WCH-608
Rev. 0

River Corridor
Closure Contract

300 Area D4 Project Building Completion Report October 1, 2013 through October 31, 2014

December 2014

For Public Release

Washington Closure Hanford

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor

DOCUMENT CONTROL 12/03/2014 a3

WCH-608
Rev. 0

STANDARD APPROVAL PAGE

Title: 300 Area D4 Project Building Completion Report: October 1, 2013 through October 31, 2014

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METRIC CONVERSION CHART

Into Metric Units			Out of Metric Units		
If You Know	*Multiply By*	*To Get*	*If You Know*	*Multiply By*	*To Get*
Length			**Length**		
inches	25.4	millimeters	millimeters	0.039	inches
inches	2.54	centimeters	centimeters	0.394	inches
feet	0.305	meters	meters	3.281	feet
yards	0.914	meters	meters	1.094	yards
miles	1.609	kilometers	kilometers	0.621	miles
Area			**Area**		
Sq. inches	6.452	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.093	sq. meters	sq. meters	10.76	sq. feet
sq. yards	0.836	sq. meters	sq. meters	1.196	sq. yards
sq. miles	2.6	sq. kilometers	sq. kilometers	0.4	sq. miles
acres	0.405	hectares	hectares	2.47	acres
Mass (weight)			**Mass (weight)**		
ounces	28.35	grams	grams	0.035	ounces
pounds	0.454	kilograms	kilograms	2.205	pounds
Ton	0.907	metric ton	metric ton	1.102	ton
Volume			**Volume**		
teaspoons	5	milliliters	milliliters	0.033	fluid ounces
tablespoons	15	milliliters	liters	2.1	pints
fluid ounces	30	milliliters	liters	1.057	quarts
cups	0.24	liters	liters	0.264	gallons
pints	0.47	liters	cubic meters	35.315	cubic feet
quarts	0.95	liters	cubic meters	1.308	cubic yards
gallons	3.8	liters			
cubic feet	0.028	cubic meters			
cubic yards	0.765	cubic meters			
Temperature			**Temperature**		
Fahrenheit	subtract 32, then multiply by 5/9	Celsius	Celsius	multiply by 9/5, then add 32	Fahrenheit
Radioactivity			**Radioactivity**		
picocuries	37	millibecquerel	millibecquerels	0.027	picocuries

1.0 SCOPE

This report summarizes the deactivation, decontamination, decommissioning, and demolition (D4) activities of facilities in the 300 Area of the Hanford Site that occurred from October 1, 2013, through October 31, 2014 (a 13-month period referred to herein as the "reporting period"). These facilities include the following:

- 309 SP-100 Ground Engineering System Test Facility
- 310 Retention Transfer System and Treated Effluent Disposal System
- 320 and 320-BA Buildings (below-grade)
- 326 Material Science Laboratory
- 340 Vault
- 342 Collection Sump complex
- 351 Electrical Substation (B3S4)
- 352-F Switch Station (C3S4)
- 3730 Gamma Irradiation Facility (below-grade)
- 3760 Technical Library (below-grade)
- 3790 Building.

The D4 of these facilities included characterization; engineering; removal of hazardous materials; removal or stabilization of radiologically contaminated materials; equipment removal; utility disconnection; deactivation, decontamination, and demolition of the structure; and stabilization (in-place) or removal of slabs and foundations.

As reference, previous D4 building completion reports include the following:

- WCH-41, *300 Area D4 Project 1st Quarter Fiscal Year 2006 Building Completion Report*
- WCH-94, *300 Area D4 Project 2nd Quarter Fiscal Year 2006 Building Completion Report*
- WCH-116, *300 Area D4 Project 3rd Quarter Fiscal Year 2006 Building Completion Report*
- WCH-143, *300 Area D4 Project 4th Quarter Fiscal Year 2006 Building Completion Report*
- WCH-309, *300 Area D4 Project Fiscal Year 2007 Building Completion Report*
- WCH-310, *300 Area D4 Project Fiscal Year 2008 Building Completion Report*
- WCH-374, *300 Area D4 Project Fiscal Year 2009 Building Completion Report*
- WCH-447, *300 Area D4 Project Fiscal Year 2010 Building Completion Report*
- WCH-504, *300 Area D4 Project Fiscal Year 2011 Building Completion Report*
- WCH-558, *300 Area D4 Project Fiscal Year 2012 Building Completion Report*
- WCH-566, *300 Area D4 Project Fiscal Year 2013 Building Completion Report*, Rev. 1.

2.0 FACILITY DESCRIPTIONS AND CONDITIONS

The buildings detailed in this report were located in the 300 Area of the Hanford Site, which is owned and operated by the U.S. Department of Energy (DOE), in Benton County, Washington. The 300 Area was constructed and operated as a reactor fuel fabrication and laboratory complex.

2.1 309 SP-100 GROUND ENGINEERING SYSTEM TEST FACILITY

The 309 SP-100 GES Test Facility, better known as the Plutonium Recycle Test Reactor (PRTR), was located in the south-central portion of the 300 Area and was a 300 Area landmark with its distinctive round dome (Figure 1). The 309 complex included the PRTR containment vessel, its connected wings and annexes, the associated below-grade vaults, and the main exhaust stack. Constructed in 1960, the 309 PRTR was operated in support of the Plutonium Utilization Program to develop an optimum reactor fuel design for recycling plutonium to stretch the uranium fuel supply for commercial nuclear reactors. In 1965, during a test, a pre-defected fuel element failed resulting in the spread of contamination throughout the reactor and containment building. Six months were required to decontaminate the reactor and operating area. The PRTR restarted in July 1966 and operated until mid-1968 when it was shut down.

Layaway and decommissioning occurred between 1969 and 1975. In 1975, the Interim Examination and Maintenance cell was built in the west wing of the 309 Building as an exact "cold" replica of the operating cell in the Fast Flux Test Facility reactor. The Interim Examination and Maintenance cell was used to train and requalify operators and to check operating procedures.

In 1986 to 1987, a new space technology development program known as the SP-100 was assigned to the 309 Building. The implementation of the program involved an extensive cleanout of the old PRTR facilities. In 1991 the program was placed on a 5-year hold and subsequently terminated in November 1993, which brought about the transition of the facility for deactivation.

Above-grade demolition of the 309 Building began in August 2010 and was completed in March 2014. Below-grade demolition began in December 2012 and is ongoing at the time this report was issued. (A separate building completion report will be issued following completion of D4 activities at 309.) During this reporting period, several noteworthy D4 activities occurred: the 1,082-ton PRTR was lifted from its containment structure, positioned onto a trailer, secured and transported to the Environmental Restoration Disposal Facility (ERDF) for disposal; the upper portion of the remaining underground containment vessel was explosively fractured; the highly contaminated moderator tank was removed; and the TW-3 holdup tank and the associated Retired Radioactive Waste Sewer/Radioactive Liquid Waste Sewer piping were stabilized.

Figure 1. 309 SP-100 GES Test Facility (August 4, 2006).

2.2 310 RETENTION TRANSFER SYSTEM AND TREATED EFFLUENT DISPOSAL SYSTEM

The 310 Retention Transfer System (RTS) consisted of the MO-745 mobile office and several facilities that formerly comprised the 310 Treated Effluent Disposal Facility (TEDF): 310-T1 equalization tank, 310-T2 and 310-T3 waste diversion tanks, 310-V valve vault, 310-S drum storage building, and the RTS lift station (Figure 2).

The RTS received process waste water from the 300 Area process sewers via the 342 Waste Collection Sump/Lift Station. After the 310 TEDF process was shut down in September 2009, the 310-T1 equalization tank was reallocated along with the 310-T2 and 310-T3 diversion tanks and the 310-S Building for use by the 310 RTS. Batches of waste waters from the 342 Waste Collection Sump were accumulated in 310-T1 for batch analysis and release to the 310 RTS lift station for discharge to the City of Richland sewer system.

Figure 2. 310 Retention Transfer Facility (January 28, 2013).

The demolition of the above-grade portion of the 310 RTS facilities was completed in August 2014. Below-grade demolition was also completed by August 2014, which consisted of removing foundations as well as components from the 310-V valve vault and lift station. Following demolition of the 310 RTS facilities, all miscellaneous restoration items (e.g., fencing, light poles, bollards) were removed as well. All of the demolition and miscellaneous restoration debris were disposed of at ERDF. Demolition included removal of one remaining portion of the original 310 TEDF building foundation originally deferred because of a utility interference.

2.3 320 AND 320-BA BUILDINGS (BELOW-GRADE)

The 320 Low-Level Radiochemistry Building, a concrete and steel frame structure, was built in 1966. The original basement and ground floor levels both received a large addition consisting of four laboratories and eight offices in the early 1980s, bringing the total building size to 44 by 26 m (144 ft by 84 ft), with an area of just over 2,300 m^2 (25,000 ft^2) (Figure 3). Recent missions have included radiochemical environmental analyses, sample preparation, methods development, and many classified programs that cannot be described. The facility was last known as the Analysis and Nuclear Research Building.

Figure 3. 320 and 320-BA (March 19, 2014).

Above-grade demolition of the 320 and 320-BA Buildings was completed in August and September 2011. Below-grade demolition of the 320 foundation, excluding the basement floor and walls, to 1 m (3 ft) below grade was completed in March 2012. The above-grade building debris were removed and disposed of at ERDF. The 320 basement walls and floor slab were left following U.S. Environmental Protection Agency (EPA) approval. Process sewer piping below the slab, the process sewer sump, and condensate sump was removed. Excavated soil was sampled and used as backfill.

A portion of the southeast corner of the 320 Building first-floor foundation and 320-BA slab were originally deferred in 2012 due to an active 13.8-kV underground electrical line. In 2014, the utility interference was permanently de-energized, allowing this deferred portion of foundation to be demolished, loaded out, and backfilled in May/June 2014.

2.4 326 MATERIAL SCIENCE LABORATORY

The 326 Building, originally known as the Pile Technology Building, began operations in 1953 to support the safe and efficient operation of the production reactors and to identify technologies and processes for improving their operation. It was later known as the Physics and Metallurgy Building, and finally as the Material Sciences Laboratory (Figure 4).

Figure 4. 326 Material Science at the Completion of D4 (May 13, 2014).

The L-shaped, two-story facility had bolted-steel framework with exterior walls of fluted-steel panels. It had a parapeted, slightly sloped steel deck roof topped with a tar and gravel finish. Located along the exterior north wall was a gas cylinder storage dock; a large, vertical propylene glycol storage tank; an electrical substation; and a 6-ft diameter, 45-ft-tall polyethylene-lined aluminum stack. Along the south wall was the building loading dock.

The first and second floors were reinforced concrete. The two floors and basement generally had offices along the walls and laboratories on the inside. The first and second floors had moveable metal partitions, while the basement, office, and laboratory walls were generally plastered gypsum block. The interior configuration of the offices and laboratories have been modified many times over the life of the facility.

The facility began operations in 1953 to ensure continuity of operation of the production reactors by maintaining and improving their equipment and processes, and to develop technical information to support the design of future reactors. This included conducting exponential pile physics development, examination, and evaluation of the performance and characteristics of irradiated and unirradiated reactor components and fuel elements, fuel jacketing process improvements, reactor development work using X-ray diffraction, mass spectrometers, electron microprobes, quantitative image analyzers, and tensile test equipment. During the final years, work was done for the National Security Directorate to develop chemical, radiological, and biological detection technologies. Pacific Northwest National Laboratory (PNNL) operated the facility from 1987 until it was transitioned to Washington Closure Hanford (WCH) in February 2011 for D4.

Above-grade demolition began in August 2013 and was completed in October 2014. The basement floor and walls (including the south wall that extends approximately 4 ft above grade) were deferred to active utilities that continue to service the 325 Building. The basement and general area were backfilled with clean soil.

2.5 340 VAULT

The 340 Waste Handling Facility was a radioactive liquid waste storage and transfer system that received radioactive and hazardous waste from the 308, 309, 324, 325, 326, 327, and 329 Buildings. Following neutralization, these wastes were then transported by truck or rail to the 200 Areas for long-term storage (Figure 5).

Above-grade demolition of the 340 Waste Handling Facility was completed in October 2012.

The concrete vault structure (38 by 25 by 25 ft) extended approximately 20 ft underground and housed two liquid waste tanks that had been previously drained and cleaned. The area around the vault was excavated (August 2012) and the vault was partially grouted to create a monolith. A steel pan was moved underneath the monolith and grouted in place to complete macro-encapsulation. A lift system was installed to raise and position the monolith onto the transport vehicle where it was packaged and transported to ERDF in January 2014.

During installation of the lift assembly, a concentration of highly contaminated soil was found centrally located under the vault in proximity to the sump. The area around and under the vault was excavated down to groundwater.

Figure 5. 340 Vault (March 25, 2013).

2.6 342 COLLECTION SUMP COMPLEX

The 342 collection sump was used to collect wastewater from the 300 Area process sewer system and pump it to the 310 TEDF for treatment (Figure 6).

The demolition of the above-grade portion of the 342 Complex, which included the 342-A sump control room, instrument and electrical building and shop, the 342-B transformer pad, and 342-C generator pad, was completed in August 2014. Below-grade demolition consisted of cleaning the 342 collection vault of debris and removing foundation walls to 1 m (3 ft) below grade. The balance of the below-grade vault was left in place with approval of the EPA. All of the demolition debris was disposed of at ERDF by August 2014. The vault was backfilled with clean fill material.

Figure 6. 342 Collection Sump (April 13, 2006).

2.7 351 ELECTRICAL SUBSTATION (B3S4)

The 351 Substation was first constructed in 1949 (known as 351-A at that time) and has evolved and expanded as the needs of the 300 Area have grown (Figure 7). Prior to demolition, the 351 Substation consisted of the 351A and 351B Buildings and associated high-voltage transmission structures; the substation was collectively known as B3S4. Initially, the 351 Substation provided 2.3 kV power to the 300 Area. After 1959, it also supplied 13.8 kV power. A 13.8-kV distribution line was installed in the 1970s that provided backup power for the 400 Area. In 1980, a significant expansion was made to the 351 Substation.

The 351-B Switchgear Building was initially constructed in 1969 to house switchgear, batteries, and other electrical equipment in support of the 351 Substation. A new 115-KV switchyard was constructed north of the 351-B Building, which included oil-filled circuit breakers. The 351-B Building was also expanded to house additional switchgear.

Demolition of the 351 Substation was completed by October 2014. Demolition included the off-site shipment of 16,500 gal of polychlorinated biphenyl- (PCB-) contaminated oils and 400,000 lb of ferrous and nonferrous metals for recycling. These materials were associated with transformers and oil-filled circuit breakers.

Figure 7. 351 Substation (B3S4) (June 30, 2003).

2.8 352-F SWITCH STATION (C3S4)

Located in the southwestern portion of the 300 Area, the 352-F Building served as a switch station for various facilities within the 300 Area (Figure 8). The 352-F Building and associated electrical distribution equipment were known collectively as C3-S4. The switchgear room was used to hold switchgear units, while the northeast corner of the building was used as a battery room. In 1984, the 352-F Building was expanded with a new switchgear building constructed on the west side of the existing structure. A manhole inside the addition led down to a cable vault running underneath the facility.

The demolition of the above-grade portion of the 352-F switch station building was completed by September 2014 with debris transported to ERDF for disposal. Below-grade demolition consisted of removing foundations. The cable vault beneath 352-F was left in place as an uncontaminated structure as approved by the EPA.

Figure 8. 352-F Switch Station (September 8, 2005).

2.9 3730 GAMMA IRRADIATION FACILITY (BELOW-GRADE)

The 3730 Building, constructed in 1949 as a temporary melting and fabrication building, was a steel building with concrete floor and interior walls and ceiling of painted cement asbestos board (Figure 9). Exterior walls were stucco finish over an insulating board attached to the original corrugated sheet metal walls. In 1955, an addition was added to the south end of the building for the Hot Graphite Shop and Storage Building. In 1959, a gamma irradiation tank was installed in the facility. Sometime after 1967, the building was renamed the Gamma Irradiation Facility.

In May 2008, the facility was transitioned from PNNL to WCH for D4. Above-grade demolition of the facility was completed in March 2013 except for the two hot cells. Below-grade demolition, including removal of the hot cells and subsequent backfill, was completed April 2014.

Figure 9. 3730 Gamma Irradiation Facility (March 31, 2006).

2.10 3760 TECHNICAL LIBRARY (BELOW-GRADE)

The 3760 Technical Library, constructed in 1952, was a partial two-story structure with no basement. Construction consisted of a bolted steel framework with exterior walls of fluted steel-insulated panels (Figure 10). The first floor consisted of concrete covered with floor tile, with the second floor constructed of steel decking topped with concrete and finished with floor tile. The roof was a sloped steel deck with tar and gravel finish. The first floor contained an 8-in.-thick concrete vault.

The library housed up to 50,000 volumes, 60,000 periodicals, and 450,000 unclassified documents and the vault housed 50,000 classified documents. In mid-1997, most of the library material was transferred to the new Washington State University Branch Campus library (Consolidated Information Center) in Richland, Washington. The library was transitioned from PNNL to WCH in February 2009, where it was used as additional office space for 300 Area technical staff until the building was deactivated for demolition.

Demolition of the above-grade structure was completed in September 2013. Demolition of floor slab and foundation and subsequent backfill was completed by October 2013.

Figure 10. 3760 Technical Library (May 29, 2012).

2.11 3790 BUILDING

The 3790 facility was a single-story structure with a basement that provided office space for security personnel in the 300 Area (Figure 11). In 1983, the facility was also being used to house Personnel Relations and the Evacuation Control Center for 309, 308, 324, and 325 Building personnel.

The demolition of the above-grade portion of the 3790 Building was completed in March 2014. Below-grade demolition consisted of cleaning the basement of debris and removing foundation walls to 1 m (3 ft) below grade and was completed in April 2014. The balance of the basement was left in place with approval of the EPA. All of the demolition debris was disposed of at ERDF. The basement was backfilled with clean fill material.

Figure 11. 3790 Building (August 4, 2006).

3.0 PROJECT ACTIVITIES

3.1 ENGINEERING AND PERMITS

The *Removal Action Work Plan for 300 Area Facilities* (DOE/RL-2004-77) and the *Removal Action Work Plan for River Corridor General Decommissioning Activities* (DOE/RL-2010-32) were prepared to satisfy the requirements of the action memoranda, outlining how compliance with and enforcement of applicable regulations will be achieved for cleanup of 300 Area facilities. Additionally, the removal action work plans and *300 Area Facilities D4 Environmental Control Plan* (WCH-84) serve as the decommissioning plan and project management plan for the 300 Area project. The removal action work plans were prepared in accordance with Section 7.2.4 of the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1989) and were approved by the DOE, Richland Operations Office and the EPA.

Plant Forces Work Reviews were prepared for the demolition of the facilities to determine whether *Davis-Bacon Act of 1931* prevailing wage rates for the work were applicable. Table 1 summarizes the reviews performed. The D4 work on all buildings was determined to be "not applicable" and the work was performed by plant forces.

Table 1. Plant Forces Work Reviews.

Building	PFWR Number	PFWR Title
309	8850-059-06, R1	Demolition of Various 300 Area Building
310-S, 310-V, 310-T1, 310-T2, 310-T3, MO-745, 342, 342-A, 342-B, 342-C, 351A, 351B, B3S4, 352-F	8850-005-14	Demolition of Various 300 Area Buildings
320, 326	8850-007-11	Demolition of Various 300 Area Buildings
340, 3790	8850-005-10	Demolition of 300 Area Buildings
3730	8850-027-07	Demolition of 300 Area Buildings
3760	8850-003-13	Demolish South 300 Area Facilities 3760, 323BA, 3906A, and 3906B

PFWR = Plant Forces Work Review

Criticality screenings for the facilities were performed where required. These criticality evaluations showed that fissionable material inventories did not exceed threshold activity values and no criticality safety requirements or controls were needed for the buildings. In addition, all the facilities were either non-nuclear or categorized as below Hazard Category 3 based on DOE Standard *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports* (DOE-STD-1027-92). Table 2 identifies the facilities and associated hazard categorization documents for each.

The quantity of nonradioactive hazardous substances did not exceed the threshold quantities (20 *Code of Federal Regulations* [CFR] 1910.119, "Chemical Accident Prevention Provisions," or 40 CFR 68.130, "Occupational Safety and Health Standards").

Table 2. Hazard Categorization Evaluations and Results.

Facility	IHC/FHC Number	IHC/FHC Category
342, 342-A, 342-B, 342-C, 351-A, 351-B	IHC-2005-0031, Rev. 1	Below Category 3
309	IHC-2006-0013	Below Category 3
310, 310-S, 310-V, 310-T1, 310-T2, 310-T3, MO-745, 3760,	IHC-2006-0017, Rev. 2	Non-nuclear
326	IHC-2011-0011	Below Category 3
3730	IHC-2013-0008, IHC-2013-0010	Below Category 3
340	IHC- 2008-0006 Rev.1	Below Category 3
320, 320A/B	IHC-2011-0005 Rev. 0	Below Category 3
352F (Substation)	None	Non-nuclear
3760 (Office)	None	Non-nuclear
3790 (Badge Office)	None	Non-nuclear

IHC = Initial Hazard Categorization
FHC = Final Hazard Categorization

3.2 HAZARDOUS MATERIAL REMOVAL

The scope of the demolition project included removing and properly disposing of hazardous materials (e.g., oils, grease, asbestos-containing material, mercury, lead, and PCBs). All known hazardous materials were removed from inside and outside of the buildings to the extent practical prior to demolition. Some hazardous materials may have remained in the buildings during demolition (e.g., lead shielding embedded in concrete). In certain cases, some asbestos-containing material (e.g., roofing material, floor tile, and vinyl sheeting) was left in place during demolition as allowed by regulation. In these cases, all building demolition waste was treated as asbestos waste, and controls to minimize asbestos fiber release (e.g., fixatives, wet methods, and air monitoring) were used throughout the demolition process.

Beryllium-contaminated equipment, including high-efficiency particulate air filters and duct work, were of particular concern in those buildings that were beryllium listed. These items were thoroughly characterized prior to removal, and work control methods to minimize airborne beryllium particulate (e.g., fixatives, wet methods, air monitoring, and hygiene practices) were implemented throughout the decommissioning and demolition process.

3.3 RADIOLOGICAL CONTAMINATION STABILIZATION

When warranted, a radiological characterization/scoping survey was performed prior to demolition. Any loose/residual contamination on building surfaces, in/on piping and ducting, and in/on equipment would be fixed in place to prevent the spread of contamination during demolition. High-activity and highly contaminated structures and equipment (e.g., sources and hot cells) were removed prior to demolition.

3.4 UTILITY AND DRAIN ISOLATION

Once the utilities were no longer needed to support building operations, and prior to hazardous materials removal, all electrical, water, sewer, and telecommunications services were disconnected from the buildings. Floor drains were sealed to provide isolation.

3.5 DEMOLITION OF ABOVE-GRADE STRUCTURES

In general, after the hazardous materials and equipment removal activities were performed and utilities isolated, the above-grade structures were ready for demolition. The building structures were demolished using excavator-mounted hydraulic shears and a bucket-and-thumb. The debris was segregated for loading and disposal. Standard ERDF roll-on/roll-off containers with 6-mil liners were used to package and ship debris. Large items (e.g., tanks, hot cells) were shipped to ERDF on low-boy trailers or Goldhofer modular heavy duty vehicles.

3.6 BELOW-GRADE DEMOLITION AND SITE RESTORATION

All buildings addressed in this report were demolished and the slab and foundations removed or demolished 1 to 3 ft below grade unless otherwise noted. Excavations were backfilled with clean fill and the site was contoured to match the surrounding grade. DOE and EPA concurrence was obtained prior to leaving any below-grade building structure.

In general, for each building demolished (or for a given complex) a post-demolition summary report is prepared that documents the characterization and final status of the building at the completion of the D4 activities. Table 3 summarizes the as-left conditions of each facility and current site posting for each facility.

Table 3. Facility As-Left Condition Summary. (2 Pages)

Building	Slab/Below-Grade Condition	Site Posting
309	Demolition on the lower reactor containment area is ongoing.	High Contamination Area, Airborne Contamination Area, Radiation Area, Contamination Area, Radiological Buffer Area, Beryllium Controlled Area, Asbestos Regulated Area
310 RTS	310V and lift station remain below grade.	None
320/320BA	320 basement remains below grade.	None
326	326 basement, RRLWS, RLWS, Retention Process Sewer, Process Sewer, and Tritium Storage Tubes remain below grade where they exit the building.	Radiologically Controlled Area, Radioactive Material Area
340	Vault is removed, remediation continues.	High Contamination Area, Contamination Area, Radiological Buffer Area, Beryllium Controlled Area

Table 3. Facility As-Left Condition Summary. (2 Pages)

Building	Slab/Below-Grade Condition	Site Posting
342	Lower collection vault remains in place below grade.	None
351 Complex	B3S4 footings and lower cable vault remain in place below grade.	Radiologically Controlled Area
352F	Lower cable vault remains in place below grade.	None
3730	Everything was removed.	None
3760	Everything was removed.	None
3790	The basement remains in place below grade.	None
MO-745	Everything was removed.	None

4.0 COST AND SCHEDULE

Table 4 details start and finish dates for the major D4 activities in each of the facilities as well as the total labor costs. These costs do not include deactivation or surveillance and maintenance work performed by Fluor Hanford; Bechtel Hanford, Inc.; and other contractors prior to turnover of the building to WCH. They also do not include overhead or distributed costs, equipment and material costs, or incidental work performed by subcontractors.

Note that some activities began prior to the current reporting year, but the demolition occurred during the reporting period of October 1, 2013, through October 31, 2014.

The total labor cost (before overhead and distributed costs) for all buildings was $66,979,133.

Table 4. Cost and Schedule Summary. (5 Pages)

309 Building	Start Date	Completion Date	Cost
Building Demo (AG)	8/30/10	3/13/14	33,446,056
Building Demo (BG)	12/10/12	TBD	6,090,748
Waste Loadout	7/5/11	TBD	314,838
Transition /Final Closure	4/24/14	TBD	1,196
			TOTAL $39,852,838

310S Building	Start Date	Completion Date	Cost
Engineering Planning	2/11/14	6/16/14	18,627
Building Deactivation	6/12/14	6/16/14	6,789
Building Demo (AG)	6/24/14	6/26/14	15,547
Building Demo (BG)	8/4/14	8/7/14	1,911
Waste Loadout	7/14/14	8/14/14	6,300
Transition/Final Closure	8/18/14	9/4/14	1,191
			TOTAL $50,365

Table 4. Cost and Schedule Summary. (5 Pages)

310T1	Start Date	Completion Date	Cost
Engineering Planning	2/24/14	6/16/14	3,972
Building Deactivation	6/12/14	6/16/14	1,190
Building Demo (AG)	6/24/14	6/26/14	18,686
Building Demo (BG)	8/4/14	8/7/14	7,027
Waste Loadout	7/14/14	8/14/14	10,254
Transition/Final Closure	8/18/14	8/21/14	5,378
			TOTAL $46,508

310T2	Start Date	Completion Date	Cost
Engineering Planning	2/24/14	6/16/14	3,130
Building Deactivation	6/12/14	6/16/14	237
Building Demo (AG)	6/24/14	8/4/14	30,511
Building Demo (BG)	7/28/14	8/7/14	2,365
Waste Loadout	8/18/14	8/21/14	16,634
Transition/Final Closure	8/21/14	8/21/14	433
			TOTAL $53,310

310T3	Start Date	Completion Date	Cost
Engineering Planning	2/24/14	6/16/14	5,018
Building Deactivation	6/12/14	6/16/14	353
Building Demo (AG)	7/3/14	7/14/14	17,833
Building Demo (BG)	7/15/14	7/21/14	4,674
Waste Loadout	7/22/14	7/23/14	11,735
Transition/Final Closure	8/18/14	8/21/14	379
			TOTAL $39,992

310V	Start Date	Completion Date	Cost
Engineering Planning	2/24/14	7/21/14	3,833
Building Deactivation	6/12/14	6/16/14	217
Building Demo (AG)	N/A	N/A	0
Building Demo (BG)	8/4/14	8/7/14	3,380
Waste Loadout	8/11/14	8/13/14	5,145
Transition/Final Closure	8/18/14	9/4/14	1,191
			TOTAL $13,765

320-Boiler Annex	Start Date	Completion Date	Cost
Building Demo (BG)	5/12/14	6/2/14	10,610
			TOTAL $10,610

326 Building	Start Date	Completion Date	Cost
Building Demo (AG)	8/21/13	10/28/13	796,658
Building Demo (BG)	N/A	N/A	0
Waste Loadout	9/4/13	3/11/14	907,270
Transition/Final Closure	4/8/14	5/22/14	322,147
			TOTAL $2,026,075

Table 4. Cost and Schedule Summary. (5 Pages)

340 Building	Start Date	Completion Date	Cost
Building Demo (BG)	8/22/11	5/22/14	22,614,433
Waste Loadout	10/15/11	6/12/14	175,865
Transition/Final Closure	1/20/14	TBD	
			TOTAL $22,790,298

342 Building	Start Date	Completion Date	Cost
Engineering Planning	2/11/14	7/25/14	15,255
Building Deactivation	6/16/14	6/23/14	26,967
Building Demo (AG)	7/15/14	7/16/14	10,159
Building Demo (BG)	7/22/14	8/21/14	32,774
Waste Loadout	7/17/14	8/21/14	38,376
Transition/Final Closure	8/21/14	8/21/14	17,978
			TOTAL $141,510

342A Building	Start Date	Completion Date	Cost
Engineering Planning	2/24/14	6/12/14	5,832
Building Deactivation	6/12/14	6/19/14	0
Building Demo (AG)	7/15/14	7/16/14	0
Building Demo (BG)	7/22/14	8/13/14	11,450
Waste Loadout	7/15/14	8/21/14	2,870
Transition/Final Closure	8/18/14	8/21/14	0
			TOTAL $20,152

342B Building	Start Date	Completion Date	Cost
Engineering Planning	2/24/14	6/12/14	4,152
Building Deactivation	6/12/14	6/19/14	0
Building Demo (AG)	7/16/14	7/16/14	0
Building Demo (BG)	7/16/14	7/16/14	0
Waste Loadout	7/17/14	7/17/14	0
Transition/Final Closure	8/18/14	8/21/14	0
			TOTAL $4,152

342C Building	Start Date	Completion Date	Cost
Engineering Planning	2/24/14	6/12/14	2,123
Building Deactivation	6/12/14	6/19/14	0
Building Demo (AG)	7/16/14	7/16/14	0
Building Demo (BG)	7/16/14	7/16/14	0
Waste Loadout	7/17/14	7/17/14	0
Transition/Final Closure	8/18/14	8/21/14	0
			TOTAL $2,123

Table 4. Cost and Schedule Summary. (5 Pages)

351A Building	Start Date	Completion Date	Cost
Engineering Planning	2/11/14	9/25/14	56,855
Building Deactivation	7/28/14	8/21/14	25,942
Building Demo (AG)	8/21/14	9/25/14	3,474
Building Demo (BG)	N/A	N/A	0
Waste Loadout	9/25/14	9/29/14	2,689
Transition/Final Closure	10/20/14	10/27/14	1,778
			TOTAL $90,737

351B Building	Start Date	Completion Date	Cost
Engineering Planning	2/11/14	9/25/14	23,859
Building Deactivation	7/28/14	8/21/14	7,224
Building Demo (AG)	9/29/14	10/6/14	83,172
Building Demo (BG)	N/A	N/A	564
Waste Loadout	10/7/14	10/14/14	48,206
Transition/Final Closure	10/20/14	10/27/14	973
			TOTAL $163,997

352F Building	Start Date	Completion Date	Cost
Engineering Planning	2/11/14	8/21/14	14,280
Building Deactivation	8/18/14	8/21/14	7,644
Building Demo (AG)	8/25/14	8/27/14	9,470
Building Demo (BG)	9/2/14	9/8/14	20,448
Waste Loadout	8/27/14	8/28/14	15,226
Transition/Final Closure	9/9/14	10/21/14	3,793
			TOTAL $70,861

3730 Building	Start Date	Completion Date	Cost
Building Demo (BG)	10/1/13	4/24/14	473,008
Waste Loadout	10/1/13	4/29/14	158,017
Transition/Final Closure	3/3/14	5/12/14	19,525
			TOTAL $650,550

3760 Building	Start Date	Completion Date	Cost
Building Demo (BG)	9/23/13	10/23/13	22,868
Waste Loadout	10/2/13	10/29/13	200,344
Transition/Final Closure	10/7/14	11/19/14	39,544
			TOTAL $262,756

Table 4. Cost and Schedule Summary. (5 Pages)

3790 Building	Start Date	Completion Date	Cost
Engineering Planning	10/1/13	12/26/13	108,866
Building Deactivation	11/4/13	2/10/14	208,440
Building Demo (AG)	2/11/14	3/24/14	49,554
Building Demo (BG)	3/4/14	4/14/14	50,387
Waste Loadout	3/18/14	4/14/14	79,397
Transition/Final Closure	4/10/14	5/12/14	41,255
			TOTAL $537,901

B3S4 Switchyard	Start Date	Completion Date	Cost
Engineering Planning	2/11/14	9/15/14	30,248
Building Deactivation	7/28/14	8/21/14	0
Building Demo (AG)	7/28/14	9/18/14	72,908
Building Demo (BG)	N/A	N/A	0
Waste Loadout	9/23/14	9/25/14	0
Transition/Final Closure	10/20/14	10/27/14	206
			TOTAL $103,363

MO-745 Building	Start Date	Completion Date	Cost
Engineering Planning	2/11/14	6/23/14	29,906
Building Deactivation	6/19/14	6/24/14	677
Building Demo (AG)	N/A	N/A	0
Building Demo (BG)	N/A	N/A	0
Waste Loadout	6/25/14	6/25/14	16,688
Transition/Final Closure	8/21/14	9/4/14	0
			TOTAL $47,270

[a] Structure was demolished in fiscal year 2012. Final costs are included in this table.
AG = above-grade demolition
BG = below-grade demolition
N/A = not applicable
TBD = to be determined

4.0 WASTE DISPOSITION

One of the objectives of the 300 Area D4/Waste Sites Project is to support recycling and waste minimization. However, beryllium and radiological contamination throughout the site prevents most of the material and equipment from being salvaged and/or transferred offsite. Unless noted in Section 2.0, all the debris for buildings identified in this report was shipped to ERDF for disposal.

Waste generated from demolition of the buildings and from the demolition of other below-grade structures removed during this reporting period was characterized under waste profiles and shipped to ERDF. Roll-on/roll-off boxes were used to ship the debris. The total number of these shipments ("cans"), tons of debris disposed of in ERDF, and the profiles used are listed in Table 5.

Table 5. Waste Transferred to ERDF.

Facility	Number of Shipments	Tons	Waste Profile(s)
309 PRTR	2899	55,098	WP309001, WP309003, WP309MOD001, WP309PRTR003
310 Retention Transfer System – 310-T1, 310-T2, 310-T3, MO-745, 310-S, 310-V, lift station demolition	175	2,560	WP3TEDF001, WP300NR001
320/320-BA	22	391	WP320BLDG001
326	954	10,045	WP326001, WP326003
340 Vault	1786	37,124	WP340VAULT003, WP300340SOIL001
342, 342-A, 342-B, 342-C	148	2,685	WP300NR001
351 (completed October 2014)	30	262	WP300NR001
352-F	36	398	WP300NR001
3730	29	632	WP3730-001, WP3730GP001, WP3730BHC003
3760	143	2,046	WP300NR001
3790	145	1,486	WP300NR001

5.0 OCCUPATIONAL EXPOSURES

5.1 PERSONNEL INJURIES

During this reporting period, WCH D4 project personnel worked approximately 532,208 hours (manual and non-manual, including subcontractors) on the D4 of the 300 Area with no Occupational Safety and Health Administration recordable injury and no lost workday cases.

5.2 PERSONNEL RADIOLOGICAL EXPOSURES

For the D4 activities associated with the structures discussed in this document, one skin and no clothing contamination incidents occurred. There was one boundary air sample greater than airborne radioactivity area posting criteria. There were four confirmed internal exposures of radioactive material. All were less than 10 mrem committed effective dose.

During this reporting period, an estimated 1,913 person-mrem was received for all D4 activities in the 300 Area.

6.0 REFERENCES

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