



Department of Energy
 Richland Operations Office
 P.O. Box 550
 Richland, Washington 99352

09-AMRC-0092

MAR 27 2009

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 Office of Environmental Cleanup
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Addressees:

COMPLETION OF THE M94-07 TRI-PARTY AGREEMENT MILESTONE

The U.S. Department of Energy, Richland Operations Office has completed all activities required by the subject Tri-Party Agreement (TPA) milestone and is declaring that the milestone is complete. Milestone completion is documented by the attached deferral forms for 3706, 306-W, and 3720. Per TPA milestone M94-00, cleanup of 300-FF-2 waste sites associated with these deferred slabs and grading will be performed in accordance with M-016-00B. Copies of the deferral forms are provided for your information. Completion documentation for 305-B, 306-E, and 333, completed per M94-06, was provided to your agencies via letter 08-AMRC-0138, dated March 14, 2008.

If you have questions, please contact me, or your staff may contact Rudy Guercia, Office of the Assistant Manager for the River Corridor, at (509) 376-5494.

Sincerely,

Joe R. Franco

Joe R. Franco, Assistant Manager
 for the River Corridor

AMRC:RFG

Attachments (3):

1. 306-E/306-E-BA/306-W deferral form (Rev 1)
2. 3706 deferral form
3. 3720 deferral form

cc w/attachs: See page 2

Addressees
09-AMRC-0092

-2-

cc w/attachs:

L. D. Arnold, FHI

F. W. Bond, Ecology

L. E. Gadbois, EPA

R. E. Piippo, CHPRC

C. P. Strand, WCH

J. G. Vance, FFS

Administrative Record, H6-08

FACILITY STATUS CHANGE FORM

Date Submitted: Jun 26, 2008 Originator: Megan Proctor Phone: 372-9930	Area: 300 Facility ID: 306E/306E-BA/306W Action Memorandum: #1 for the 300 Area	Control #: D4-300-004 Rev.1
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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:

This revision supersedes the original approved on March 3, 2008 and defers removal of the concrete foundations for the 306E (including 306E-BA) and 306W Buildings to waste site remediation. The changes address the addition of 306E-BA and 306W.

Deactivation: Utility isolations were performed on the facilities prior to beginning decontamination.

Decontamination and Decommissioning: The following hazardous materials were removed prior to facility demolition: oils, grease, asbestos-containing material, beryllium, mercury, freon, and polychlorinated biphenyls. Hazardous material removal and waste disposition was performed in accordance with *Removal Action Work Plan #1 for the 300 Area, DOE/RL-2004-77, Revision 1 (RAWP)*. Some Class II non-friable asbestos-containing material (flooring, roofing material, and a small amount of inaccessible transite) was left in place to be removed during demolition, as described in Section 2.1.4 of the RAWP. Fixative was applied to the inside of the building to lock down any remaining contamination prior to demolition.

Demolition: Demolition of the above-grade structure for the 306E Building was completed in January 2007. Demolition of the above-grade structure for the 306W Building (including 306E-BA) was completed in October 2007. Due to the facility histories, the demolitions were performed under asbestos and radiological controls. The building debris was removed and disposed at ERDF. The contaminants of concern remaining in the facility during demolition were radionuclides, metals, asbestos (Class II non-friable), and beryllium.

Description of Deferral (as applicable):

Active water lines are in close proximity to the 306E foundation. These water lines cannot currently be isolated as they are part of the fire water supply loop for the 300 Area. In addition, the 306E foundation is located above the 300-256 and 300-41 waste sites. The 306W foundation and any potential soil excavation will be deferred to the 300-33 remedial action. The foundation is located directly above the 300-33 waste site. Removal of the foundation prior to waste site remediation could result in potential exposure of contaminants from the underlying soil. Removal of the foundation will occur prior to waste site remediation and/or once the water lines are isolated and no longer impact excavation activities.

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.

FACILITY STATUS CHANGE FORM

Description of Current/As-Left Conditions:

The 306E (including 306E-BA) and 306W foundations are currently posted as a radiological control area.

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

300-15: Area Process Sewer - The site is an underground process sewer extending throughout the 300 Area for the disposal of process wastes such as steam condensate, cooling water and non-regulated liquids. The site is located in the 300 Area and is a network of underground piping extending throughout the area. 300-15 is a 300-FF-2 waste site.

300-32: 333 Building, 333N Fuels Manufacturing Building, New Fuel Cladding Facility - The 333 Building was a large steel frame building with double metal insulated panel exterior walls.

300-33: 306W Metal Fabrication Development Building Release - The site is the contaminated soil around and under the 306W Building. The site is located in the main 300 Area on the north side of Ginkgo Street between Wisconsin and California Streets. 300-33 is a 300-FF-2 waste site.

300-41: 306E Fabrication and Testing Laboratory - The site includes a neutralization tank and valve pit. The site is located west/northwest of the northeast corner of where the 306E Building stood. 300-41 is a 300-FF-2 waste site.

300-71: 306E Building - HVAC Condensate, Miscellaneous Stream #454 - The site is an injection well that used to receive HVAC condensate. The site is located west of the northeast corner of where the 306E Building stood. 300-71 is a 300-FF-2 waste site.

300-256: 306E Fabrication and Testing Laboratory Releases - The site is contaminated soil under and around the 306E Building. 300-256 is a 300-FF-2 waste site.

300-258: Abandoned Pipe Trench Between 334 Tank Farm and 306E - The site is an abandoned subsurface concrete pipe trench between the 334 tank farm and the 306E Building. The piping had been installed to transfer nitric acid from the 333 Building to the 306 Building. 300-258 is a 300-FF-2 waste site.

Section 3: List of Attachments

1. Facility Information - Building History and Characterization
2. Building Photographs

DOE-RL

Date

6/26/08

Lead Regulator



EPA



Ecology

Date

6/26/08

DISTRIBUTION:

EPA: Alicia Boyd, B1-46
 Ecology: Rick Bond, H0-57
 DOE: Rudy Guercia,
 Document Control, H0-30
 Administrative Record, H6-08

SIS Coordinator: Linda Dietz, H4-22
 D4 EPL: Megan Proctor, L1-07
 Sample Design/Cleanup Verification: Jason Capron, H4-23
 FR Engineering: Rich Carlson, X4-08
 FR EPL: Jim Golden, X2-07

Attachment 1: Facility Information

Building History:

The 306 Building was completed in 1956 as the Metallurgical Semi-Works. The building contained metallurgical equipment and a fuel element pilot plant. Its initial mission was to support 313 Building operations and to pilot process improvements in single-pass reactor fuel fabrication methods. In 1960 the 306 Building was expanded to approximately double its original size to contain the pilot plant for the co-extrusion fabrication process for N Reactor fuel elements. The addition (latter 306E) contained a complete fuel element manufacturing line including component preparation, canning, finishing, and all inspections except autoclaving. Adjacent to the 306E Building was the 306E Boiler Annex (306E-BA) which supplied steam to support activities in the 306E Building.

In 1972 the 306 Building was split into two parts. The newer part was designated as 306E and was used by Hanford Engineering Development Laboratory (HEDL). The older section was designated as 306W and was used by Battelle Northwest Laboratory (BNWL) (later PNNL).

In 1995, the 306E Building provided large, high clearance and heavy floor loading space for assembling, inspecting, and testing of equipment. A variety of specialty development and testing activities take place in the central assembly area and adjacent smaller facilities.

Operations in the 306E (including 306E-BA) and 306W Buildings were phased out by 2004 and the buildings were demolished in November 2006 and December 2007, respectively.

Building Characterization:

Table 1 summarizes the industrial hygiene, radiological control, and asbestos samples collected in the 306E (including 306E-BA) and 306W Buildings. Table 2 and 3 summarize the results of the characterization samples collected in the 306E and 306W buildings, respectively. Table 4 summarizes the contaminants of concern for facility demolition and the associated determination of no impact to the soil.

Table 1: Summary of Scoping Samples Collected at 306E and 306W Buildings

Type	Quantity	Method Detection Limits	Results
306E Building (including 306E-BA)			
Radiological Scoping surveys	51 (306E) 25 (306E-BA)	Beta-gamma – 1,000 removable/ 5,000 fixed (dpm/100 cm ²) Alpha – 20 removable/ 100 fixed (dpm/100 cm ²)	12 (306E only) - Beta-gamma greater than 1,000 removable/5,000 fixed Alpha – All were below method detection limit.
Industrial Hygiene Scoping Surveys (wipe samples)	148	Beryllium - 0.02 µg/100cm ²	80 – less than 0.02 µg/100cm ² 64 – between 0.02 and 0.1 µg/100cm ² 3 – between 0.1 and 0.2 µg/100cm ² 1 – equal to 0.37 µg/100cm ²
Asbestos Containing Materials	91	1 wt%	51 out of 91 samples collected was asbestos containing material (greater than 1% weight)
306W Building			
Radiological Scoping surveys	168	Beta-gamma – 1,000 removable /5,000 fixed (dpm/100 cm ²) Alpha – 20 removable/100 fixed (dpm/100 cm ²)	1 - Beta-gamma greater than 1,000 removable/5,000 fixed 4 – Alpha greater than 20 removable/100 fixed
Industrial Hygiene Scoping Surveys (wipe samples)	72	Beryllium - 0.02 µg/100cm ²	54 – less than or equal to 0.02 µg/100cm ² 14 – between 0.021 and 0.1 µg/100cm ² 4 – between 0.11 and 0.19 µg/100cm ²
Asbestos Containing Materials	74	1 wt%	17 out of 74 samples collected was asbestos containing material (greater than 1% weight)

Table 2: Summary of Characterization Samples Collected at 306E

Sample Description and Location	Results	Method Detection Limit	HEIS #
Paint – Orange color from overhead crane and shield door (Solid)	PCB (Aroclor 1254) - 79000 µg/kg PAH (Naphthalene) – 340 µg/kg Barium TCLP – 113 µg/L Cadmium TCLP – 60.2 µg/L Chromium TCLP – 189000 µg/L Mercury TCLP – 1.2 µg/L	41000 µg/kg 33.3 µg/kg 1.2 µg/L 4.2 µg/L 18.6 µg/L 0.10 µg/L	J12BX8
Machine Filings (Solid)	Zirconium, Total – 34.1 mg/kg Arsenic TCLP – 45.7 µg/L Barium TCLP – 64.7 µg/L Cadmium TCLP – 18.5 µg/L Chromium TCLP – 155 µg/L Lead TCLP – 8670 µg/L Mercury TCLP – 0.30 µg/L Selenium TCLP – 40.8 µg/L	7.5 mg/kg 24.6 µg/L 3 µg/L 4.2 µg/L 6.4 µg/L 26 µg/L 0.10 µg/L 36.5 µg/L	J12652, J12653, J12654, J12655, J12656
Electrical Equipment (Liquid)	Chloride – 34.8 mg/L Sulfate – 2.2 mg/L pH – 7.2 unit Aluminum Total – 241 µg/L Barium Total – 6.2 µg/L Calcium Total – 10200 µg/L Chromium Total – 1.4 µg/L Copper Total – 5.3 µg/L Iron Total – 14200 µg/L Lead Total – 48.4 µg/L Lithium Total – 4.2 µg/L Magnesium Total – 306 µg/L Manganese Total – 258 µg/L Nickel Total – 2.3 µg/L Potassium Total – 3890 µg/L Silica Total – 5200 µg/L Sodium Total – 29000 µg/L Vanadium Total – 2.4 µg/L Zinc Total – 502 µg/L Gross Beta – 3.54 pCi/L	1.2 mg/L 0.25 mg/L 0.01 unit 24.9 µg/L 0.20 µg/L 8.6 µg/L 0.70 µg/L 0.80 µg/L 24.3 µg/L 1.2 µg/L 0.20 µg/L 7.2 µg/L 0.20 µg/L 1.3 µg/L 21.2 µg/L 8.4 µg/L 2.1 µg/L 0.50 µg/L 0.30 µg/L 1.8 pCi/L	J13J37

Table 3: Summary of Characterization Samples Collected at 306W

Sample Description and Location	Results	Required Detection Limit ¹	HEIS #
Oil/Crusty Material (Room 150)	Acenaphthylene – 1.9 mg/kg Aroclor 1242 – 2.9 mg/kg Aroclor 1248 – 13 mg/kg Aroclor 1254 – 28 mg/kg Aroclor 1260 – 4.4 mg/kg Barium TCLP – 14.6 mg/L Benzo(a)anthracene – 0.43 mg/kg Benzo(a)pyrene – 0.049 mg/kg Benzo(b)fluoranthene – 0.15 mg/kg Benzo(ghi)perylene – 0.039 mg/kg Benzo(k)fluoranthene – 0.025 mg/kg Beryllium – 0.79 mg/kg Cadmium TCLP – 0.0572 mg/L Cadmium (Total) – 3.6 mg/kg Chromium TCLP – 2.27 mg/L	0.1 mg/kg ² 0.017 mg/kg 0.017 mg/kg 0.017 mg/kg 0.017 mg/kg 10 mg/L 0.015 mg/kg ² 0.015 mg/kg ² 0.015 mg/kg ² 0.03 mg/kg ² 0.015 mg/kg ² 0.5 mg/kg 0.01 mg/L 0.5 mg/kg 0.06 mg/L	J135H4, J135H5, J135H6

Sample Description and Location	Results	Required Detection Limit ¹	HEIS #
	Chrysene – 1.1 mg/kg Fluorene – 3.2 mg/kg Lead TCLP – 8.04 mg/L Lead (Total) – 245 mg/kg Naphthalene – 1.5 mg/kg Phenanthrene – 0.4 mg/kg Pyrene – 1.5 mg/kg Sulfide – 133 mg/kg Thorium 234 – 1280 pCi/g Uranium 235 – 58.7 pCi/g	0.1 mg/kg ² 0.03 mg/kg ² 0.075 mg/L 5 mg/kg ² 0.1 mg/kg ² 0.05 mg/kg ² 0.05 mg/kg ² 5 mg/kg 11.2 pCi/g 0.828 pCi/g	
Tech Smear (Room 161 and Machine Shop)	Actinium 228 – 88.1 pCi/sample Europium 155 – 16.5 pCi/sample Radium 226 – 89.8 pCi/sample Thorium 234 – 1420 pCi/sample Uranium 235 – 394 pCi/sample	25.8 pCi/sample 5.78 pCi/sample 52.5 pCi/sample 39.8 pCi/sample 5.31 pCi/sample	J135L2, J135L3, J135L4
Metal Ductwork	Actinium 228 – 21.4 pCi/sample Thorium 234 – 571 pCi/sample Uranium 235 – 222 pCi/sample	19.1 pCi/sample 29.9 pCi/sample 2.94 pCi/sample	J13DK5
Cloth Coveralls	Cesium 137 – 3.7 pCi/sample	2.96 pCi/sample	J13DK6
Pre-filter and Filter Housing Media	Arsenic – 13.9 mg/kg Barium – 19.3 mg/kg Bis(2-ethylhexyl)phthalate – 44.0 mg/kg Butylbenzylphthalate – 10 mg/kg Cadmium TCLP – 0.06 mg/L Cadmium – 3.1 mg/kg Chromium TCLP – 0.199 mg/L Chromium – 102 mg/kg Di-n-butylphthalate – 120 mg/kg Lead TCLP – 0.122 mg/L Lead (Total) – 26.2 mg/kg Mercury (Total) – 2.1 mg/kg Phenol – 2.9 mg/kg Actinium 228 – 552 pCi/sample Americium 241 – 837 pCi/sample Europium 155 – 50.6 pCi/g Potassium 40 – 4.81 pCi/g Radium 228 – 31.6 pCi/g Thorium 228 – 32.4 pCi/g Thorium 230 – 4.09 pCi/g Thorium 232 – 31.6 pCi/g Thorium 234 – 56900 pCi/sample Uranium 233/234 – 6390 pCi/g Uranium 235 – 14500 pCi/sample Uranium 238 – 2470 pCi/g	10 mg/kg 2 mg/kg 0.33 mg/kg 0.33 mg/kg 0.01 mg/L 0.5 mg/kg 0.06 mg/L 1 mg/kg 0.33 mg/kg 0.075 mg/L 5 mg/kg 0.2 mg/kg 0.33 mg/kg 115 pCi/sample 57.8 pCi/sample 3.1 pCi/g 3.3 pCi/g 1.1 pCi/g 0.62 pCi/g 1 pCi/g 1.1 pCi/g 444 pCi/sample 70 pCi/g 33 pCi/sample 51 pCi/g	J13HC6, J13HC7, J13HC9, J13HDO
Tech Smear (Press Hood in Room 164)	Actinium 228 – 197 pCi/sample Americium 241 – 12.7 pCi/sample Thorium 234 – 1350 pCi/sample Uranium 235 – 798 pCi/sample	28.3 pCi/sample 10 pCi/sample 78.9 pCi/sample 7.25 pCi/sample	J13J82, J13J85
Tech Smear (Pentaflex Press in Room 161)	Thorium 234 – 7120 pCi/sample Uranium 235 – 107 pCi/sample	109 pCi/sample 6.83 pCi/sample	J13J83, J13J84
Tech Smear (Grinder Hood in Room 162)	Actinium 228 – 54.3 pCi/sample Americium 241 – 15.3 pCi/sample Europium 155 – 18.3 pCi/sample Thorium 234 – 5790 pCi/sample Uranium 235 – 1220 pCi/sample	39.7 pCi/sample 11.9 pCi/sample 9.82 pCi/sample 60.2 pCi/sample 9.82 pCi/sample	J13J86

Notes:

¹ Required Detection Limits listed for nonradiological constituents are in accordance with the 300 Area D4 Waste Sampling and Analysis Plan (DOE/RL-2004-84, Revision 1), unless otherwise noted. Required Detection Limits listed for radiological constituents are the actual Minimum Detectable Activity (MDA) recorded.

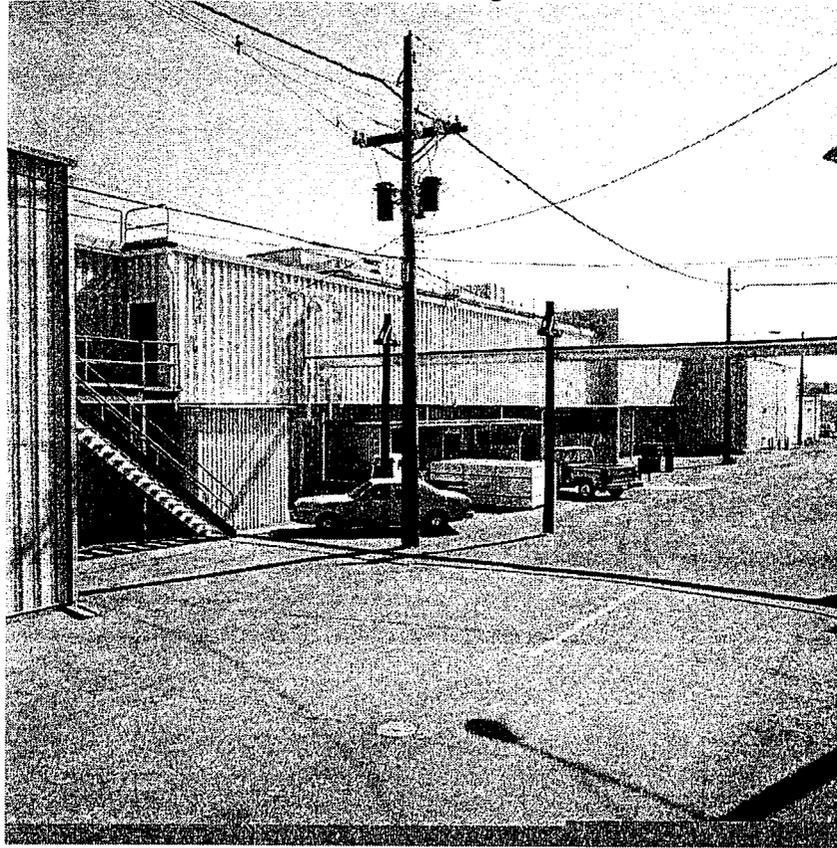
² Constituent not listed as a required analyte in the 300 Area D4 Waste Sampling and Analysis Plan (DOE/RL-2004-84, Revision 1). The specified RDL is in accordance with contractually required minimum detection limits.

Table 4. Contaminants of Concern for Facility Demolition

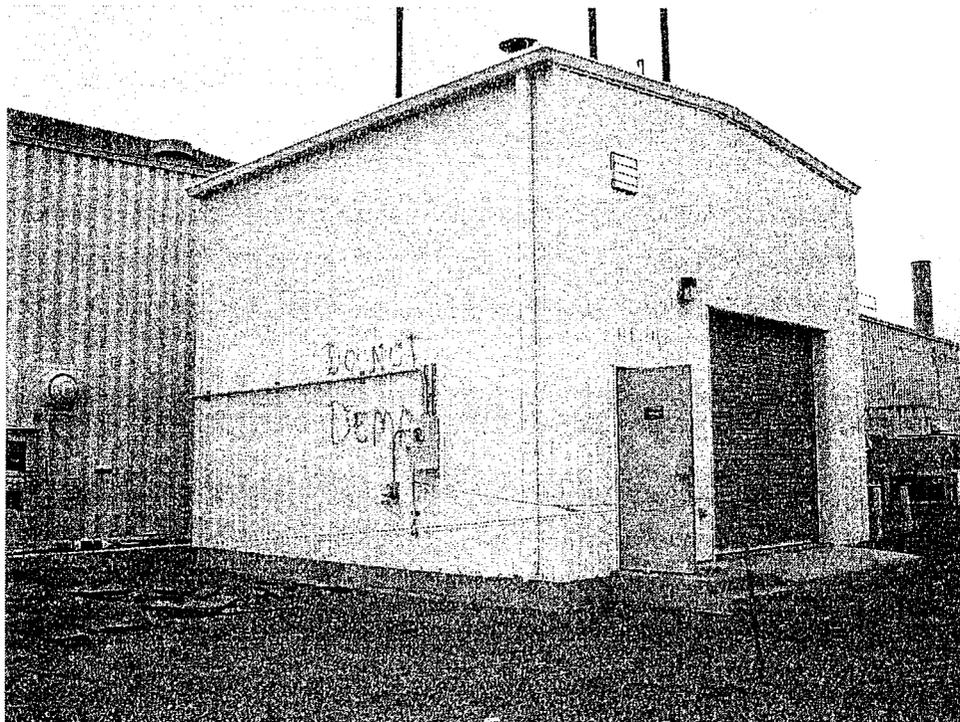
Contaminant of Concern	Determination of no impact to the soil
Radionuclides	The 306E (including 306E-BA) and 306W Buildings were locked down prior to demolition as a precautionary measure because of the facility history. The foundations have been surveyed and are posted as necessary.
Beryllium	The 306E (including 306E-BA) and 306W Buildings were locked down prior to demolition as a precautionary measure because of the facility history. The foundations have been surveyed and are posted as necessary.
Class II non-friable Asbestos	Demolition was performed in accordance with 40 CFR 61.145 (c) and 40 CFR 61.150

Attachment 2: Project Photographs

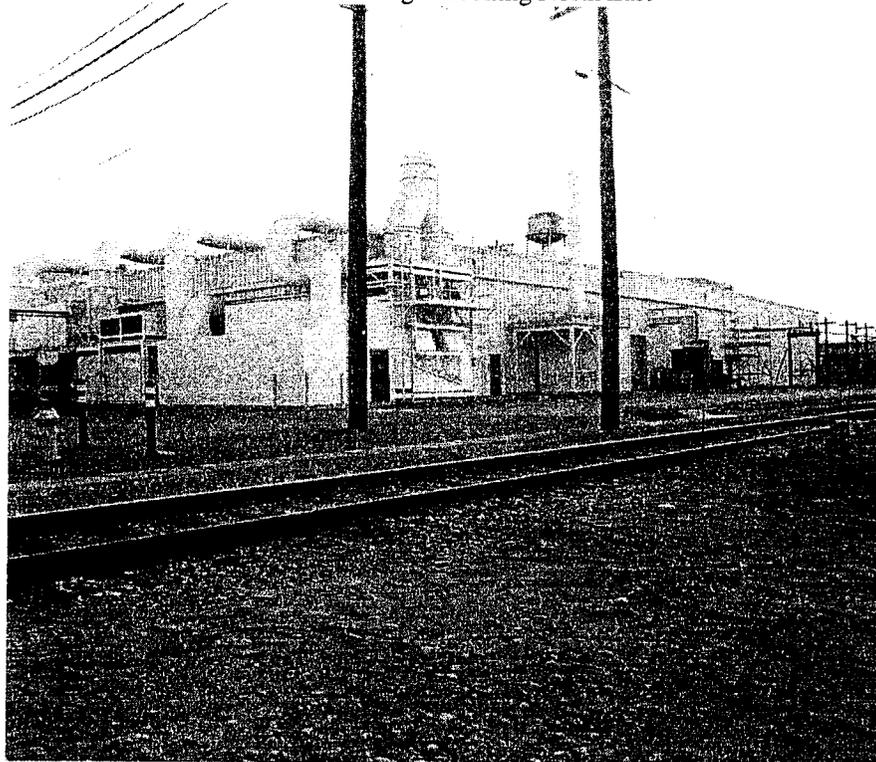
306E Building



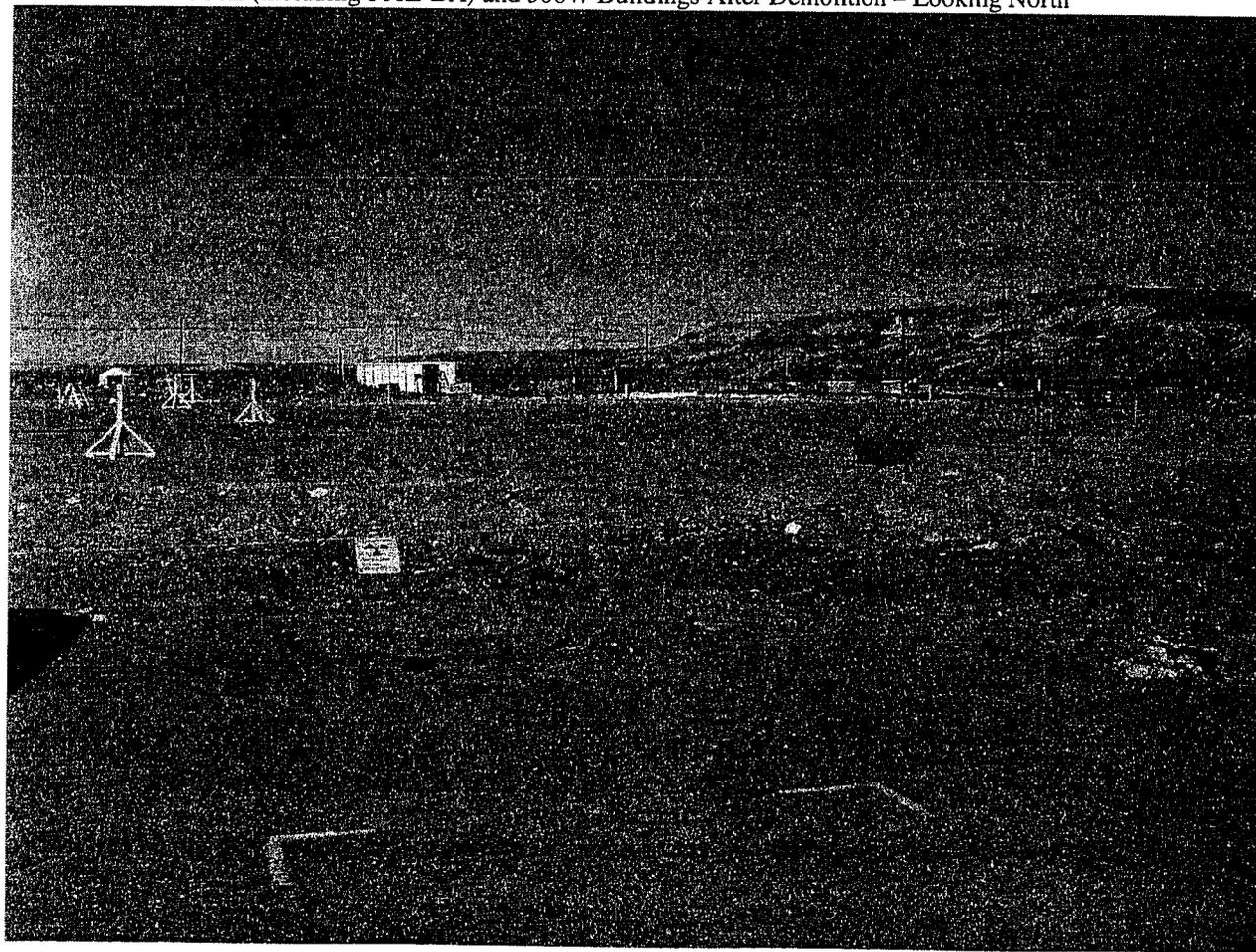
306E-BA Building



306W Building – Looking North East



306E (including 306E-BA) and 306W Buildings After Demolition – Looking North



FACILITY STATUS CHANGE FORM

Date Submitted: Apr 28, 2008 Originator: M. L. Proctor Phone: 521-9622	Area: 300 Facility ID: 3706/3706A Action Memorandum: #1 for the 300 Area	Control #: D4-300-006
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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 isolations were performed on the facilities prior to beginning facility decontamination.

Decontamination and Decommissioning: The following hazardous materials were removed prior to facility demolition: oils, grease, asbestos-containing material, beryllium, mercury, Freon, and polychlorinated biphenyls. Hazardous material removal and waste disposition was performed in accordance with *Removal Action Work Plan #1 for the 300 Area*, DOE/RL-2004-77, Revision 1 (RAWP). Some Class II non-friable asbestos-containing material (flooring, roof material, and a small amount of inaccessible transite) was left in place to be removed during demolition, as described in Section 2.1.4 of the RAWP. Fixative (paint) was applied to the inside of the buildings to lock down any remaining contamination prior to demolition.

Demolition: Demolition of the above-grade structure was completed in June 2007. Due to the facility history, the demolition was performed under radiological and asbestos controls. The building debris was removed and disposed at ERDF. The contaminants of concern remaining in the facilities during demolition were radionuclides, metals, asbestos (Class II non-friable), and beryllium.

Description of Deferral (as applicable):

The 3706 and 3706A foundations and any potential soil excavation will be deferred to the 300-46 remedial action. The foundation is located directly above the 300-46 waste site. Removal of the foundation prior to waste site remediation could result in potential exposure of contaminants from the underlying soil.

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 3706 and 3706A foundations are currently posted as radiological control areas.

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

300-35: This underground 300 gallon diesel fuel storage tank was deactivated before May 1988 and is a rejected WIDS site. The tank was used to support emergency generator operations for heating, ventilation, and air conditioning within the 3706A building. It is expected that this tank will be addressed with the below-grade and adjacent waste sites.

300-46: This 300-FF-2 waste site addresses soil contamination surrounding and underlying the 3706 Building as a result of operations and associated spills and releases. The scope of 300-46 includes 21 (WIDS 300-131 through 300-150 and 300-156)

FACILITY STATUS CHANGE FORM

miscellaneous streams/steam condensate french drains or dry wells that must be dispositioned in accordance with WAC-173-216/218. All drains were plugged prior to facility demolition.

Section 3: List of Attachments

1. Facility information (building history and characterization)
2. Asbestos inspection results
3. Project photographs

 _____ DOE-RL  _____ Lead Regulator	_____ Date 4/28/08 _____ Date 5-8-2008
<input checked="" type="checkbox"/> EPA <input type="checkbox"/> Ecology	

DISTRIBUTION:

EPA: Alicia Boyd, B1-46
 Ecology: Rick Bond, H0-57
 DOE: Rudy Guercia, A3-04
 Document Control, H0-30
 Administrative Record, H6-08

SIS Coordinator: Linda Dietz, H4-22
 D4 EPL: Megan Proctor, L1-07
 Sample Design/Cleanup Verification: Jason Capron, H4-23
 FR Engineering: Rich Carlson, X4-08
 FR EPL: Jim Golden, X2-07

Attachment 1: Facility Information

Building History:

The 3706 Building was constructed in 1943 and housed the original radiochemistry and radiometallurgy laboratory for the Hanford Engineer Works. Its original mission was to perform small-scale experiments in the development of fuel reprocessing technologies that were implemented in the 200 Area. In 1954, the 3706 Building underwent a major decontamination and remodeling effort in which many of the laboratories were converted into office space. During the 1970's and 1980's, additional minor remodeling took place as all laboratory work was phased out. By the late 1980's the building was used for graphics, photography, mail, duplicating, publications, word processing, microfilming, document processing, central files, and first aid.

The 3706A Building housed HVAC, vacuum pump, electrical distribution panels, and other support equipment for the main 3706 Building.

Building Characterization:

Table 1: Summary of Scoping Samples Collected

Type	Quantity	Results	Method Detection Limits
Radiological Scoping surveys	156	3 - Beta-gamma > 1,000 removable /5,000 fixed	Beta-gamma - 1,000 removable /5,000 fixed (dmp/100 cm ²)
Industrial Hygiene Scoping Surveys	123 wipe samples	Beryllium - 11 > 0.2 ug/100cm ²	0.1 ug/100 cm ²

Table 2: Summary of Characterization Samples Collected at 3706/3706A

Sample Description and Location	Results	Required Detection Limit ¹	HEIS #
Building Trench (Liquid)	Aluminum - 650 µg/L	50 µg/L	J124F9, J124H0
	Antimony - 107 µg/L	60 µg/L	
	Barium - 54.1 µg/L	20 µg/L	
	Calcium - 69100 µg/L	1000 µg/L	
	Chloride - 23500 µg/L	200 µg/L	
	Chromium - 14.3 µg/L	10 µg/L	
	Copper - 463 µg/L	10 µg/L	
	Iron - 3570 µg/L	50 µg/L	
	Magnesium - 11400 µg/L	750 µg/L	
	Manganese - 54.2 µg/L	5 µg/L	
	Nitrate - 100000 µg/L	250 µg/L	
	Potassium - 14500 µg/L	4000 µg/L	
	Silver - 463 µg/L	10 µg/L	
	Silica - 25700 µg/L	20 µg/L	
	Sodium - 46300 µg/L	500 µg/L	
	Sulfate - 126000 µg/L	500 µg/L	
	Zinc - 475 µg/L	10 µg/L	
	Gross Alpha - 50.3 pCi/g	3.5 pCi/g	
Gross Beta - 35.8 pCi/g	2.8 pCi/g		
Technetium 99 - 27.1 pCi/g	6 pCi/g		
Uranium 233/234 - 29.6 pCi/g ²	0.84 pCi/g		
Uranium 235 - 4.11 pCi/g ²	0.54 pCi/g		
Uranium 238 - 19.7 pCi/g ²	0.84 pCi/g		
Soot From Press Exhauster Filter Housing (Solid)	Cadmium - 11.1 mg/kg	0.5 mg/kg	J12781
	Lead - 276 mg/kg	5 mg/kg	
	Radium 226 - 48.2 pCi/g	11.1 pCi/g	
	Thorium 234 - 37.9 pCi/g ²	6.97 pCi/g	
	Uranium 235 - 2.98 pCi/g	0.69 pCi/g	
Resin Tank (Liquid)	Barium - 555 µg/L	20 µg/L	J14K82
	Gross Alpha - 7.03 pCi/g	4 pCi/g	

Sample Description and Location	Results	Required Detection Limit ¹	HEIS #
	Gross Beta – 6.74 pCi/g Cobalt 60 – 0.173 pCi/g Europium 152 – 0.858 pCi/g Potassium 40 – 9.55 pCi/g ² Radium 226 – 0.563 pCi/g	5.3 pCi/g 0.057 pCi/g 0.14 pCi/g 2.55 pCi/g 0.091 pCi/g	
Concrete Floor (Solid)	Potassium 40 – 13.2 pCi/g ² Thorium 234 – 419 pCi/g ² Uranium 235 – 31.9 pCi/g	2.63 pCi/g 4.29 pCi/g 0.489 pCi/g	J12L56-J12L59
Potential Asbestos Containing Materials (Solid)	See Attachment 2	<1 wt%	See Attachment 2

Notes:

¹ Required Detection Limits listed for nonradiological constituents are in accordance with the 300 Area D4 Waste Sampling and Analysis Plan (DOE/RL-2004-84, Revision 1), unless otherwise noted. Required Detection Limits listed for radiological constituents are the actual Minimum Detectable Activity (MDA) recorded.

² Constituent not listed as a required analyte in the 300 Area D4 Waste Sampling and Analysis Plan (DOE/RL-2004-84, Revision 1).

Table 3. Contaminants of Concern for Facility Demolition

Contaminant of Concern	Determination of no impact to the soil
Radionuclides	Radiological contamination fixative was applied to the 3706 and 3706A Buildings prior to demolition as a precautionary measure because of the facility history. The foundation has been surveyed and is posted as necessary.
Beryllium	Contamination fixative was applied to the building interior prior to demolition. Foundation has been surveyed and is posted as necessary.
Class II non-friable Asbestos	Demolition was performed in accordance with 40 CFR 61.145 (c) and 40 CFR 61.150

Attachment 2: Asbestos Inspection Results

Asbestos Sample Summary Building 3706/3706A				
Sample Batch Number	HEIS Sample Number	Sample Description	Sample Location	Percent Asbestos (lab results)
MM-1	BOL001	Light brown vinyl sheeting	Rooms 3, 22, 121, 210C	<1%
MM-2	BOK594	White 12" by 12" floor tile	Throughout building	<1%
MM-3	BOL042	Gray 9" by 9" floor tile	Closet at south end of room 121	<1%
MM-4	BOL043	Blue-green floor tile mastic	Throughout building	<1%
MM-5	BOL045	Brown floor tile	Rooms 228 and 232	2-4% Chrysotile
MM-5	BOL046	Brown floor tile	Rooms 228 and 232	5-10% Chrysotile
MM-6	BOL047	Black 9" by 9" floor tile	Rooms 209A and 232	2-4% Chrysotile
MM-7	BOL048	Tan floor tile	Room 206	<1%
MM-8	BOL0R4	Exterior transite shingles		10-20% Chrysotile
MM-9	BOL0R5	Interior transite panels	Throughout building	1-2% Chrysotile
MM-9	BOL0R7	Interior transite panels	Throughout building	10-20% Chrysotile
MM-10	BOL273	Blown-in insulation	3706 attic	<1%
MM-10	BOL275	Blown-in insulation	3706 attic	<1%
MM-10	BOL277	Blown-in insulation	3706 attic	<1%
MM-11	BOL0R8	Cove mastic	Throughout building	<1%
MM-12	BOL0R9	Sheetrock joint compound	Throughout building	<1%
MM-13	BOL100	Window putty	Throughout building	<1%
MM-13	BOL101	Window putty	Throughout building	<1%
MM-14	BOL108	Black laboratory-type table in kitchen	Room 212	<1%
MM-15	J124W4	Outer fabric layer on ventilation system	West air mover on north side of 3706	10-20% Chrysotile
MM-15	J124W6	Outer fabric layer on ventilation system	West air mover on north side of 3706	10-20% Chrysotile
TSI-1	BOK9T5	White duct insulation	3706 attic	10-20% Chryotile 4-8% Amosite
TSI-1	BOK9T6	White duct insulation	3706 attic	20-30% Chryotile 4-8% Amosite
TSI-1	BOK9T7	White duct insulation	3706 attic	40-50% Chryotile 4-8% Amosite
TSI-2	BOL049	Asbestos insulation on pipe, including elbows	Throughout building	5-10% Chrysotile 4-8% Amosite
TSI-2	BOL051	Asbestos insulation on pipe, including elbows	Throughout building	5-10% Chrysotile 2-4% Amosite
TSI-2	BOL053	Asbestos insulation on pipe, including elbows	Throughout building	15-25% Chrysotile 8-15% Amosite
TSI-2	BOL055	Asbestos insulation on pipe, including elbows	Throughout building	<1%
TSI-2	BOL057	Asbestos insulation on pipe, including elbows	Throughout building	<1%
TSI-2	BOL059	Asbestos insulation on pipe, including elbows	Throughout building	<1%
TSI-2	BOL061	Asbestos insulation on pipe, including elbows	Throughout building	<1%
TSI-2	BOL063	Asbestos insulation on pipe, including elbows	Throughout building	<1%

Asbestos Sample Summary Building 3706/3706A

Sample Batch Number	HEIS Sample Number	Sample Description	Sample Location	Percent Asbestos (lab results)
TSI-2	BOL249	Asbestos insulation on pipe, including elbows	Throughout building	10-20% Chrysotile
TSI-2	BOL251	Asbestos insulation on pipe, including elbows	Throughout building	20-30% Chrysotile
TSI-2	BOL253	Asbestos insulation on pipe, including elbows	Throughout building	20-30% Chrysotile
TSI-2	BOL255	Asbestos insulation on pipe, including elbows	Throughout building	15-20% Chrysotile 5-10% Amosite
TSI-2	BOL257	Asbestos insulation on pipe, including elbows	Throughout building	5-10% Chrysotile 5-10% Amosite
TSI-2	BOL259	Asbestos insulation on pipe, including elbows	Throughout building	4-8% Amosite
TSI-2	BOL261	Asbestos insulation on pipe, including elbows	Throughout building	<1%
TSI-2	BOL263	Asbestos insulation on pipe, including elbows	Throughout building	<1%
TSI-2	BOL265	Asbestos insulation on pipe, including elbows	Throughout building	<1%
TSI-2	BOL289	Asbestos insulation on pipe, including elbows	Throughout building	10-20% Chrysotile
TSI-2	BOL291	Asbestos insulation on pipe, including elbows	Throughout building	5-10% Chrysotile
TSI-2	BOL293	Asbestos insulation on pipe, including elbows	Throughout building	10-20% Chrysotile
TSI-2	BOL050	Asbestos insulation on pipe, including elbows	Throughout building	5-10% Chrysotile 2-4% Amosite
TSI-2	BOL052	Asbestos insulation on pipe, including elbows	Throughout building	<1%
TSI-2	BOL054	Asbestos insulation on pipe, including elbows	Throughout building	20-30% Chrysotile 5-10% Amosite
TSI-2	BOK9R5	Asbestos insulation on pipe, including elbows	Throughout building	20-30% Chrysotile
TSI-2	BOK9R6	Asbestos insulation on pipe, including elbows	Throughout building	20-30% Chrysotile
TSI-2	BOK9R7	Asbestos insulation on pipe, including elbows	Throughout building	20-30% Chrysotile
TSI-2	BOK9R8	Asbestos insulation on pipe, including elbows	Throughout building	40-60% Chrysotile 4-8% Amosite
TSI-2	BOK9R9	Asbestos insulation on pipe, including elbows	Throughout building	40-60% Chrysotile 2-4% Amosite
TSI-2	BOK9T0	Asbestos insulation on pipe, including elbows	Throughout building	40-60% Chrysotile 2-4% Amosite
TSI-2	BOK9T8	Asbestos insulation on pipe, including elbows	Throughout building	<1%
TSI-2	BOK9T9	Asbestos insulation on pipe, including elbows	Throughout building	30-40% Chrysotile 4-8% Amosite
TSI-2	BOK9V0	Asbestos insulation on pipe, including elbows	Throughout building	40-50% Chrysotile 4-8% Amosite
TSI-2	BOK9V1	Asbestos insulation on pipe, including elbows	Throughout building	25-35% Chrysotile 2-4% Amosite
TSI-2	BOK9V2	Asbestos insulation on pipe, including elbows	Throughout building	20-30% Chrysotile
TSI-2	BOK9V3	Asbestos insulation on pipe, including elbows	Throughout building	5-10% Chrysotile

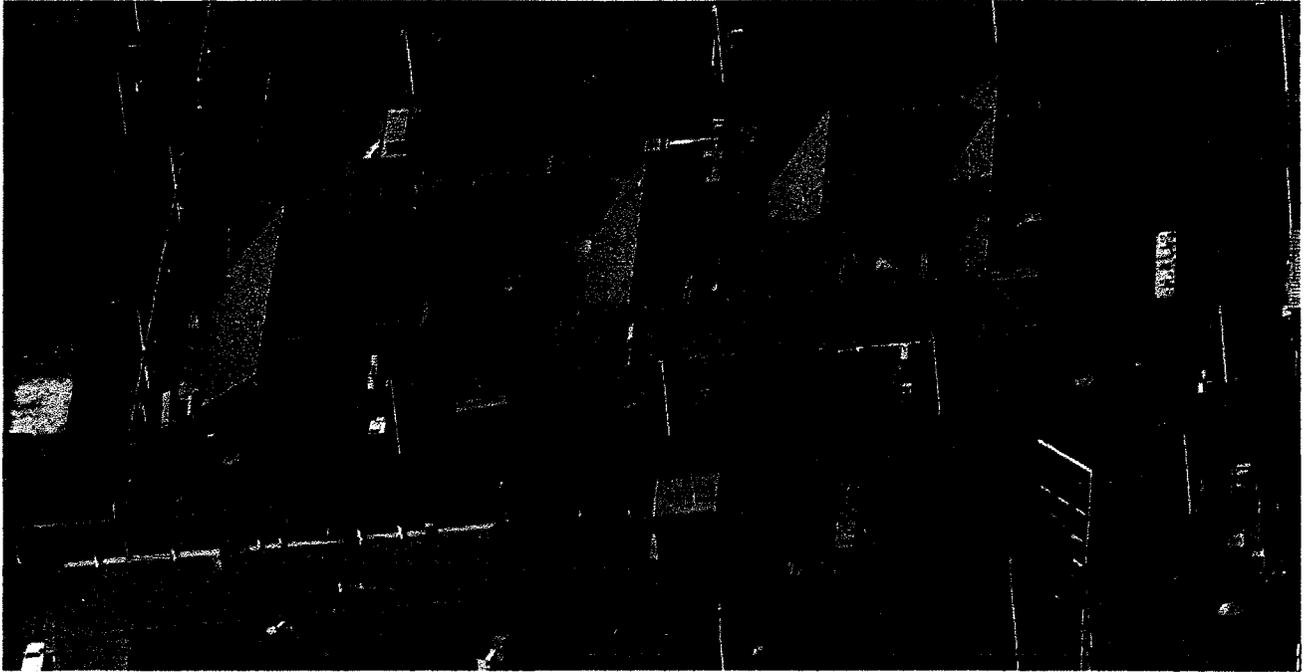
Asbestos Sample Summary
Building 3706/3706A

Sample Batch Number	HEIS Sample Number	Sample Description	Sample Location	Percent Asbestos (lab results)
TSI-3	B0L243	Insulation on air conditioning unit	3706A	15-25% Chrysotile 5-10% Amosite
TSI-3	B0L245	Insulation on air conditioning unit	3706A	20-30% Chrysotile 10-20% Amosite
TSI-3	B0L247	Insulation on air conditioning unit	3706A	20-30% Chrysotile 5-10% Amosite
TSI-4	B0L061	White cloth on air conditioning unit	3706	<1%
TSI-4	B0L063	White cloth on air conditioning unit	3706	<1%
TSI-5	B0L102	Duct insulation	On roof above room 210C	20-30% Chrysotile
TSI-5	B0L103	Duct insulation	On roof above room 210C	20-30% Chrysotile
TSI-5	B0L104	Duct insulation	On roof above room 210C	20-30% Chrysotile
TSI-5	B0L105	Duct insulation	On roof above room 210C	<1%
TSI-5	B0L106	Duct insulation	On roof above room 210C	<1%
TSI-5	B0L107	Duct insulation	On roof above room 210C	<1%
TSI-6	J124W7	Steam line elbows on north side of building	Near door # 07	<1%
TSI-6	J124W8	Steam line elbows on north side of building	West of door # 06	<1%
TSI-6	J124X2	Steam line elbows on north side of building	East of door # 06	<1%

In-Process Asbestos Sample Summary
Building 3706

Sample Batch Number	HEIS Sample Number	Sample Description	Sample Location	Percent Asbestos (lab results)
MM-1	J12659	Sheetrock	Entry way ceiling near room 5	ND
MM-1	J12662	Sheetrock	Ceiling in room 205	ND
MM-1	J12664	Sheetrock	Ceiling in room 207	ND
MM-1	J13VW1	Sheetrock	Wall in room 22	ND
MM-2	J12660	Brown fiberboard w/ grey backing	Hallway ceiling near room 134	ND
MM-2	J13VW3	Brown fiberboard	Hallway wall near room 22	ND
MM-2	J13VW7	Brown fiberboard	Wall in room 102	ND
MM-3	J12661	Grey transite	Ceiling in room 122A	10-20% Chrysotile
MM-3	J12663	Grey transite	Ceiling in room 210	10-20% Chrysotile
MM-3	J12665	Grey transite	Ceiling in room 207	10-20% Chrysotile
MM-3	J12667	Grey transite	Ceiling in room 217	10-20% Chrysotile
MM-3	J12668	Grey transite	Ceiling in room 228	10-20% Chrysotile
MM-3	J13VW2	Grey transite	Hallway wall near room 22	10-20% Chrysotile
MM-3	J13VW4	Grey transite	Hallway wall near room 218	10-20% Chrysotile
MM-3	J13VW5	Grey transite	Hallway wall near room 224	10-20% Chrysotile
MM-3	J13VW6	Grey transite	Wall in room 102	10-20% Chrysotile
MM-3	J13VW8	Grey transite	Wall in room 117	10-20% Chrysotile
MM-3	J13VW9	Grey transite	Wall in room 122	10-20% Chrysotile
MM-4	J12666	Grey/white cotton-like insulation	Attic area above room 207	ND
MM-5	J13P89	Green/grey vermiculite-like insulation	Attic area on east end of building	ND
MM-6	J13P88	1' x 1' white, symmetrical hole design, ceiling tile	Ceiling in room 210C	ND
MM-7	J13P86	1' x 1' white, "worm hole" design, ceiling tile	Ceiling in room 22	ND
MM-7	J13P87	Mastic on ceiling tile sample # J13P86	Ceiling in room 22	ND
MM-8	J13VX1	1' x 1' grey w/ white paint, amorphous design, ceiling tile	3706	ND
MM-9	J13VX2	1' x 1' tan/orange w/ white paint, random hole design, ceiling tile	3706	ND
MM-10	J13VX3	1' x 1' grey w/ white paint, worm hole & small hole design, ceiling tile	3706	ND

Attachment 3: Project Photographs



Aerial Photo taken August 2005 showing live trees within western most courtyard.



View of 3706 Concrete Slab from the Northeast (May 2006)

FACILITY STATUS CHANGE FORM

Date Submitted: Mar 17, 2009 Originator: David Warren Phone: 554-9368	Area: 300 Facility ID: 3720 Action Memorandum: #1 for the 300 Area	Control #: D4-300-011
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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 isolations were performed on the facility prior to beginning facility decontamination.

Decontamination and Decommissioning: The following hazardous materials were removed prior to facility demolition: lead, glycol, oils, asbestos containing material, mercury, and Freon. Hazardous material removal and waste disposition was performed in accordance with *Removal Action Work Plan #1 for the 300 Area, DOE/RL-2004-77, Revision 1 (RAWP)*. Fixative was applied to the inside of the building to lock down any remaining radiological and beryllium contamination prior to demolition.

Demolition: Demolition of the above-grade structure and majority of the foundation was completed in 2007. The building debris was removed and disposed at ERDF. The building slab was broken up, soils below the slab radiologically surveyed, with the slab rubble piled for later use as clean fill. Due to the facility history, the demolition was performed under radiological controls, and items with high levels of contamination were removed from the building. The contaminants of concern remaining in the facility during demolition were asbestos (Class II non-friable) and specific locations of fixed radiological contamination.

Description of Deferral (as applicable):

Final significant grading will be performed when Field Remediation work associated with the 313 Building Area has been completed.

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 area was surveyed clean and is not posted for radiological or industrial hygiene hazards. A portion of the west basement and below grade stem walls remain that will be addressed during final grading. No construction debris (e.g., paint chips, insulation) or soil staining was identified during the visual inspection of the excavated area. The related adjacent waste sites were not considered to be affected by the removal action.

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

300-1- connections to the 300 Area Process Sewer in each section of the 3720 building are as follows: H-3-21356 (northeast section), H-3-21357 (northwest section), H-3-21358 (southeast section), and H-3-21359 (southwest section).

300-SS- three sanitary sewer manholes located on the south side of the 3720 building.

Undocumented Injection/Reverse Well, Steam Condensate- Located on the west side of the 3720 building.

Section 3: List of Attachments

1. Facility information (building history and characterization)

FACILITY STATUS CHANGE FORM

2. Project Photographs	
3. Global Positioning Environmental Radiological Survey (GPERS)	
DOE-RL <i>Larry Gadbois</i>	Date <i>3/23/09</i>
Lead Regulator <input checked="" type="checkbox"/> EPA <input type="checkbox"/> Ecology	Date <i>3-23-09</i>

DISTRIBUTION:

EPA: Larry Gadbois, B1-46
 Ecology: Rick Bond, H0-57
 DOE: Rudy Guercia, A3-04
 Document Control, H0-30
 Administrative Record, H6-08

SIS Coordinator: Sheri Harshberger, H4-22
 D4 EPL: Chris Strand, L1-07
 Sample Design/Cleanup Verification: Megan Proctor, H4-22
 FR Engineering: Rich Carlson, X4-08
 FR EPL: Darrin Faulk, L6-06

Attachment 1: Facility Information

Building History:

The 3720 Building was constructed in 1964 as the Consolidated Service Facility, which served as the Maintenance and Quality Control Laboratory for analytical chemistry support for the reactor fuels manufacturing plants. In 1971, the 3720 Building was transferred to PNNL as the Material Science Laboratory.

The 3720 Building was a metal frame structure on a concrete foundation and concrete slab floor. The exterior walls were steel panels with fiberglass insulation. The building had a concrete partial basement (southwest quadrant), a concrete block addition with a full basement (northwest end), and a covered storage area (southwest end). The sloped gable roof was tar and gravel over a corrugated sheet metal base. The building had electrical power, was steam heated, and had connections to both sanitary and process sewers.

The 3720 Building was deactivated and placed in "cold, dark, and dry status" by PNNL in December of 2003. There were 29 offices and 31 laboratories of various sizes in the building including several labs that had posted radioactive contamination areas, one lab that contained beryllium contamination, and at least two (2) labs that were used to process toxic and/or hazardous materials.

Building Characterization:

Table 1 summarizes the industrial hygiene, radiological control, and asbestos samples collected in the 3720 Building. Table 2 summarizes the contaminants of concern for facility demolition and the Management Practices implemented to minimize spread of those contaminants.

Table 1. Summary of Samples Collected

Type	Quantity	Method Detection Limits	Results
Radiological Scoping and Pre-Demolition surveys	25 Radiological Survey Reports	Beta-gamma – 1,000 removable/ 5,000 fixed ^a Alpha – 20 removable/ 100 fixed ^a	Levels of fixed contamination ranged from less than detectable to a high of 4,000,000 Beta-gamma and 300,000 alpha. Levels of removable contamination ranged from less than detectable to a high of 24,000 Beta-gamma and 14,000 alpha.
Industrial Hygiene Scoping Surveys for Beryllium (Air and Wipe Samples)	204 wipe samples 14 Air Samples	Beryllium – Wipe Samples- 0.01 $\mu\text{g}/100\text{cm}^2$ Air Samples- 0.01 $\mu\text{g}/\text{sample}$	Nine Be wipe sample results were above the action level of 0.2 $\mu\text{g}/100\text{cm}^2$ All air sample results were below the method's limit of detection
Industrial Hygiene Post Demolition Sampling for Beryllium (Bulk and Wipe Samples)	30 Bulk Samples 4 Wipe Samples	Beryllium – Bulk Samples- 0.02 $\mu\text{g}/\text{sample}$ Wipe Samples- 0.01 $\mu\text{g}/100\text{cm}^2$	All thirty bulk samples were measured at levels below the local background release criterion of 1.81 $\mu\text{gram}/\text{gram}$. All four wipe samples were measured to have surface levels less than the action level of 0.2 $\mu\text{g}/100\text{cm}^2$

Type	Quantity	Method Detection Limits	Results
Radiological Post-Demolition and Downposting Surveys	19 Radiological Survey Reports	Beta-gamma – 1,000 removable/ 5,000 fixed ^a Alpha – 20 removable/ 100 fixed ^a	All results were below method detection limits
Global Position Environmental Radiological Surveys (GPERS)	2 Surveys	N/A	Results of the Survey are listed in Attachment 3
Asbestos – Thermal System Insulation and Miscellaneous Material	77	<1% weight	58 - below detection limits 6 - less than 1% asbestos 13 - found to be at levels requiring removal

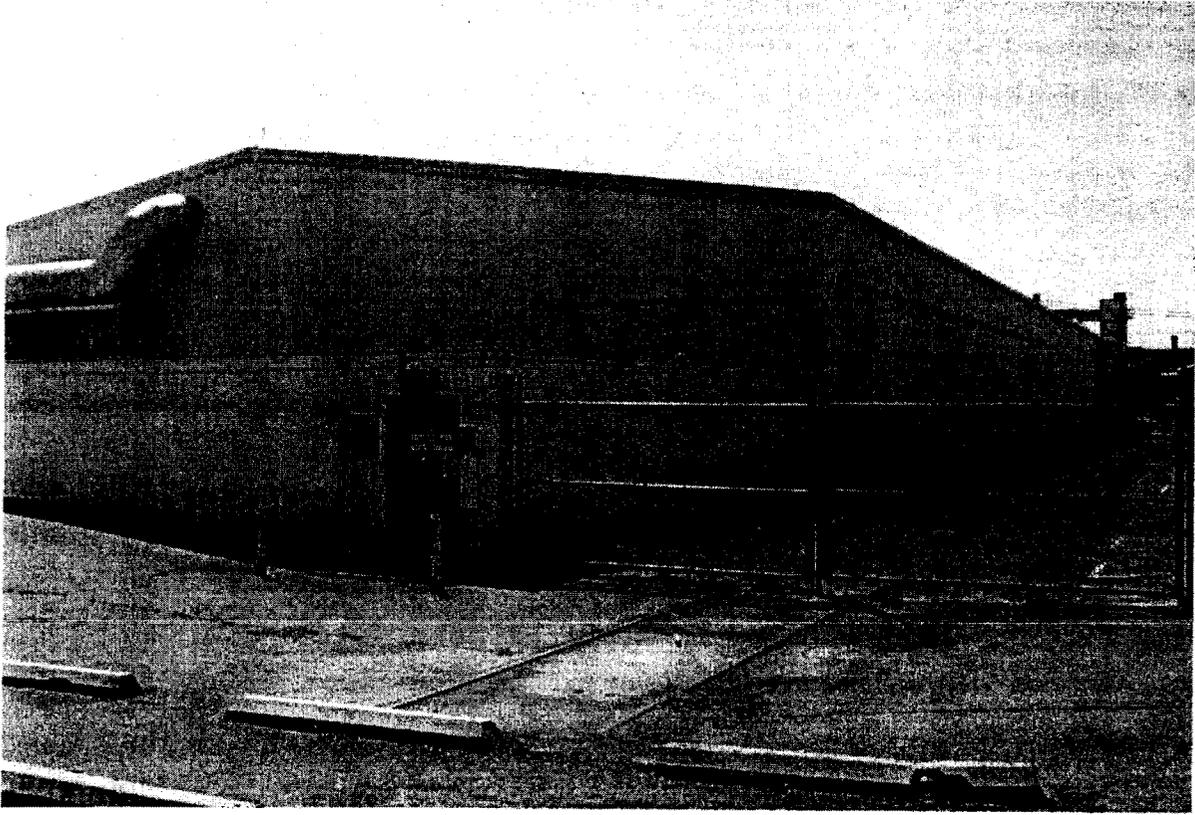
^a – dpm/100 cm²

Table 2. Contaminants of Concern for Facility Demolition

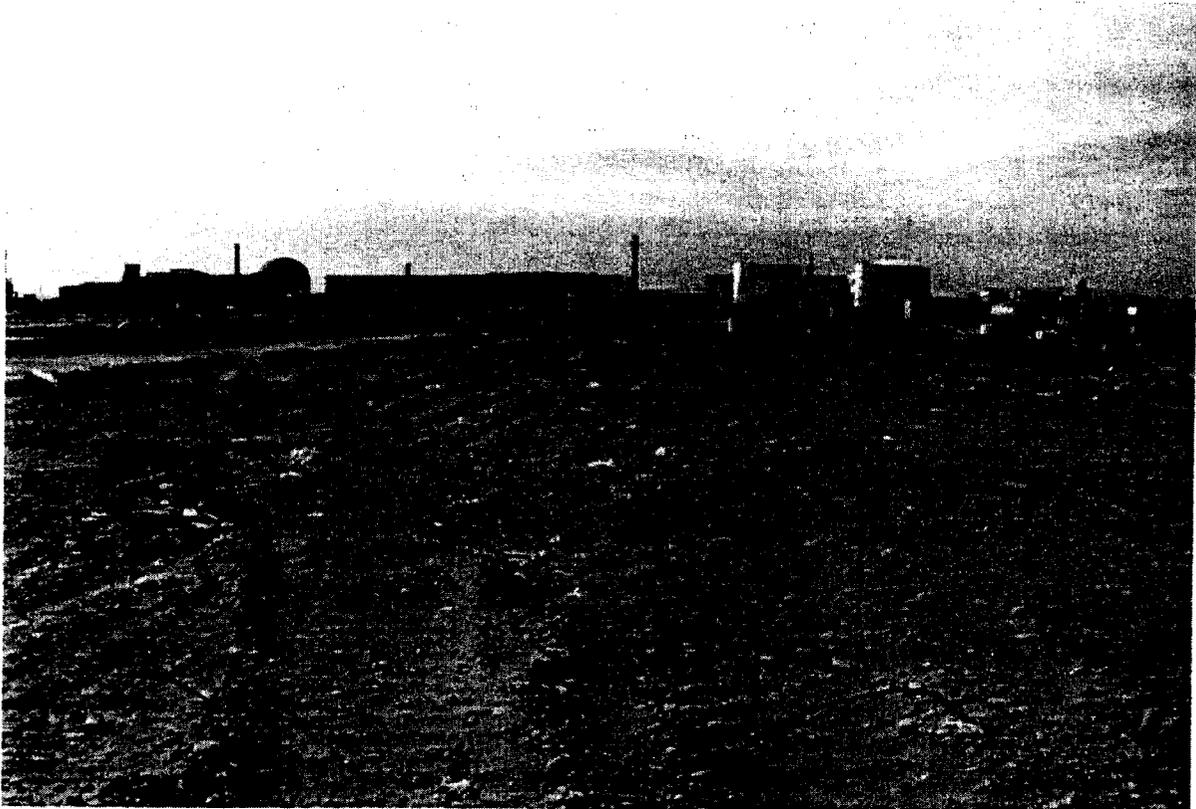
Contaminant of Concern	Management Practice
Radionuclides	Due to the facility history, the demolition was performed under radiological controls. After the building foundation was removed, the area was surveyed and downposted.
Beryllium	Building interior was locked down prior to demolition. Visual inspection of the demolition area was performed.
Class II non-friable Asbestos	Demolition was performed in accordance with 40 CFR 61.145 (c) and 40 CFR 61.150

Attachment 2: Project Photographs

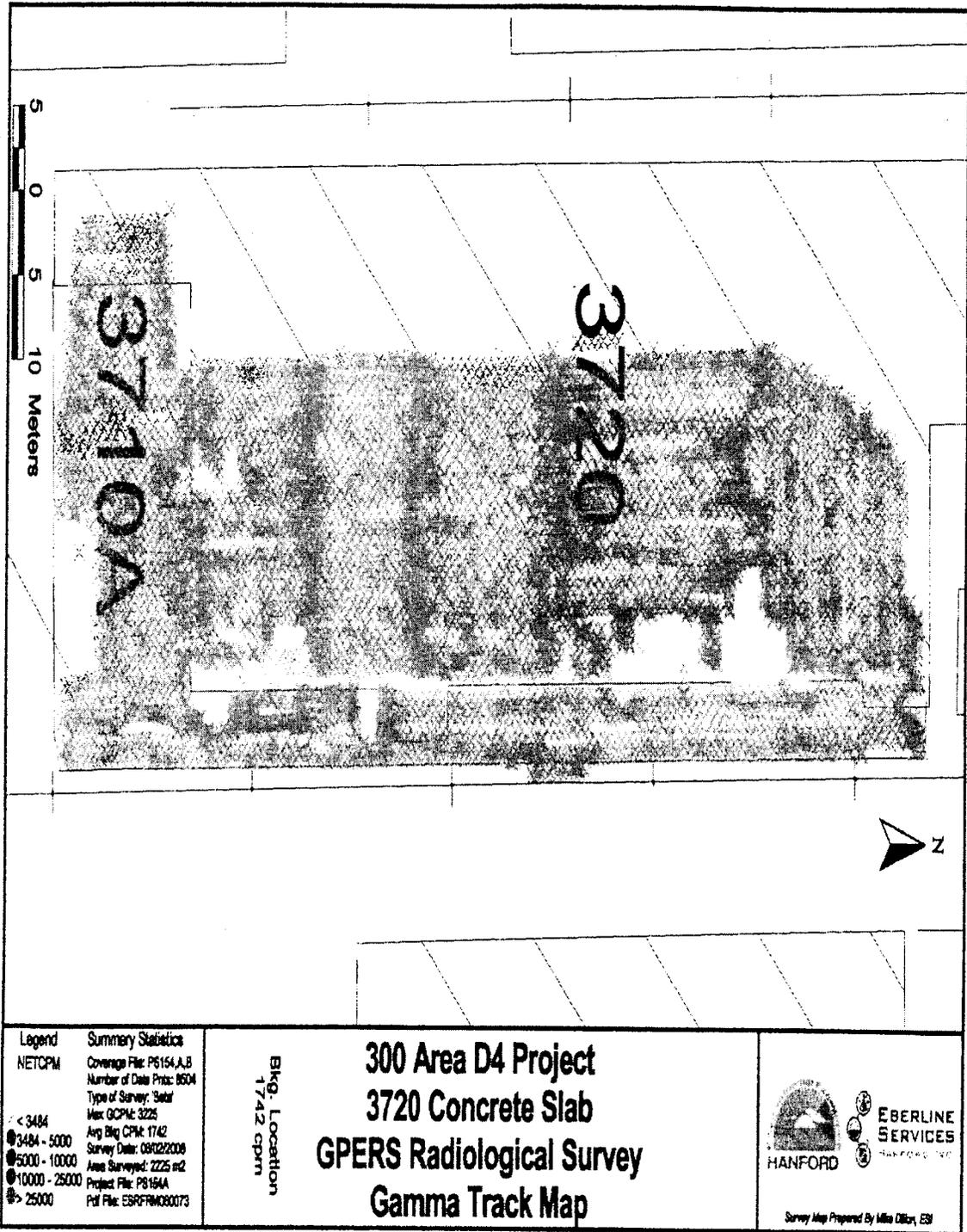
3720 Building



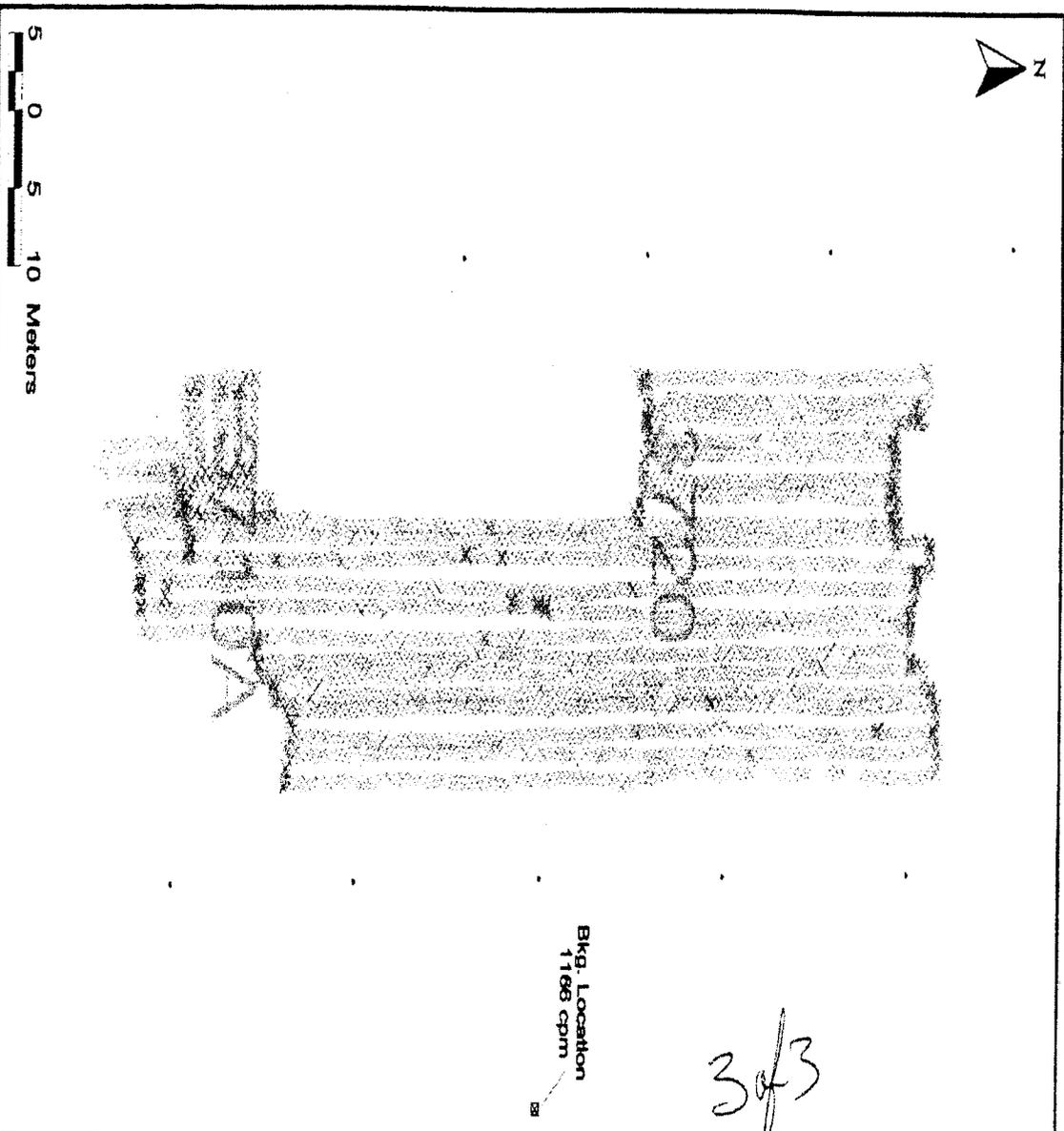
3720 Building Complex Site after Demolition



Attachment 3: Global Positioning Environmental Radiological Surveys (GPERs)



3 of 3



5
0
5
10
Meters



Bkg. Location
1166 cpm

3 of 3

<p>Legend</p> <p>NETCPM</p> <p>< 2332</p> <p>● 2332 - 5000</p> <p>● 5000 - 10000</p> <p>● 10000 - 25000</p> <p>● > 25000</p>	<p>Summary Statistics</p> <p>Coverage File: PS233</p> <p>Number of Data Pairs: 2702</p> <p>Type of Survey: Gamma</p> <p>Max GCPM: 1916</p> <p>Avg Bkg CPM: 1166</p> <p>Survey Date: 08/22/2008</p> <p>Area Surveyed: 1811 m²</p> <p>Project File: PS233</p> <p>PDF File: ESRFRM060137</p>	<p>300 Area D4 Project</p> <p>3720 Pad Area</p> <p>GPERS Radiological Survey</p> <p>Gamma Track Map</p>	 <p>Survey Map Prepared By Mike Collins, ESI</p>
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