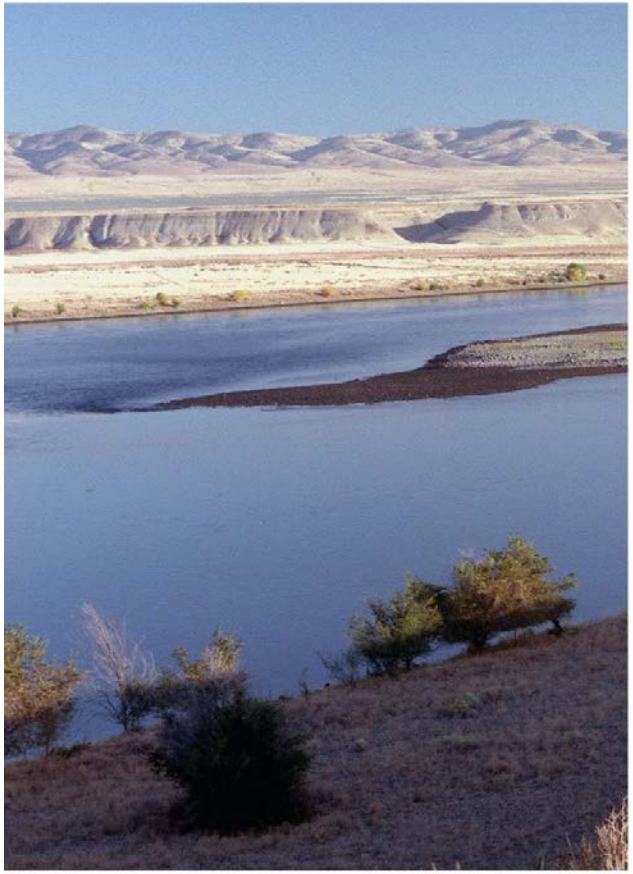

100-D/H Draft A Proposed Plan Overview

Presented to: Hanford Advisory Board River and Plateau Committee

By: James Hanson

January 8, 2013

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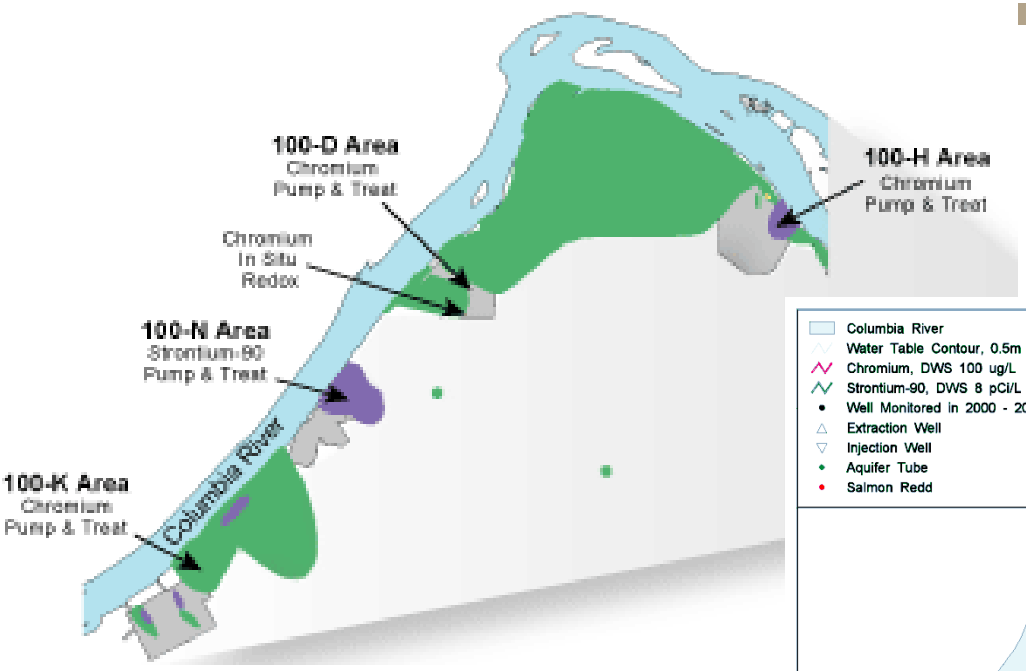
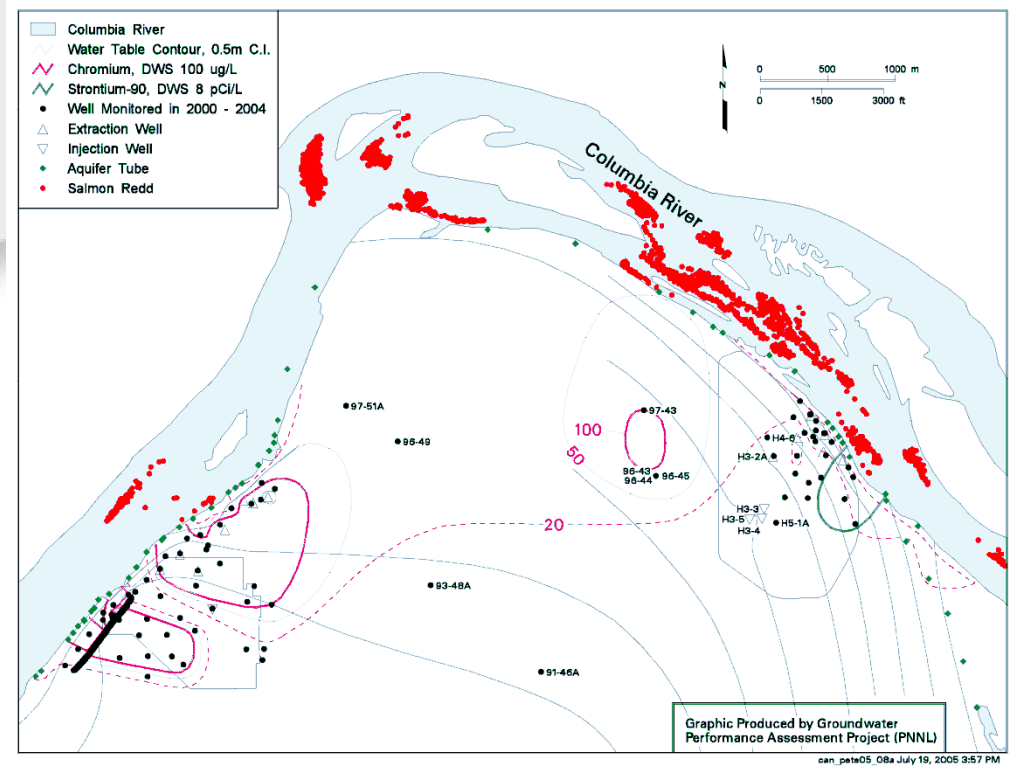
100 Area Historic Plumes





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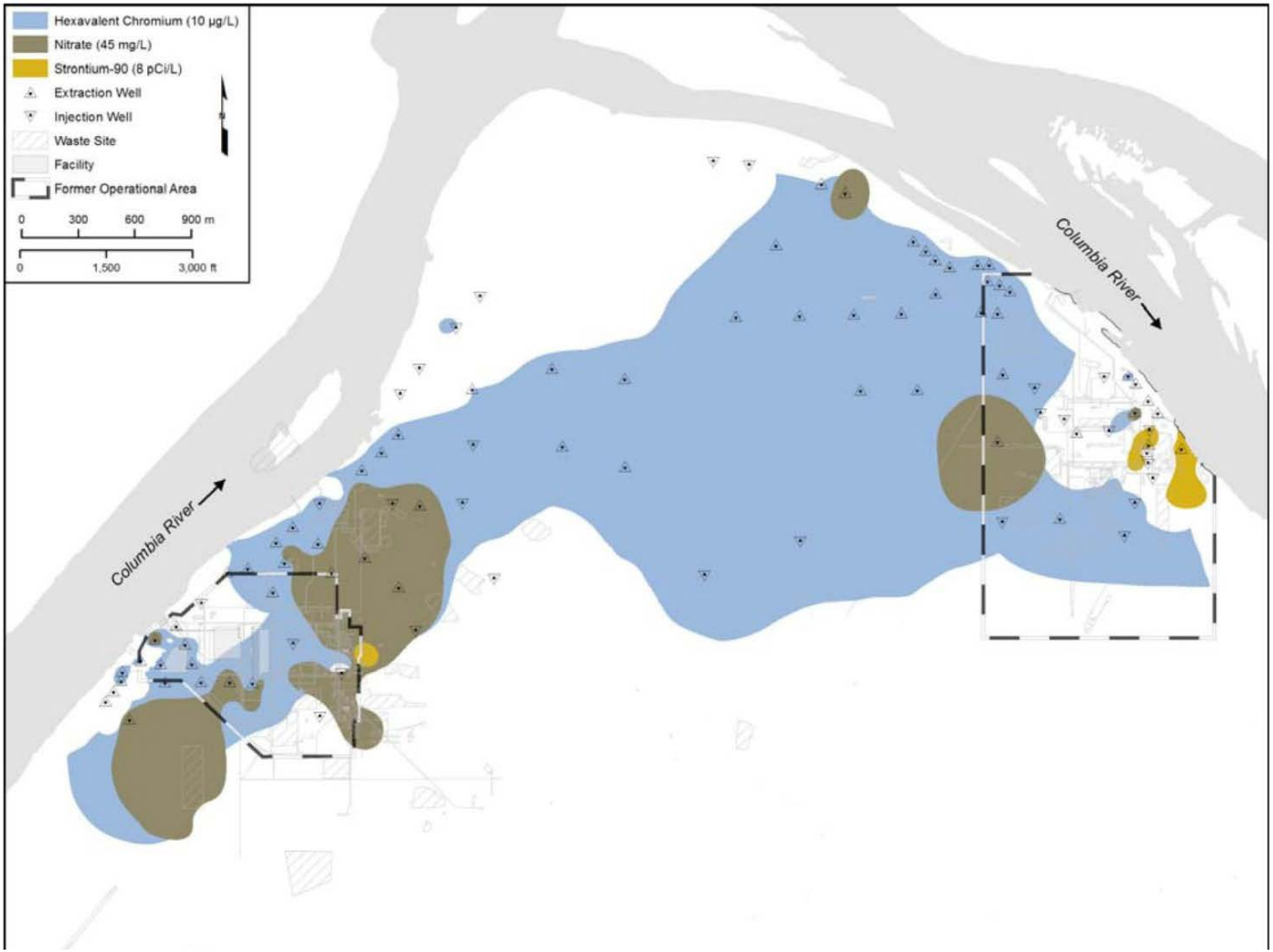
100-D/H Groundwater Plume Map



100-D/H Area Cleanup

- Removed more than 3 million tons of waste and cleaned up 148 waste sites
- Removed 115 former process and site support facilities
- Pump and treat systems have removed over 1200 kg of hexavalent chromium
- Remediation of waste sites under Interim Action Record of Decision is ongoing

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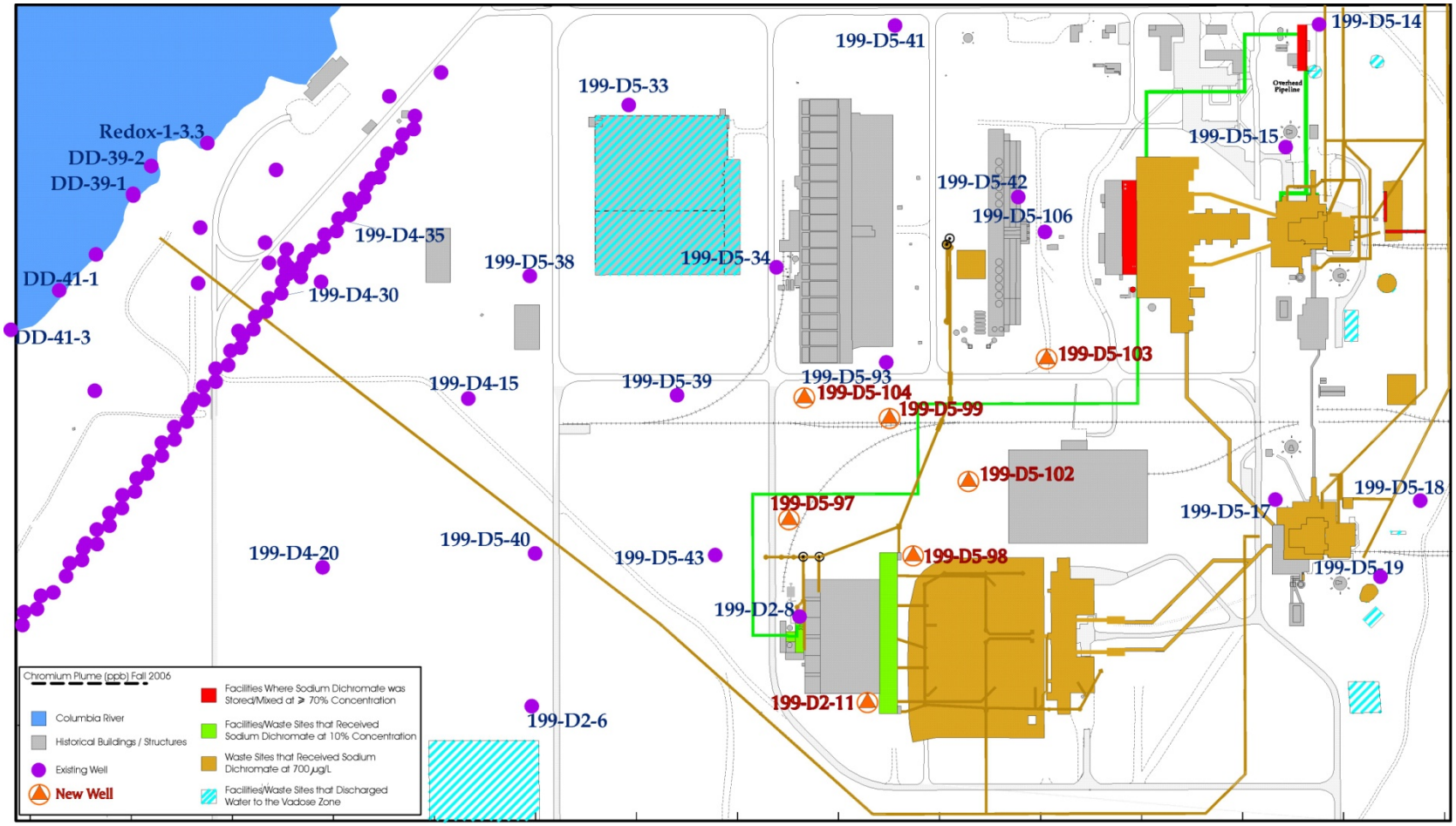
100-D Area Potential Source Areas – Reactor Operations/Chemical Handling



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Deep Hexavalent Chromium Waste Site (Near Transfer Station)

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Deep Hexavalent Chromium Waste Sites

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Deep Hexavalent Chromium Waste Sites

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Deep Hexavalent Chromium Waste Sites

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Deep Hexavalent Chromium Waste Sites

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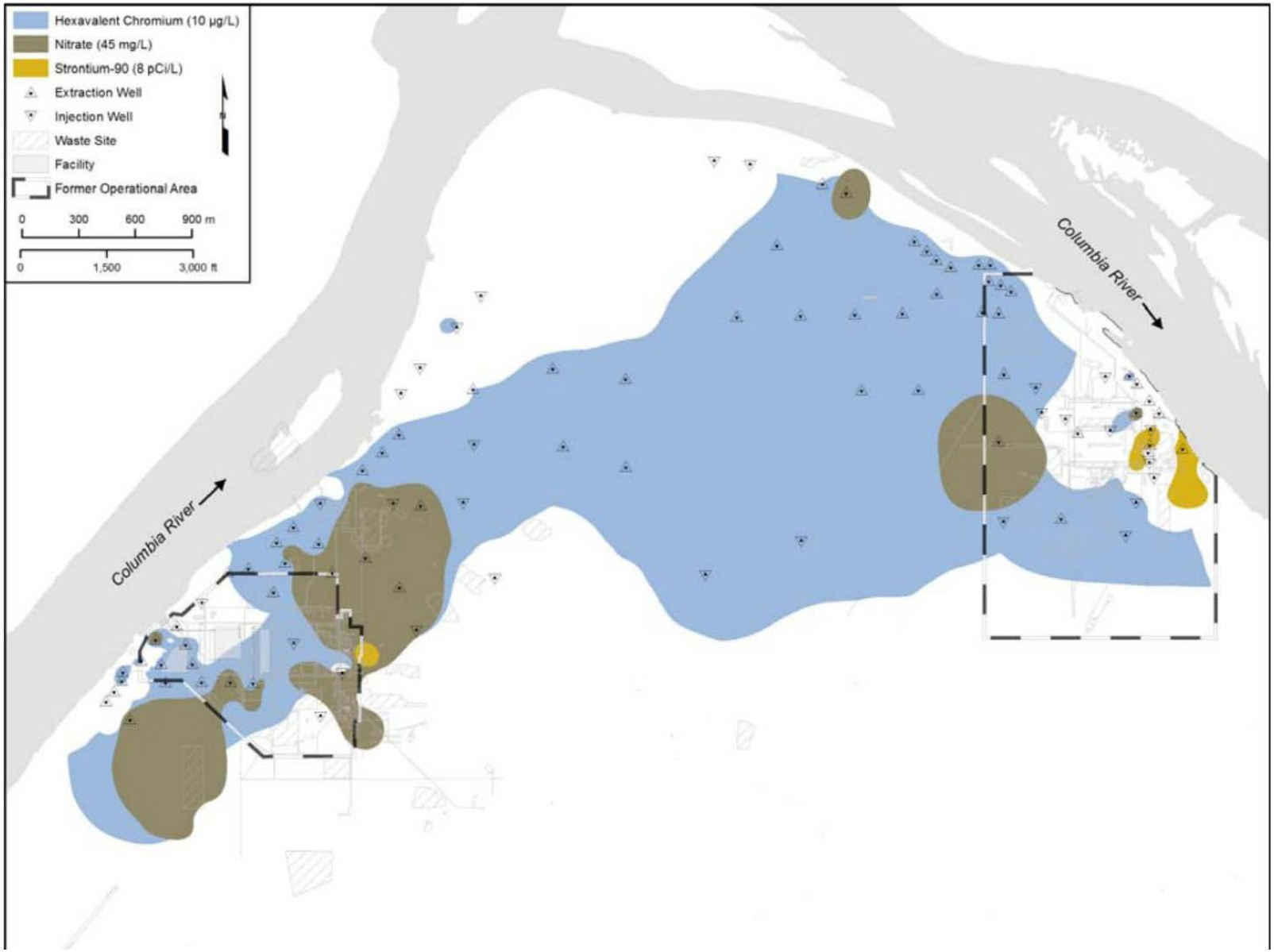
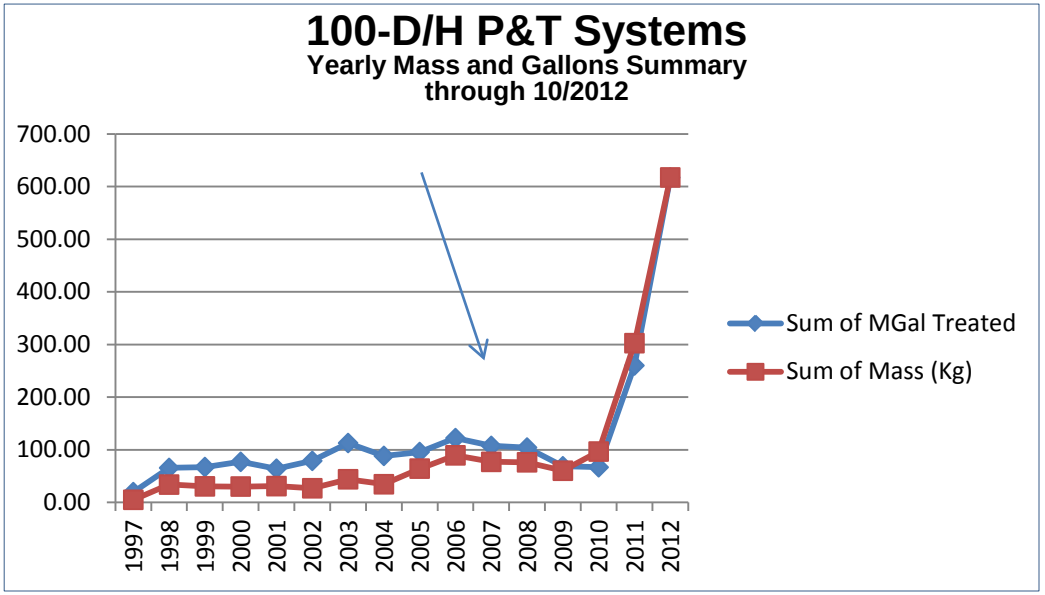
100-D/H Groundwater Plume Map



Interim Action Successful

Chromium concentration before DX Pump and Treat System began operations in December 2010

Chromium concentration decreased after DX Pump and Treat (June 2012)



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Remedial Alternatives

- Alternative 1 – No Action
- Common Elements Alternatives 2, 3 and 4
  - Monitored Natural Attenuation and Institutional Controls
- Alternative 2 – Removal, Treatment, and Disposal (RTD) and Void Fill Grouting for one Waste Site and Pump and Treat with Biological Treatment for Groundwater – Cost: $506 Million
  Cr(VI) Remediated – 25 yrs.
- Alternative 3 – RTD and Void Fill Grouting for one Waste Site and Increased Pump and Treat for Groundwater – Cost: $570 Million
  Cr(VI) Remediated – 12 yrs.
- Alternative 4 - RTD Waste Sites and Pump and Treat for Groundwater
  Cost: $601 Million
  Cr(VI) Remediated – 41 yrs.

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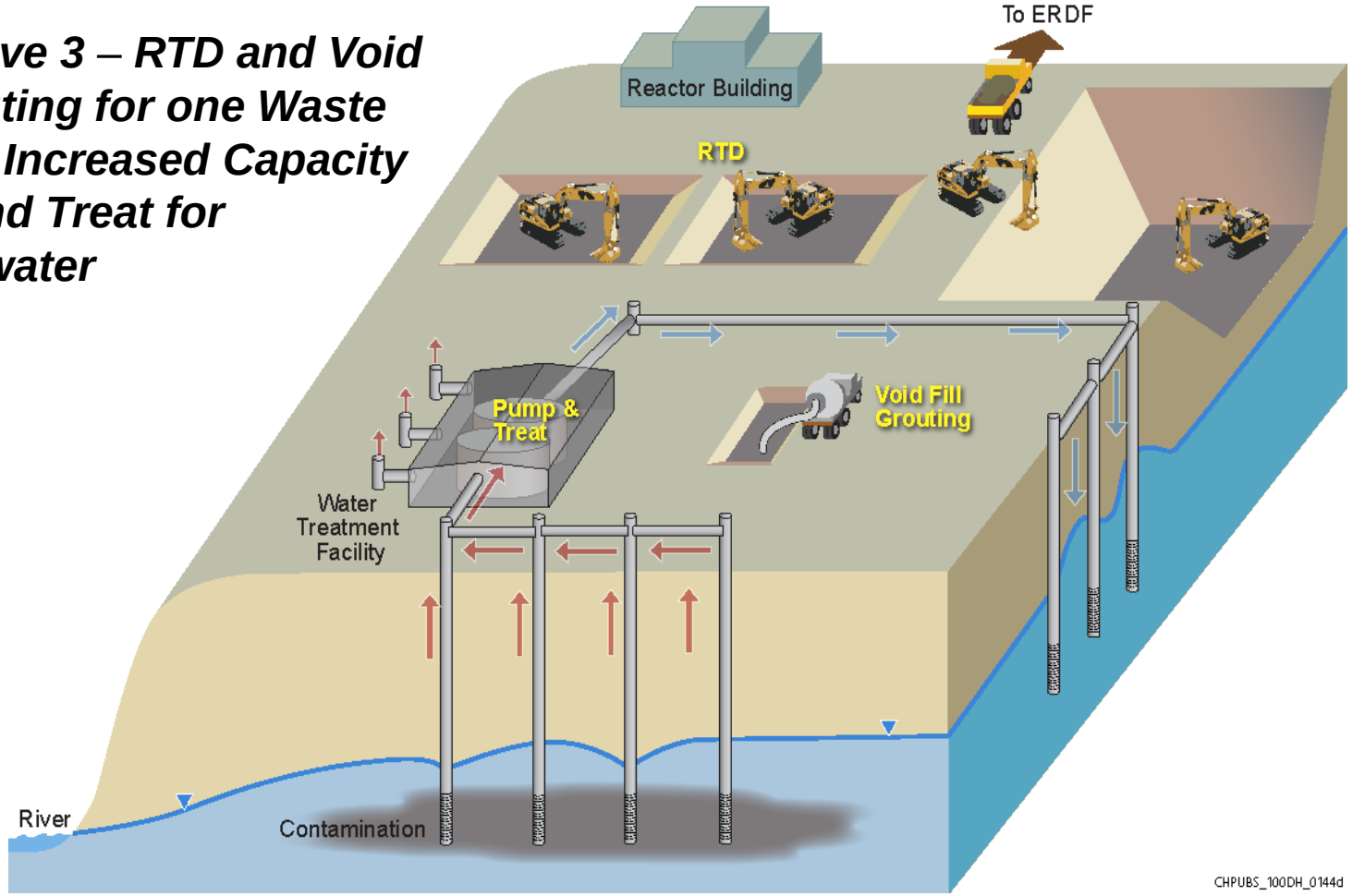
Preferred Alternative

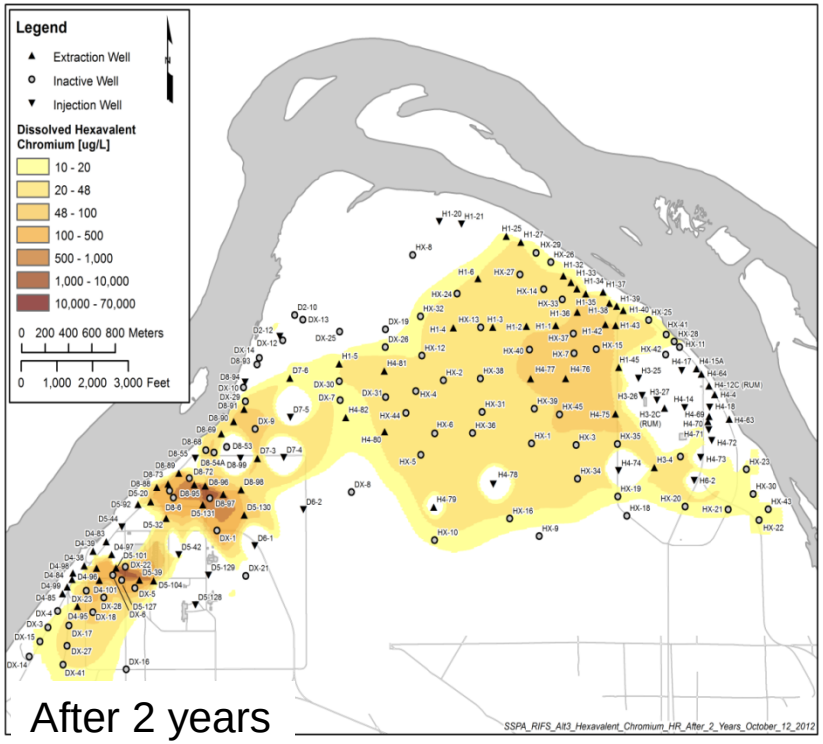
- Alternative 3 – *RTD and Void Fill Grouting for one Waste Site and Increased Capacity Pump and Treat for Groundwater*
  - Performs best regarding short-term effectiveness and reduction in toxicity, mobility, or volume (TMV) through treatment
  - Protective of human health and the environment
  - Complies with *applicable or relevant and appropriate requirements (ARARs)*

Preferred Alternative

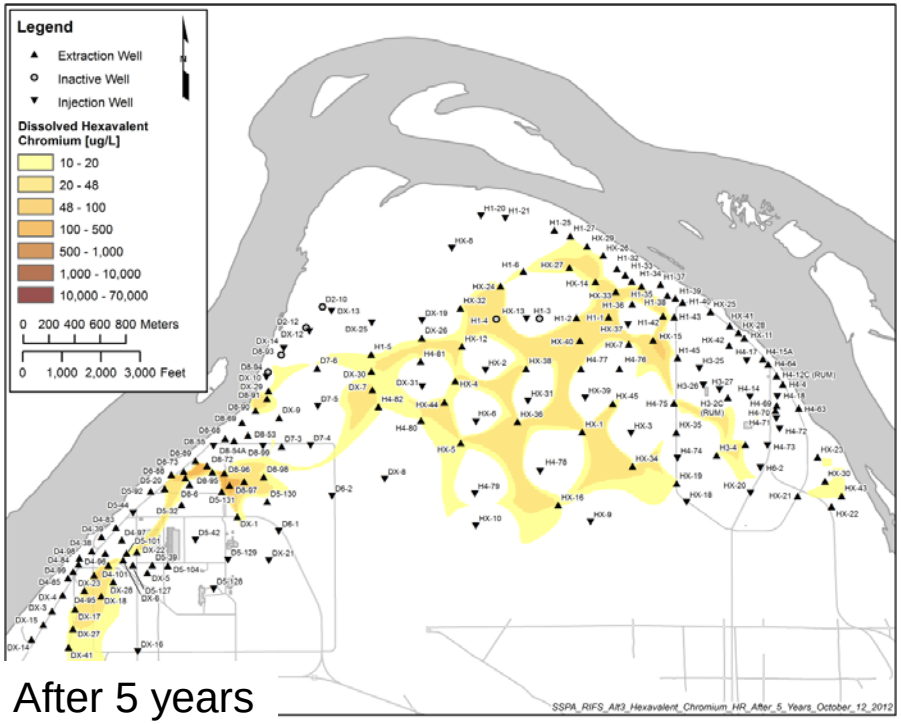
Alternative 3 – RTD and Void Fill Grouting for one Waste Site and Increased Capacity Pump and Treat for Groundwater



Preferred Alternative Projected Effectiveness



After 2 years



After 5 years

Predicted 100-D/H Cr(VI) Plumes for Alternative 3

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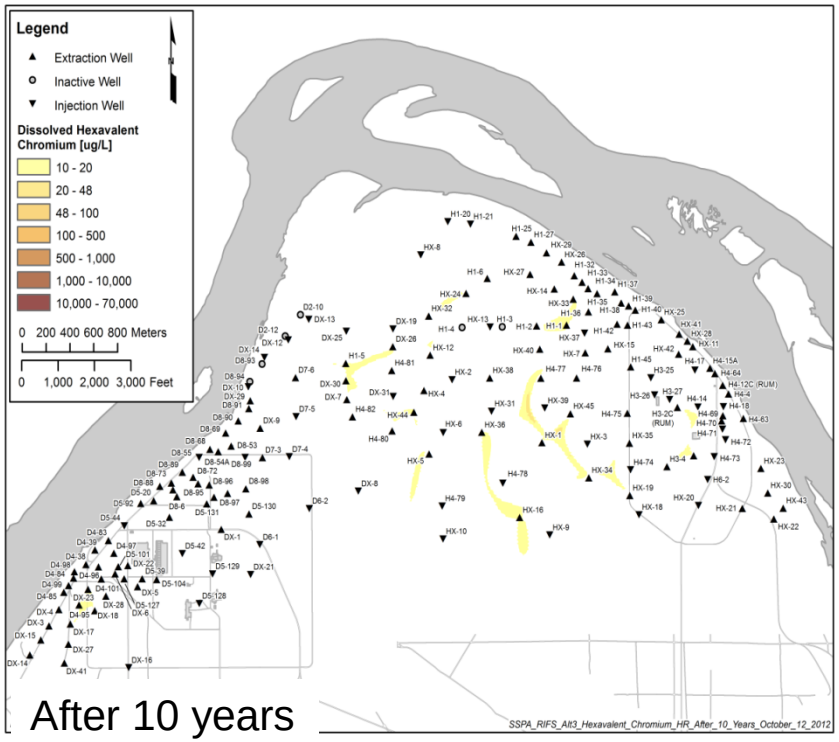
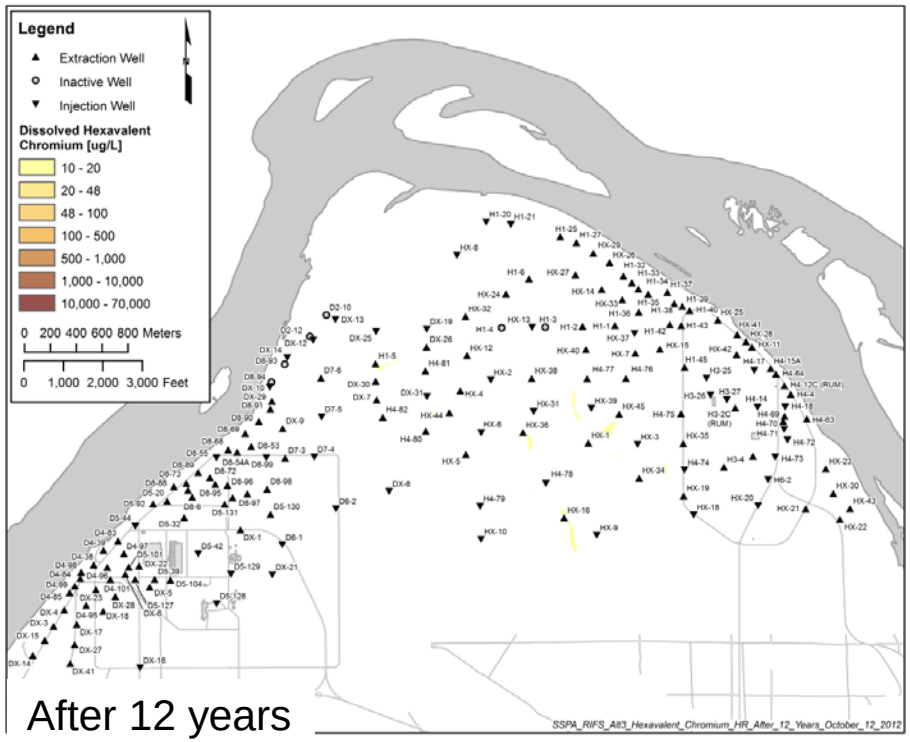
Preferred Alternative Projected Effectiveness



After 10 years



After 12 years

Predicted 100-D/H Cr(VI) Plumes for Alternative 3

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Example of Backfilling

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Examples of Revegetation at H and D Areas

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Conclusion

- Preferred alternative RTD removes contaminants
- Groundwater Pump and Treat provides protection of Columbia River
- Groundwater Pump and Treat provides expedited cleanup of groundwater (~12 years for chromium removal)

Backup Slides

Interim Action Source Area Remediation Progress – D Area

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Interim Action Source Area Remediation Progress – H Area

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