

Date Received for Clearance Process (MM/DD/YYYY) <u>03/17/2011</u>	<h2 style="margin: 0;">INFORMATION CLEARANCE FORM</h2> S
A. Information Category <input type="checkbox"/> Abstract <input type="checkbox"/> Journal Article <input type="checkbox"/> Summary <input type="checkbox"/> Internet <input type="checkbox"/> Visual Aid <input type="checkbox"/> Software <input type="checkbox"/> Full Paper <input checked="" type="checkbox"/> Report <input type="checkbox"/> Other _____	B. Document Number DOE/RL-2010-18, Rev. 1 C. Title Hanford Site Active Cleanup Footprint Reduction D. Internet Address
E. Required Information (MANDATORY) 1. Is document potentially Classified? <input checked="" type="radio"/> No <input type="radio"/> Yes <u>M. S. McCormick</u> Manager Required (Print and Sign) <u>Doug S. Sharp for</u> If Yes <u>ADC Required (Print and Sign)</u> <input type="radio"/> No <input type="radio"/> Yes Classified 2. Official Use Only <input checked="" type="radio"/> No <input type="radio"/> Yes Exemption No. _____ 3. Export Controlled Information <input checked="" type="radio"/> No <input type="radio"/> Yes OOU Exemption No. 3 4. UCNI <input checked="" type="radio"/> No <input type="radio"/> Yes 5. Applied Technology <input checked="" type="radio"/> No <input type="radio"/> Yes 6. Other (Specify) _____	7. Does Information Contain the Following: a. New or Novel (Patentable) Subject Matter? <input checked="" type="radio"/> No <input type="radio"/> Yes If "Yes", OOU Exemption No. 3 If "Yes", Disclosure No.: _____ b. Commercial Proprietary Information Received in Confidence, Such as Proprietary and/or Inventions? <input checked="" type="radio"/> No <input type="radio"/> Yes If "Yes", OOU Exemption No. 4 c. Corporate Privileged Information? <input checked="" type="radio"/> No <input type="radio"/> Yes If "Yes", OOU Exemption No. 4 d. Government Privileged Information? <input checked="" type="radio"/> No <input type="radio"/> Yes If "Yes", Exemption No. 5 e. Copyrights? <input checked="" type="radio"/> No <input type="radio"/> Yes If "Yes", Attach Permission. f. Trademarks? <input checked="" type="radio"/> No <input type="radio"/> Yes If "Yes", Identify in Document. 8. Is Information requiring submission to OSTI? <input checked="" type="radio"/> No <input type="radio"/> Yes 9. Release Level? <input checked="" type="radio"/> Public <input type="radio"/> Limited
F. Complete for a Journal Article	
1. Title of Journal <u>N/A</u>	
G. Complete for a Presentation	
1. Title for Conference or Meeting <u>N/A</u> 2. Group Sponsoring _____ 3. Date of Conference _____ 4. City/State _____ 5. Will Information be Published in Proceedings? <input type="radio"/> No <input type="radio"/> Yes 6. Will Material be Handed Out? <input type="radio"/> No <input type="radio"/> Yes	
H. Information Owner/Author/Requestor <u>M. S. McCormick</u> (Print and Sign) <u>Doug S. Sharp for</u>	Responsible Manager <u>M. S. McCormick</u> (Print and Sign) <u>Doug S. Sharp for</u>
Approval by Direct Report to President (Speech/Articles Only) <u>N/A</u> (Print and Sign)	
I. Reviewers	Signature
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J. Comments If Additional Comments, Please Attach Separate Sheet	Information for Internal Approval 

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Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management



U.S. DEPARTMENT OF
ENERGY

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J. W. Aardal 03/17/2011
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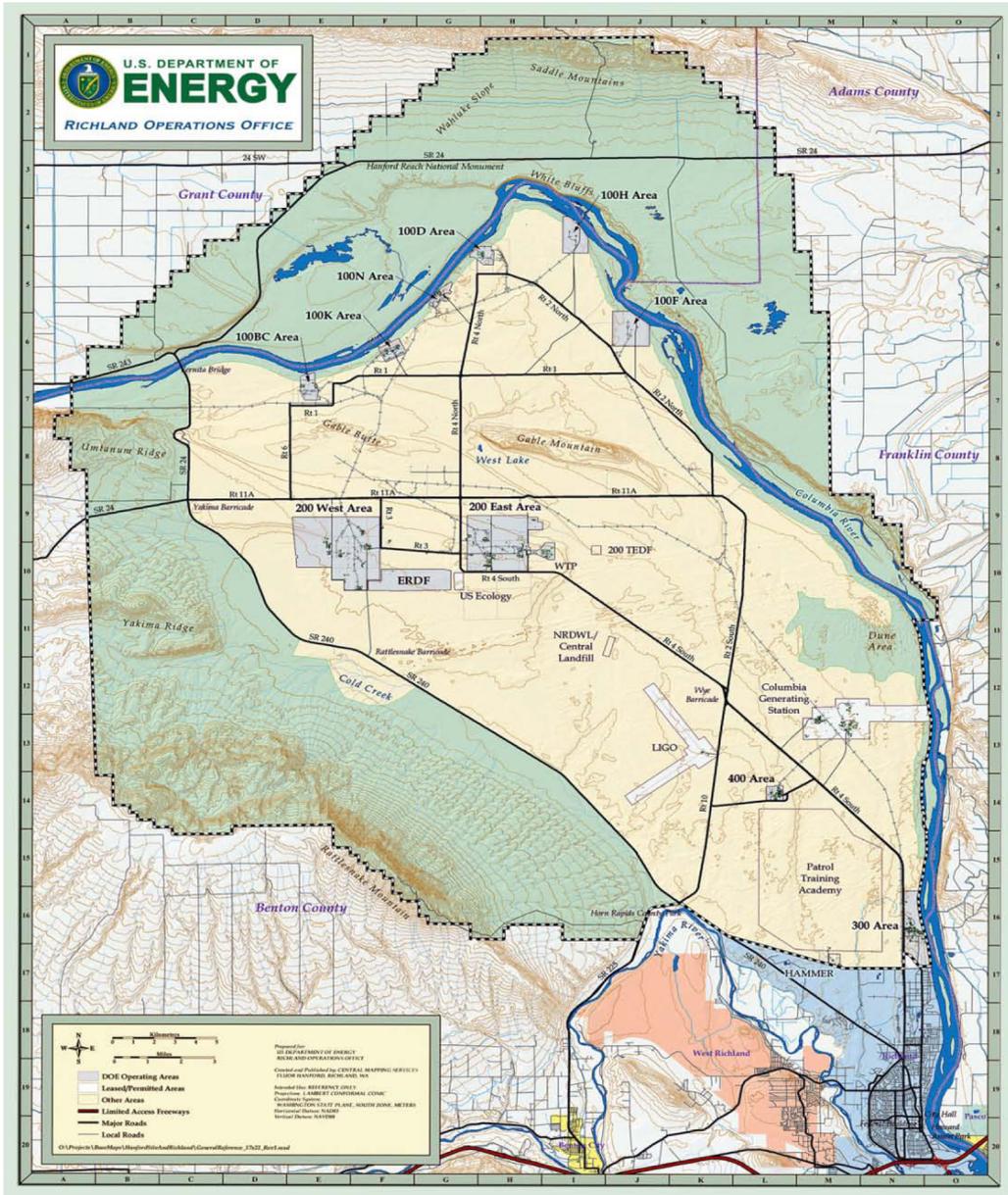
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Hanford Site Active Cleanup Footprint Reduction



Richland, Washington

March 2011

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Hanford Site Active Cleanup Footprint Reduction

1. Introduction

A key objective of Hanford Cleanup is shrinking the footprint of active cleanup to protect the Columbia River, reduce cost, make some lands available for asset revitalization such as Energy Parks, and show overall cleanup progress. DOE is committed to protecting human health and the environment while meeting its cleanup and post-cleanup obligations in a safe and cost-effective manner. Reducing the footprint of active cleanup operations is a tangible sign of meeting these obligations. The purpose of this document is to describe what DOE means when we talk about shrinking the footprint of active cleanup.

DOE Richland Operations Office's objective is to significantly reduce the footprint of Hanford Site active cleanup operations by 49% (approximately 290 sq. miles) and 90% (approximately 530 sq. miles) in 2011 and 2015, respectively. Remaining footprint reductions would occur after 2015. Active cleanup footprint reduction consists of completing surface waste site cleanup, including removal of excess facilities, and implementation of groundwater remediation systems. Groundwater remediation will continue after facilities have been demolished and waste sites have been remediated. Site cleanup is normally performed with CERCLA Interim Records of Decision (RODs), Final RODs or other regulatory documents.

It is important to clarify that reducing the footprint of active cleanup does not necessarily mean DOE intends to physically reduce the site boundaries or excess the land. It would, however, result in making some areas available for DOE's reuse consistent with the existing Hanford Comprehensive Land-Use Plan Environmental Impact Statement (HCP-EIS) and ROD (64 FR 61615), which established the Comprehensive Land Use Plan (CLUP). DOE anticipates that the vast majority of the Hanford Site will remain under Federal management and control for the foreseeable future.

Following completion of cleanup requirements, the Hanford Site will continue to be managed by DOE in accordance with the Hanford CLUP and in compliance with the CERCLA RODs. CERCLA Five Year Reviews will assess the effectiveness of remedial actions and may necessitate additional remedial actions. Likewise, results from the Natural Resource Damage Assessment may necessitate additional restoration activities.

2. Hanford Site Footprint

The Hanford Site is composed of approximately 586 square miles in southeastern Washington. The site consists of three major geographical components: (1) Hanford Reach National Monument, (2) River Corridor, and (3) Central Plateau. The Central Plateau is further divided into the Outer and Inner Areas. These components are shown in Figure 1.

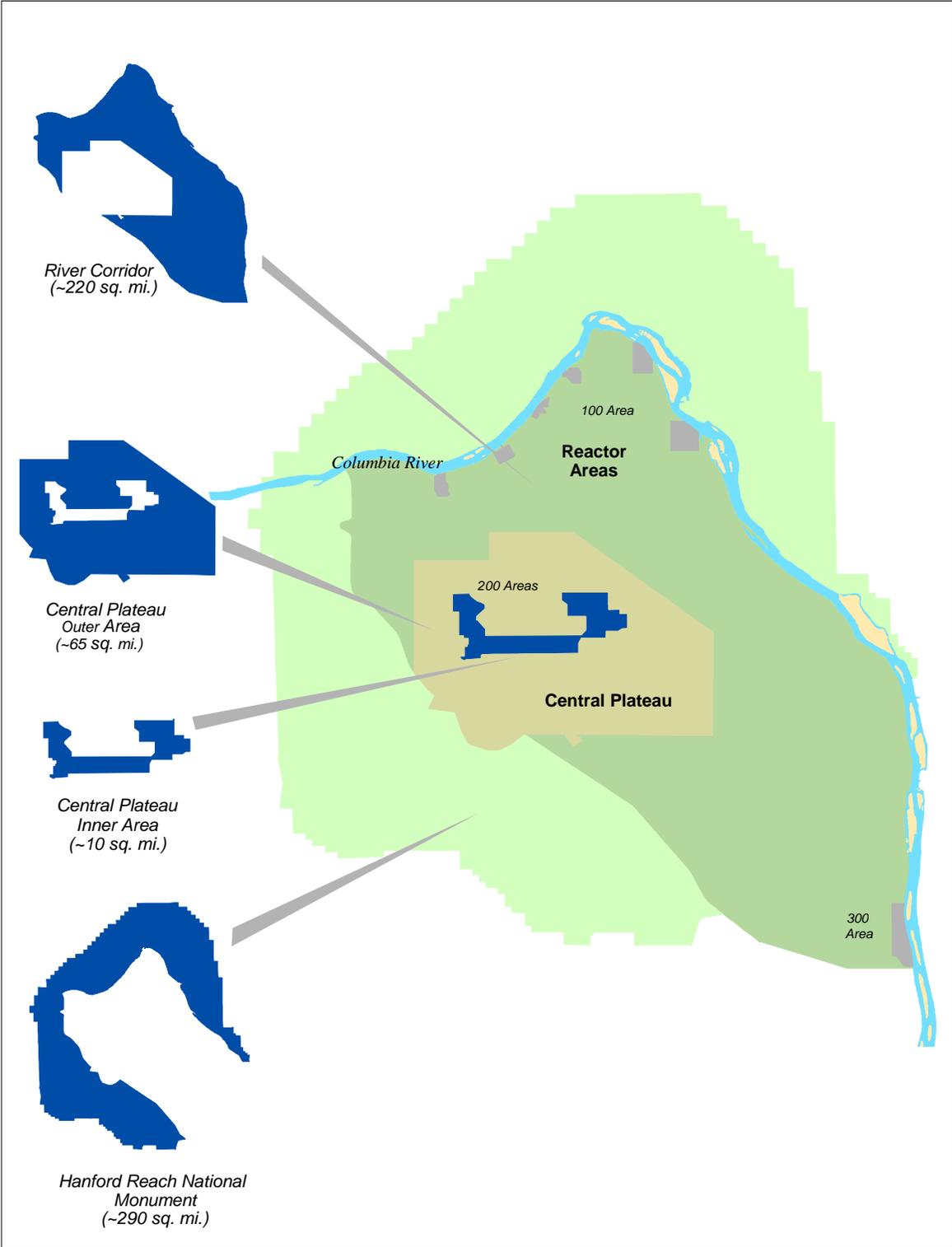


Figure 1 - Principal Components of Active Cleanup Footprint Reduction at Hanford

3. How Active Cleanup Footprint Reduction is Achieved



National Monument: This component consists of approximately 290 square miles in the northern and southwestern portions of the Hanford Site as shown in Figure 1. It is composed of the Hanford Reach National Monument lands with the exception of the south shore of the Columbia River adjacent to the River Corridor. The National Monument is a biologically diverse landscape embracing a remarkable natural and historic legacy. The area was originally used as an anti-aircraft defense installation for the Hanford Site and thereafter as a buffer zone for nuclear operations. The desire to shrink the footprint of active cleanup at Hanford necessitated the removal of anthropogenic items/sources that do not contribute to the long term vision for the National Monument. Land in the National Monument on the south side of the Columbia River is addressed in the River Corridor component cleanup.

- Active Cleanup Footprint Reduction Criteria for the National Monument Component

The National Monument cleanup component is planned for completion in fiscal year 2011. Final CERCLA cleanup actions for the National Monument have previously been completed. DOE will conduct a survey of the area that identifies Cold War Era military facilities, excess scientific facilities/experiments, abandoned facilities/items and general trash and debris to be removed. Items required to be left by cultural laws/requirements, on-going DOE programs, and US Fish and Wildlife programs will not be removed.



River Corridor: This component consists of approximately 220 square miles of the Hanford Site as shown in Figure 1. This region includes the 100 and 300 Areas along the south shore of the Columbia River. The 100 Area contains nine retired plutonium production reactors, numerous support facilities, solid and liquid waste disposal sites, contaminated groundwater, and uncontaminated areas. The 300 Area, located north of the city of Richland, contained fuel fabrication facilities, nuclear research and development facilities, associated solid and liquid waste disposal sites, and contaminated groundwater. The River Corridor component also includes the contiguous areas that extend from the 100 Areas and 300 Area to the Central Plateau boundaries. This component includes the National Monument lands on the south shore of the Columbia River adjacent to the River Corridor.

- Active Cleanup Footprint Reduction Criteria for the River Corridor Component

The Active Cleanup Footprint Reduction for the River Corridor component is planned for completion in calendar year 2015. The River Corridor is being cleaned up to the criteria specified in the associated Interim RODs. Cleanup of the River Corridor was started early in the CERCLA process specified on a “bias for action” agreement to protect the Columbia River. Over one half of the River Corridor work scope is now complete and between 2010 and 2015 all segments of the River Corridor will be cleaned up consistent with the Interim RODs. Along with the

Interim RODs, groundwater remediation activities have been implemented and will continue after the active cleanup footprint has been reduced. Items required to be left by cultural laws and regulations, ongoing DOE programs and other Federal/State programs will not be remediated.

Large regions exist between the operational areas and their associated waste sites. These regions are being evaluated to determine if cleanup actions are required. Aerial surveys of the site are being used to identify disturbed areas which could potentially contain waste sites. Walk down and sampling of these suspect sites will be performed as necessary to determine if there are any additional waste sites requiring cleanup. Additional waste sites, referred to as Orphan Sites, have been found using this approach and are being cleaned up.

After completion of the River Corridor Final RODs, the CERCLA process may still determine that additional cleanup is required or warranted beyond what was performed under the Interim RODs. The River Corridor RODs are planned to be finalized in 2014. Any additional cleanup to the Final RODs is within the scope of current DOE contracts.

Items that are excluded from the planned River Corridor 2015 active cleanup footprint reduction goal are as follows: nine production reactors, K West Basin and sludge removal support facilities, Fast Flux Test Facility (FFTF), National Historic Landmarks, HAMMER, Hanford Patrol Training Academy, Energy Northwest, PNNL Operations facilities in the 300 Area, and the Laser Interferometer Gravitational Wave Observatory (LIGO).



Central Plateau: This component consists of approximately 75 square miles in the central portion of the Hanford Site as shown in Figure 1. This region contains the 200 East and 200 West Areas that have been used primarily for nuclear fuel processing and waste management and disposal activities. The Central Plateau contains excess facilities, tank waste storage systems, waste sites, solid waste disposal facilities, and contaminated groundwater.

- Active Cleanup Footprint Reduction Criteria for the Central Plateau Component



The Outer Area:

The Outer Area (~ 65 sq. miles) is the portion of the Central Plateau outside the boundary of the Inner Area. Waste sites currently being remediated in this area will be cleaned up in accordance with existing CERCLA documentation and will result in a footprint reduction of approximately 28 square miles by the end of 2011. The remaining waste sites will be cleaned up in accordance with a future “Outer Area” ROD. The cleanup of these waste sites will be performed in the 2015-2020 time frame. Completion of the Outer Area will shrink the active cleanup footprint leaving just the Inner Area remaining.

Items required to be left by cultural laws and regulations, ongoing DOE programs and other Federal/State programs will not be remediated.

After completion of the Outer Area Final ROD, the CERCLA process may still determine that additional cleanup is required or warranted. Any additional cleanup to the Final ROD criteria is within the scope of current DOE contracts.



The Inner Area:

The Inner Area (~10 sq. mi.) contains major processing facilities (e.g. chemical processing canyons), solid waste burial grounds (e.g. Environmental Restoration Disposal Facility), and waste management facilities (e.g. Waste Treatment Plant). This area is anticipated to be the final footprint of Hanford, and will be dedicated to long term waste management and containment of residual contamination.

4. Active Cleanup Footprint Reduction Calculations

Figure 2 depicts the specific areas that will be cleaned up to meet DOE-RL's Cleanup Footprint Reduction Goals. Precise Cleanup Footprint Reduction calculations for planned completion in 2011 and 2015 are as follows:

2011:

$$\frac{\text{National Monument (285 mi}^2\text{) + River Corridor IU2/IU6 Segments 1\&2 (60 mi}^2\text{) + Outer Area Segments CP-1, CP-2 \& CP-4 (28 mi}^2\text{)}}{\text{Hanford Site (586 mi}^2\text{)}}$$

$$= 373 \text{ mi}^2 / 586 \text{ mi}^2$$

$$= \mathbf{64\% \text{ Cleanup Footprint Reduction}}$$

2015:

$$\frac{\text{National Monument (285 mi}^2\text{) + River Corridor (220 mi}^2\text{) + Outer Area Segments CP-1, CP-2 \& CP-4 (28 mi}^2\text{)}}{\text{Hanford Site (586 mi}^2\text{)}}$$

$$= 533 \text{ mi}^2 / 586 \text{ mi}^2$$

$$= \mathbf{91\% \text{ Cleanup Footprint Reduction}}$$

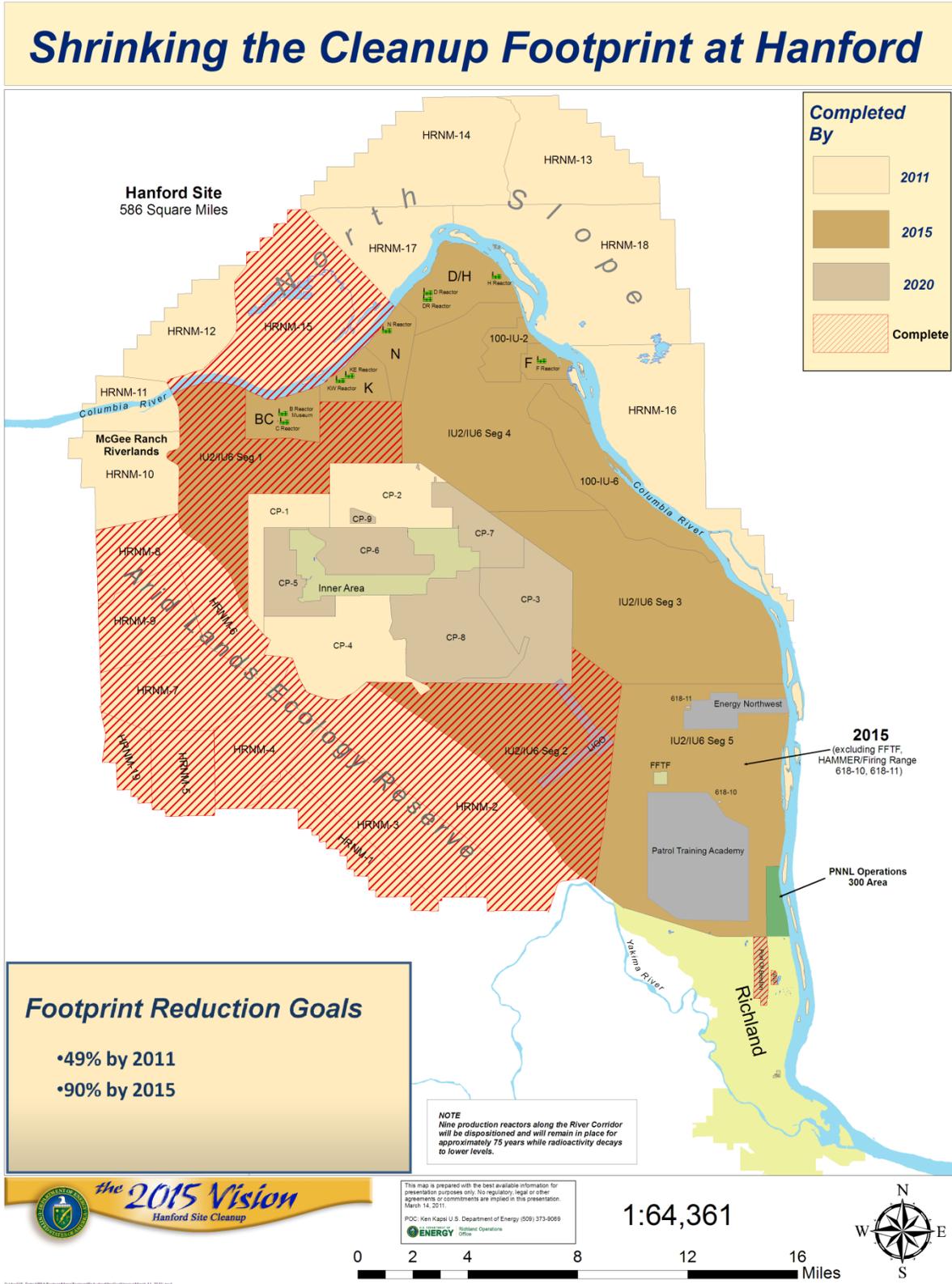


Figure 2 – Shrinking the Cleanup Footprint at Hanford