE SUBCONTRACTOR. EXCAVATIONS SHALL COMPLY WITH ALL REQUIREMENTS OF 0100N-SP-C0043 CIVIL SPECIFICATION.
5. CONTOUR INTERVAL IS 0.5 METERS.
6. STAGING OF MATERIAL SHALL OCCUR WITHIN THE AOC/WASTE SITE BOUNDARY UNLESS DIRECTED BY THE CONTRACTOR. STAGING OF MATERIAL OUTSIDE OF THE AOC/WASTE SITE BOUNDARY, SHALL HAVE PRIOR APPROVAL IN WRITING BY THE CONTRACTOR.
7. SEE DRAWING NO. 0100N-DD-C0306, 0100N-DD-C0306, 0100N-DD-C0307, OR 0100N-DD-C0308 FOR WASTE SITE SURVEY CONTROL DESIGN COORDINATE TABLE.
8. SUBCONTRACTOR SHALL TAKE ALL NECESSARY SAFETY PRECAUTIONS WHEN WORKING IN PROXIMITY TO ENERGIZED POWER LINES. ALL REASONABLE METHODS TO PROTECT EXISTING POWER POLES SHALL BE TAKEN BEFORE RE-ROUTING POWER LINES AND REMOVAL OF PILES WILL BE REQUIRED.
9. REMOVE DN150 (8") CAST IRON SANITARY SEWER LINE TO EXTENT OF EXCAVATION.
10. WEST AND SOUTH BERMS HAVE BEEN REMOVED. EAST BERM MAY BE AVAILABLE FOR CLEAN FILL IF NOT USED ELSEWHERE ON THE PLANT.
11. REMAINS OF DEMOLISHED BUILDINGS ARE IN THE VICINITY OF REMEDIAL ACTION WASTE SITES, AND MAY CONSIST OF SUBGRADE STRUCTURES (E.G., BASEMENTS, DEMOLITION DEBRIS). SUCH REMAINS MAY BE REMOVED DURING PERFORMANCE OF WORK SCOPE AS DIRECTED BY CONTRACTOR.

DOCUMENT CONTROL *0100N-DD-C0250*

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**U.S. DEPARTMENT OF ENERGY**  
DOE RICHLAND OPERATIONS OFFICE  
RIVER CORRIDOR CLOSURE CONTRACT

**WASHINGTON CLOSURE HANFORD LLC.**  
REDLAND, WASHINGTON

100 N AREA  
100 N WASTE SITE REMEDIATION DESIGN  
124-N-4 SANITARY SEWER SYSTEM CIVIL PLOT PLAN

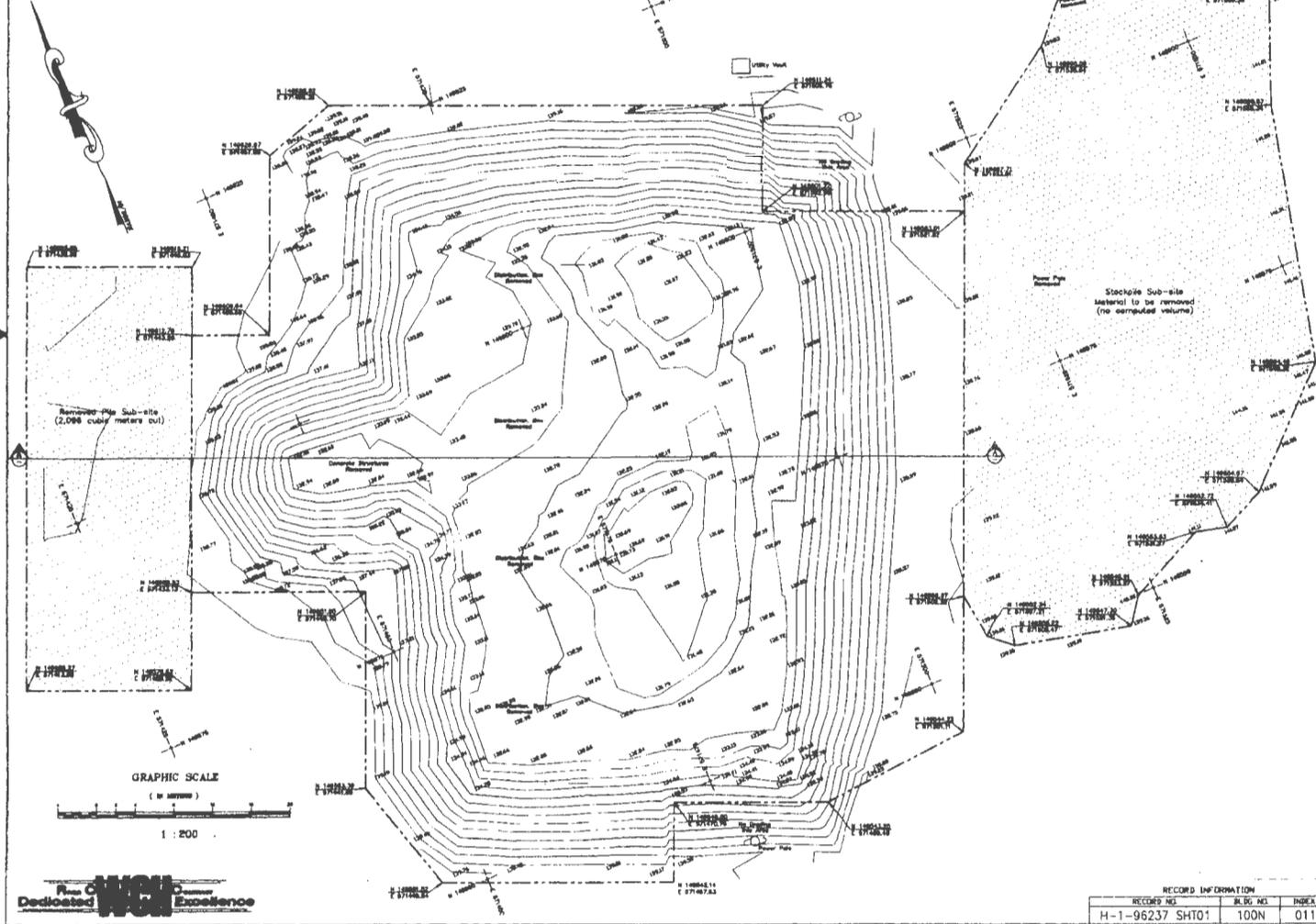
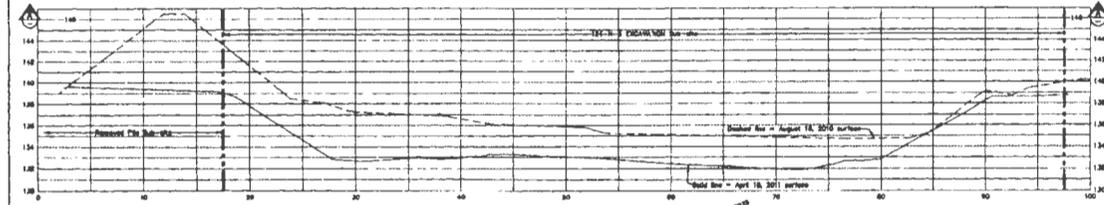
WCH JOB NO.	DOE CONTRACT NO.	CAD FILENAME
14855	DE-AC06-05RL-14855	1NDC0250.DWG

RECORD NO.	BLDG NO.	INSTR. NO.	DRAWING NO.
H-1-89919 SHT 01	100N	0110	100 N 0100N-DD-C0250



# D4 Project Facility Completion Form

Drawing No. 0100N-DD-C0596  
REV. NO. 0



## NOTES

- 1) Field survey performed April 16, 2011.
- 2) Contour Interval 0.5 HANDBOOK meters based on NGS' monument "H98068", elevation 141.705.
- 3) Horizontal Datum: NAD83/01 meters, Washington South Zone unless otherwise specified.

## REFERENCES

- 1) H-1-96225 SHT 01, DRAWING 0100N-DD-C0594 '124-N-4 SANITARY SEWER SYSTEM CIVIL SURVEY'

NO.	DESCRIPTION	DATE
1	Issue for construction	04/16/11
2	Issue for construction	04/16/11
3	Issue for construction	04/16/11
4	Issue for construction	04/16/11
5	Issue for construction	04/16/11
6	Issue for construction	04/16/11
7	Issue for construction	04/16/11
8	Issue for construction	04/16/11
9	Issue for construction	04/16/11
10	Issue for construction	04/16/11

RECEIVED  
MAY 05 2011  
WCH - DOCUMENT CONTROL

## SURVEYOR'S NARRATIVE

THE PURPOSE OF THIS SURVEY WAS TO PROVIDE EXISTING SITE TOPOGRAPHY POST REMEDIATION ACTIVITIES AT THE 124-N-4 SANITARY SEWER SYSTEM. THIS SURVEY OUTLINES THE ASSOCIATED SPILL PILE TO BE REMOVED AND COMPLETE EARTHWORK VOLUMES. FOR THE PURPOSE OF THIS SURVEY THE SITE WAS DIVIDED INTO 3 SUB-SITES.

- 1) STOCKPILE: THE OUTLINE OF THE EXISTING SPILL PILE WAS MEASURED. THE PILE CONTAINED WITHIN THIS SUB-SITE IS PLANNED TO BE REMOVED.
- 2) 124-N-4 EXCAVATION: THE AREA SURROUNDING AND CONTAINING THE EXCAVATED AREA.
- 3) REMOVED PILE: AREA WESTERLY OF THE EXCAVATION WHICH PRIOR TO THE START OF REMEDIATION ACTIVITIES CONTAINED A PILE/BERM WHICH INTERFERED WITH THE PLANNED EXCAVATION SIDE SLOPES.

## Sub-Site Volume Table: Unadjusted

Sub-site	Out cu.m.	Fill cu.m.	Net cu.m.	Method
124-N-4 EXCAVATION	8718	4	8713 (C)	Grid
124-N-4 REMOVED PILE	2096	0	2096 (C)	Grid

## SURVEYOR'S CERTIFICATE

I, John A. Beaman, a Professional Land Surveyor in the State of Washington, Reg.# 21346, hereby certify that this map correctly represents a survey conducted under my direct supervision in April 2011 at the request of Phoenix Enterprises NW LLC.



DATE 4/16/11

DOCUMENT CONTROL m3c 5/3/11

NO.	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
1	04/16/11	JAB	ISSUE FOR CONSTRUCTION	04/16/11	JAB	ISSUE FOR CONSTRUCTION

U.S. DEPARTMENT OF ENERGY  
DOE RICHLAND OPERATIONS OFFICE  
RIVER CORRIDOR CLOSURE CONTRACT

WASHINGTON CLOSURE HANFORD LLC  
PHOENIX ENTERPRISES NW  
RICHLAND, WASHINGTON

100 N AREA  
100 N WASTE SITE REMEDIATION  
124-N-4 POST EXCAVATION CIVIL SURVEY

WCH JOB NO. 14655  
DOE CONTRACT NO. DE-AC06-05RL-14655  
CADD FILENAME 0100N-DD-C0596.DWG

RECORD INFORMATION	TASK	DRAWING NO.	REV. NO.
RECORD NO. H-1-96237 SHT01 PLG. NO. 100N INDEX NO. 0110	100 N	0100N-DD-C0596	0



D4 Project Facility Completion Form

**Attachment 5: Sampling Determination Form for the 1903-N  
Sanitary Sewer System (SDF-100N-015)  
(8 Pages)**

# D4 Project Facility Completion Form

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<b>100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM</b>		Determination Number SDF-100N-015
<b>A. INSTRUCTIONS</b>		
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>B. GENERAL INFORMATION</b>		
Building Name: <u>Septic System</u>	Building Number: <u>1903-N (aka WIDS 124-N-4)</u>	
WIDS Sites Associated or Adjacent: <u>124-N-4 &amp; 100-N-84:5</u>		
Other: WIDS site 124-N-4 incorporates the footprint of the 1903-N facility in entirety. Accordingly, closeout documentation of 124-N-4 will be used for the 1903-N facility footprint.		
<b>C. INFORMATION SOURCES</b>		
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>	Radiological Survey: <u>Global Positioning Environmental Radiological Surveys (GPERs): ESR-FRM-11-0148 / 0149 / 0150 / 0177</u>	
IHC/FHC Document: <u>N/A</u>	RCC Stewardship Information System (SIS) WIDS/SIS: Facility Summary Reports: <u>1903-N &amp; 124-N-4 WIDS report for 124-N-4</u>	
PDSR: <u>N/A</u>	Facility Inspection: <u>N/A</u>	
Waste Characterization Checklist: <u>N/A</u>	Summary Report: <u>N/A</u>	
Other: • Work Instruction for Verification Sampling of the 124-N-4, 100-N Sanitary Sewer System No. 4 Waste Site: 0100N-WI-G0027		
<b>D. HAZARDOUS SUBSTANCES</b>		
Check all that apply:		
<input type="checkbox"/> None <input type="checkbox"/> Asbestos containing material <input type="checkbox"/> Lead <input type="checkbox"/> PCBs/PCB Articles <input type="checkbox"/> Oils/Greases <input type="checkbox"/> Chemicals    List: _____		
<input checked="" type="checkbox"/> Radiological Contamination <input type="checkbox"/> Mercury/Mercury Devices <input checked="" type="checkbox"/> Other: <u>Consult section 6.1 of the Work Instruction for verification sampling for 124-N-4 (0100N-WI-G0027 pg. 13).</u>		
References/Comments: • Radiological Contamination: <u>ESR-FRM-11-0150B (Beta Track Map)</u>		
Liquids: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
If yes, describe source and nature of liquids: <u>This 1903-N facility consisted of two septic tanks and a drainage field (SIS Facility Summary Report for 124-N-4 pg. 1). Each septic tank had a capacity of 14,000 gallons (SIS Facility Summary Report for 124-N-4 pg. 1). The facility received 30,000 gallons of sanitary sewage daily (SIS Facility Summary Report for 124-N-4 pg. 2).</u>		
Were the hazardous substances removed from the facility prior to demolition? <input type="checkbox"/> Yes <input type="checkbox"/> No		
As verified by what documentation: <u>This question is not applicable because Verification sampling of the facility's footprint was conducted. See the Comments section of part D of this form for details.</u>		
Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

D4 Project Facility Completion Form

Acrobat 9.0

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

Determination Number  
SDF-100N-015

**References/Comments:**

This question is not applicable. Verification sampling was previously completed for 1903-N. See the Comments section of part D of this form for additional details.

**List any hazardous materials left in the building for demolition:**

This question is not applicable. Verification sampling was previously completed for 1903-N. See the Comments section of part D of this form for additional details.

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

This question is not applicable. Verification sampling was previously completed for 1903-N. See the Comments section of part D of this form for additional details.

**Comments:**

The footprint of this facility has undergone verification sampling (0100N-WI-G0027). The verification sampling covered the 1903-N excavation (WIDS Site 124-N-4) and the staging pile area (0100N-WI-G0027 pg. 16). In addition, three focused samples were taken from the historical location of the septic tanks (0100N-WI-G0027 pg. 16). A map and summary table of these sample locations are attached to this form for reference. The pertinent sample numbers are J1CXP6, J1CXP7, J1CXP8, J1CYB0, J1D4W6, and J1D4W8. The sample results are attached to this form for reference.

Parts E and F of this form are not applicable to the 1903-N facility (124-N-4 WIDS site) as it was removed entirely by Field Remediation and has undergone verification sampling.

**E. FIELD OBSERVATIONS**

**Visual Inspection**

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

**References/Comments:**

Part E of this form is not applicable to this facility.

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

**References/Comments:**

N/A

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

**References/Comments:**

N/A

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

N/A

**Radiological Surveys**

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

**References/Comments:**

Part E of this form is not applicable to this facility.

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

**References/Comments:**

N/A

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

N/A

Were the contaminated materials removed?  Yes  No  N/A

**References/Comments:**

N/A

D4 Project Facility Completion Form

Acrobat 9.0

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

Determination Number  
SDF-100N-015

**F. WIDS SITES**

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

If yes, list the WIDS sites:

1903-N is a WIDS site (124-N-4) and was removed entirely by Field Remediation.

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

References/Comments:

N/A.

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

References/Comments:

N/A.

**G. COPCs FOR 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:

Section 6.1 of the Work Instruction for Verification Sampling for 124-N-4 (1903-N) this location's COPCs (0100-N-WI-G0027 pg. 13).

Summary of in-process soil sampling requirements:

N/A

Constituents detected / concentrations / rationale

Consult Sample Collection Summary (below) and the corresponding results attached to this form. Analysis of the results will be addressed in the CVP for the 124-N-4 WIDS site.

Sample Collection Summary

• Verification samples at 1903-N (124-N-4): Sample (HEIS) Numbers J1CXP6, J1CXP7, J1CXP8, J1CYB0, J1D4W6, and J1D4W8. Analysis of the results will be addressed in the CVP for the 124-N-4 WIDS site.

**H. NOTES / ADDITIONAL INFORMATION**

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

If checked, list the attachment(s):

• Verification Sample Map and Summary Table: 0100-N-WI-G0027 pgs. 16 & 17  
• Sample Results for Sample Numbers J1CXP6, J1CXP7, J1CXP8, J1CYB0, J1D4W6, and J1D4W8. For complete analysis of results see 124-N-4 Waste Site Reclassification Form #2012-011.

**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.

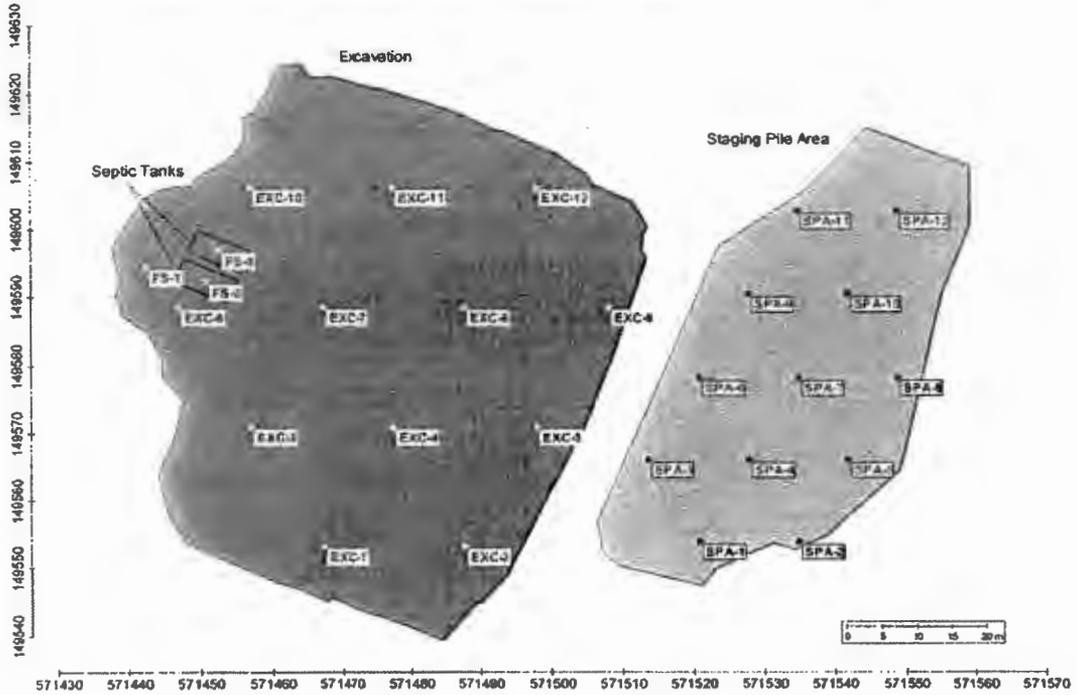
The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

D4 Project Facility Completion Form

Acrobat 9.0

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM			Determination Number SDF-100N-015
Information Reviewer Signature <i>David Warren</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>R.F. Guerra</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	

Figure 8. Verification Sample Locations for the 124-N-4 Waste Site.



D4 Project Facility Completion Form

Work Instruction No. 0100N-WI-G0027  
Rev. 0

Table 3. Verification Sampling Summary Table for the 124-N-4 Waste Site.

Sample Location	HEIS Sample Number	WSP Coordinates		Sample Analysis
		Northing	Easting	
EXC-1	TBD	149553.2	571467.4	ICP metals <sup>a</sup> , mercury, hexavalent chromium, PCBs, SVOA, nitrates <sup>b</sup> , pesticides, GEA, carbon-14, nickel-63, tritium, strontium-90, isotopic uranium, isotopic plutonium
EXC-2	TBD	149553.2	571487.8	
EXC-3	TBD	149570.9	571457.2	
EXC-4	TBD	149570.9	571477.6	
EXC-5	TBD	149570.9	571498.0	
EXC-6	TBD	149588.6	571447.0	
EXC-7	TBD	149588.6	571467.4	
EXC-8	TBD	149588.6	571487.8	
EXC-9	TBD	149588.6	571508.2	
EXC-10	TBD	149606.3	571457.2	
EXC-11	TBD	149606.3	571477.6	
EXC-12	TBD	149606.3	571498.0	
Duplicate <sup>c</sup>	TBD	TBD	TBD	
SPA-1	TBD	149554.0	571520.8	ICP metals <sup>a</sup> , mercury, hexavalent chromium, PCBs, SVOA, nitrates <sup>b</sup> , pesticides, GEA, carbon-14, nickel-63, tritium, strontium-90, isotopic uranium, isotopic plutonium
SPA-2	TBD	149554.0	571534.9	
SPA-3	TBD	149566.2	571513.8	
SPA-4	TBD	149566.2	571527.9	
SPA-5	TBD	149566.2	571542.0	
SPA-6	TBD	149578.4	571520.8	
SPA-7	TBD	149578.4	571534.9	
SPA-8	TBD	149578.4	571549.0	
SPA-9	TBD	149590.6	571527.9	
SPA-10	TBD	149590.6	571542.0	
SPA-11	TBD	149602.8	571534.9	
SPA-12	TBD	149602.8	571549.0	
Duplicate <sup>c</sup>	TBD	TBD	TBD	
FS-1	TBD	149594.4	571442.6	ICP metals <sup>a</sup> , mercury, hexavalent chromium, PCBs, SVOA, nitrates <sup>b</sup> , pesticides, GEA, carbon-14, nickel-63, tritium, strontium-90, isotopic uranium, isotopic plutonium
FS-2	TBD	149592.4	571450.8	
FS-3	TBD	149596.8	571452.7	
Equipment Blank	TBD	NA	NA	ICP metals <sup>a</sup> , mercury, SVOA

<sup>a</sup> Analysis will be performed for the expanded list of ICP metals to include antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, lead, manganese, magnesium, molybdenum, nickel, silver, selenium, vanadium, and zinc.

<sup>b</sup> To preclude holding time issues associated with EPA Method 300.0 for nitrates, EPA Method 353 will be performed.

<sup>c</sup> One duplicate soil sample will be collected from each decision unit at a location selected at the project analytical lead's discretion.

EPA = U.S. Environmental Protection Agency  
GEA = gamma energy analysis  
HEIS = Hanford Environmental Information System  
ICP = inductively coupled plasma  
NA = not applicable

PCB = polychlorinated biphenyl  
SVOA = semivolatle organic analysis  
TBD = to be determined  
WSP = Washington State Plane

D4 Project Facility Completion Form

SAMP_N UM	DECISION _UNIT	MEDIA	COLLECTION _PURPOSE	PRIM_SAMP_N UM	LAB_QC_ TYPE	FIELD _QC_ TYPE	CON_LONG_NAME	VALUE_ RPTD	UNITS_ RPTD	MDA	LAB_QUA LIFIER
J1CXP6		SO	VER	J1CXP8		TB	1,1,1-Trichloroethane	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	1,1,2,2-Tetrachloroethane	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	1,1,2-Trichloroethane	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	1,1-Dichloroethane	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	1,1-Dichloroethene	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	1,2-Dichloroethane	5.46	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	1,2-Dichloroethene(Total)	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	1,2-Dichloropropane	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	2-Butanone	5.71	ug/kg		J
J1CXP6		SO	VER	J1CXP8		TB	2-Hexanone	10.9	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	4-Methyl-2-Pentanone	10.9	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Acetone	15.5	ug/kg		
J1CXP6		SO	VER	J1CXP8		TB	Benzene	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Bromodichloromethane	5.46	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Bromofom	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Bromomethane	9.09	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Carbon disulfide	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Carbon tetrachloride	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Chlorobenzene	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Chloroethane	9.09	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Chloroform	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Chloromethane	9.09	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Dibromochloromethane	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Ethylbenzene	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Methylenechloride	4.73	ug/kg		J
J1CXP6		SO	VER	J1CXP8		TB	Percent Solids	100	%		
J1CXP6		SO	VER	J1CXP8		TB	Styrene	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Tetrachloroethene	4.55	ug/kg		U
J1CXP6		SO	VER	J1CXP8		TB	Toluene	4.55	ug/kg		U

## D4 Project Facility Completion Form

For complete analysis of results see 124-N-4 Waste Site Reclassification  
Form #2012-011.