

## FACILITY STATUS CHANGE FORM

<b>Date Submitted:</b> Jul 25, 2012 <b>Originator:</b> John Harrie <b>Phone:</b> 509.308.9935	<b>Area:</b> 300 Area <b>Facility ID:</b> 335 and 336 <b>Action Memorandum:</b> Action Memorandum #3	<b>Control #:</b> D4-300-065
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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.

The following hazardous materials were removed prior to facility demolition: asbestos, batteries, Freon, oil, light ballasts and miscellaneous construction materials. Asbestos abatement was performed by certified asbestos workers. Hazardous material removal and waste disposition was performed in accordance with *Removal Action Work Plan for 300 Area Facilities, DOE/RL-2004-77, Revision 2 (RAWP)*.

Demolition: Above-grade demolition of the 335 and 336 facilities were completed in August of 2009 and March of 2010, respectively. Below-grade demolition of the 335 and 336 foundation slabs were completed in July of 2012. Approximately 2-feet of soil was removed during slab demolition and the excavations backfilled with clean fill. The building debris were removed and disposed of at ERDF. The demolition was performed with Radiological and Industrial Hygiene controls.

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

None

### **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 335 and 336 building debris and slab foundations were removed and disposed of at EDRF. Prior to demolition, a 50 feet (17 m) deep caisson was filled with controlled density fill (Reference Attachment 3, 336 Floor Plan, showing location). The caisson was left in place following demolition, which was supported by characterization data that demonstrated leaving the structure did not fail remedial/removal action goals. EPA concurred with this approach, which is documented in Attachment 2. 335-336 were outside the 300 Area Underground Radioactive Material Area (URMA), a non-radiological building and demolished using clean equipment, therefore, no GPERS survey was performed. Excavation was backfilled to grade with clean fill.

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

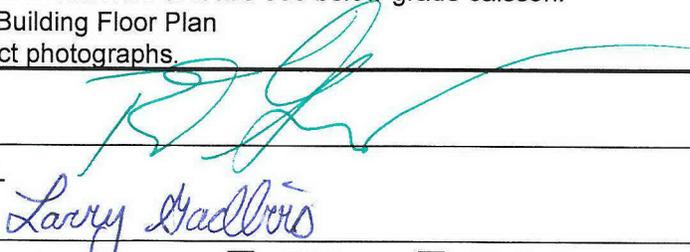
The 335 & 336 RSDF (335 & 336 Retired Sanitary Drain Field) was grout filled and the top 3-feet removed during D4 demolition. 300-15 Process sewer piping was removed to the excavation layback.

### **Section 3: List of Attachments**

1. Facility information (building history, characterization and identification of documented waste sites).

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- 2. EPA Concurrence to leave 336 below-grade caisson.
- 3. 336 Building Floor Plan
- 4. Project photographs.

	<p style="text-align: right; font-size: 1.2em;">7/25/12</p>
DOE-RL <span style="float: right;">Date</span> <span style="font-size: 1.2em; color: blue;">Larry Gadbois</span>	<span style="font-size: 1.2em; color: blue;">July 25, 2012</span>
Lead Regulator <input checked="" type="checkbox"/> EPA <input type="checkbox"/> Ecology	Date

**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: Ben Cowin, H4-22  
 D4 EPL: Chris Strand, L7-10  
 Sample Design/Cleanup Verification: Megan Proctor, H4-22  
 FR Engineering: Joe Delaney, L6-06  
 FR EPL: Chris Strand, L7-10

## Attachment 1: Facility Information

### Building History:

The 335 Building, known initially as the Fast Reactor Thermal Engineering Facility, was constructed in 1968 on the eastern portion of the 300 Area, east of the 324 building. The one-story, 100' by 60' corrugated steel sided building was constructed on a concrete slab.

The 336 High Bay Testing Facility was completed in 1969 to house experimental equipment for the study of sodium properties. The 50' by 50' building was 65' high and had a 50' deep pit that housed the sodium test vessel.

The 335 & 336 Sodium Test facilities supported the Fast Flux Test Facility (FFTF) through the late 1970s when the tests were deactivated and the sodium test loops were removed during the mid 1980s. Both buildings were transferred to PNNL in 1986. In the 1990s, 335 & 336 were known as the Radionuclide Logging System Laboratory. In 2006, 335 & 336 were transferred to WCH for use as a maintenance shop and finally demolition.

### Building Characterization:

Table 1 summarizes the industrial hygiene, radiological control, and asbestos samples collected in the 335 and 336 Buildings.

**Table 1. Summary of Characterization Surveys at 335 and 336.**

Type	Date	Documented In	Results Summary
Asbestos	June 11, 2009 (335) December 1, 2008 (336)	CCN # 145054 CCN # 142373	Duct insulation, roofing, & pipe gaskets were ACM in 336. Floor tiles, mastic were presumed ACM in 335.
IH Surveys and Beryllium Characterization	March 22, 2006 March 28, 2006 May 21, 2009 October 6, 2008 November 12, 2008 July 28, 2010 July 28, 2010	CCN # 126882 CCN # 126937 CCN # 144809 CCN # 141639 CCN # 142054 CCN # 152291 CCN # 152292	Be, Cd & Cr samples were within background concentration. Pb was found on floor of high-bay requiring IHWP.
Radiological Surveys	September 16, 2008 September 19, 2008 October 1, 2008 May 16, 2009	RSR-300PS-08-2883 RSR-300PS-08-2920 RSR-300PS-08-3052 RSR-300PS-09-1535	No radiological contamination was identified.

### Associated WIDs sites:

The 335 & 336 RSDF, 335 & 336 Retired Sanitary Drain Field was grout filled and the top 3-feet removed during D4 demolition. 300-15 Process sewer was removed to the excavation layback.

### Anomalies Discovered During Demolition.

No anomalies were observed during the demolition of the 335 and 336 Buildings. Soil beneath the slab displayed no visual evidence of staining or discoloration. 335-336 was outside the URMA, a non-radiological building and demolished using clean equipment, therefore, no GPERS survey was performed. Excavation was backfilled to grade with clean fill.

**Attachment 2: EPA Concurrence to leave 336 below-grade caisson.**

**Strand, Christopher P**

**From:** Gadbois.Larry@epamail.epa.gov  
**Sent:** Friday, October 02, 2009 2:53 PM  
**To:** Guercia, Rudolph F; Strand, Christopher P  
**Subject:** 300 Area building 336 Basement Caisson  
**Attachments:** winmail.dat; message\_body.rtf; 336 Pit Calculations.xls

Thank you for the chemical analysis information on the paint in the building 336 below grade structure. Since the paint is part of that structure, EPA approves an approach that includes the mass of the painted structure in combination with the chemical analysis of the paint scrapings to determine the appropriate waste designation. EPA understands that the conclusion is that the below grade structure is orders of magnitude less in lead content than would be required for this painted concrete structure to fail the cleanup levels for the 300 Area CERCLA cleanup. EPA approves the plan to fill the caisson with controlled density fill, sand, or similar inert material such that subsequent D4 activities over this pit do not risk dropping waste into the hole that would then have to be retrieved to meet cleanup levels for this site.

--Larry--

"Strand, Christopher P" <cpstrand@wch-rcc.com> To Larry Gadbois/R10/USEPA/US@EPA, "Guercia, Rudolph F"  
 <Rudolph\_F\_Rudy\_Guercia@rl.gov>  
 09/30/2009 02:44 PM cc  
 Subject 336 Basement Caisson

Larry,

As follow-up to the discussion Rudy Guercia and I had with you yesterday, I offer the following to for your consideration. Concurrence was sought regarding the end-state of the 336 below-grade caisson, given the presence of lead-based paint on the caisson steel liner. A simple calculation (figures attached) shows approximately 17 lbs of lead present in attached form to the 417,000 lb caisson structure. This results in an  $4.08E-5$  lead content apportioned to the entire structure. Given this low concentration, no action is to be taken and the caisson will be filled as is.

Regarding fill, since demolition plans are yet to be finalized for the 336 Facility, one of two options will be performed; 1) fill (CDF or other appropriate flowable material) the caisson prior to demolition, or 2) protect/cover the caisson and void fill following above grade demolition. Should obstacles be encountered that would result in a modification to this approach, the EPA will be informed ahead of time.

Please call if you have any questions or require any additional information.

Thanks,

Chris  
 727-8342

7/25/2012

	Source
Caisson foundation diameter (ft)	22.5 H-3-30315
Caisson foundation thickness (ft)	2.375 H-3-30315
Caisson liner ID (ft)	20 H-3-30315
Caisson liner thickness (in.)	0.25 H-3-30315
Caisson diameter (ft)	21.5 H-3-30315
Caisson top EL (ft)	378 H-3-30315
Caisson bottom EL (ft)	339.875 H-3-30315
Caisson height (ft)	38.125
Rectangular pit length (ft)	32.5 H-3-30312
Rectangular pit width (ft)	24 H-3-30312
Rectangular pit height (ft)	12 H-3-30315

#### **Pit Volume**

Caisson volume (ft <sup>3</sup> )	11977.3
Caisson volume (yd <sup>3</sup> )	443.6
Rectangular pit volume (ft <sup>3</sup> )	9360
Rectangular pit volume (yd <sup>3</sup> )	346.7
Total below-grade volume (yd <sup>3</sup> )	790.3

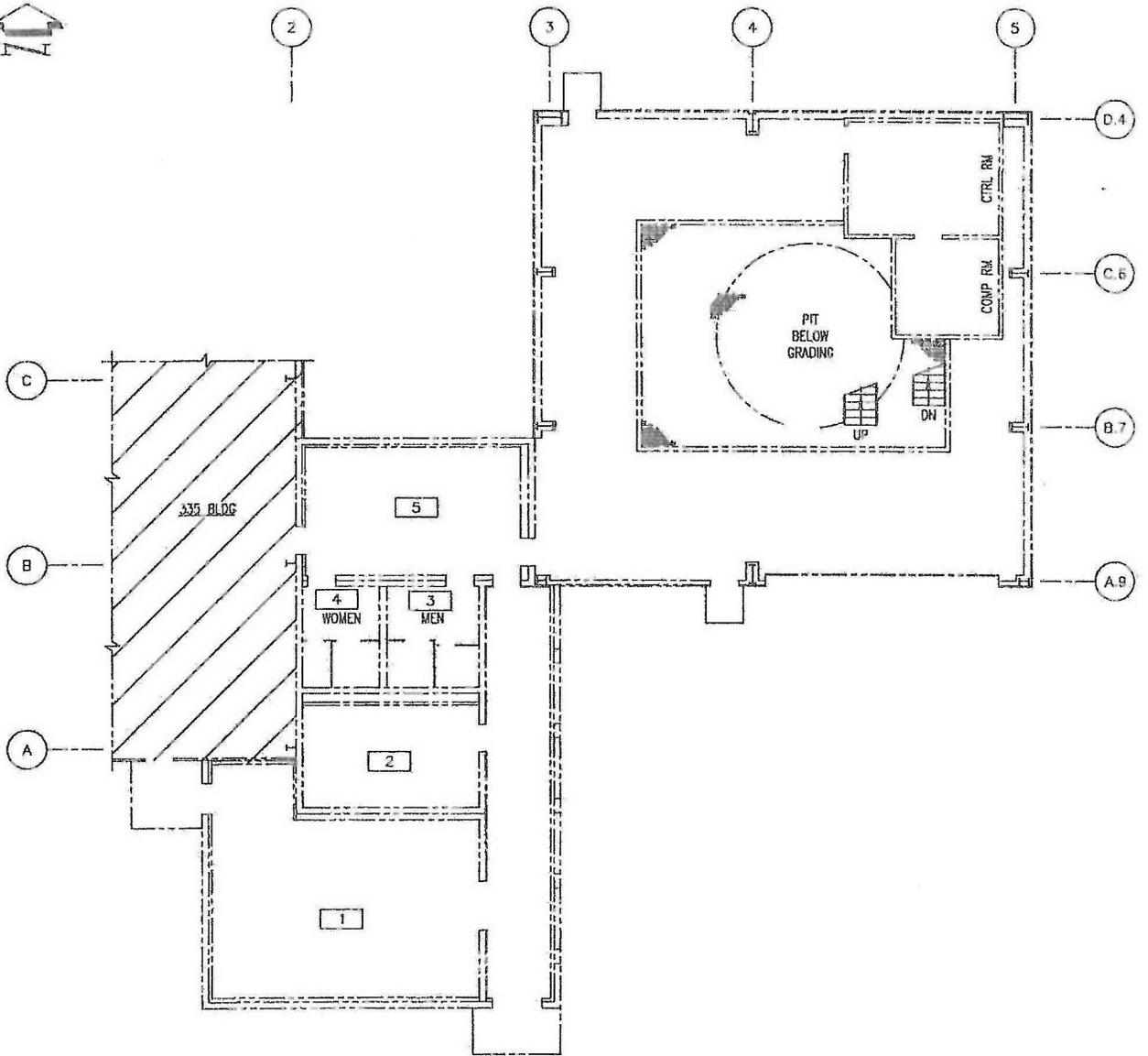
#### **Total Lead Content**

Assumed paint density (g/mL)	4
Assumed paint thickness (mil)	3
Assumed lead content in paint by weight	0.1
Caisson liner surface area (ft <sup>2</sup> )	2709.6
Paint volume (ft <sup>3</sup> )	0.677
Paint weight (lb)	169.1
Lead weight (lb)	16.9

#### **Caisson Component Masses**

Liner metal volume (ft <sup>3</sup> )	56.450
Liner density (lb/ft <sup>3</sup> )	490
Liner metal weight (lb)	27660.7
Concrete foundation volume (ft <sup>3</sup> )	944.3
Concrete shell volume (ft <sup>3</sup> )	1839.0
Total concrete volume (ft <sup>3</sup> )	2783.3
Concrete density (lb/ft <sup>3</sup> )	150
Concrete weight (lb)	417498.5

## **Attachment 3: 336 Floor Plan**



**1ST FLOOR PLAN**  
FINISH FL. ELEV (+) 0.

## Attachment 4: Project Photographs

**Figure 1: Looking northwest at the 335 – 336 Buildings on September 21, 1971.**



**Figure 2. Looking northwest at the 336 Highbay during demolition on March 15, 2010.**



**Figure 3. Looking southwest at 335 and 336 Building slabs on April 13, 2012.**



**Figure 4. Looking northwest at 335 and 336 following backfill in July of 2012.**

