

## FACILITY STATUS CHANGE FORM

<b>Date Submitted:</b> Mar 10, 2009 <b>Originator:</b> Bob Cathel <b>Phone:</b> (509) 845-6146	<b>Area:</b> 100-N <b>Facility ID:</b> 105-NB <b>Action Memorandum:</b> 100-N Ancillary Facilities	<b>Control #:</b> D4-100N-0016
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**This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.**

### Section 1: Facility Status

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

#### Description of Completed Activities and Current Conditions:

Deactivation: Utility isolation was performed on 105-NB prior to beginning facility deactivation.

Decontamination and Decommissioning: 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. One anomaly was encountered at the 105-NB during hazardous material removal: a mud dauber wasp nest was discovered in an old electrical component, this was handled in accordance with radiological control procedures.

Demolition: Demolition of the above-grade structures was complete August 2007. Below-grade demolition was complete in May 2008. The building debris was disposed at the Environmental Restoration Disposal Facility. The only materials of concern during demolition were radionuclides, metals, chemicals and asbestos.

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

Not applicable.

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### 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 105-NB building and concrete pad were demolished and removed. A minimal amount of soil was removed along with the concrete pad. The site has been regraded with material from the 100-N borrow pit.

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

Two waste sites were in the general proximity of the 105-NB facility and a status of any impacts to the waste sites is discussed below:

100-N-59, Radioactively Contaminated Soil Northeast of 105-NB Building (Accepted Waste Site): The site was a broken, contaminated, underground pipeline. After excavating and repairing the broken pipe, the site was marked as an Underground Radioactive Material area. The site is located northeast of the 105-NB Building. The site is associated with an underground waste line from the 105-N/109-N facility. In September 1995, a 15-centimeter (6-inch) diameter underground liquid waste line was found to be leaking. An area approximately 0.76 meters (2.5 feet) by 1.4 meters (4.5 feet) was excavated to repair the pipe. The soil below the pipe had a beta-gamma reading of 7,000 disintegrations per

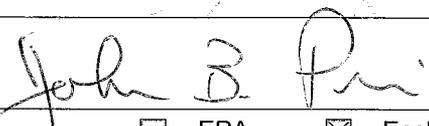
# FACILITY STATUS CHANGE FORM

minute (dpm). A direct reading on the broken pipe found 35,000 dpm. After repairing the pipe, the excavation was backfilled with clean dirt and posted with an Underground Radioactive Material sign. This waste site was not impacted by D4 activities. This waste site will be addressed via an amendment to the 100-NR-1/100-NR-2 OU Interim Action ROD or through an Explanation of Significant Differences to the ROD.

100-N-69 Stormwater Injection Well, Miscellaneous Stream #801 (Not Accepted Waste Site): The site is covered with a 0.56 meter (1.8 foot) diameter steel grate and is 2.56 meters (8.4 feet) deep. The drywell is constructed of concrete. The site appears to drain stormwater that accumulates at a low point and from roof drains on the 105-NB building. Flow rates to the drain are estimated to be less than 19 liters (5 gallons) per minute. The site is located 5.4 meters (18 feet) north of the 105-NB north entrance door. The pipe that enters the drywell on the south side at a depth of 1.29 meters (4.2 feet) drains stormwater from the roof of the 105-NB building. The drain was installed to prevent stormwater from collecting in low areas. This waste site was not accepted by the Tri-Parties.

### Section 3: List of Attachments

1. Facility Information - Building History and Characterization
2. Post-Demolition GPERs Radiological Survey
3. Pre- and Post-Demolition GPS Surveys
4. Pre- and Post-Demolition Photographs

Mark French <hr/> DOE-RL John Price <hr/> Lead Regulator	<div style="text-align: right;">   <hr/>         Date  <hr/>   <hr/>         Date  <hr/>         4-14-2009       </div>
<input type="checkbox"/> EPA	<input checked="" type="checkbox"/> Ecology

### DISTRIBUTION:

EPA: Dennis Faulk, B1-46  
 Ecology: John Price, H0-57  
 DOE: Rudy Guercia, A3-04  
 Document Control, H0-30  
 Administrative Record, H6-08

SIS Coordinator: Sheri Harshberger, H4-22  
 D4 EPL: Robert Cathel, X5-50  
 Sample Design/Cleanup Verification: Megan Proctor, H4-22  
 FR Engineering: Rich Carlson, N3-30  
 FR EPL: Dan Saueressig, N3-30

**Attachment 1: Facility Information (4 pages)**

## 100-N D4 Project Facility Completion Form

### Introduction

This document provides information regarding the 105-NB facility history, characterization and final status at the completion of deactivation, decontamination, decommissioning and demolition (D4) activities.

### Site Information

The 105-NB Maintenance Shop was a pre-engineered, single story, steel frame building with metal siding and roofing, on a reinforced concrete slab foundation, constructed during the 1980's. The 105-NB Maintenance Shop was approximately 160 ft by 140 ft (area 22,400 ft<sup>2</sup>), located adjacent to the original 105-N Maintenance Shop. The building was a large, single room area with various types of shop equipment and an inventory of miscellaneous shop items.

The 105-NB Maintenance Shop provided a maintenance/mechanical shop to support craft activities. No fires were identified for the 105-NB facility; however, there were some areas on the floor with stains apparently from small oil leaks from shop equipment. These stains were relatively minor.

Facility description information was collated from the "*Pre-Existing*" *Conditions Surveys of Hanford Sites Facilities by Bechtel Hanford Inc., Phase II December 30, 1994* (BHI- 00221).

### Radiological Scoping and Industrial Hygiene Baseline Surveys

The 105-NB above- and below-grade demolition were performed under the RCC contract. A radiological scoping survey of the building was not performed prior to demolition. The demolition and load-out of the structures had constant radiological monitoring and no contamination was discovered. An Industrial Hygiene baseline survey was performed in the buildings prior to demolition and is documented in CCN 128657. See Table 1 for a summary of industrial hygiene scoping surveys.

**Table 1. Summary of Scoping Surveys 105-NB**

Type	Quantity	Method Detection Limits	Results
Industrial Hygiene Scoping Surveys	1 Survey	N/A	No evidence of spills or any anomalies were noted.
	1 Survey	N/A	Several wipe samples were taken in April 2005 for Beryllium analysis; all samples were results were less than 0.2 µg/100cm <sup>2</sup> .

## 100-N D4 Project Facility Completion Form

### Post Demolition Radiological Surveys

An initial radiological down-posting survey was performed on August 22, 2007 and documented in RSR-100N-07-0194. All areas were direct surveyed. All surveyed areas were at less than detectable levels. The clearance radiological survey was performed on June 25, 2008. This survey was part of a larger survey of several buildings in the area. The survey is documented in RSR-100N-08-1130. All areas were direct surveyed and were less than detectable levels. A post-demolition Global Positioning Environmental Radiological Survey (GPERS) was conducted on the 105-NB facility area as a final survey of this site on July 8, 2008. The 105-NB facility was surveyed along with the 1714-N complex, 1705-N complex, and 1712-N. During the survey, 10858 data points were measured and no data point was greater than 2 times the average background of 1462 counts per minute. A copy of the survey map is in Attachment 2.

### Facility & Waste Characterization Sampling

Samples were removed from the facility to facilitate safe demolition and proper disposal in accordance with disposal facility waste acceptance criteria.

No asbestos samples were collected of items from the inside or outside of 105-NB structure. Several items were labeled as Presumed Asbestos Containing Material. These items included gasket/joint expansion material, 9 X 9 inch floor tile, pipe wrap/elbows and fire prevention surfacing material.

Three samples were collected for waste designation purposes. Material sampled included fiberglass glue, black tar, and blue gel. Analytical results are documented in Sample Delivery Group (SDG) K0478. Sampling information is documented in logbook EL-1516-10

See Table 2 for a summary of characterization samples collected.

**Table 2. Summary of Characterization Samples 1705-N Complex**

HEIS Number	Date Sampled	Location	Analysis	Results
J12WV1	11-Jul-2006	105NB	Metals (TCLP Extract)	Arsenic - < 24.6 µg/L Barium - 15.9 µg/L Cadmium - < 4.2 µg/L Chromium - <6.4 µg/L Lead - < 26.0 µg/L Mercury - 3.1 µg/L Selenium - < 36.5 µg/L Silver - < 5.6 µg/L
J12WV2	11-Jul-2006	105NB	Metals (TCLP Extract)	Arsenic - 48.9 µg/L Barium - 17.9 µg/L Cadmium - < 4.2 µg/L Chromium - <6.4 µg/L Lead - 700000 µg/L Mercury - 0.44 µg/L

100-N D4 Project Facility Completion Form

HEIS Number	Date Sampled	Location	Analysis	Results
				Selenium - < 36.5 µg/L Silver - < 5.6 µg/L
J12WV4	11-Jul-2006	105NB	Metals (TCLP Extract)	Arsenic - < 24.6 µg/L Barium - 13.4 µg/L Cadmium - < 4.2 µg/L Chromium - < 6.4 µg/L Lead - 39.0 µg/L Mercury - < 0.10 µg/L Selenium - < 36.5 µg/L Silver - < 5.6 µg/L

**Demolition**

The pre-existing above ground structure of 105-NB building and slab were demolished in August 2007 and May 2008, respectively. The demolition material was loaded into roll-off containers and sent to the Environmental Restoration Disposal Facility.

**Civil Survey Information**

A pre-demolition Global Positioning Satellite (GPS) survey of the concrete pad corners was conducted October 2006. A post demolition GPS survey of the old building site was conducted October 2008. Both surveys are included in Attachment 3.

**Anomalies**

One anomaly was encountered at the 105-NB during hazardous material removal. A mud dauber nest was discovered in an old electrical component.

**Final Building Status**

The 105-NB building was demolished to the concrete pad during August 2007. After demolition was completed the building debris was stockpiled, sized reduced on the concrete pad, loaded out and disposed at ERDF. Demolition and removal of all traces of the concrete pad was completed in May 2008. A minimal amount of soil was removed along with the concrete pad. Backfill material from 100-N Borrow Pit was brought in to regrade the site.

**Table 2. Contaminants of Concern for Facility Demolition**

Contaminant of Concern	Determination of no impact to the soil
Radionuclides	A Global Positioning Environmental Radiological Survey (GPERS) conducted on the 1714-N complex as a final survey of this site for gamma contamination found that all sampling points were less than 2 times the average background of 1462 counts per minute.
Chemicals	All hazardous chemicals were removed prior to demolition. In addition, visual examination for stained soil prior to backfill was conducted to ensure no legacy or newly discovered staining was identified.
Metals	All hazardous materials were removed prior to above-grade demolition. Prior to below-grade demolition, load-out of waste was performed.
Asbestos	All asbestos was removed prior to above-grade demolition.

**References**

BHI-00221, *"Pre-Existing" Conditions Surveys of Hanford Sites Facilities by Bechtel Hanford Inc., Phase II December 30, 1994*, December 1994, Bechtel Hanford Inc., Richland, Washington

CCN 128657, *IH Baseline for 105-NB Mechanical Shop*, Strong, Ilene, July 2006, Washington Closure Hanford, LLC, Richland, Washington

DOE-RL, 2006, *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70, Rev. 2, U.S. Department of Energy, Richland Operations Office, Richland, Washington

EL-1516-10, *Miscellaneous Sampling, pp 47*, July 2006, Washington Closure Hanford, LLC., Richland, Washington

EPA, 2000, *Interim Remedial Action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units*, U.S. Environmental Protection Agency, Washington, D.C.

RSR-100N-07-0194, *Radiological Survey Record – Downpost of 105-NB Footprint to URMA Only*, August 2007, Washington Closure Hanford, LLC., Richland, Washington

RSR-100N-08-1130, *Radiological Survey Record – 1705-N RBA Downpost*, June 2008, Washington Closure Hanford, LLC., Richland, Washington

SDG K0478, *Lionville Laboratory Preliminary Data Package*, August 2006, Washington Closure Hanford, LLC., Richland, Washington

**Attachment 2: GPERS Survey (1 page)**



**COPY**

Legend	Summary Statistics
NETCPM	Coverage File: N190.A
	Number of Data Pnts: 10858
	Type of Survey: 'Gamma'
× < 2924	Max GCPM: 2346
● 2924 - 5000	Avg Bkg CPM: 1462
● 5000 - 10000	Survey Date: 07/08/2008
● 10000 - 25000	Area Surveyed: 5052 m2
● > 25000	Project File: N190
	Pdf File: ESRFRM080109C

**100N D4 Project**  
**1705N Slab Village**  
**GPERS Radiological Survey**  
**Gamma Track Map**

10 0 10 Meters



Survey Map Prepared By Mike Dillon, ESI

**Attachment 3: GPS Surveys (6 pages)**

0579170

# GPS Survey Data Report for 105N & 105NB Buildings Pre Demolition

**Project : Job 947**

<b>User name</b>	maaye	<b>Date &amp; Time</b>	5:18:18 PM 10/17/2006
<b>Coordinate System</b>	US State Plane 1983	<b>Zone</b>	Washington South 4602
<b>Project Datum</b>	NAD 1983 (Conus)		
<b>Vertical Datum</b>	NAD83	<b>Geoid Model</b>	GEOID99 (Conus)
<b>Coordinate Units</b>	Meters		
<b>Distance Units</b>	Meters		
<b>Height Units</b>	Meters		

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Survey Project Name/Title: 105N - 105NB  
 Survey Purpose: GPS Building corners and surrounding features for the 105N and 105NB Buildings  
 Requested By: Amy Hood  
 General Site Location: 100-N  
 Charge Code:  
 Field Surveyor: Margo Aye  
 Computer Software Used: Trimble Survey Controller, and Geomatics Office V.11  
 Survey Equipment Used: 5800  
 Control Monuments Used: 100N-4  
 Survey Method: RTK  
 Estimated Horizontal Precision: .020m  
 Estimated Vertical Precision: .050m  
 Fieldwork Start Date: 6/6/06  
 Fieldwork Completion Date: 6/6/06  
 Notes: *Logbook# EL-1571*

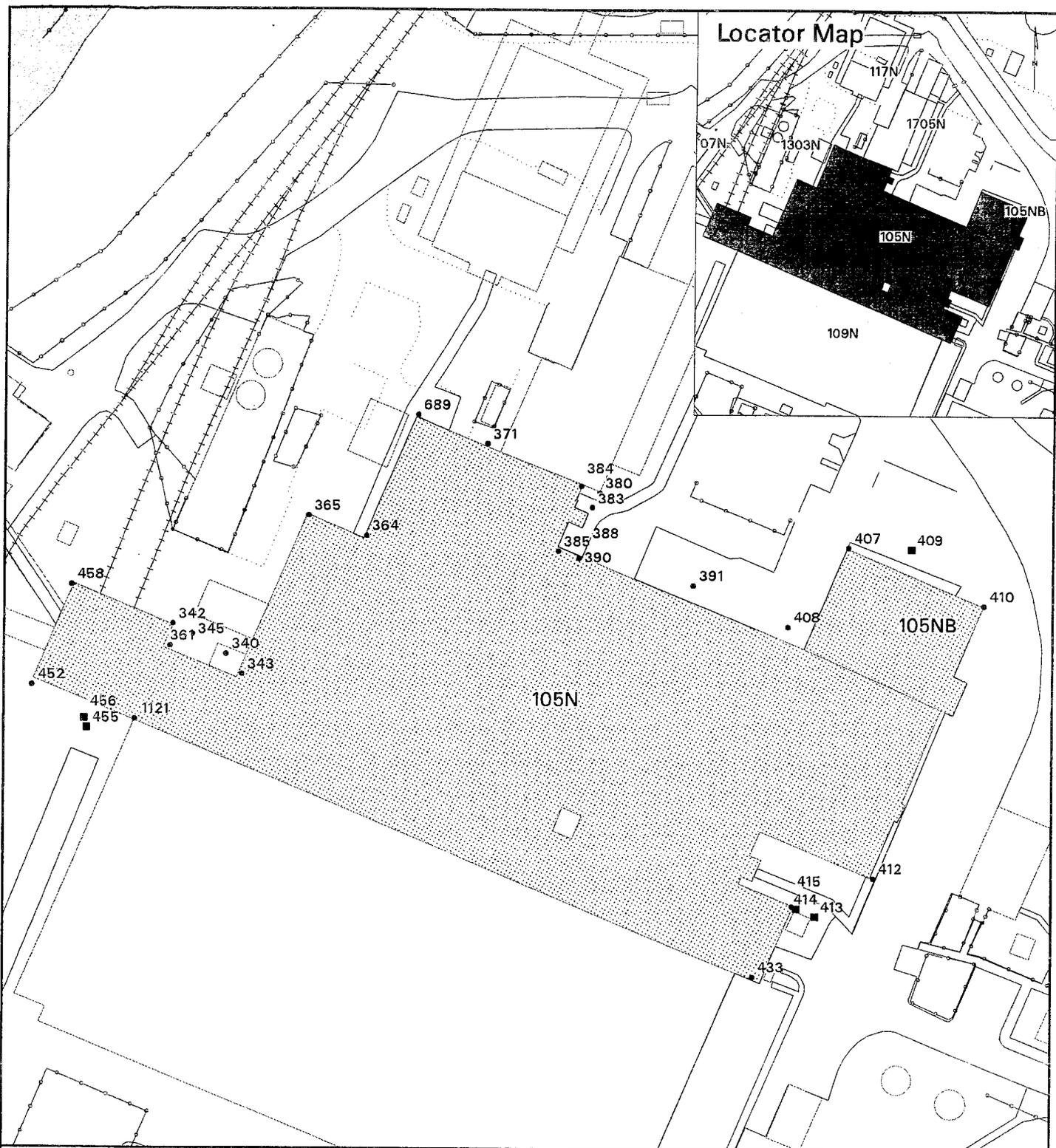
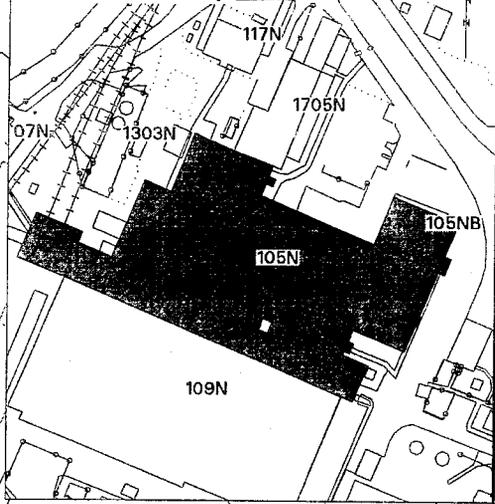
Name	Feature Code	Northing	Easting	Elevation	Description
1121	corner-offset	149513.275m	571134.816	143.277	
455	confined space	149511.446m	571125.152	141.201	
456	confined space	149513.426m	571124.603	141.264	
452	corn-conc	149520.280m	571114.014	139.831	
458	corn-bldg	149541.006m	571121.902	139.890	
342	bldg-corn-top	149532.966m	571142.485	139.788	
361	corn-bldg	149528.419m	571141.968	139.996	
345	bldg-corn-top	149530.845m	571146.525	142.443	
340	bldg-corn-top	149527.251m	571153.264	142.778	
343	bldg-corn-top	149522.488m	571156.648	143.584	

365	corn-bldg	149555.479m	571169.950	139.759
634	corn-bldg	149551.295m	571181.902	139.806
689	corn-bldg	149576.474m	571192.365	139.956
380	corn-bldg	149560.321m	571229.937	139.647
384	corn-bldg	149561.757m	571226.143	139.788
383	corner-overhang	149557.367m	571228.412	140.459
388	corn-bldg	149550.010m	571226.849	139.770
385	corn-bldg	149548.325m	571221.531	139.926
390	corn-bldg	149546.894m	571225.749	139.780
391	corn-bldg	149541.208m	571249.191	139.720
408	corn-bldg	149532.726m	571268.346	139.669
407	corn-bldg	149549.213m	571280.766	139.353
410	drain	149537.311m	571308.852	139.386
412	corn-bldg	149480.852m	571286.171	139.628
415	corn-bldg	149474.942m	571269.459	139.624
414	corner of lift station	149474.464m	571270.387	139.595
413	corner of lift station	149472.821m	571274.189	139.616
433	corner- mh-sewer	149460.201m	571261.446	152.610
3203	corn-bldg	149570.485m	571206.765	139.817
409	drain	149548.933m	571293.820	139.160

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Locator Map



-  Paved Roads and Sidewalks
-  Unpaved Roads and Trails
-  Railroad
-  Fences
-  Location of the 105N and 105NB Building Prior to Demolition
-  GPS Locations for Building Corners, Prior to Demolition
-  GPS Locations for Surrounding Features

Pre- Demolition Survey of The 105N and 105NB Buildings



# GPS Post Demo Survey Report for 1714N, 1705N, 1706, & 105NB Foundations

## Project : 1705N-Slab

<b>User name</b>	maaye	<b>Date &amp; Time</b>	3:39:31 PM 10/7/2008
<b>Coordinate System</b>	US State Plane 1983	<b>Zone</b>	Washington South 4602
<b>Project Datum</b>	NAD 1983 (Conus)		
<b>Vertical Datum</b>	NAD83	<b>Geoid Model</b>	GEOID99 (Conus)
<b>Coordinate Units</b>	Meters		
<b>Distance Units</b>	Meters		
<b>Height Units</b>	Meters		

Survey Project Name/Title: 1705N, 1705NA, 1706N, 1712N ,1714NA, 1714NB, 105NB Slabs

Survey Purpose: Post demo surface survey

Requested By: Amy Hood

General Site Location: 100N

Charge Code:

Field Surveyor: Margo Aye

Computer Software Used: Trimble Survey Controller, and Geomatics Office V.11

Survey Equipment Used: 5800

Control Monuments Used:

Survey Method: RTK

Estimated Horizontal Precision: .020m

Estimated Vertical Precision: .050m

Fieldwork Start Date: 6/9/08

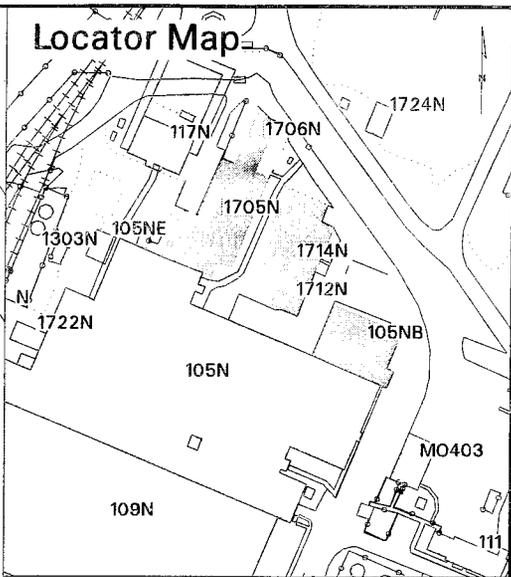
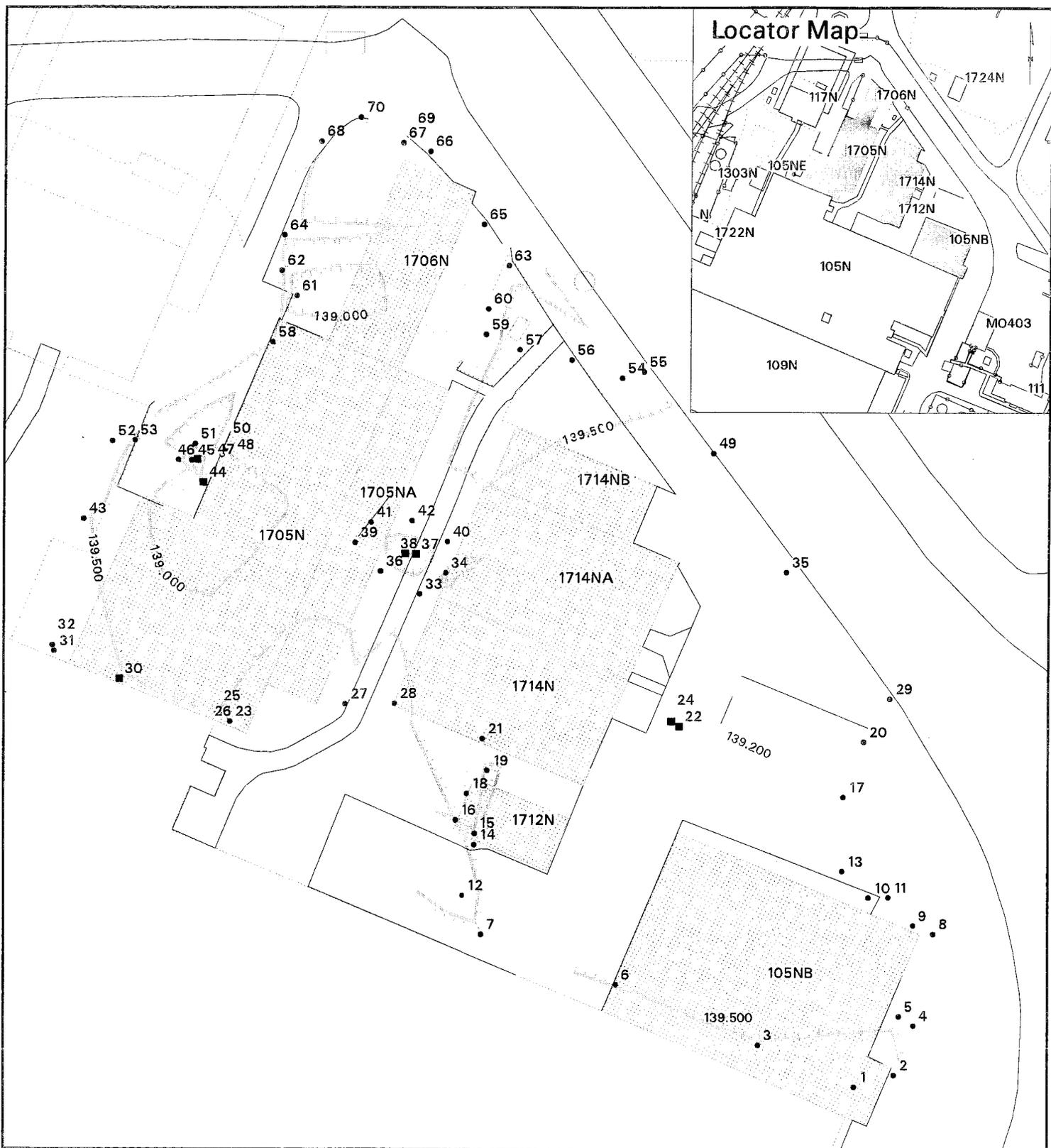
Fieldwork Completion Date: 6/9/08

Notes: Points 24 and 22 are to the edge of one manhole (not two).

Name	Northing	Easting	Elevation	Feature Code	Description
1	149519.249m	571301.148m	139.634m	post-grade	
2	149520.620m	571305.752m	139.534m	post-grade	
3	149524.132m	571289.875m	139.509m	excav-bndry-top	
4	149526.422m	571308.093m	139.409m	post-grade	
5	149527.504m	571306.343m	139.469m	post-grade	
6	149531.202m	571273.283m	139.484m	excav-bndry-top	
7	149537.083m	571257.616m	139.455m	excav-bndry-top	
8	149537.173m	571310.378m	139.257m	post-grade	
9	149538.166m	571307.970m	139.333m	post-grade	
10	149541.427m	571302.745m	139.196m	post-grade	
11	149541.470m	571305.072m	139.247m	post-grade	
12	149541.655m	571255.387m	139.599m	excav-bndry-top	
13	149544.535m	571299.675m	139.139m	post-grade	
14	149547.586m	571256.810m	139.467m	excav-bndry-top	
15	149548.889m	571256.857m	139.506m	excav-bndry-top	
16	149550.481m	571254.560m	139.498m	excav-bndry-top	
17	149553.164m	571299.797m	139.193m	post-grade	
18	149553.591m	571255.921m	139.396m	excav-bndry-top	
19	149556.306m	571258.303m	139.525m	excav-bndry-top	
20	149559.707m	571302.209m	139.253m	post-grade	
21	149560.043m	571257.753m	139.383m	excav-bndry-top	
22	149561.497m	571280.594m	139.186m	manhole-edge	
23	149562.036m	571228.077m	139.526m	excav-bndry-top	
24	149562.093m	571279.698m	139.195m	manhole-edge	
25	149562.949m	571226.692m	139.601m	pipe-end	
26	149563.009m	571226.582m	139.493m	post-grade	
27	149564.090m	571241.514m	139.578m	excav-bndry-top	
28	149564.142m	571247.298m	139.531m	excav-bndry-top	
29	149564.755m	571305.170m	139.344m	post-grade	
30	149567.023m	571215.168m	139.537m	access-hole	
31	149570.288m	571207.596m	139.751m	post-grade	
32	149570.962m	571207.444m	139.609m	post-grade	

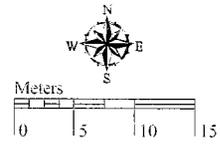
33	149577.019m	571250.249m	139.456m	edge-hole
34	149579.522m	571253.316m	139.513m	edge-hole
35	149579.589m	571293.064m	139.359m	post-grade
36	149579.701m	571245.611m	139.312m	edge-hole
37	149581.669m	571249.791m	138.533m	valve
38	149581.739m	571248.512m	138.481m	valve
39	149583.050m	571242.645m	139.413m	edge-hole
40	149583.185m	571253.494m	139.412m	edge-hole
41	149585.416m	571244.516m	139.438m	edge-hole
42	149585.599m	571249.283m	139.418m	edge-hole
43	149585.786m	571210.970m	139.558m	post-grade
44	149590.066m	571224.891m	138.529m	access-hole
45	149592.662m	571223.582m	138.311m	post-grade
46	149592.684m	571221.982m	139.281m	post-grade
47	149592.755m	571224.209m	138.451m	access-hole
48	149593.332m	571227.056m	138.633m	post-grade
49	149593.513m	571284.517m	139.425m	post-grade
50	149594.018m	571227.620m	139.321m	post-grade
51	149594.585m	571223.952m	138.514m	post-grade
52	149594.907m	571214.342m	139.676m	post-grade
53	149594.989m	571216.949m	139.470m	post-grade
54	149602.348m	571273.888m	139.560m	post-grade
55	149603.066m	571276.406m	139.548m	post-grade
56	149604.498m	571267.998m	139.708m	post-grade
57	149605.680m	571261.920m	139.666m	post-grade
58	149606.552m	571232.896m	139.497m	post-grade
59	149607.460m	571258.027m	139.377m	post-grade
60	149610.423m	571258.260m	139.377m	post-grade
61	149611.940m	571235.610m	138.680m	post-grade
62	149614.844m	571233.891m	139.638m	post-grade
63	149615.442m	571260.611m	139.443m	post-grade
64	149618.958m	571234.200m	139.578m	post-grade
65	149620.208m	571257.703m	139.443m	post-grade
66	149628.602m	571251.229m	139.444m	post-grade
67	149629.582m	571248.042m	139.018m	post-grade
68	149629.730m	571238.457m	139.478m	post-grade
69	149630.530m	571249.042m	139.397m	post-grade
70	149632.504m	571243.080m	139.101m	post-grade

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**Post Demolition Survey of  
1712N, 1714N, 1714NA, 1714NB,  
1705N, 1705NA, 1706N,  
& 105NB Foundations**

- Paved Roads and Sidewalks
- ..... Unpaved Roads and Trails
- ==== Railroad
- Minor Contour Lines, .10 Meters
- Major Contour Lines, .5 Meter Interval
- Incline Contour Direction Lines
- Foundation Locations Prior to Demolition
- GPS Post Demolition Locations
- GPS Locations for Additional Features (See attached survey report for details)



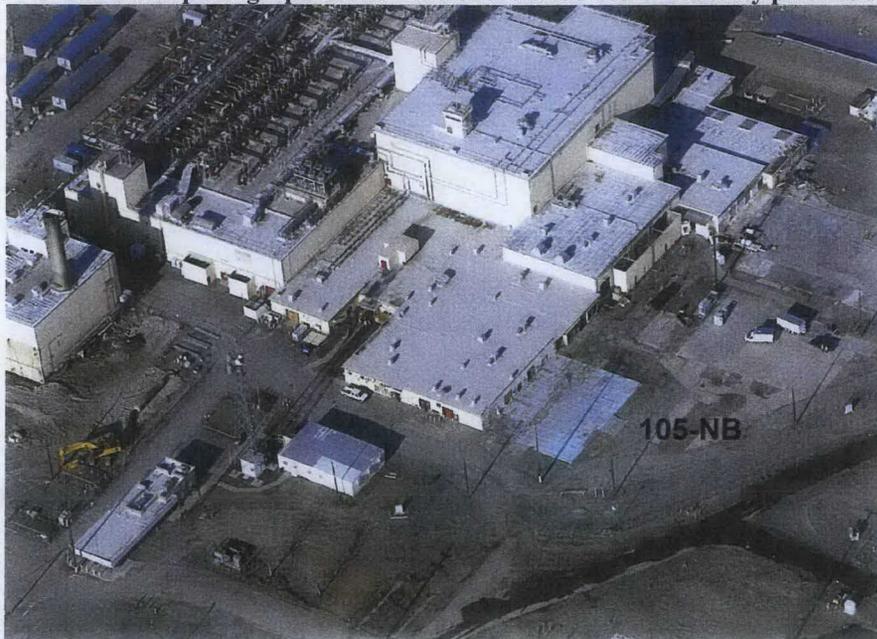
**Attachment 4: Photographs (2 pages)**

100-N D4 Project Facility Completion Form

**Figure 1. A aerial photograph of the 105-NB Building before demolition**



**Figure 2. The aerial photograph shows the slab from the 105-NB facility prior to removal.**



100-N D4 Project Facility Completion Form

Figure 3. The aerial photograph shows the site of the 105-NB after demolition and slab removal.

