Overview of the Third Quarter 2015 Surveillance and Maintenance Report for the LM Rocky Flats Site

July–September 2015
Quarterly Monitoring and Reporting

- Quarterly reports are required under the *Rocky Flats Legacy Management Agreement* (RFLMA) to document that the CERCLA remedy continues to be protective
  - Primary goal: Surface water protection

- Response action under the final remedy for Rocky Flats
  - Maintain two landfill covers
  - Maintain four groundwater treatment systems
  - Monitor surface water and groundwater
  - Maintain physical controls
    - Signage
    - Access restriction
  - Enforce institutional controls
    - No building construction or occupation
    - Excavation and soil-disturbance restrictions
    - No surface water consumption or agricultural use
    - No groundwater wells, except for monitoring
    - Landfill covers and engineered remedy-components protection
Surface Water Monitoring

Third Quarter 2015
Select RFLMA Surface-Water Monitoring Locations
Original Landfill (OLF) Performance Monitoring

- OLF (Woman Creek – location GS59)
  - Composite sampling results for arsenic and selenium above RFLMA standards
    - Mean arsenic concentration 10.6 \( \mu \text{g/L} \) for the quarter (RFLMA standard is 10 \( \mu \text{g/L} \))
    - Mean selenium concentration 6.7 \( \mu \text{g/L} \) for the quarter (RFLMA standard is 4.6 \( \mu \text{g/L} \))
      - Prompted increased sampling frequency (monthly) for the fourth quarter, per RFLMA evaluation protocols
  - Similar concentrations detected at upstream location GS05
Present Landfill (PLF) Performance Monitoring

- PLF (System effluent – location PLFSYSEFF)
  - Routine third quarter sampling showed three analytes above the applicable RFLMA standard
    - Vinyl chloride concentration was 0.28 µg/L, exceeding the practical quantitation limit of 0.2 µg/L
    - Arsenic concentration was 18 µg/L, exceeding the standard of 10 µg/L
    - Selenium concentration was 14 µg/L, exceeding the standard of 4.6 µg/L
  - Per RFLMA evaluation protocols, the results triggered a sampling frequency increase from quarterly to monthly
  - Subsequent results from the first monthly sample showed all three analytes below the standard, or not detected
Point of Evaluation (POE) Monitoring

- Location SW027 – 12-month rolling average for plutonium: Reportable as of April 30, 2015
  - 12-month rolling averages 0.22 (April 30) and 0.72 pCi/L (May 31): standard is 0.15 pCi/L
  - Composite sample initiated June 12, 2015 still in progress
  - RFLMA Contact Record 2015-05 (July 8, 2015)
  - Mitigating actions include enhancing upstream erosion controls
  - All results from downstream WOMPOC are less than applicable standards

- No other RFLMA POE analyte concentrations were reportable throughout third quarter calendar year (CY) 2015
Point of Compliance (POC) Monitoring

- All RFLMA POC analyte concentrations remained below reportable levels throughout third quarter CY 2015
Groundwater Monitoring and Operations

Third Quarter 2015
RFLMA Monitoring

- Light sampling quarter
  - 10 RCRA wells (sampled quarterly)
  - Groundwater quality generally consistent with previous results
  - Results will be evaluated in the annual report

- Heavy spring precipitation continued to affect groundwater levels and treatment system flows
NOTE: Groundwater treatment system locations omitted for clarity
Treatment System Activities

- Treatment systems experienced above-average flows
- MSPTS
  - Routine maintenance on air stripper, other components
  - Continued designing system reconfiguration
    - Construction scheduled for mid-2016
- ETPTS
  - Routine maintenance
    - Adjusted timer settings
    - Monitored power levels (augmented with generator as necessary)
    - Replaced malfunctioning effluent pump (augmented with portable sump pump as necessary)
    - Cleaned scale from some components
      - See less scale buildup compared to original, small-scale air stripper
Treatment System Activities (continued)

- **SPPTS**
  - Continued microcell and lagoon tests
  - Replaced malfunctioning ITSS pump
  - Replaced damaged wiring
  - Developing procurement package to construct interim configuration
    - Empty original “Big Box” structure, scale it up to test full-scale lagoon operation and performance
    - Construction scheduled for early 2016
Site Operations

Third Quarter 2015
Quarterly Sign Inspections

- RFLMA physical control
- All signs are in good condition
Site Operations – OLF

- Performed three monthly inspections
  - One weather-related inspection occurred in July due to a precipitation event producing more than 1 inch of rain in a 24-hour period
- Monitored eight settlement monuments
- Cracking and slumping were less pronounced on OLF east and west sides, compared to second quarter observations
- Construction – interim action to reestablish surface water management on portions of the OLF
  - Began August 18 and completed September 22
  - Graded, smoothed, and filled cracks to promote water drainage from the cover
  - Potholed existing east subsurface drain to investigate reason for low flows
  - Applied seed and installed erosion control matting on all disturbed areas
Site Operations – OLF (continued)
OLF East Side Former Scarp Area – September 2015
Site Operations – PLF

- Performed one quarterly inspection and one weather-related inspection for precipitation events producing more than 1 inch of rain in a 24-hour period
  - No issues were observed during inspections
Former Building Areas 371, 771, 881, and 991

- Inspected former building areas
  - Observed and filled subsidence areas at 881 and 771
    - Subsidences ranged from 1 to 3 feet wide, and 1 to 1.5 feet deep
Ecology Activities

- Conducted Preble’s mouse and wetland mitigation monitoring, wetland delineations, and revegetation monitoring
- Conducted forb nursery monitoring
- Surveyed current and former prairie dog towns in and near the COU for activity
- Conducted revegetation activities
- Treated approximately 145 acres with herbicides for weed control
- Continued watering habitat enhancement shrubs planted in spring 2015