

[0089479]

FACILITY STATUS CHANGE FORM

Date Submitted: 1/14/2013	Area: 100-N	Control #: D4-100N-0024
Originator: David Warren	Facility ID: 108-N Chemical Unloading Facility	
Phone: 539-6040	Action Memorandum: 100-N Ancillary Facilities	

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

Section 1: Facility Status

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

Description of Completed Activities and Current Conditions:

The 108-N Chemical Unloading Facility was comprised of a railcar unloading station, three acid storage tanks, one caustic storage tank, a pneumatic transfer tank, and a pump building.

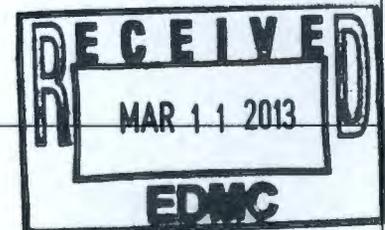
Deactivation: If required, utility isolation was performed at each facility prior to beginning deactivation.

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: The acid and caustic tanks were removed from the 108-N Chemical Unloading Facility prior to August 2005. The above grade portion of the pump building was demolished by May of 2006. The above and below grade portions of the railcar unloading station were demolished by December of 2008 along with the below grade portion of the pump building. After being stockpiled and reduced in size, waste was transported to the Environmental Restoration Disposal Facility (ERDF), where it was disposed. Based on historical presence of radiological contamination, demolition of the 108-N Chemical Unloading Facility 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 108-N Chemical Unloading Facility was demolished and disposed of at the ERDF. A post-demolition Global Positioning System (GPS) civil survey was performed to document the extent of the excavation. The excavation underwent two Global Positioning Environmental Radiological Surveyor (GPERS) surveys, neither of which identified radiological contamination. The excavation has been backfilled with clean soil from the 100-N Borrow Pit. The results of the GPERS surveys are shown in Attachment 3 and the results of the GPS civil survey are shown in Attachment 4.

FACILITY STATUS CHANGE FORM

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

There were two Waste Information Data System (WIDS) sites present within the 108-N excavation footprint: WIDS site 120-N-7 and WIDS subsite 100-N-103:1. WIDS site 120-N-7 consists of the 108-N Chemical Unloading Facility French Drain and the underlying soil and is located at the previous location of the railcar unloading station. The site's French drain was demolished/removed in December of 2008.

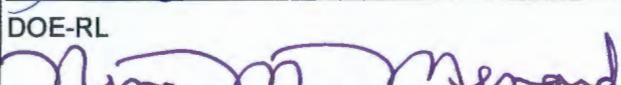
WIDS subsite 100-N-103:1 is comprised of multiple French drains and the underlying soils. One of these French drains, FD-1, was associated with the 108-N Chemical Unloading Facility and was located immediately north of the previous location of the pump building. This French drain was demolished in December of 2008.

The soils underlying 120-N-7 and 100-N-103:1 underwent verification sampling. However, the analytical results of both verification sampling efforts indicated that additional remediation would be necessary. The Field Remediation (FR) Organization will perform the requisite additional remediation and the subsequent verification sampling at these two locations. As FD-1 (100-N-103:1 French Drain #1) is collocated with WIDS subsite 100-N-84:6, it will be remediated and subsequently closed out as part of the 100-N-84:6 subsite.

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 (SDF) for the 108-N Chemical Unloading Facility (SDF-100N-003) represents a regulatory agreement between DOE and the Lead Regulator (Ecology), and required sampling to be performed for verification of soils adjacent the 108-N facility. Sampling was performed by the Washington Closure Hanford D4 organization and the results indicated results above the RAGS. The sampling location is in the vicinity of FD-1, part WIDS subsite 100-N-103:1, which lies within the Ecology approved remediation design for 100-N-84:6. As FD-1 is collocated with WIDS subsite 100-N-84:6, it will be remediated and subsequently closed out as part of the 100-N-84:6 subsite. Further action will not be required by the D4 organization to demonstrate that cleanup criteria have been met for the 108-N Chemical Unloading Facility.

Section 3: List of Attachments

1. Facility Information
2. Photographs
3. Global Positioning Environmental Radiological Surveyor (GPERS) Surveys
4. GPS Civil Surveys
5. Sampling Determination Form for the 108-N Chemical Unloading Facility (SDF-100N-003)

	Date <u>1/16/13</u>
DOE-RL 	Date <u>2/28/13</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

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

SIS Coordinator: Benjamin Cowin, H4-22

D4 EPL: Dave Warren, X9-08

Sample Design/Cleanup Verification: Theresa Howell, H4-22

FR Engineering: Rich Carlson, N3-30

FR EPL: Dan Saueressig, N3-30

D4 Project Facility Completion Form

Attachment 1: Facility Information (10 pages)

Facility Information

Introduction

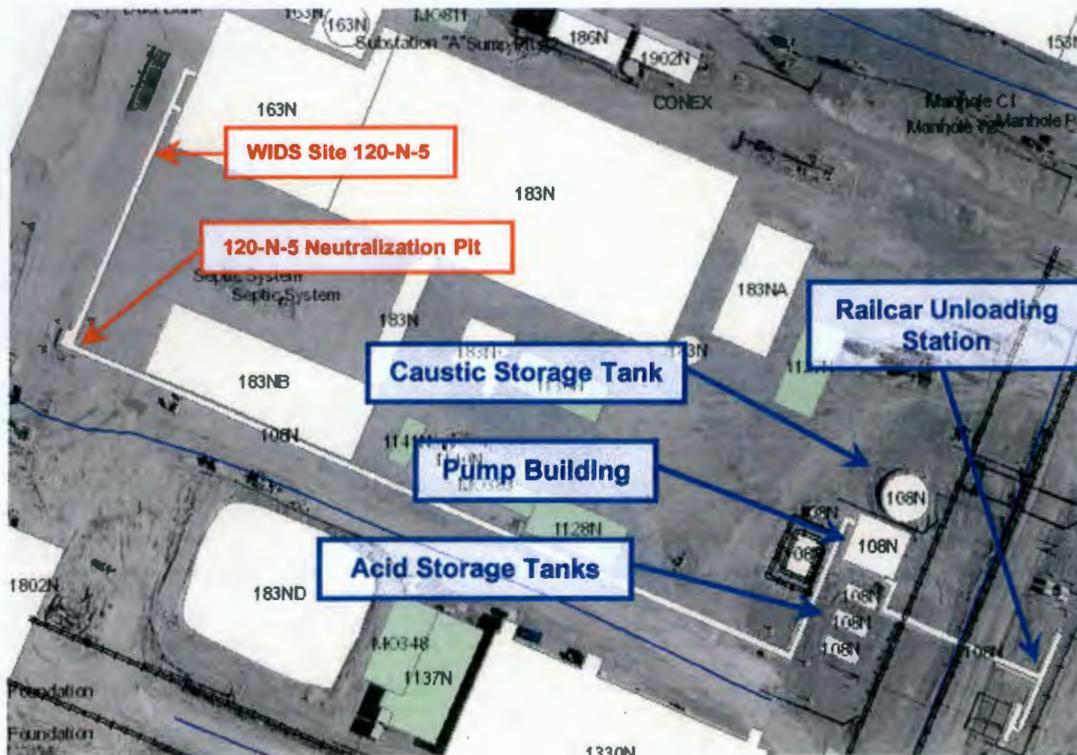
This document provides information regarding the history, characterization, and final status at the completion of deactivation, decontamination, decommissioning, and demolition activities of the 108-N Chemical Unloading Facility, formerly located at the 100-N Area.

Site Information

The 108-N Chemical Unloading Facility consisted of a railcar unloading station, three acid storage tanks, one caustic storage tank, a pneumatic transfer tank, and a 27 ft by 30 ft concrete pump building that had a tar and gravel concrete roof and a poured concrete foundation. The facility received, stored, and transferred caustic and acid liquid that was delivered in rail cars and trucks. A map of the 108-N Chemical Unloading Facility is included in Figure 1. Photographs are included in Attachment 2.

Acid and caustic liquids were transported from the 108-N facility to the 163-N Demineralized Water Plant through underground pipelines contained within the 108-N/163-N Transfer Line and Neutralization Pit, which has been classified as Waste Information Data System (WIDS) site 120-N-5. This WIDS site was a 720 foot long trench that originally had a concrete bottom, concrete walls, and a metal plate cover. The concrete was corroded during a major spill within the trench and was subsequently replaced with new polymer-lined concrete. The trench contained a neutralization pit that was used to collect acid and caustic liquids that had spilled within the trench. Collected liquids were neutralized and then discharged to the nearby Columbia River.

Figure 1: Location of the 108-N Chemical Unloading Facility



D4 Project Facility Completion Form

NOTE: The 108-N/163-N Transfer Line and Neutralization Pit was not part of the 108-N Chemical Unloading Facility. However, it was connected to, and associated with, the facility. Accordingly, information pertaining to the 108-N/163-N Transfer Line and Neutralization Pit is provided below to supplement 108-N Chemical Unloading Facility information.

Radiological and Industrial Hygiene Scoping Surveys

No radiological scoping or industrial hygiene baseline survey was performed at the 108-N Chemical Unloading Facility or the 108-N/163-N Transfer Line and Neutralization Pit.

Post-Demolition Radiological Surveys

Radiological contamination was not detected during the final work progress down-posting survey performed at the 108-N footprint in January of 2009. This survey is summarized in Table 1 below.

Global Positioning Environmental Radiological Surveyor (GPERS) surveys were performed at the 108-N Chemical Unloading Facility and a portion of the 108-N/163-N Transfer Line and Neutralization Pit. The 108-N GPERS surveys were performed in January of 2009. The 108-N/163-N Transfer Line and Neutralization Pit GPERS surveys were performed in February and November of 2008. These surveys did not detect radiological contamination. The GPERS surveys are included in Attachment 3 and are summarized in Table 1 below.

Table 1: Summary of Post-Demolition Radiological Surveys

Type	Quantity	Method Detection Limits	Results
Work Progress Down-Posting Radiological Surveys	1 Survey	Beta-gamma – 1,000 removable/ 5,000 fixed ^a Alpha – 20 removable/ 500 fixed ^a	All results were below method detection limits.
GPERS Surveys	6 Surveys	N/A	A total of 14,657 data points were taken at the 108-N facility and the 108-N/163-N Transfer Line and Neutralization Pit. All results were less than 2 times the background count. It should be noted that readings from this location that are under 2 times the background count are considered to be insignificant. The GPERS surveys are included in Attachment 3.
^a – dpm/100 cm ²			

D4 Project Facility Completion Form

Facility & Waste Characterization Sampling

Five samples of potential asbestos-containing material were taken from the 108-N caustic tank in August of 1996. Subsequently, 19 samples of potential asbestos-containing material were taken from the 108-N Chemical Unloading Facility during a certified asbestos inspection in December of 2005. Finally, two samples of potential asbestos-containing material were taken from the interior of a French drain at the 108-N Chemical Unloading Facility during its demolition. Table 2 below summarizes the asbestos characterization sampling at the 108-N Chemical Unloading Facility.

Table 2: Summary of Asbestos Samples

Type	Quantity	Method Detection Limits	Results
Asbestos – Thermal System Insulation and Miscellaneous Material	26 Samples	1% asbestos content	<p>Samples of potential asbestos-containing material were taken from water lines, steam lines, and the condensate line within the 108-N pump building; the exterior of the 108-N caustic tank; and the interior of a French drain at the 108-N facility.</p> <p>One of the samples taken from fibrous material on the water lines contained asbestos above the method detection limit. It was decided that all elbows on the water supply piping should be considered to contain asbestos.</p> <p>Four of the samples taken from fibrous material on the steam lines contained asbestos above the method detection limit. It was decided that all components of the 108-N steam system should be considered to contain asbestos.</p> <p>The two samples taken from insulation within the French drain contained asbestos above the method detection limit.</p> <p>No other sample of potential asbestos-containing material from the 108-N facility contained asbestos above the method detection limit. All asbestos was removed from the facility prior to demolition.</p>

The remainder of characterization sampling performed at the 108-N Chemical Unloading Facility was carried out to determine the acceptability of material disposal at the Environmental Restoration Disposal Facility (ERDF). Table 3 below summarizes the samples that were taken for such waste management purposes. These samples should not be confused with verification samples of WIDS site 120-N-7 or WIDS subsite 100-N-103:1. These verification samples are addressed later in this attachment.

D4 Project Facility Completion Form

Table 3: Summary of Additional Waste Management Samples

HEIS #	Sample Date	Location	Material
J11K52	3-13-06	108-N French Drain	Anomalous Discolored Soil
J11K53	3-13-06	108-N French Drain	Anomalous Discolored Soil
J11K54	3-13-06	108-N French Drain	Anomalous Discolored Soil
J11KD9	3-13-06	108-N French Drain	Anomalous Discolored Soil
J13VN7	12-7-06	108-N Neutralization Pit	Water
J13VN8	12-7-06	108-N Neutralization Pit	Sludge
J16385	12-5-07	108-N/163-N Sulfuric Acid Transfer Line	Water
J16386	12-5-07	108-N/163-N Sodium Hydroxide Transfer Line	Water
J16383	12-11-07	108-N/163-N Chemical Transfer Lines	Soil

Demolition

The acid and caustic tanks were removed from the 108-N Chemical Unloading Facility prior to August 2005. The above and below grade portions of the railcar unloading station were demolished by December of 2008. The above grade portion of the 108-N pump building was demolished by May of 2006. The below grade portion of the 108-N pump building was demolished by December of 2008. The southeast portion of the 108-N/163-N Transfer Line and Neutralization Pit was removed with the railcar unloading station and the below grade portion of the 108-N pump building. Facility debris was stockpiled, reduced in size, loaded into roll-off containers, and then sent to the ERDF for disposal.

Contaminants of Concern

Radionuclides were the only contaminants of concern for demolition of the 108-N Chemical Unloading Facility.

Civil Survey Information

A pre-demolition Global Positioning System (GPS) civil survey was performed at the 108-N Chemical Unloading Facility in November of 2005. A post-demolition GPS civil survey was performed at the 108-N excavation in January of 2009. Copies of these GPS civil surveys are provided in Attachment 4.

A pre-demolition GPS civil survey was performed at the 108-N/163-N Transfer Line and Neutralization Pit in October of 2006. Post-demolition GPS civil surveys were performed at the excavations of the 108-N/163-N Transfer Line and the 108-N/163-N Neutralization Pit in February and November of 2008, respectively. Copies of these GPS civil surveys are provided in Attachment 4.

Anomalies

Three anomalous circumstances were encountered during demolition of the 108-N Chemical Unloading Facility:

D4 Project Facility Completion Form

- Potential asbestos-containing insulation was discovered within a French drain at the 108-N facility. This material was sampled and was determined to contain asbestos. It was properly disposed. Table 2 of this attachment summarizes the asbestos characterization sampling at the 108-N Chemical Unloading Facility.
- Stained soil was discovered at a French drain at the 108-N facility. This soil was sampled to ensure that it met the parameters of the applicable waste profile. Table 3 of this attachment summarizes the samples that were taken for waste management purposes.
- Sulfuric acid and sodium hydroxide were discovered within the soil underlying the 108-N railcar unloading station at levels that were not expected. As a result of this discovery, the excavation permit for 108-N removal was revised to incorporate additional excavation depths at this location.

Status of Associated/Adjacent WIDS Sites

Table 4 below provides information on the WIDS sites that were associated with, and/or adjacent to, the 108-N Chemical Unloading Facility.

Table 4: Associated/Adjacent WIDS Sites for 108-N

Site Number	Site Name	Description & Classification/Reclassification Statuses	Removal Status
100-N-8	108-N Chemical Unloading Facility	<p>This site consisted of the 108-N pump building, tank pit, tank foundations, and metal structure used to offload chemicals.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> Rejected</p>	<p>This site was completely removed during removal of the 108-N facility.</p> <p>As this site has received a Rejected reclassification status, no remedial action is expected for the underlying soil.</p>
100-N-27	108-N Neutralization Pit	<p>This site consisted of a concrete pit with a brick lining and steel lid that received drainage from the 108-N floor drains and 108-N acid transfer tank.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> Rejected</p>	<p>This site was completely removed during removal of the 108-N facility.</p> <p>As this site has received a Rejected reclassification status, no remedial action is expected for the underlying soil.</p>
100-N-40	Unplanned Release at 108-N	<p>This site consisted of a portion of a gravelled lot at the railcar unloading station of the 108-N Chemical Unloading Facility that received an unplanned release of sodium hydroxide.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> Rejected</p>	<p>This site was remediated shortly after the time of the unplanned release, prior to removal of the 108-N facility.</p> <p>As this site has received a Rejected reclassification status, no additional remedial action is expected.</p>

D4 Project Facility Completion Form

Site Number	Site Name	Description & Classification/Reclassification Statuses	Removal Status
100-N-58	120-N South Settling Pond (1324-N South Settling Pond)	<p>This site consisted of an unlined pond that received regeneration waste from the 163-N building and filter backwash water from the 183-N building. Regeneration waste from the 163-N building contained aluminum sulfate, sulfuric acid, sodium hydroxide solutions, and cooling water.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> Closed Out</p>	<p>This site was remediated, backfilled, and closed out prior to the removal of the 108-N facility.</p> <p>As this site has received a Closed Out reclassification status, no additional remedial action is expected.</p>
100-N-61:1 (subsite)	109-N South Side Pipelines of the 100-N Water Treatment and Storage Facilities Underground Pipelines	<p>This site consists of underground pipelines that were used to transport reactor cooling water, sewer water, sump discharge waste water, and chlorine between the 109-N building and the 181-N, 182-N, 183-NA, 1900-N, and 1908-N water treatment and storage facilities.</p> <p><u>Classification:</u> Accepted</p>	<p>The portion of this subsite that was located within the 108-N excavation footprint was completely removed during removal of the 108-N facility.</p>
100-N-84:1 (subsite)	100-N Area Raw Water Pipelines	<p>This subsite consists of pipelines used for transporting low pressure water, emergency water, raw water, raw water return, and raw water supply.</p> <p><u>Classification:</u> Accepted</p>	<p>The portion of this subsite that was located within the 108-N excavation footprint was completely removed during removal of the 108-N facility.</p>
100-N-84:3 (subsite)	100-N Area Filter and Potable Water Pipelines	<p>This subsite consists of pipelines used for transporting makeup water, filter water, demineralized water, and potable water.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> No Action</p>	<p>The portion of this subsite that was located within the 108-N excavation footprint was completely removed during removal of the 108-N facility.</p> <p>As this subsite has received a No Action reclassification status, no remedial action is expected for the remaining portion.</p>
100-N-84:4 (subsite)	100-N Area Stream and Condensate Pipelines	<p>This subsite consists of pipelines used for transporting steam condensate, injection water, and vacuum pump water.</p> <p><u>Classification:</u> Accepted</p>	<p>The portion of this subsite that was located within the 108-N excavation footprint was completely removed during removal of the 108-N facility.</p>

D4 Project Facility Completion Form

Site Number	Site Name	Description & Classification/Reclassification Statuses	Removal Status
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>The portion of this subsite that was located within the 108-N excavation footprint was completely removed during removal of the 108-N facility.</p>
100-N-84:6 (subsite)	100-N Area Chemical and Process Sewer Pipelines	<p>This subsite consists of pipelines used for transporting chemical waste, radioactive drain waste, flush waste, sample waste, and chlorine.</p> <p><u>Classification:</u> Accepted</p>	<p>The portion of this subsite that was located within the 108-N excavation footprint was completely removed during removal of the 108-N facility.</p>
100-N-103:1	100-N Steam Condensate French Drains	<p>This subsite consists of 11 steam condensate French drains and the associated underground pipeline components.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> No Action</p>	<p>One of the French drains, FD-1, was removed during removal of the 108-N facility. Contaminated soil remains within the FD-1 excavation boundary.</p> <p>This subsite will be closed out by the Field Remediation (FR) Organization.</p>
120-N-1	1324-NA Percolation Pond	<p>This site consisted of an unlined basin that received regeneration waste and process and cooling water from the 163-N building.</p> <p><u>Classification:</u> Accepted</p>	<p>This site was remediated and backfilled prior to the removal of the 108-N facility.</p>
120-N-2	1324-N Surface Impoundment	<p>This site consisted of an unlined basin that received regeneration waste and process and cooling water from the 163-N building.</p> <p><u>Classification:</u> Accepted</p>	<p>This site was remediated and backfilled prior to the removal of the 108-N facility.</p>
120-N-6	108-N Acid Tank Vent French Drains	<p>This site consisted of five French drains, three of which received overflow and condensate from the three sulfuric acid storage tanks south of the 108-N pump building. The remaining two French drains received 108-N acid tank vent overflow and condensate from a transfer tank in a concrete pit just west of the 108-N pump building. These French drains were packed with limestone to neutralize the acid before entering the soil column.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> Rejected</p>	<p>This site was completely removed prior to the removal of the 108-N facility.</p> <p>As this site has received a Rejected reclassification status, no remedial action is expected for the underlying soil.</p>

D4 Project Facility Completion Form

Site Number	Site Name	Description & Classification/Reclassification Statures	Removal Status
120-N-7	108-N Acid Unloading Facility French Drain	<p>This site consisted of a French drain at the Railroad Car Unloading Facility that was used to collect small releases of sulfuric acid from the overhead transfer boom hose coupling that offloaded sulfuric acid from the railroad tank cars and tank trucks.</p> <p><u>Classification:</u> Accepted</p>	<p>This French drain was removed during removal of the 108-N facility. Contaminated soil remains within the 120-N-7 excavation boundary.</p> <p>This site will be closed out by the FR Organization.</p>
UPR-100-N-15	108-N Neutralization Sump Spill	<p>This site consisted of the interior of the 108-N pump building and a portion of the adjacent exterior graveled field that received an unplanned release of sulfuric acid during an acid transfer from the acid transfer pumps.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> Rejected</p>	<p>This site was completely removed during removal of the 108-N facility.</p> <p>As this site has received a Rejected reclassification status, no remedial action is expected for the underlying soil.</p>
UPR-100-N-33	108-N Acid Transfer Spill	<p>This site consisted of a portion of a graveled lot at the 108-N Chemical Unloading Facility that received an unplanned release of sulfuric acid during an acid transfer from a rail car to the sulfuric acid storage tank at the 108-N Chemical Unloading Facility.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> Rejected</p>	<p>This site was completely removed during removal of the 108-N facility.</p> <p>As this site has received a Rejected reclassification status, no remedial action is expected for the underlying soil.</p>

120-N-5 and Associated WIDS Sites

Site Number	Site Name	Description & Classification/Reclassification Statures	Removal Status
<p>120-N-5</p> <p><u>Note:</u> 120-N-5 was connected to the 108-N facility</p>	108-N/163-N Transfer Line and Neutralization Pit	<p>This site consisted of a 720-foot long polymer-lined concrete trench that connected the 108-N Chemical Unloading Facility to the 163-N Demineralized Water Plant. It contained a sulfuric acid transfer line and a sodium hydroxide transfer line. A neutralization pit was located at a bend in the trench and collected waste spills from the transfer lines.</p> <p><u>Classification:</u> Accepted <u>Reclassification:</u> Rejected</p>	<p>The southeastern portion of this site was removed during removal of the railcar unloading station, which was part of the 108-N Facility. No other portion of this site was affected during removal of the 108-N facility.</p>

D4 Project Facility Completion Form

Site Number	Site Name	Description & Classification/Reclassification Statuses	Removal Status
<ul style="list-style-type: none"> •100-N-10 •100-N-11 •120-N-3 •UPR-100-N-34 	<p>120-N-3: 163-N Neutralization Pit and French Drain</p> <p>All other WIDS sites listed were unplanned releases of either sulfuric acid or sodium hydroxide from the 108-N/163-N Transfer Line and Neutralization Pit.</p>	<p>120-N-3: Neutralization Pit and French Drain <u>Classification:</u> Accepted</p> <p>All Others: Unplanned Releases <u>Classification:</u> Accepted <u>Reclassification:</u> Rejected</p>	<p>120-N-3 was not affected during removal of the 120-N-5 WIDS site. The locations of 100-N-10, 100-N-11, and UPR-100-N-34 were removed during partial removal of the 120-N-5 WIDS site. None of these four sites were affected during removal of the 108-N facility.</p> <p>As WIDS sites 100-N-10, 100-N-11, and UPR-100-N-34 have received Rejected reclassification statuses, no additional remedial action is expected at their locations.</p>

Final Building Status and Underlying Soil

Demolition of the 108-N Chemical Unloading Facility was completed by December of 2008. Facility debris was sent to the ERDF for disposal. The excavation was subsequently backfilled with clean soil from the 100-N Borrow Pit.

Three anomalous substances were discovered during demolition of the 108-N Chemical Unloading Facility: asbestos-containing insulation within a French drain, stained soil at a French drain, and soil containing sulfuric acid and sodium hydroxide beneath the 108-N railcar unloading station. Samples were taken of the asbestos insulation and French drain stained soil, as summarized in Tables 2 and 3 of this attachment. The excavation permit for 108-N removal was revised to allow for removal of the soil containing sulfuric acid and sodium hydroxide, as these compounds were not expected to be present within the soil at the level at which they were discovered.

GPERS surveys were performed at the 108-N footprint as well as at a portion of the 108-N/163-N Transfer Line and Neutralization Pit footprint. Radiological contamination was not detected during these GPERS surveys. GPS civil surveys were performed to document the location of the 108-N Chemical Unloading Facility as well as its post-demolition excavation. Table 5 below summarizes the contaminants of concern for 108-N removal. Photographs are included in Attachment 2. GPERS surveys are included in Attachment 3 and GPS civil surveys are included in Attachment 4.

WIDS site 120-N-7 and WIDS subsite 100-N-103:1 are the only waste sites currently remaining within the 108-N excavation footprint. WIDS site 120-N-7 is the 108-N Acid Unloading Facility French Drain. It was located at the railcar unloading station, a portion of the 108-N Chemical Unloading Facility, and accordingly was demolished by December of 2008. Following demolition, this WIDS site was verification sampled by the FR Organization and the sample results indicated that the remaining soil exceeded the remedial action goal (RAG) for chromium

D4 Project Facility Completion Form

(total), lead, vanadium, sulfate, total petroleum hydrocarbons (TPHs), and various polycyclic aromatic hydrocarbons (PAHs). This WIDS site will undergo additional excavation and verification sampling by the FR Organization.

WIDS subsite 100-N-103:1 consists of the 100-N Steam Condensate French Drains. This set of French drains includes French drain FD-1, which was associated with the 108-N facility and was located immediately north of the 108-N pump building. Accordingly, FD-1 was likewise demolished by December of 2008. Following demolition, FD-1 was verification sampled according to the applicable verification sampling work instruction, as approved by the Department of Energy and the Washington State Department of Ecology (Ecology). The sample results indicated that the remaining soil exceeded the RAG for lead, zinc, PAHs, and TPHs. The 100-N-103:1 subsite lies within the boundary of Ecology-approved remediation design drawing 0100-DD-C0816, which also encompasses WIDS subsite 100-N-84:6. Accordingly, additional remediation of the 100-N-103:1 subsite will occur during remediation of the 100-N-84:6 subsite, which is scheduled to be remediated by the FR Organization in 2013. Therefore, new verification samples will be collected in the future to support interim closure of the 100-N-84:6 subsite and these samples will be used to support closeout of the 100-N-103:1 subsite as part of 100-N-84:6.

Table 5: 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 for demolition of the 108-N Chemical Unloading Facility. Radiological controls were in place during demolition and load out.</p> <p>The post-demolition GPERS surveys performed at the 108-N footprint did not detect radiological contamination. The GPERS survey maps are included in Attachment 3.</p> <p><u>Note:</u> The 108-N Chemical Unloading Facility contained asbestos and hazardous chemicals during its operation. All asbestos-containing material and hazardous chemicals were removed prior to demolition.</p>

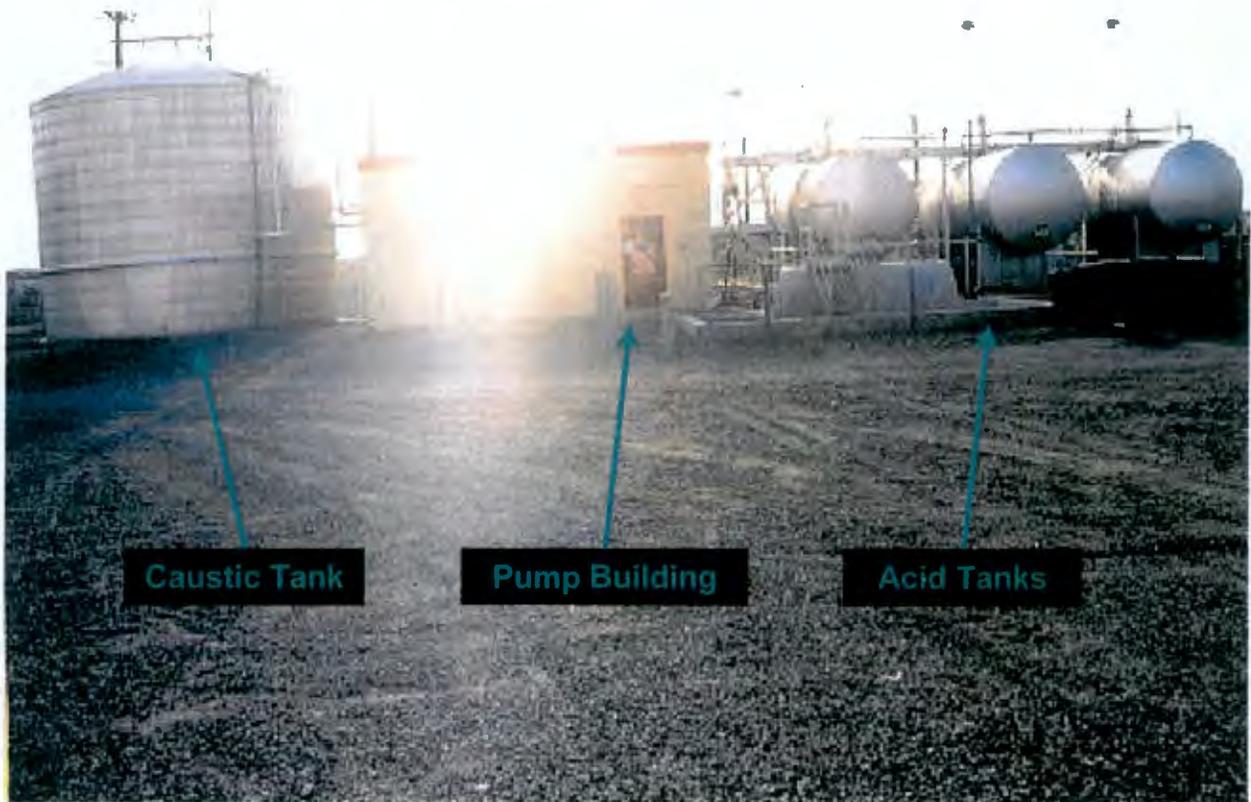
D4 Project Facility Completion Form

Attachment 2: Photographs (3 Pages)

D4 Project Facility Completion Form



108-N Pre-Demolition



108-N Chemical Storage Tanks & Pump Building Pre-Demolition (Looking Southeast)

D4 Project Facility Completion Form



108-N Railcar Unloading Station (Looking Northwest)

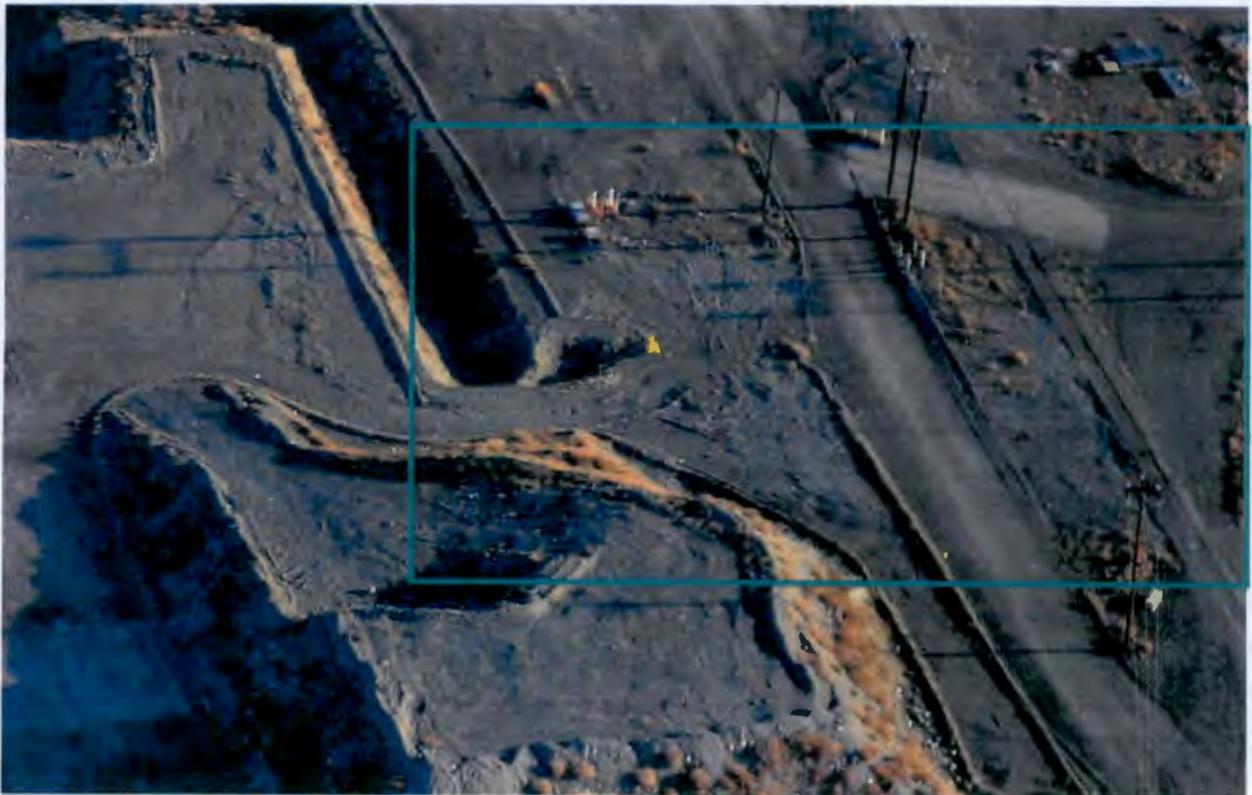


108-N After Removal of Chemical Storage Tanks

D4 Project Facility Completion Form



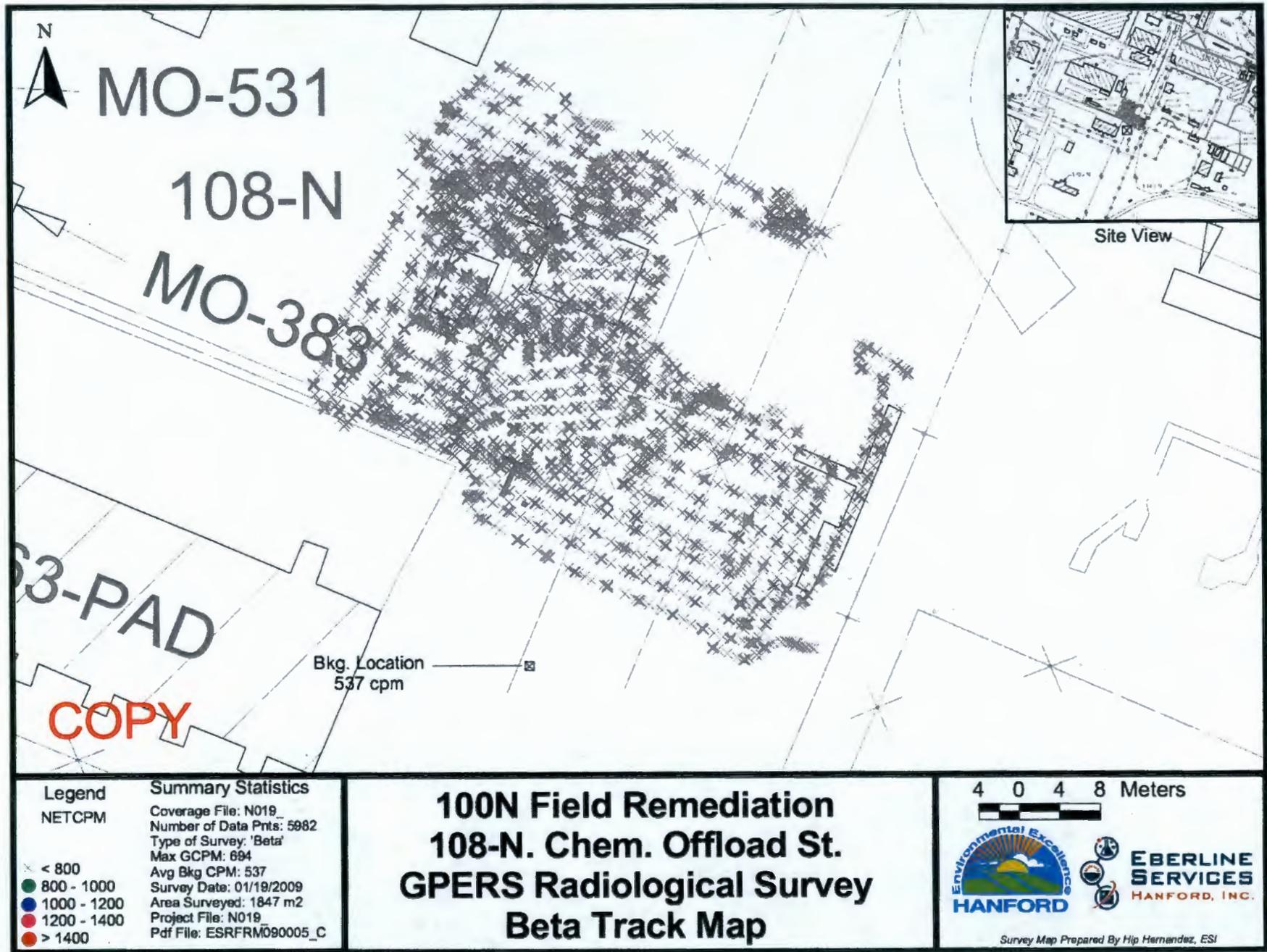
108-N After Demolition & Backfill

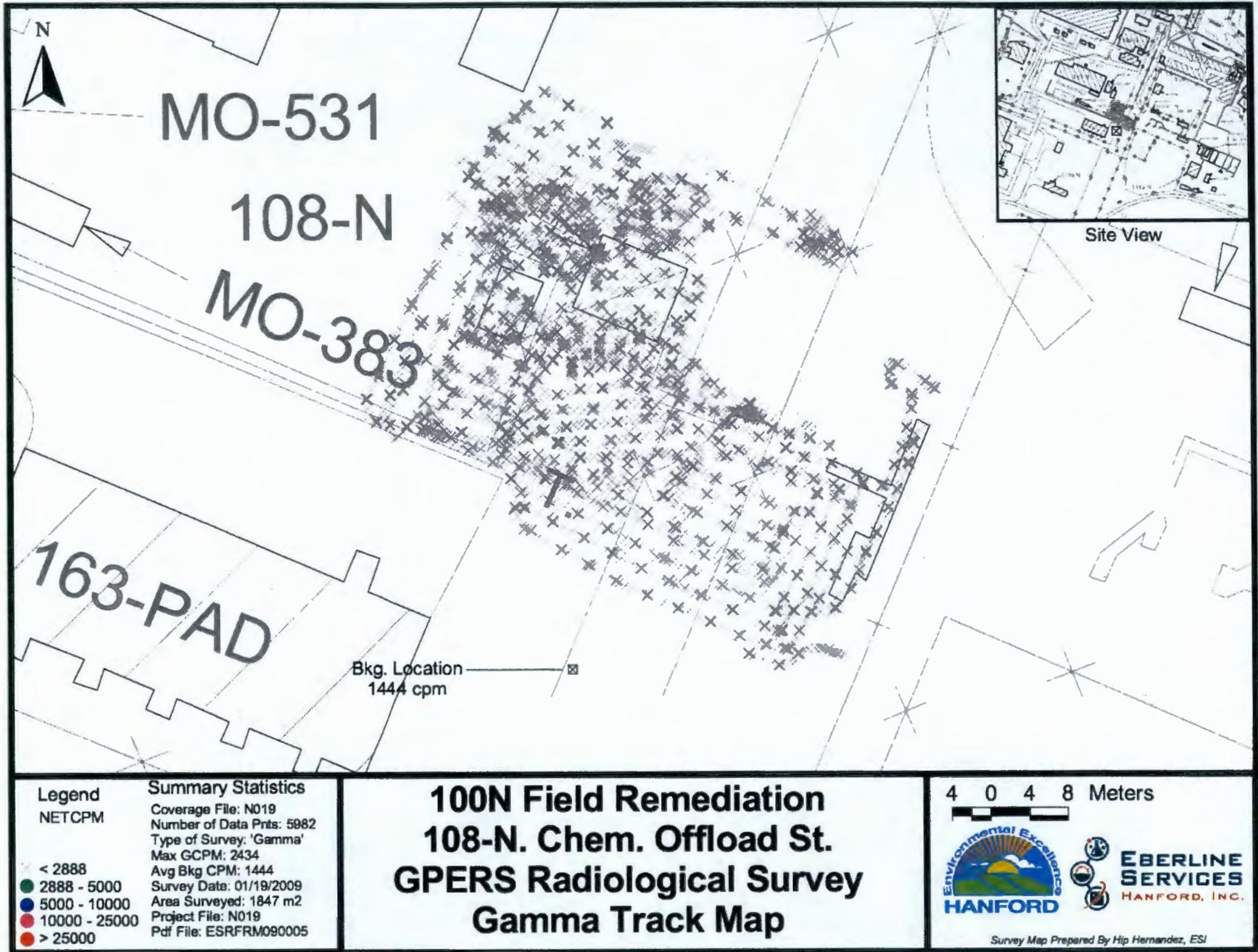


108-N After Demolition & Backfill

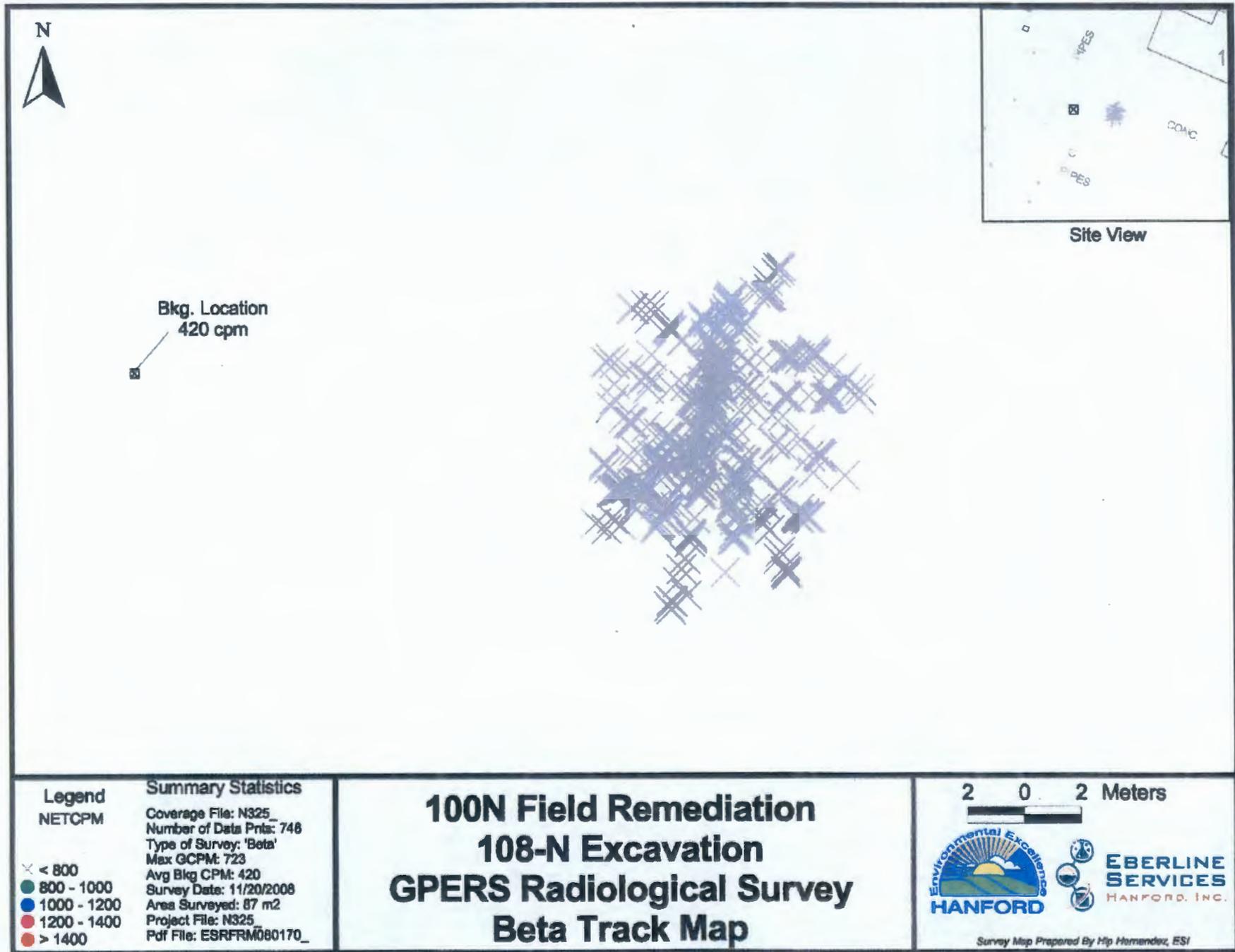
D4 Project Facility Completion Form

Attachment 3: GPERS Surveys (6 Pages)

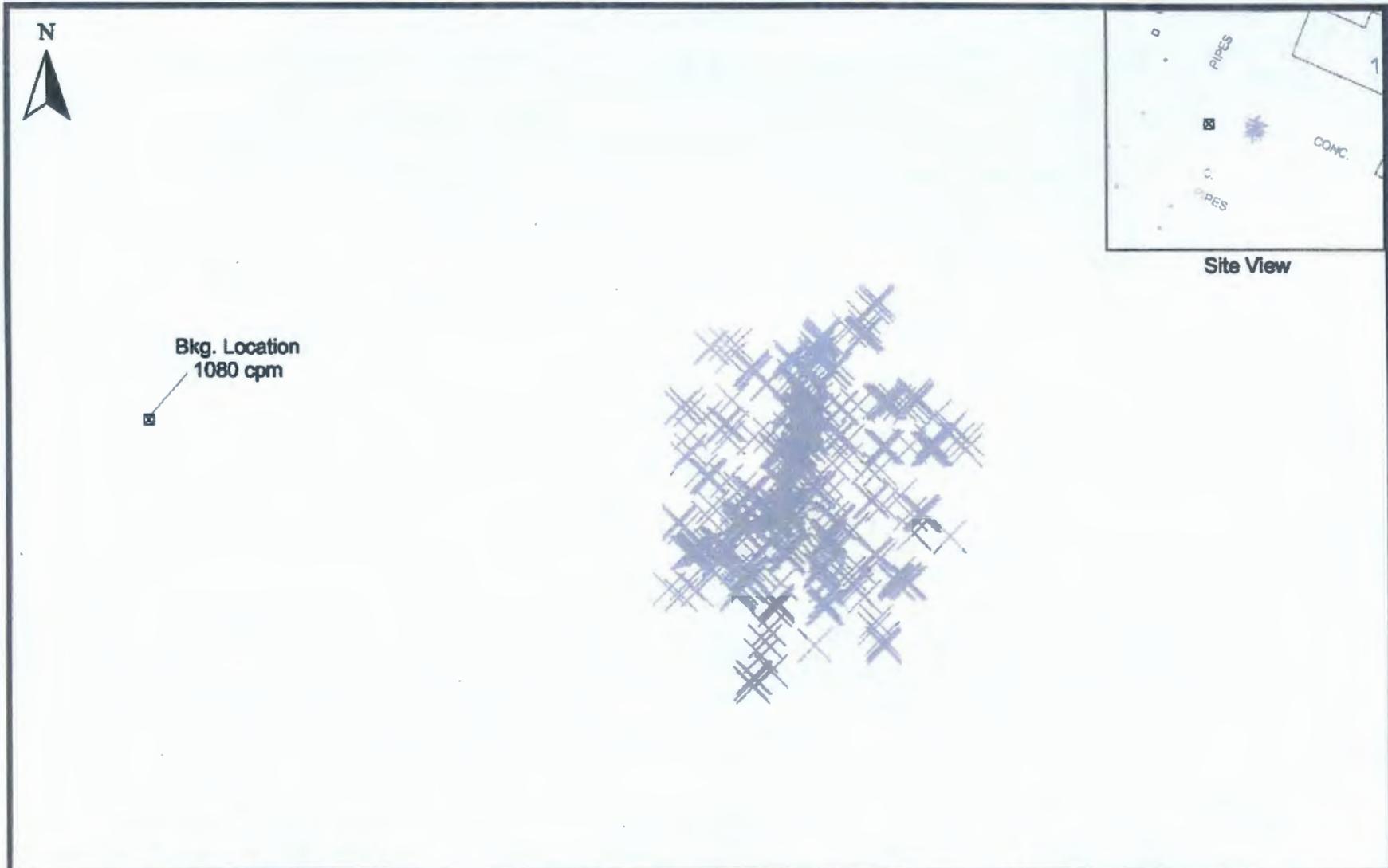




D4 Project Facility Completion Form



D4 Project Facility Completion Form



Legend
NETCPM

- < 2160
- 2160 - 5000
- 5000 - 10000
- 10000 - 25000
- > 25000

Summary Statistics

Coverage File: N325
Number of Data Pnts: 748
Type of Survey: 'Gamma'
Max GCPM: 1639
Avg Bkg CPM: 1080
Survey Date: 11/20/2008
Area Surveyed: 87 m2
Project File: N325
Pdf File: ESRFRM080170

**100N Field Remediation
108-N Excavation
GPERS Radiological Survey
Gamma Track Map**

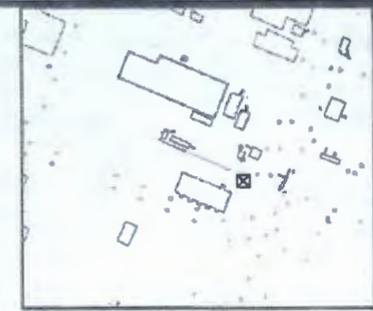
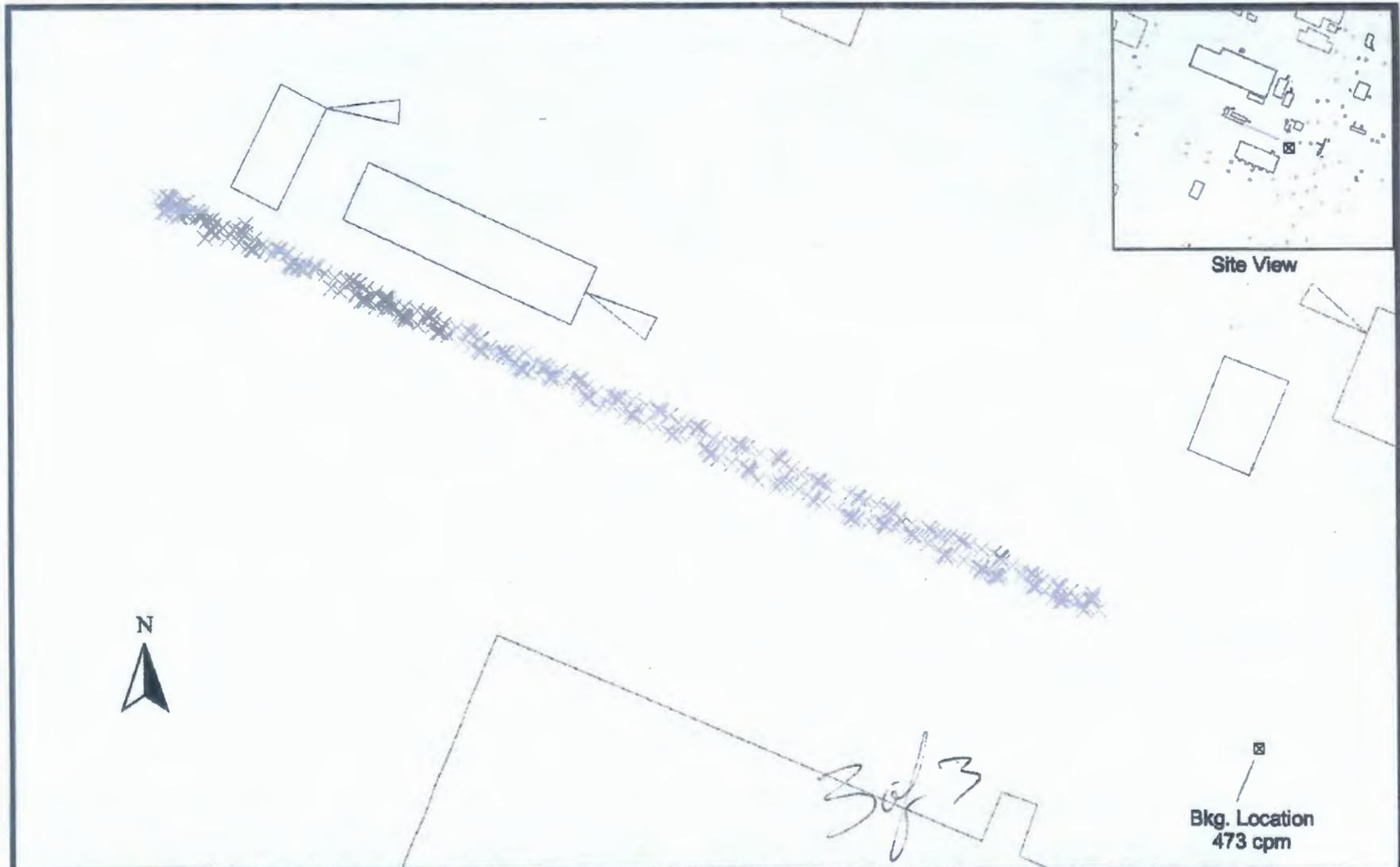
2 0 2 Meters



**EBERLINE
SERVICES**
HANFORD, INC.

Survey Map Prepared By Hip Hernandez, ES!

D4 Project Facility Completion Form



Site View

Legend	Summary Statistics
NETCPM	Coverage File: N051A
× < 800	Number of Data Pnts: 650
● 800 - 1000	Type of Survey: 'Beta'
● 1000 - 1200	Max GCPM: 754
● 1200 - 1400	Avg Bkg CPM: 473
● > 1400	Survey Date: 02/20/2008
	Area Surveyed: 144 m2
	Project File: N051A
	Pdf File: ESRFRM080012

**100N D4 Project
108-N Chemical Trench
GPERS Radiological Survey
Beta Track Map**

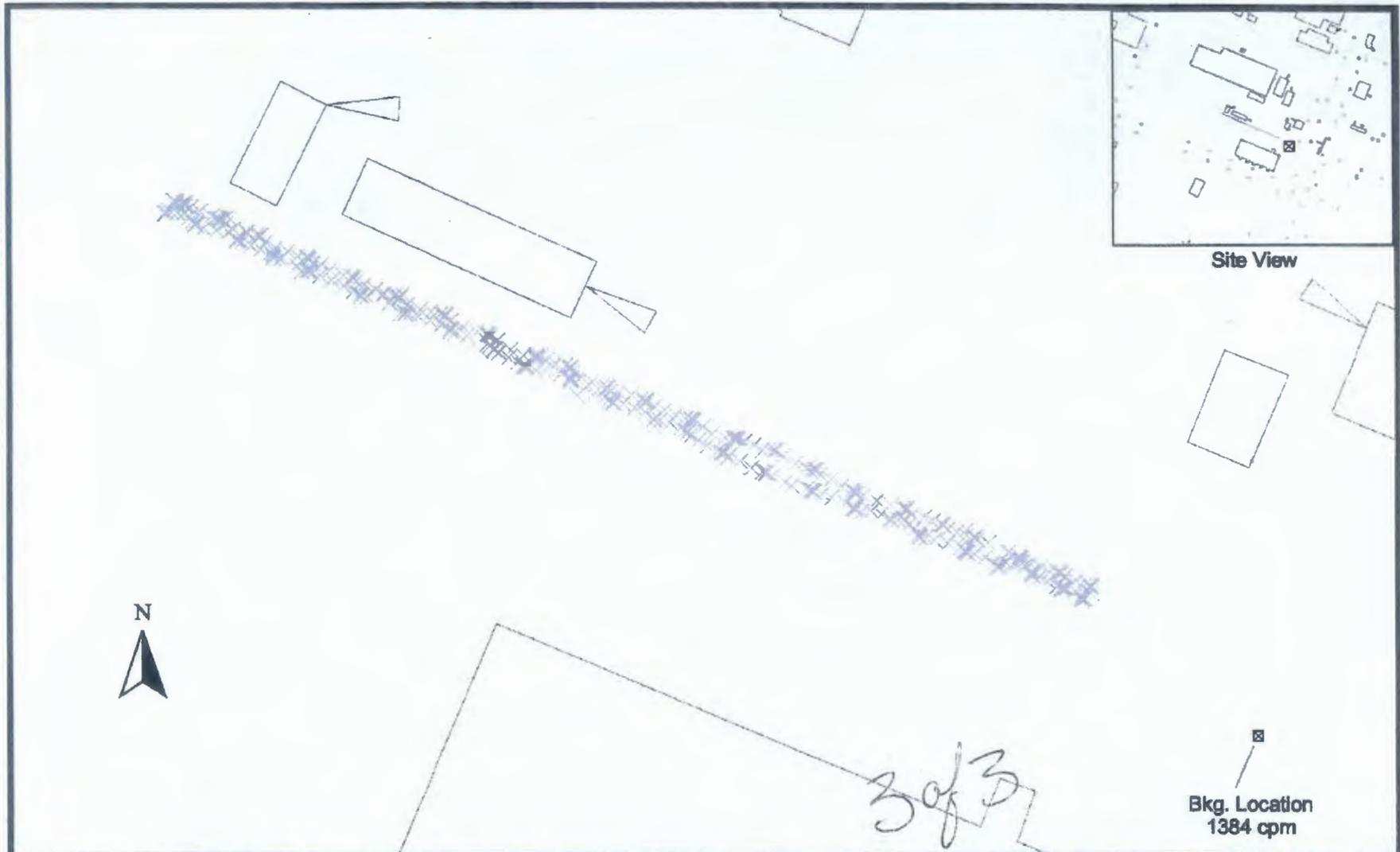
5 0 5 Meters

Environmental Excellence
HANFORD

EBERLINE
SERVICES
HANFORD, INC.

Survey Map Prepared By Mike Dillon, ESI

D4 Project Facility Completion Form



Legend

NETCPM

- × < 2768
- 2768 - 5000
- 5000 - 10000
- 10000 - 25000
- > 25000

Summary Statistics

Coverage File: N051
 Number of Data Pnts: 547
 Type of Survey: 'Gamma'
 Max GCPM: 1708
 Avg Bkg CPM: 1384
 Survey Date: 02/20/2008
 Area Surveyed: 144 m2
 Project File: N051
 Pdf File: ESRFRM080011

100N D4 Project
108-N Chemical Trench
GPERS Radiological Survey
Gamma Track Map

5 0 5 Meters



Survey Map Prepared By Mike Dillon, ESI

D4 Project Facility Completion Form

Attachment 4: GPS Surveys (14 Pages)

0579172

GPS Survey Data Report for 108N Pre Demolition

Project : Job 947

User name	maaye	Date & Time	7:48:15 AM 11/16/2006
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum		Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name/Title:	108N Building Pre Demolition
Survey Purpose:	GPS 108N building and surrounding features prior to D&D
Requested By:	Amy Hood
General Site Location:	100-N
Charge Code:	per building
Field Surveyor:	MARGO AYE
Computer Software Used:	Survey Controller
Survey Equipment Used:	5800
Control Monuments Used:	100N-4
Survey Method:	RTK
Estimated Horizontal Precision:	<=0.02m
Estimated Vertical Precision:	<=0.05m
Fieldwork Start Date	November 29, 2005
Completion Date:	December 12, 2005

Notes: *Logbook # EL1571*

Name	Northing	Easting	Elevation	Feature Code	Description
892	149285.655m	571260.223m	140.095m	tank-pad	
893	149281.215m	571262.223m	140.082m	tank-pad	
888	149275.789m	571259.576m	139.922m	corn	
894	149283.636m	571254.688m	140.090m	tank-pad	
891	149279.010m	571253.096m	140.300m	drain	Frech Drain
887	149279.633m	571250.777m	139.892m	corn	
896	149278.752m	571247.903m	139.983m	pipeline	
895	149277.844m	571250.091m	139.917m	pipeline	
902	149276.812m	571249.617m	139.967m	pipeline	
901	149277.361m	571248.537m	140.018m	pipeline	
903	149275.599m	571246.484m	139.899m	pipeline-fence	

D4 Project Facility Completion Form

904	149278.413m	571239.761m	139.803m	fence
890	149271.816m	571247.534m	139.912m	corn
1128	149268.195m	571256.288m	139.927m	bldg-corn
906	149266.047m	571242.507m	139.929m	pipeline-fence
905	149269.075m	571235.652m	139.778m	fence
898	149259.624m	571231.891m	139.942m	pipeline
897	149256.780m	571238.649m	139.988m	pipeline
900	149255.347m	571239.217m	140.004m	pipeline
899	149258.568m	571231.516m	139.924m	pipeline

[Back to top](#)

D4 Project Facility Completion Form

Attachment 4: GPS Surveys (14 Pages)

0579172

GPS Survey Data Report for 108N Pre Demolition

Project : Job 947

User name	maaye	Date & Time	7:48:15 AM 11/16/2006
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum		Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name/Title: 108N Building Pre Demolition
 Survey Purpose: GPS 108N building and surrounding features prior to D&D
 Requested By: Amy Hood
 General Site Location: 100-N
 Charge Code: per building
 Field Surveyor: MARGO AYE
 Computer Software Used: Survey Controller
 Survey Equipment Used: 5800
 Control Monuments Used: 100N-4
 Survey Method: RTK
 Estimated Horizontal Precision: <=0.02m
 Estimated Vertical Precision: <=0.05m
 Fieldwork Start Date: November 29, 2005
 Completion Date: December 12, 2005

Notes: *Log Book # EL1571*

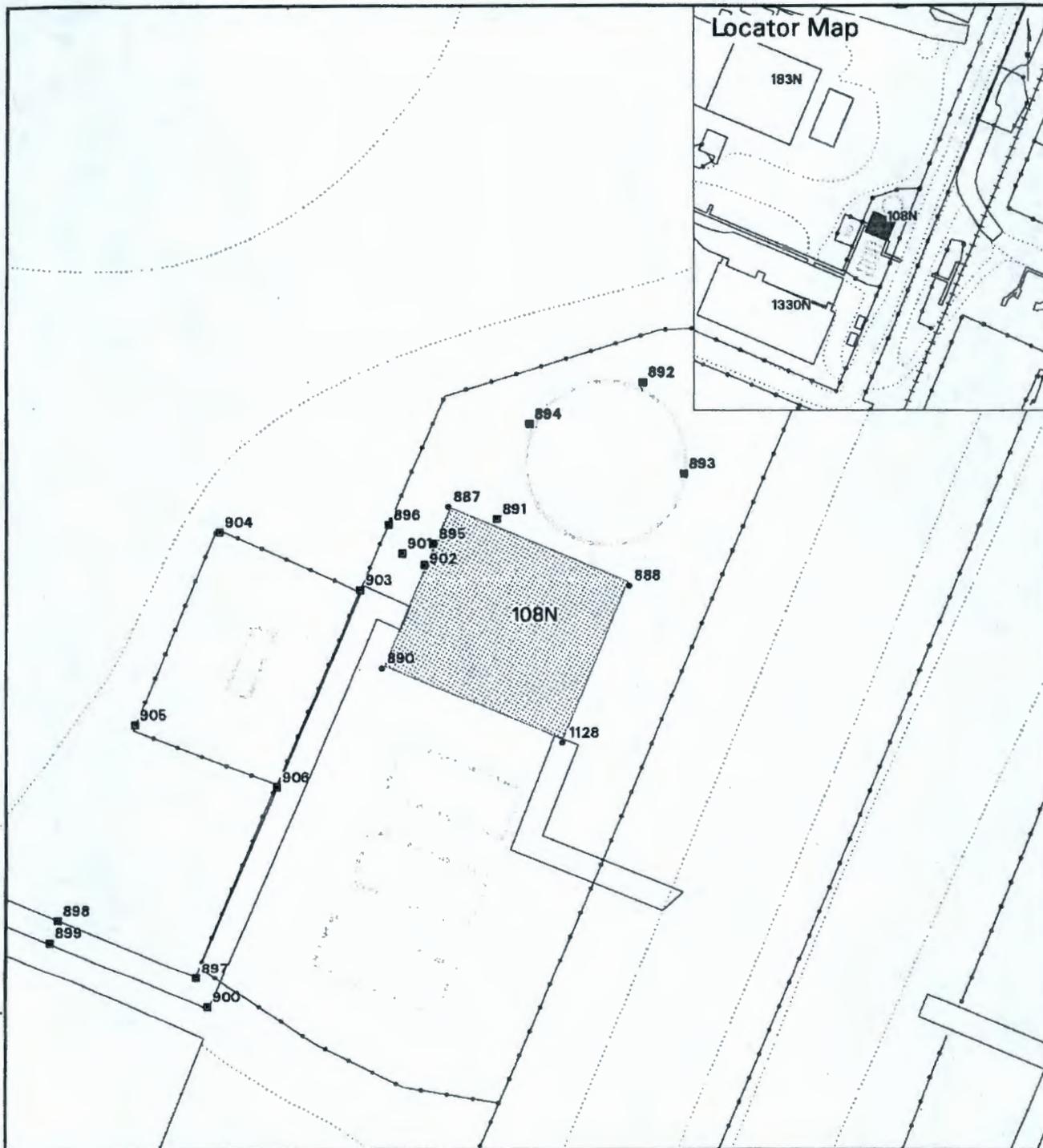
Name	Northing	Easting	Elevation	Feature Code	Description
892	149285.655m	571260.223m	140.095m	tank-pad	
893	149281.215m	571262.223m	140.082m	tank-pad	
888	149275.789m	571259.576m	139.922m	corn	
894	149283.636m	571254.688m	140.090m	tank-pad	
891	149279.010m	571253.096m	140.300m	drain	Frech Drain
887	149279.633m	571250.777m	139.892m	corn	
896	149278.752m	571247.903m	139.983m	pipeline	
895	149277.844m	571250.091m	139.917m	pipeline	
902	149276.812m	571249.617m	139.967m	pipeline	
901	149277.361m	571248.537m	140.018m	pipeline	
903	149275.599m	571246.484m	139.899m	pipeline-fence	

D4 Project Facility Completion Form

904	149278.413m	571239.761m	139.803m	fence
890	149271.816m	571247.534m	139.912m	corn
1128	149268.195m	571256.288m	139.927m	bldg-corn
906	149266.047m	571242.507m	139.929m	pipeline-fence
905	149269.075m	571235.652m	139.778m	fence
898	149259.624m	571231.891m	139.942m	pipeline
897	149256.780m	571238.649m	139.988m	pipeline
900	149255.347m	571239.217m	140.004m	pipeline
899	149258.568m	571231.516m	139.924m	pipeline

[Back to top](#)

D4 Project Facility Completion Form



-  Paved Roads and Sidewalks
-  Unpaved Roads and Trails
-  Railroad
-  Fences
-  Miscellaneous Polygons

-  Location of the 108N Building Prior to Demolition
-  GPS Locations for Corners Prior to Demolition
-  GPS Locations for Surrounding Features See Survey Report for Point Details

Pre- Demolition Survey of The 108N Building



ERC:\aa\19\067\home\msay\am\area_108N\pre-108n.sxd: Rev. 0 Database: 11/16/06 7:20 AM

D4 Project Facility Completion Form

Post Demolition GPS Survey Report for 108N

Page 1 of 3

0598247

Post Demolition GPS Survey Report for 108N

Project : post108n Job 947

User name	maaye	Date & Time	5:16:05 PM 1/22/2009
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name: Post Demolition Survey for 108N
 Date: 1/15/2009
 Equipment: 5800
 Survey Purpose: Map the top and toe of demolition location
 Requested By: Stankovitch
 Location: 100N
 Charge Code: R108NON400
 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 Percision: .020m
 Vertical Precision: .050m
 Fieldwork Start Date: 011409
 Fieldwork Completion Date: 011509
 Notes: *Logbook # EL-1571-03*

Name	Northing	Easting	Elevation	Description
1	149254.750m	571244.003m	140.364m	top
2	149252.802m	571242.967m	140.317m	top
3	149252.418m	571240.833m	140.301m	top
4	149253.718m	571238.541m	140.270m	top
5	149254.430m	571237.829m	140.240m	top
6	149257.394m	571231.515m	140.205m	top
7	149258.031m	571230.691m	140.138m	top
8	149260.767m	571231.950m	140.119m	top
9	149258.909m	571238.590m	140.134m	top
10	149262.458m	571239.546m	140.114m	top
11	149263.461m	571240.236m	139.976m	top
12	149264.805m	571239.118m	139.984m	top
13	149268.814m	571243.336m	139.451m	top
14	149268.150m	571244.644m	139.599m	top
15	149267.384m	571247.225m	139.464m	top
16	149268.404m	571248.710m	139.526m	top
17	149268.443m	571254.436m	139.551m	top
18	149265.577m	571258.804m	139.756m	top
19	149263.540m	571260.653m	139.905m	top
20	149260.494m	571267.100m	139.976m	top
21	149255.326m	571279.798m	140.145m	top
22	149260.497m	571282.434m	140.010m	top
23	149260.389m	571285.165m	140.213m	top
24	149256.313m	571284.069m	140.305m	top
25	149252.909m	571282.975m	140.355m	top
26	149250.988m	571282.243m	140.354m	top
27	149245.538m	571279.497m	140.363m	top

D4 Project Facility Completion Form

Post Demolition GPS Survey Report for 108N

Page 2 of 3

28	149242.451m	571278.695m	140.342m	top
29	149237.492m	571275.156m	140.241m	top
30	149237.385m	571272.816m	140.164m	top
31	149239.041m	571270.699m	140.100m	top
32	149240.306m	571270.537m	139.829m	top
33	149246.479m	571273.467m	139.891m	top
34	149249.274m	571275.588m	139.860m	top
35	149251.551m	571277.179m	139.856m	top
36	149252.678m	571274.532m	139.947m	top
37	149254.837m	571269.393m	139.961m	top
38	149257.529m	571263.236m	140.098m	top
39	149256.354m	571261.017m	140.088m	top
40	149253.484m	571253.063m	140.135m	top
41	149252.779m	571248.636m	140.161m	top
42	149258.042m	571245.361m	138.235m	toe toe
43	149258.992m	571243.918m	138.250m	toe toe
44	149259.375m	571243.300m	138.351m	toe toe
45	149257.850m	571242.179m	139.042m	toe toe
46	149256.455m	571242.440m	139.264m	toe toe
47	149255.602m	571241.653m	139.294m	toe toe
48	149254.566m	571240.832m	139.391m	toe toe
49	149255.403m	571239.058m	139.261m	toe toe
50	149257.059m	571235.236m	139.532m	toe toe
51	149258.245m	571232.154m	139.543m	toe toe
52	149259.635m	571232.476m	139.577m	toe toe
53	149258.384m	571236.041m	139.522m	toe toe
54	149256.938m	571239.060m	139.266m	toe toe
55	149258.200m	571240.536m	139.068m	toe toe
56	149260.469m	571242.598m	138.359m	toe toe
57	149263.010m	571245.227m	138.235m	toe toe
58	149264.407m	571247.171m	138.333m	toe toe
59	149264.688m	571250.251m	137.760m	toe toe
60	149264.140m	571252.850m	138.109m	toe toe
61	149263.646m	571255.701m	138.340m	toe toe
62	149261.675m	571257.961m	138.475m	toe toe
63	149260.847m	571260.720m	138.534m	toe toe
64	149260.458m	571263.089m	139.256m	toe toe
65	149257.655m	571269.274m	139.074m	toe toe
66	149255.564m	571275.052m	139.085m	toe toe
67	149253.679m	571278.626m	139.292m	toe toe
68	149253.356m	571280.276m	139.310m	toe toe
69	149255.460m	571281.566m	139.758m	toe toe
70	149259.297m	571283.073m	139.784m	toe toe
71	149258.506m	571283.630m	139.597m	toe toe
72	149255.649m	571282.371m	139.742m	toe toe
73	149252.229m	571280.723m	139.128m	toe toe
74	149247.582m	571278.204m	139.249m	toe toe
75	149241.350m	571275.524m	139.390m	toe toe
76	149238.676m	571273.474m	139.434m	toe trench and WIDS
77	149239.512m	571272.179m	139.478m	toe trench and WIDS
78	149243.351m	571275.299m	139.259m	toe toe
79	149248.932m	571278.105m	139.287m	toe toe
80	149251.685m	571279.718m	139.195m	toe toe
81	149253.825m	571277.167m	139.236m	toe toe
82	149255.846m	571271.236m	139.098m	toe toe
83	149258.938m	571263.318m	139.266m	toe toe
84	149259.784m	571259.254m	138.559m	toe toe
85	149261.697m	571253.364m	138.429m	toe toe
86	149260.438m	571247.816m	138.372m	toe toe
87	149262.151m	571262.047m	139.644m	cut-wires-copper-coated
88	149237.924m	571272.001m	140.111m	stained-soil
89	149277.694m	571260.865m	139.822m	top
90	149280.006m	571263.531m	139.704m	top
91	149284.326m	571263.142m	139.679m	top
92	149285.693m	571261.962m	139.709m	top

D4 Project Facility Completion Form

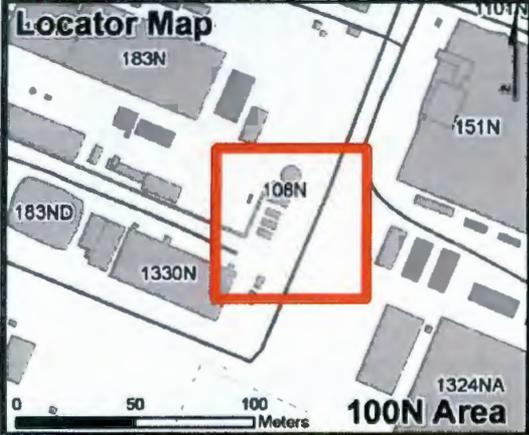
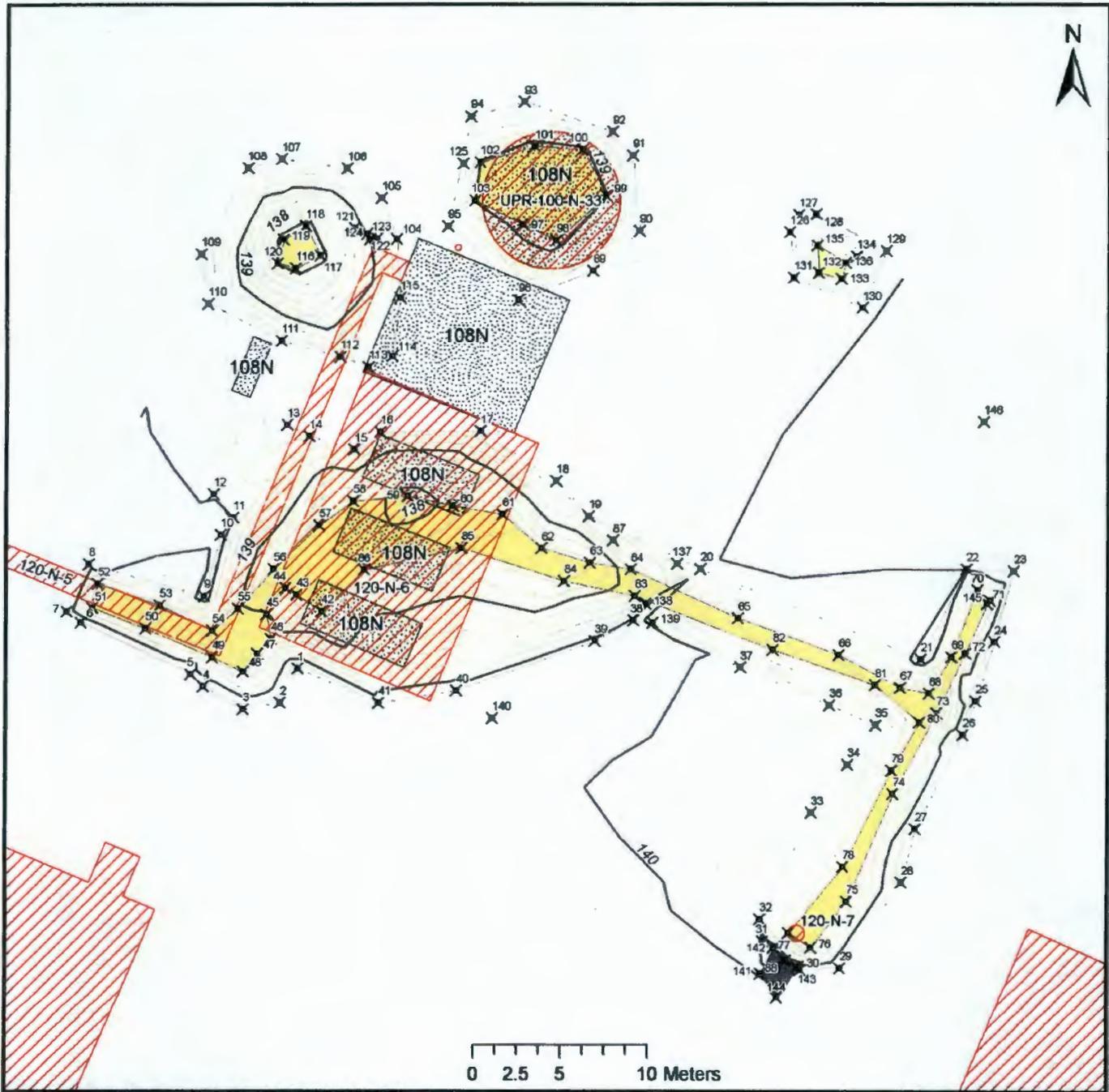
Post Demolition GPS Survey Report for 108N

Page 3 of 3

93	149287.412m	571256.893m	139.823m	top
94	149286.581m	571253.827m	139.749m	top
95	149280.262m	571252.526m	139.638m	top
96	149276.003m	571256.580m	139.680m	top
97	149280.364m	571256.824m	138.839m	toe
98	149279.454m	571258.742m	138.850m	toe
99	149282.029m	571261.607m	138.991m	toe
100	149284.663m	571260.253m	138.934m	toe
101	149284.854m	571257.496m	138.890m	toe
102	149283.937m	571254.373m	138.981m	toe
103	149281.738m	571254.097m	138.976m	toe
104	149279.528m	571249.602m	139.572m	top
105	149281.870m	571248.726m	139.703m	top
106	149283.582m	571246.782m	139.723m	top
107	149284.112m	571242.963m	139.809m	top
108	149283.598m	571241.003m	139.799m	top
109	149278.656m	571238.349m	139.885m	top
110	149275.768m	571238.743m	139.886m	top
111	149273.667m	571242.983m	139.555m	top
112	149272.731m	571246.392m	139.491m	top
113	149272.150m	571248.012m	139.443m	top
114	149272.774m	571249.355m	139.593m	top
115	149276.142m	571249.811m	139.617m	top
116	149277.829m	571243.826m	137.903m	toe
117	149278.573m	571245.241m	137.888m	toe
118	149280.272m	571244.407m	137.872m	toe
119	149279.490m	571243.096m	137.843m	toe
120	149278.114m	571242.749m	137.979m	toe
121	149280.147m	571247.198m	138.615m	cut-pipe-10in
122	149279.830m	571247.912m	139.267m	pipe-90degree-bend
123	149279.547m	571248.457m	139.417m	cut-pipe-1.5in
124	149279.506m	571248.071m	139.215m	cut-pipe-10in
125	149283.863m	571253.404m	139.510m	cable
126	149279.937m	571272.161m	139.903m	top
127	149280.923m	571272.674m	139.898m	top
128	149280.971m	571273.686m	139.846m	top
129	149278.866m	571277.743m	139.936m	top
130	149275.572m	571276.360m	139.966m	top
131	149277.299m	571272.391m	139.891m	top
132	149277.580m	571273.839m	139.242m	toe
133	149277.241m	571275.155m	139.173m	toe
134	149278.552m	571276.035m	139.213m	toe
135	149279.165m	571273.749m	139.264m	toe
136	149278.186m	571275.382m	139.134m	galv-anchor
137	149260.806m	571265.751m	139.969m	cut-copper-wire
138	149258.489m	571263.922m	139.444m	cut-copper-wire
139	149257.408m	571264.356m	139.823m	cut-copper-wire
140	149251.917m	571255.149m	140.088m	cut-wires (mass)
141	149237.151m	571270.570m	139.950m	stained-area
142	149238.676m	571271.330m	140.101m	stained-area
143	149237.562m	571272.726m	140.145m	stained-area
144	149235.699m	571271.514m	140.171m	stained-area
145	149258.696m	571283.792m	139.721m	cut-pipe-1in
146	149269.015m	571283.420m	140.330m	telephone-access-cut

[Back to top](#)

D4 Project Facility Completion Form



Post Demo GPS Report For 108N

- ✕ See Survey Report for Point Details
- Stained Soil Area
- ▨ Building Location (Pre Demolition)
- ▨ Waste Sites
- Excavation Location
- Major Contour 1 Meter Interval
- ▨ Excavation Toe
- - - Minor Contour .2 Meter Interval

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

WCH:05/22/12:V:\maaye\ArcMap\100N\postdemo-108N.mxd, 9:45:34 AM

D4 Project Facility Completion Form

GPS Pre Demo Survey for the 108N Sump and Trench

Project : 100N-10-24

Job 1232

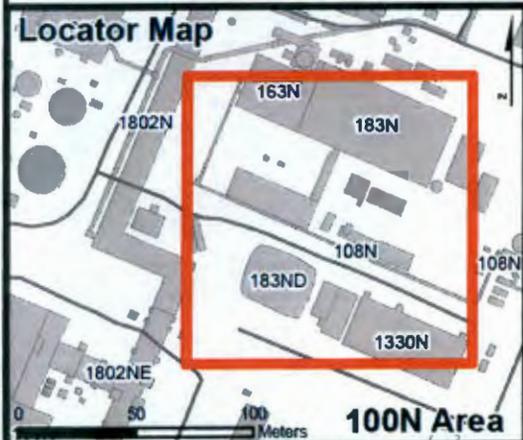
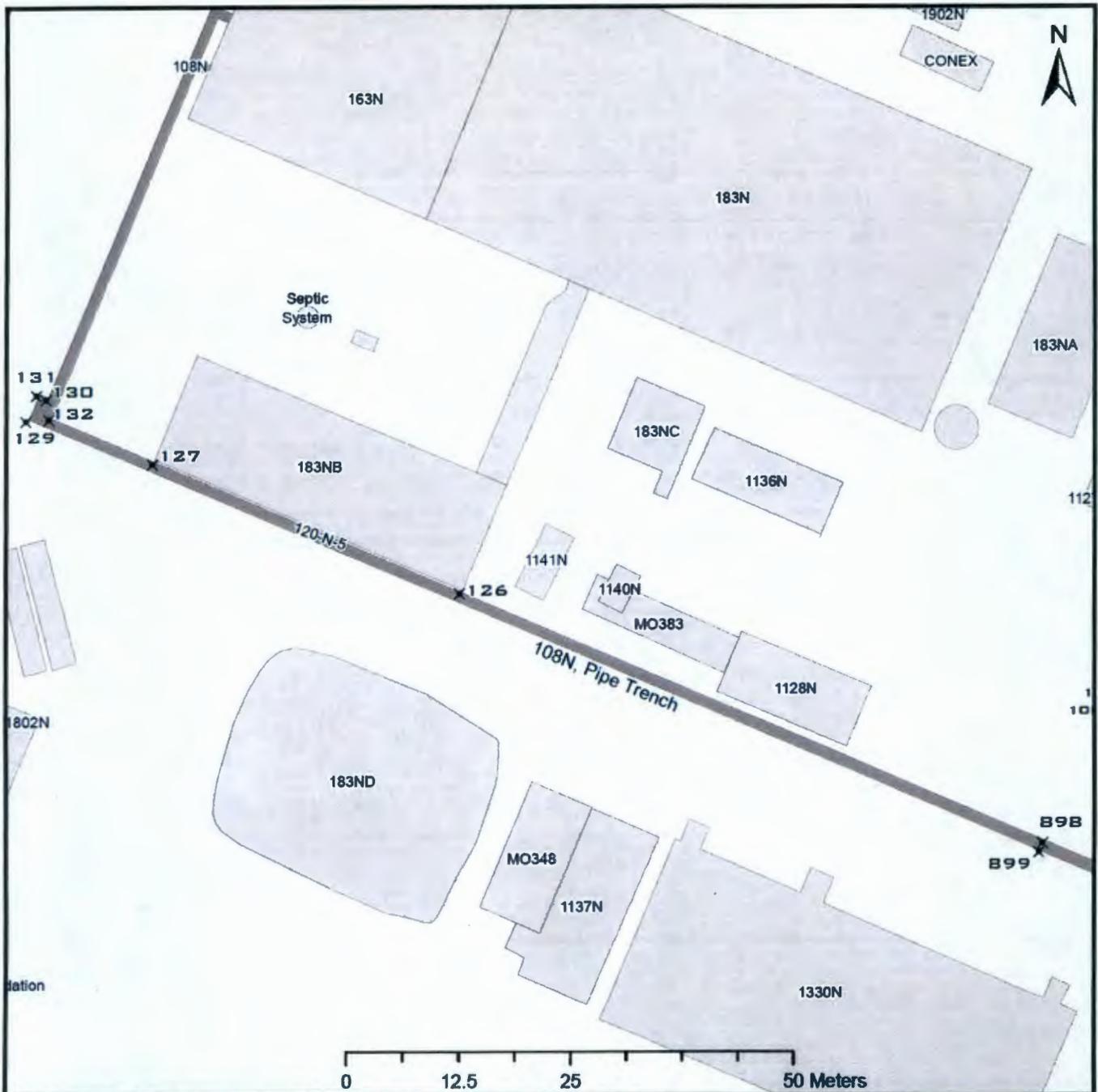
User name	maaye	Date & Time	4:44:32 PM 12/13/2012
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name: 108N Sump and Trench Post Demolition Survey
 Date: 11/8/2006
 Equipment: 5800
 Survey Purpose: Map the location of 108N Post Demolition Site
 Requested By: Amy Hood
 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: F-Line
 Survey Method: RTK
 Horizontal Precision: .0020m
 Vertical Precision: .0050m
 Fieldwork Start Date: 10/31/06
 Fieldwork Completion Date: 10/31/06
 Notes:

Name	Northing	Easting	Elevation	Feature Code
Description:				
126	149287.221m	571166.479m	139.510m	conc-pad
127	149301.584m	571132.135m	139.416m	conc-pad
129	149306.417m	571117.976m	139.458m	108N-pipeline
130	149309.198m	571119.188m	139.419m	108N-pipeline-fence
131	149308.776m	571120.226m	139.489m	108N-pipeline-fence
132	149306.551m	571120.548m	139.506m	108N-pipeline-fence
898	149259.624m	571231.891m	139.942m	pipeline
899	149258.568m	571231.516m	139.924m	pipeline

[Back to top](#)

D4 Project Facility Completion Form



Pre Demo GPS Report For 108N Sump and 108N Trench

- × See Survey Report for Point Details
- 108N Pipe Trench and Sump Location
- Building Locations (Pre-Demolition)

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

WCH: \\Hgis01\gis\home\maaye\ArcMap\100N\predemo-108N_sump\trch.mxd Date: 12/13/2012

Post Demo GPS Survey Report for 108N Trench

Project : 100N-108trench

Job: 1036

User name	maaye	Date & Time	3:26:10 PM 12/10/2008
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name: Post Demo Survey for the 108N Trench from the 108N Building
 Date: 2/20/08
 Survey Purpose: Map the toe and top of the old trench
 Requested By: Tom Edmondson
 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:
 Survey Method: RTK
 Horizontal Percision: .020m
 Vertical Precision: .050m
 Fieldwork Start Date: 2/20/08
 Fieldwork Completion Date: 2/20/08
 Notes:
 Logbook# EL-1571-03

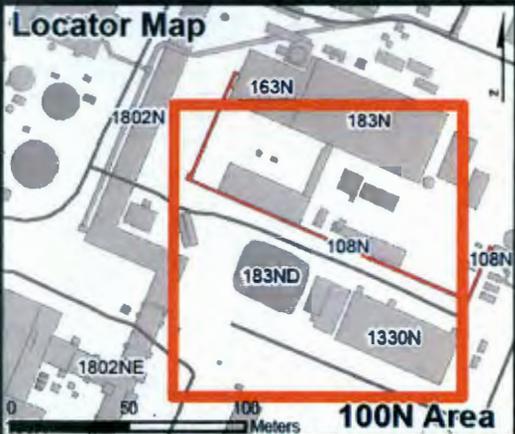
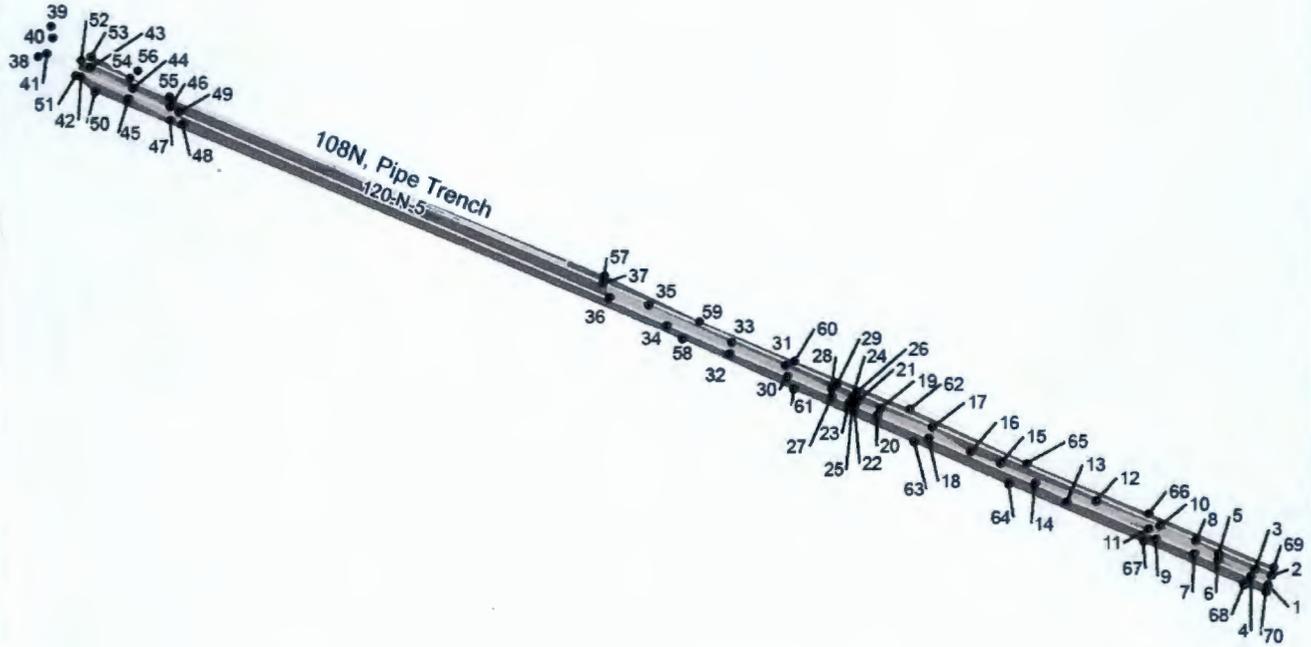
Name	Northing	Easting	Elevation	Feature Code	Description
N-2	149644.179m	571811.159m	144.762m		
1	149258.742m	571231.579m	139.717m	bottom	
2	149259.546m	571231.894m	139.675m	bottom	
3	149260.148m	571230.429m	139.480m	bottom	
4	149259.444m	571229.974m	139.511m	bottom	
5	149261.508m	571227.049m	139.425m	bottom	
6	149260.939m	571227.015m	139.343m	bottom	
7	149261.512m	571224.818m	139.594m	bottom	
8	149262.687m	571224.938m	139.637m	bottom	
9	149262.818m	571221.320m	139.615m	bottom	
10	149264.069m	571221.666m	139.700m	bottom	
11	149263.787m	571220.614m	139.485m	bottom	
12	149266.312m	571215.792m	139.434m	toe-bottom	
13	149266.185m	571213.034m	139.554m	toe-bottom	
14	149267.881m	571210.125m	139.511m	toe-bottom	
15	149269.664m	571206.869m	139.633m	toe-bottom	
16	149270.698m	571204.120m	139.435m	toe-bottom	
17	149272.904m	571200.552m	139.436m	toe-bottom	
18	149271.926m	571200.210m	139.454m	toe-bottom	
19	149274.660m	571195.755m	139.261m	toe-bottom	

D4 Project Facility Completion Form

20	149273.946m	571195.442m	139.255m	toe-bottom
21	149275.238m	571193.642m	139.432m	toe-bottom
22	149274.767m	571193.336m	139.442m	toe-bottom
23	149275.131m	571192.831m	139.398m	toe-bottom
24	149275.590m	571193.141m	139.402m	toe-bottom
25	149275.256m	571193.186m	139.773m	pipe-center
26	149276.109m	571193.597m	139.540m	pipe-edge
27	149275.628m	571191.219m	139.308m	pipe-edge
28	149276.438m	571191.245m	139.324m	pipe-edge
29	149276.878m	571191.784m	139.487m	pipe-edge
30	149277.430m	571187.112m	139.295m	pipe-edge
31	149278.453m	571186.945m	139.288m	pipe-edge
32	149279.536m	571181.798m	139.407m	pipe-edge
33	149280.571m	571182.032m	139.418m	pipe-edge
34	149282.011m	571176.041m	139.496m	pipe-edge
35	149283.909m	571174.418m	139.455m	pipe-edge
36	149284.508m	571170.768m	139.338m	pipe-edge
37	149285.788m	571170.158m	139.341m	pipe-edge
38	149306.435m	571118.067m	139.801m	conc-pad
39	149309.164m	571119.243m	139.796m	conc-pad
40	149308.084m	571119.425m	139.805m	mh
41	149306.748m	571118.897m	139.811m	mh
42	149304.594m	571122.033m	139.062m	toe
43	149305.452m	571122.888m	139.051m	toe
44	149303.576m	571126.848m	139.009m	toe
45	149302.600m	571126.426m	139.012m	toe
46	149301.836m	571130.271m	139.036m	toe
47	149300.642m	571130.294m	139.086m	toe
48	149300.265m	571131.417m	139.056m	toe
49	149301.362m	571131.087m	138.989m	toe
50	149303.201m	571123.330m	139.600m	top
51	149304.664m	571121.539m	139.743m	top
52	149306.025m	571122.027m	139.702m	top
53	149306.453m	571122.948m	139.713m	top
54	149304.509m	571126.575m	139.701m	top
55	149302.773m	571130.196m	139.720m	top
56	149305.181m	571127.262m	139.848m	valve
57	149286.540m	571170.328m	139.719m	top
58	149280.838m	571177.495m	139.860m	top
59	149282.401m	571179.037m	139.801m	top
60	149278.836m	571187.799m	139.808m	top
61	149276.308m	571187.705m	139.902m	top
62	149274.553m	571198.461m	139.726m	top
63	149271.511m	571198.911m	139.877m	top
64	149267.745m	571207.676m	139.886m	top
65	149269.719m	571209.364m	139.834m	top
66	149265.167m	571220.602m	139.989m	top
67	149262.609m	571220.151m	139.878m	top
68	149258.691m	571229.359m	139.978m	top
69	149260.343m	571232.093m	139.964m	top
70	149258.078m	571231.390m	139.964m	top

[Back to top](#)

D4 Project Facility Completion Form



Post Demo GPS Report For 108N Pipe Trench

GPS Post Demolition Survey Points:

- See Survey Report for Point Details
- Building Locations (Pre Demolition)

- Excavation Top
- Excavation Toe

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

WCH: \\Hgis01\gis\home\maayo\ArcMap\100N\postdemo-108N_pipe_trench.mxd Date: 12/13/2012

D4 Project Facility Completion Form

GPS Post Demo Survey for the 108N Sump

Project : 108N-sump

Job: 1232

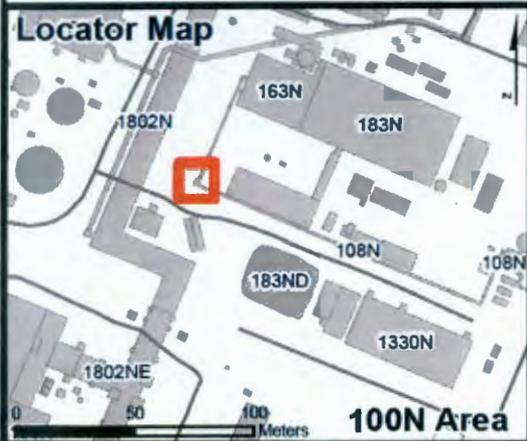
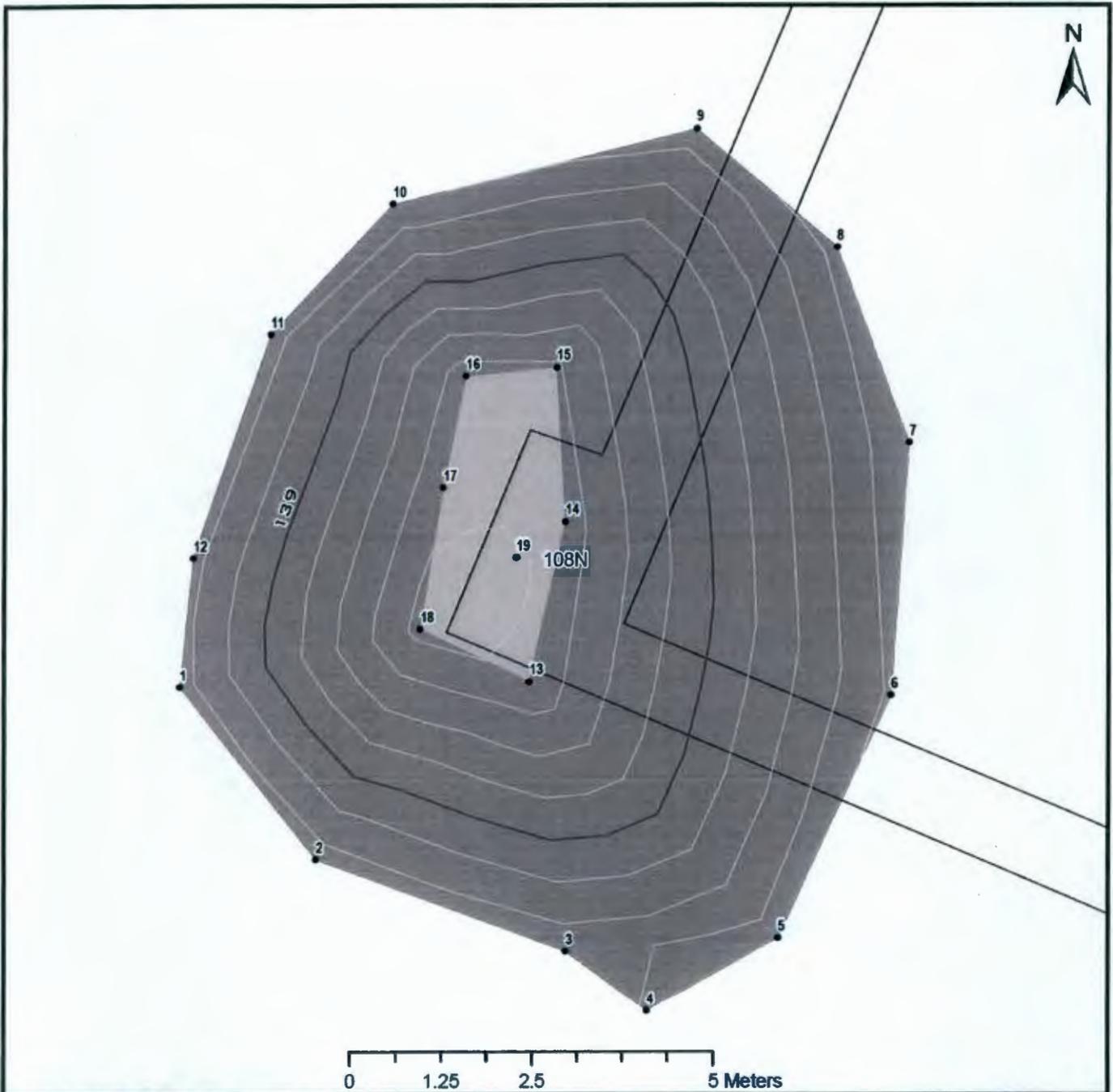
User name	maaye	Date & Time	4:02:20 PM 12/13/2012
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name: 108N-sump-post
 Date: 12/4/2008
 Equipment: 5800
 Survey Purpose: Post demo survey of the daylight and toe excavation
 Requested By: Tom Edmundson
 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: 11/8/08
 Fieldwork Completion Date: 11/8/08
 Notes:

Name	Northing	Easting	Elevation	Feature Code	Description:
1	149305.849m	571114.700m	139.473m	top top	
2	149303.461m	571116.576m	139.488m	top	
3	149302.189m	571120.012m	139.529m	top	
4	149301.353m	571121.128m	139.607m	top	
5	149302.383m	571122.929m	139.699m	top	
6	149305.741m	571124.511m	139.836m	top	
7	149309.220m	571124.753m	139.988m	top	
8	149311.917m	571123.756m	139.868m	top	
9	149313.559m	571121.838m	139.712m	top	
10	149312.521m	571117.635m	139.577m	top	
11	149310.714m	571115.965m	139.481m	top	
12	149307.617m	571114.902m	139.449m	top	
13	149305.918m	571119.485m	138.244m	toe toe	
14	149308.123m	571120.016m	138.309m	toe	
15	149310.272m	571119.847m	138.367m	toe	
16	149310.136m	571118.615m	138.292m	toe	
17	149308.587m	571118.297m	138.253m	toe	
18	149306.642m	571118.009m	138.134m	toe	
19	149307.646m	571119.282m	138.155m	middle	

[Back to top](#)

D4 Project Facility Completion Form



Post Demo GPS Report For 108N Sump

GPS Post Demolition Survey Points:

- See Survey Report for Point Details
- ▭ Building Locations (Pre Demolition)
- Excavation Top
- Excavation Toe
- Major Contour 1 Meter Interval
- Minor Contour .2 Meter Interval

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

WCH: \\Hgis01\gishome\maaye\ArcMap\100N\postdemo-108N_sump.mxd Date: 12/13/2012

D4 Project Facility Completion Form

**Attachment 5: Sampling Determination Form for the 108-N
Chemical Unloading Facility (SDF-100N-003)
(5 Pages)**

D4 Project Facility Completion Form

Acrobat 9.0

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-003

A. INSTRUCTIONS

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

B. GENERAL INFORMATION

Building Name: Chemical Unloading Facility Building Number: 108-N

WIDS Sites Associated or Adjacent:

Associated (taken from CCN 143099 pgs. 4-5):

100-N-8 (rejected), 100-N-27 (rejected), 100-N-40 (rejected), 100-N-58 (closed out), 120-N-1 (irrelevant due to distance from 108-N), 120-N-2 (intersects 120-N-5), 120-N-3 (intersects 120-N-5), 120-N-5 (rejected), 120-N-6 (rejected), and 120-N-7

Adjacent (determined using GIS Site Tool)

100-N-10 (within 120-N-5, rejected); 100-N-11 (within 120-N-5, rejected); 100-N-61; 100-N-84:1 (intersects 120-N-5); 100-N-84 colon sites 3, 4, 5, and 6 (each connects directly to 108-N); 100-N-103:1; UPR-100-N-15 (rejected); UPR-100-N-33 (rejected)

Other:

Note: A waste site with a rejected status, as well as a waste site whose only association with a facility is through a rejected waste site, are of no concern in determining the need to sample at that facility. Accordingly, the only waste sites that should be considered in determining the need for sampling at this facility are: 100-N-58, 120-N-7, 100-N-61, 100-N-84 (colon sites 1, 3, 4, 5, and 6), and 100-N-103:1.

C. INFORMATION SOURCES

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

Historical Site Assessment: N/A

Site Walkdown: N/A

IH Characterization Report: N/A

Radiological Survey: Global Positioning Environmental Radiological Surveyor (GPERS) surveys ESR-FRM-08-0011, ESR-FRM-08-0012, ESR-FRM-08-0170, and ESR-FRM-09-0005

IHC/FHC Document: N/A

RCC Stewardship Information System Facility WIDS/SIS: Summary Reports: 108-N, 100-N-27, 120-N-5, and 120-N-7

PDSR: Post-Demolition Summary Report for the 108-N Chemical Unloading Facility and the 120-N-5 Transfer Line Trench and Neutralization Pit CCN 143099

Facility Inspection: N/A

Waste Characterization Checklist: N/A

Summary Report: Characterization Summary Report for the 163-N Demineralized Water Treatment Plant and the 108N Chemical Unloading Facility CCN 122914

Other:

Radiological Survey Record: RSR-100N-09-0045 (Downposting)
 100-N Area Technical Baseline Report: WHC-SD-EN-TI-251
 Asbestos Summary Report, 108-N Chemical Unloading Facility: CCN 125292
 Pre-Existing Conditions Survey of Hanford Site Facilities: BHI-00221
 Waste Site Reclassification Form for 120-N-5: CCN 523335
 Discovery Site Evaluation Checklist for 120-N-7
 Sample Results on 108-N Neutralization Pit Water: CCN 131359
 Hazardous Material Removal from 100N Buildings: CCN 137407
 Work Package 2005 09 20 005: Master 100 Area Building and Structure Demolition
 Work Package 2005 09 20 003 G: 100 Area TSI Asbestos Abatement
 Work Package 2005 09 20 002 AG: 100 Area Hazardous Material Removal

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-003

Work Package 2005 09 20 002 P: 100 Area Hazardous Material Removal
Work Package 2005 09 20 001 D: 100 Area Characterization and Sampling
Work Package 100 07 12 03 002: 108N Demolition / Phase 2
Photographs of 108-N, No Time Stamps: CCN 143099 Figures 1-5

D. HAZARDOUS SUBSTANCES

Check all that apply:

- None
 Asbestos containing material
 Lead
 PCBs/PCB Articles
 Oils/Greases
 Chemicals
 List: Sulfuric Acid & Sodium Hydroxide (WHC-SD-EN-TI-251 Figure 2-12). Of the materials present within the facility, these had the greatest potential for release.
 Radiological Contamination
 Mercury/Mercury Devices
 Other: Anions, Hexavalent Chromium, Total Chromium, Metals, PAHs, PCBs, and SVOCs (100-N Area Waste Site Summary, Rev. 19 for waste sites 100-N-61, 100-N-84 (colon sites 1, 3, 4, 5, and 6), and 100-N-103:1)

References/Comments:

Asbestos: CCN 125292 Appendices B & D

Lead: BHI-00221 pg. 3-54

Work Package 2005 09 20 002 AG WCH Task Instruction pgs. 3 & 4

Oils/Greases: Work Package 2005 09 20 002 P WCH Task Instruction pg. 3

Radiological Contamination: Work Package 2005 09 20 001 D WCH Task Instruction pg. 2

Mercury/Mercury Devices: Work Package 2005 09 20 002 P WCH Task Instruction pg. 3

Liquids: Yes No

If yes, describe source and nature of liquids:

This facility contained storage tanks and transfer pumps for sulfuric acid and sodium hydroxide (WHC-SD-EN-TI-251 Figure 2-12).

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

As verified by what documentation:

While it is unclear if all hazardous substances were removed from the facility prior to demolition, verification of removal exists for several sources of hazardous substances. All friable asbestos was removed during abatement (Work Package 2005 09 20 003 G WCH Task Instruction pg. 5). All door actuators, which typically contained oils (sometimes PCB oils), were removed (Work Package 2005 09 20 002 WCH Task Instruction pg. 7). All incandescent and fluorescent light bulbs, which typically contained various metals including mercury, were removed (Work Package 2005 09 20 002 WCH Task Instruction pg. 7).

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

References/Comments:

Multiple spills and stains are documented for this facility. Consult the remaining text from part D of this form for references.

List any hazardous materials left in the building for demolition:

It is unclear if any hazardous materials were left in the building for demolition. Lead-Acid batteries are identified as an expected hazardous material for this facility (Work Package 2005 09 20 002 AG WCH Task Instruction pgs. 3 & 4). A note within this work package indicates that items listed in the task instructions had been completed (WCH Task Instruction pg. 1). Accordingly, the battery removal might have occurred as this activity was addressed in the WCH Task Instruction on pages 2-4. However, the Hazmat Removal Checklist for this work package doesn't indicate that the batteries were removed (WCH Task Instruction pg. 7).

At least one indication exists for the usage of lead piping at this facility (BHI-00221 pg. 3-54). While the removal of lead piping was not addressed in either of the corresponding hazardous material removal work packages, it is not an item of environmental concern as the EPA and Washington State Department of Ecology approved a demolition plan for another 100-N ancillary facility that allowed lead piping to remain in the facility during demolition (CCN 137407).

Oils/greases and mercury are identified as expected hazardous materials for this facility (Work Package 2005 09 20 002 P WCH Task Instruction pg. 3). However, both materials are marked "N/A" on the corresponding Hazmat Removal

D4 Project Facility Completion Form

Acrobat 9.0

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-003

Checklist (Work Package 2005 09 20 002 P WCH Task Instruction pg. 7). This suggests that these materials were either not encountered as expected, or were encountered but not removed under this work package.

It is unknown if the acid and caustic tanks and pumps were removed prior to demolition. Such information could possibly be addressed in the above grade demolition work package, as referenced in the Post-Demolition Summary Report for this facility (CCN 143099 pg. 5). The referenced work package is generic, but states that it shall be applied to an individual building through an applicability attachment (Work Package 2005 09 20 005 WCH Task Instruction pg. 1). Applicability attachment S is listed as that which corresponds to the 108-N facility (Work Package 2005 09 20 005 WCH Task Instruction pg. 7a). However, no such attachment is available through Universal Content Manager nor the Document And Records Tracking System. Furthermore, none of the other work packages pertaining to 108-N appear to address either the presence or removal of these chemical sources prior to demolition. The facility's steam system was radiologically contaminated (Work Package 2005 09 20 001 D WCH Task Instruction pg. 2). It was not determined during review of the facility if the steam system was removed prior to demolition. However, radiological contamination is not an item of concern for the facility because none was detected in the downposting survey nor the GPERs surveys (RSR-100N-09-0045, ESR-FRM-08-0011, ESR-FRM-08-0012, ESR-FRM-08-0170, and ESR-FRM-09-0005).

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

Historical records indicate that the facility can be determined to be free of asbestos and radiological contamination, as explained in the previous section. However, the potential for the presence of the remaining hazardous substances listed above cannot be ruled out, as explained in the previous section. This includes lead, oils/greases, sulfuric acid, sodium hydroxide, and mercury.

Further indication of the potential for the presence of these substances can be found in various historical records. One document identifies a possible sodium hydroxide spill, standing liquid of unknown origin, and major historical acid spills (BHI-00221 pg. 3-54). Multiple stains were discovered in the soil and concrete of the facility (CCN 143099 pg. 5, Work Package 2005 09 20 001 D WCH Task Instruction pgs. 3 & 4). At least some of these stains were the result of sulfuric acid spills (Work Package 2005 09 20 001 D WCH Task Instruction pg. 4).

Comments:

The 120-N-7 french drain appears to have been part of the same sulfuric acid off-loading process that stocked the acid tanks at the 108-N facility (CCN 143099 pg. 5). The remediation of 120-N-7 was deemed necessary as a pH of less than 1 was present in the surrounding soil (Work Package 100 07 12 03 002 WCH Task Instruction pg. 2). Accordingly, the highly acidic conditions at 120-N-7 would be indicative of potential conditions of elevated acidity at 108-N.

It should be noted that waste site 120-N-5 was reclassified as rejected despite transporting the chemicals stored at the 108-N facility. This determination was based on the belief that any acid or caustic spills would have been neutralized by the soil and environmental conditions (CCN 523335). This was not the belief that was acted upon for 120-N-7. One difference between the two sites is the collection of chemicals that each likely received. Process knowledge of 120-N-5 indicates that it received both sulfuric acid and sodium hydroxide, while process knowledge of 120-N-7 suggests that it received only sulfuric acid (WHC-SD-EN-TI-251 Figure 2-12, and the Discovery Site Evaluation Checklist for 120-N-7). Of the two waste sites, the 108-N facility was most like 120-N-5 as it contained both sulfuric acid and sodium hydroxide.

The 108-N facility and adjoining 120-N-5 Transfer Pipes and Neutralization Pit were entirely removed along with all corresponding concrete pads during demolition (CCN 143099 pg. 6).

E. FIELD OBSERVATIONS

Visual Inspection

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

References/Comments:

Several Anomalies were discovered throughout the demolition process. One of which was at 120-N-7 (french drain), already designated a waste site, which will be removed and closed out by FR at a later date. Additionally, another french drain was discovered during the demolition process. The french drain was determined to contain Asbestos Containing Material (ACM) and stained soils, both of which were sampled for purposes of waste disposal and subsequently removed (CCN 143099 pgs. 2 & 5).

D4 Project Facility Completion Form

Acrobat 9.0

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

Determination Number
SDF-100N-003

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

References/Comments:

Samples were taken at the extent of the 120-N-7 excavation and the french drain (see above and CCN 143099 pgs. 2 & 5).

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

References/Comments:

Samples taken from waste site 120-N-7 indicate several constituents above the Remedial Action Goals (RAGS). This site is already within FR scope.

Is the area potentially a discovery site? Yes No

References/Comments:

Samples taken from this location correlate with waste site 120-N-7, which is already within FR scope.

Radiological Surveys

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

References/Comments:

RSR-100N-09-0045, ESR-FRM-08-0011, ESR-FRM-08-0012, ESR-FRM-08-0170, and ESR-FRM-09-0005

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

References/Comments:

Since radiological contamination was not identified, this question is not applicable.

Is the area potentially a discovery site? Yes No

References/Comments:

No radiological contamination was identified.

Were the contaminated materials removed? Yes No N/A

References/Comments:

Since radiological contamination was not identified, this question is not applicable.

F. WIDS SITES

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

If yes, list the WIDS sites:

120-N-7 was partially removed by D4. The french drain was dug to the extent of depth allowed by the excavation permit. Staining was still evident at this depth and samples indicated several constituents above the RAGS. The extent of excavation was delineated with straw and backfilled (CCN 143099 pg. 5).

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

References/Comments:

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

References/Comments:

120-N-7 is already within the scope of FR.

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): Sulfates, Anions

Comments:

D4 Project Facility Completion Form

Acrobat 9.0

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

Determination Number
SDF-100N-003

Summary of in-process soil sampling requirements:

Constituents detected / concentrations / rationale
Consult Sample Collection Summary below.

Sample Collection Summary

Asbestos: CCN 125292 Appendix B (for sample numbers) and Appendix D (for sample results)
 French Drain Soil: Sample (HEIS) Numbers J11K52, J11K53, J11K54, and J11KD9 (CCN 143099 Attachment 2)
 French Drain Insulation: Sample (HEIS) Numbers J11KD7 and J11KD8 (CCN 143099 Attachment 2)
 Chemical Transfer Line Soil: Sample (HEIS) Number J16383 (CCN 143099 Attachment 2)
 Chemical Transfer Line Water: Sample (HEIS) Numbers J16385 and J16386 (CCN 143099 Attachment 2)
 120-N-7: Sample (HEIS) Numbers J17T54, J17T55, J17T56, and J17T57 (CCN 143099 pg. 5)
 Neutralization Vault Water: Sample (HEIS) Number J13VN7 (Work Package 2005 09 20 001 D Attachment 7.4 D)
 Neutralization Vault Sludge: Sample (HEIS) Number J13VN8 (Work Package 2005 09 20 001 D Attachment 7.4 D)
 163N Footing Concrete Stain: Sample (HEIS) Number J14BJ5 (Work Package 2005 09 20 001 D Attachment 7.4 D)
 163N Footing Soil Stain: Sample (HEIS) Number J14BJ7 (Work Package 2005 09 20 001 D Attachment 7.4 D)

H. NOTES / ADDITIONAL INFORMATION

Check here if additional information / data / maps / sketches are attached to this form.
 If checked, list the attachment(s):

I. SAMPLING

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

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

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

Information Reviewer Signature <i>David Warren</i>	Printed Name David Warren	Date 2.8.12
---	------------------------------	----------------

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>RF Guerra</i>	Printed Name RF Guerra	Date 1/26/12
-----------------------------------	---------------------------	-----------------

Ecology Signature <i>Nina M. Menard</i>	Printed Name NINA M. MENARD	Date 2/9/12
--	--------------------------------	----------------