
Overview of the Second Quarter 2011 Surveillance and Maintenance Report for the LM Rocky Flats Site



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Surface Water Monitoring and Operations



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Pond Operations – Second Quarter 2011

- Terminal Pond Discharges:
 - None
- Transfers:
 - A-3 in flow-through to A-4
- Pond Levels:
 - As of July 1, 2011, Ponds A-3, A-4, B-5, and C-2 and the Landfill Pond were holding approximately 18.9 MG (19.1 percent of capacity)



October 14, 2011, Pond Levels

- Landfill (14.0 percent)
- A-3 (0.0 percent)
- A-4 (9.1 percent)
- B-5 (10.7 percent)
- C-2 (8.7 percent)



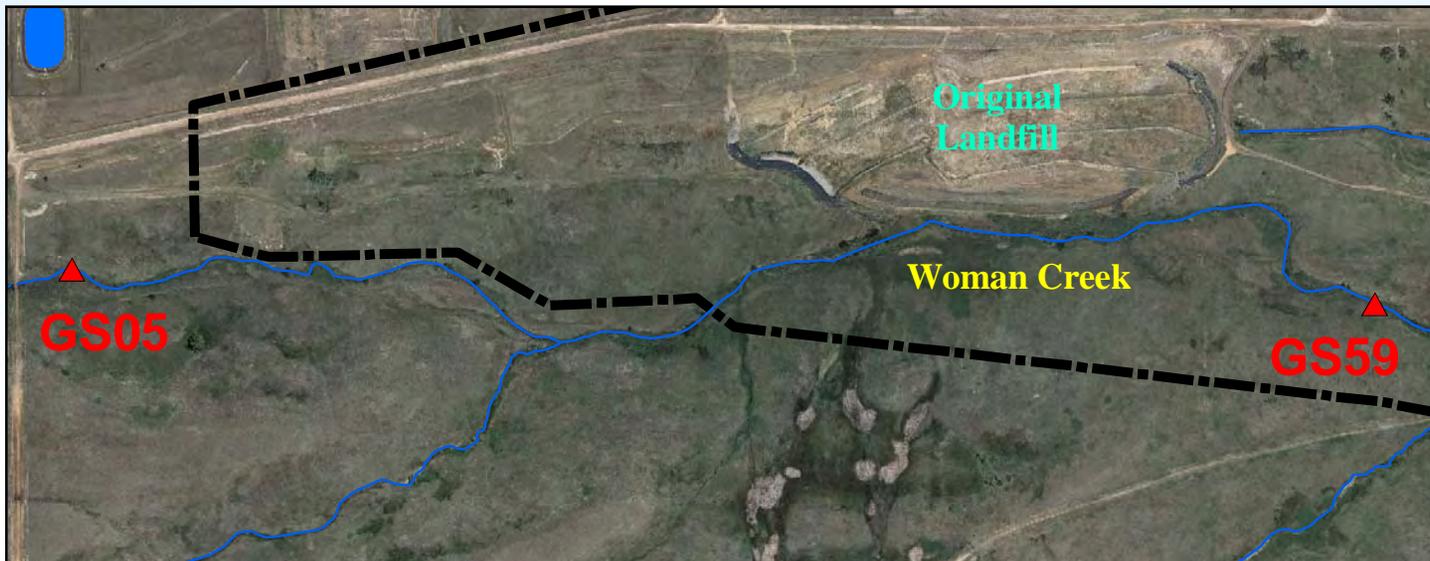
Hydrologic Data – Second Quarter 2011

- Precipitation
 - 6.23 inches total precipitation
 - 113 percent of WY 1993–2010 average
- Flow rates (percentage of average)
 - GS01 (24 percent)
 - GS03 (4 percent)
 - GS10 (26 percent)
 - SW027 (0.1 percent)
 - SW093 (36 percent)

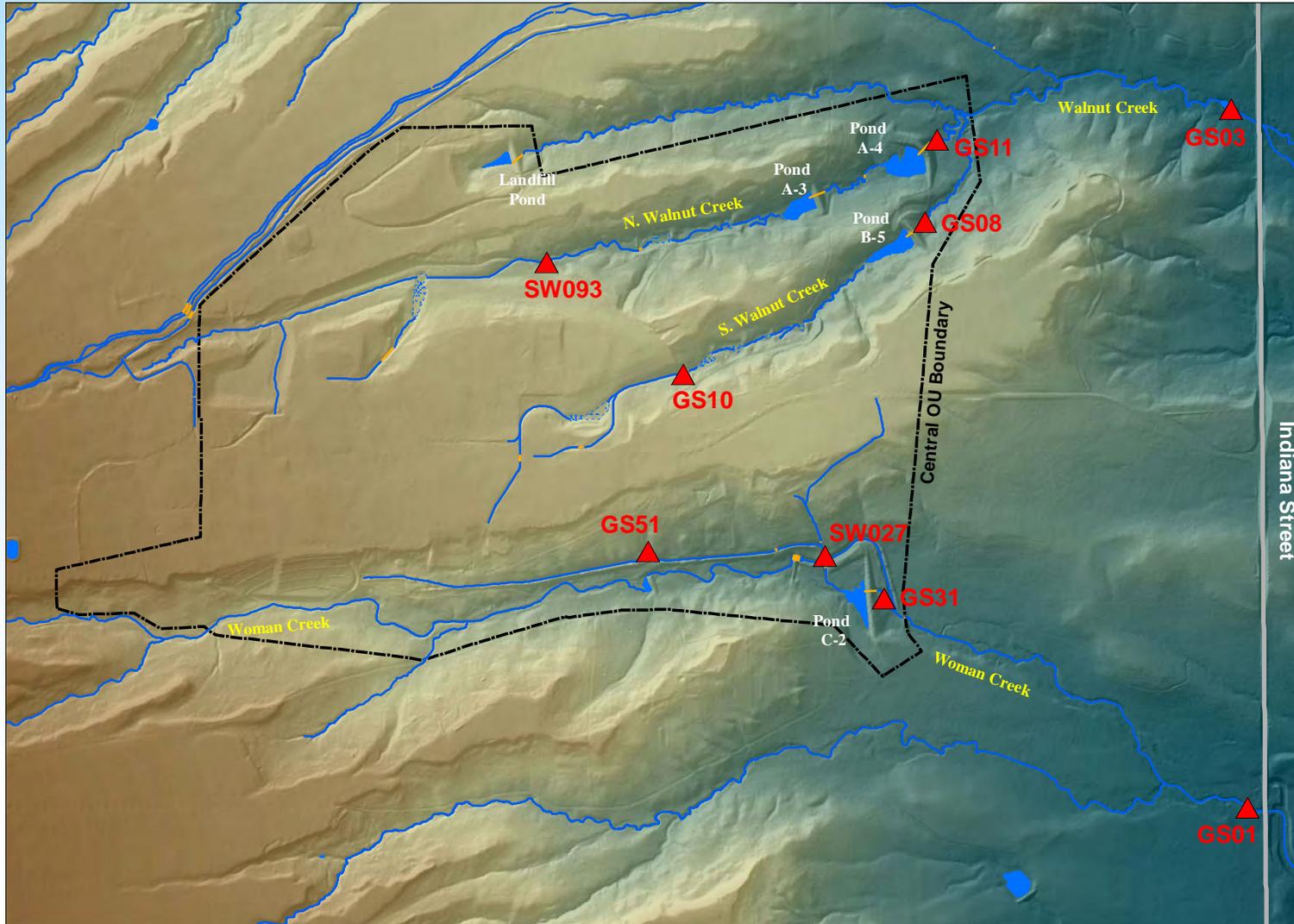


Performance Monitoring – Second Quarter 2011 Original and Present Landfills

- **Original Landfill (OLF):** surface water quality results were all below standards for the quarter; analytical data for the June 14 through October 5, 2011, composite samples are not available
- **Present Landfill (PLF):** surface water quality results were all below standards for the quarter



Selected Surface Water Monitoring Locations



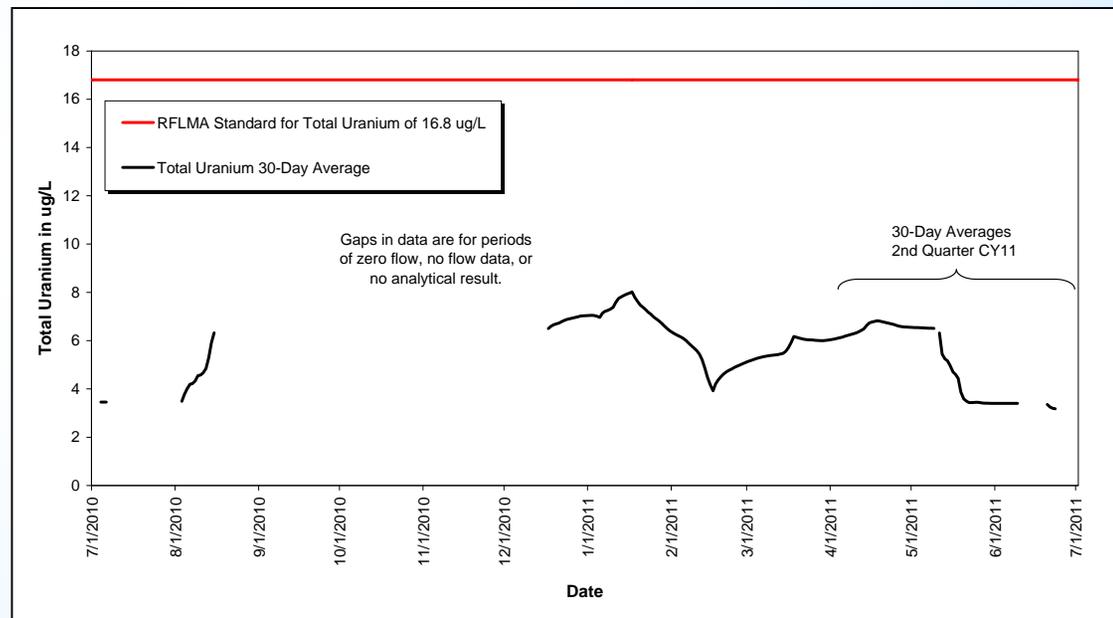
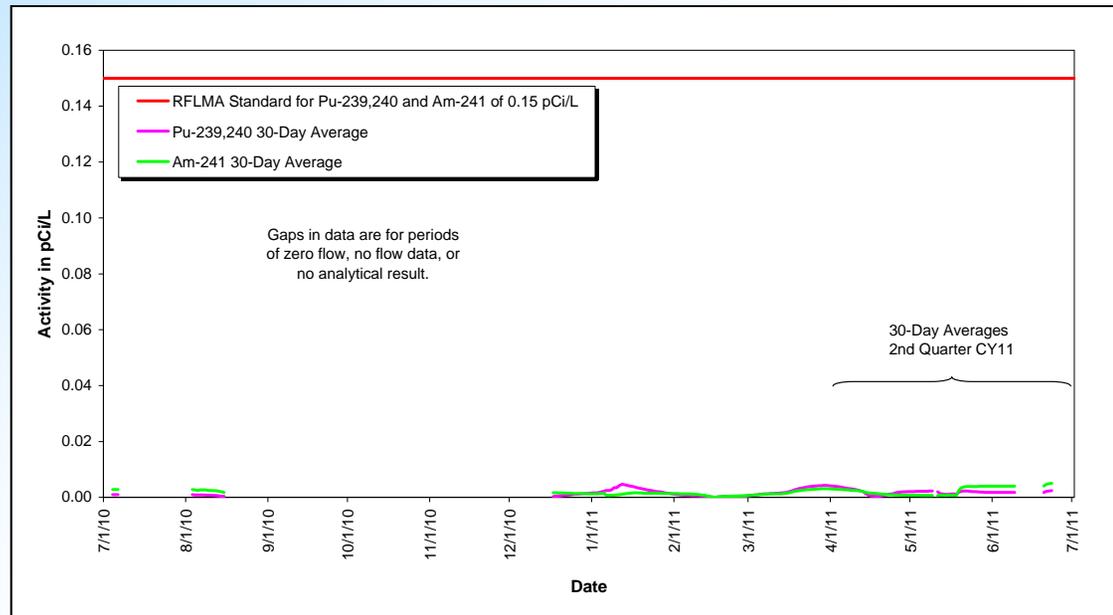
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POC GS01

■ Plutonium and Americium

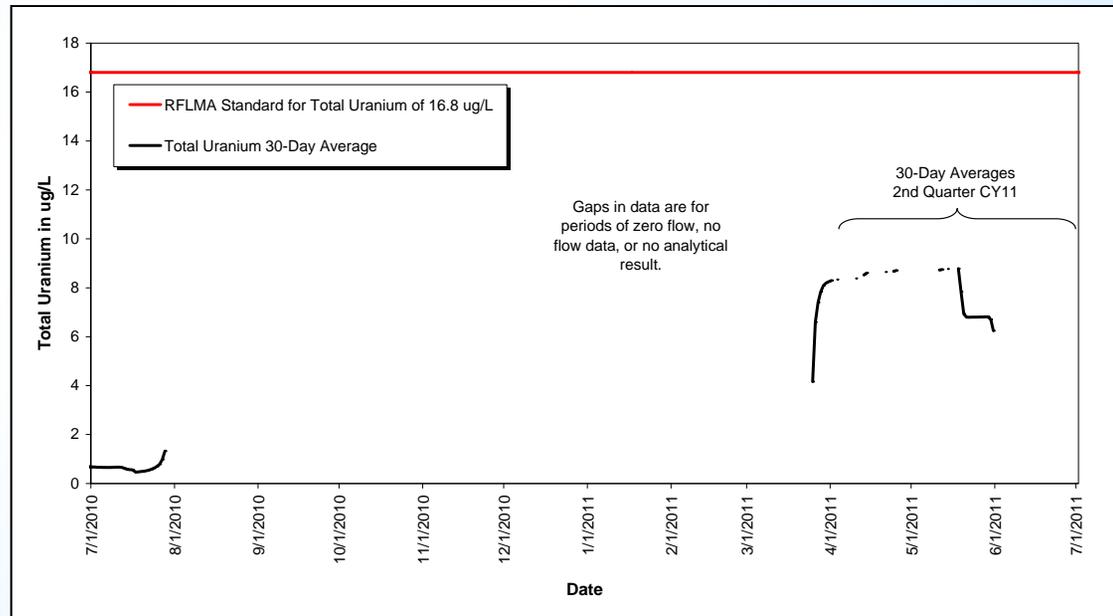
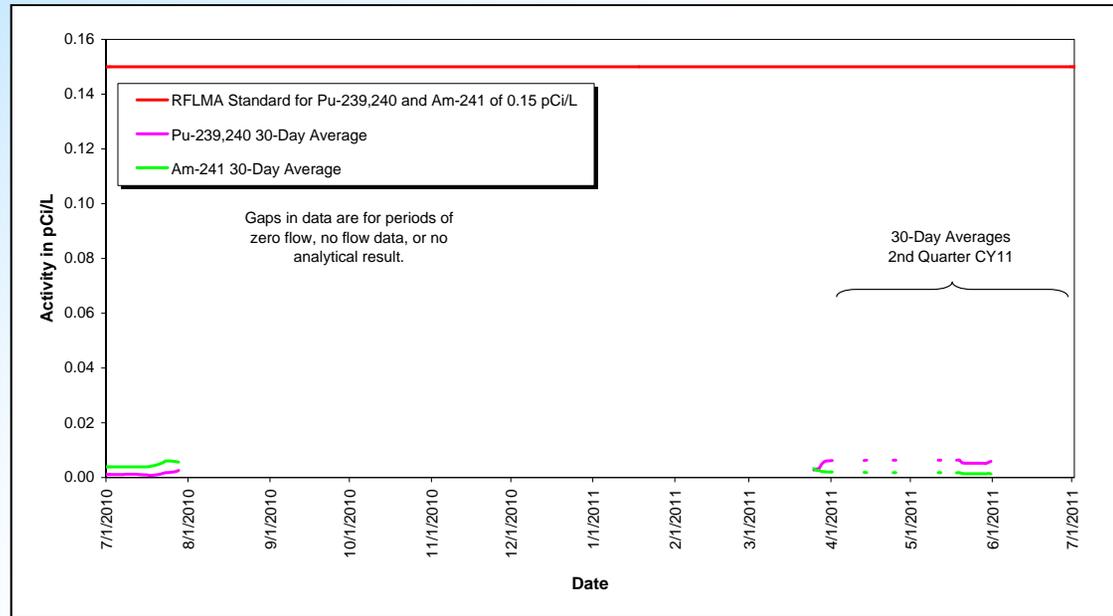
■ Total Uranium



POC GS03

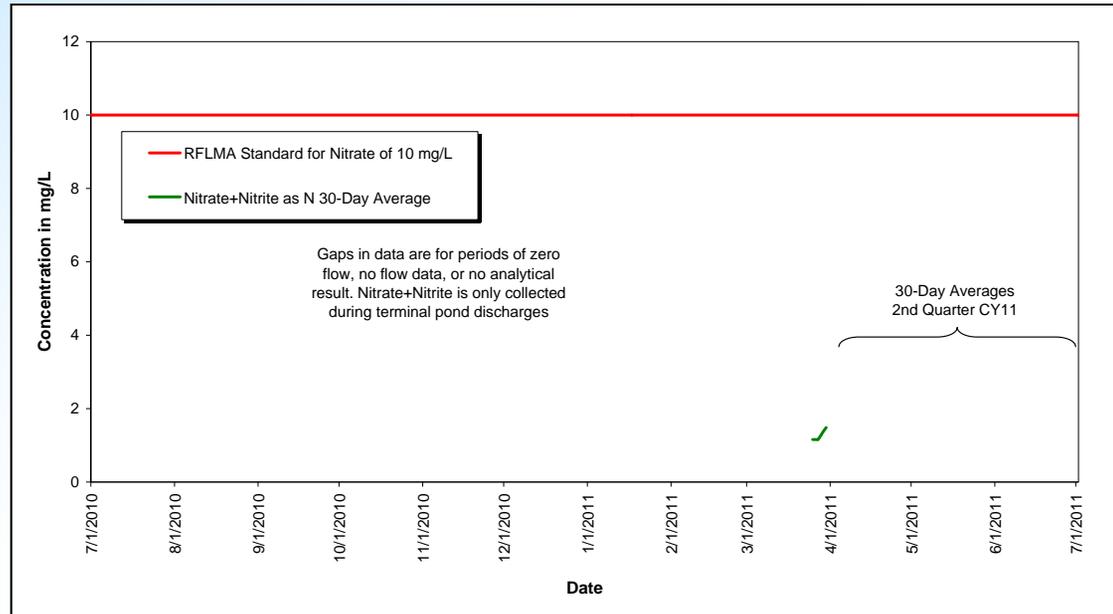
■ Plutonium and Americium

■ Total Uranium



POC GS03

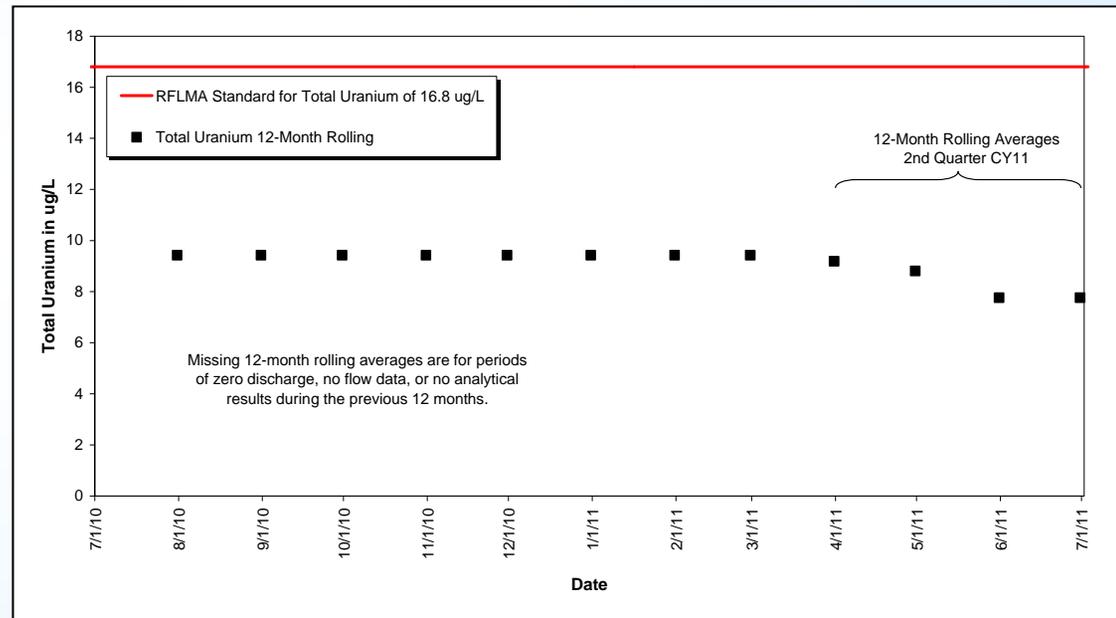
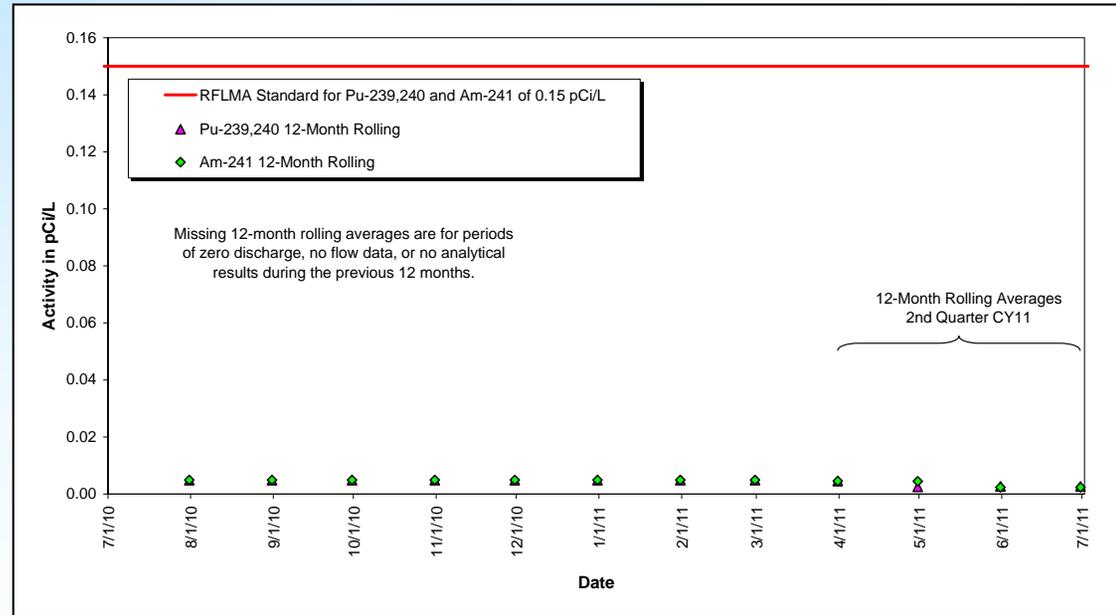
- Nitrate + Nitrite as Nitrogen



POC GS08

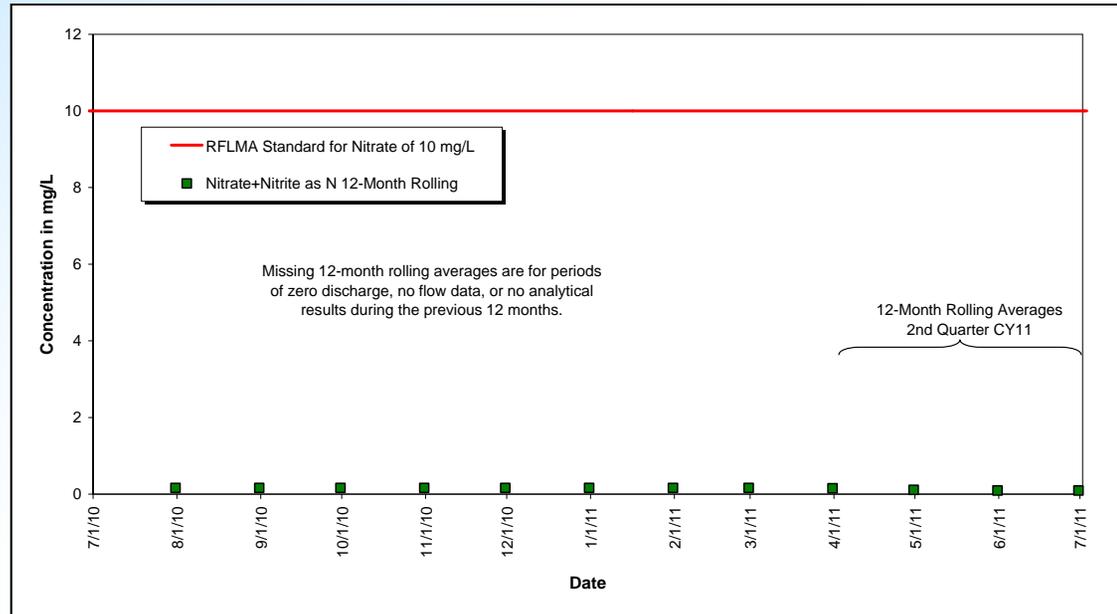
■ Plutonium and Americium

■ Total Uranium



POC GS08

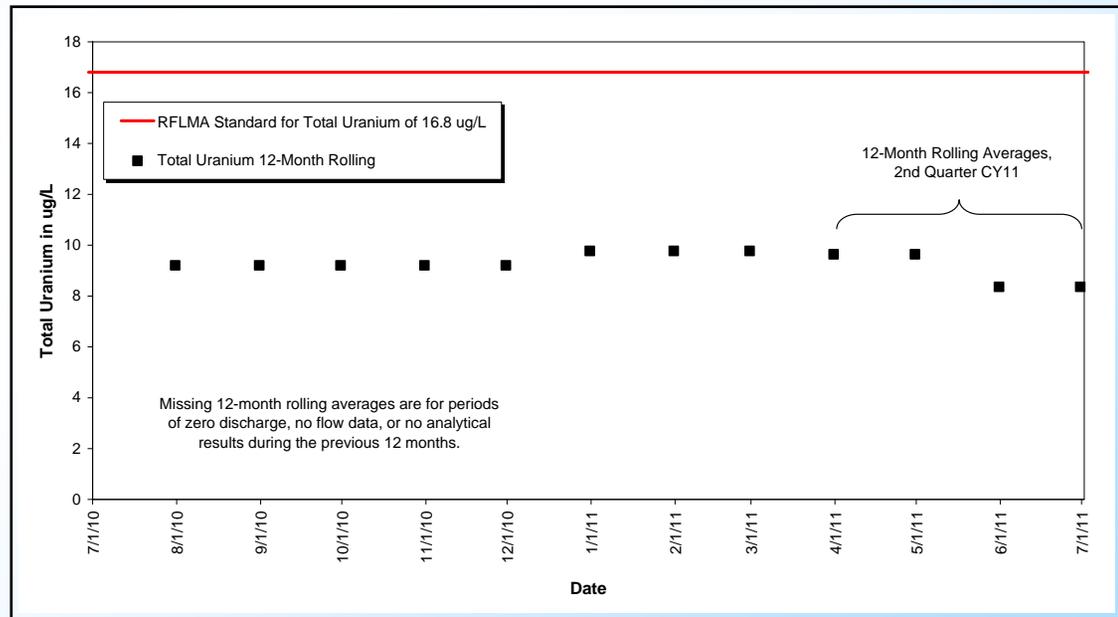
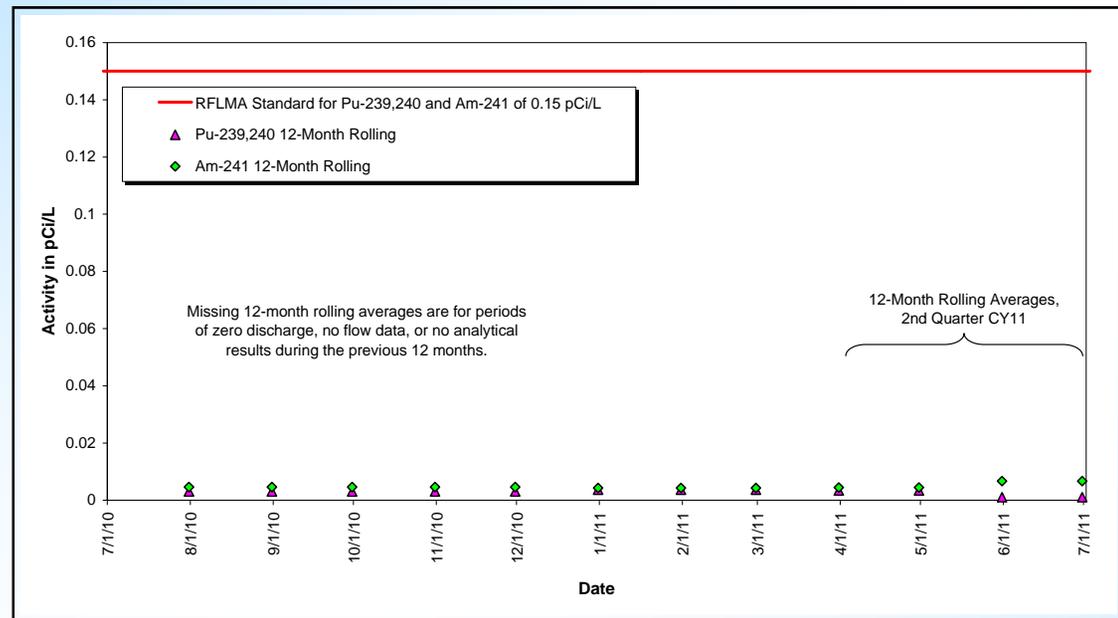
■ Nitrate + Nitrite as Nitrogen



POC GS11

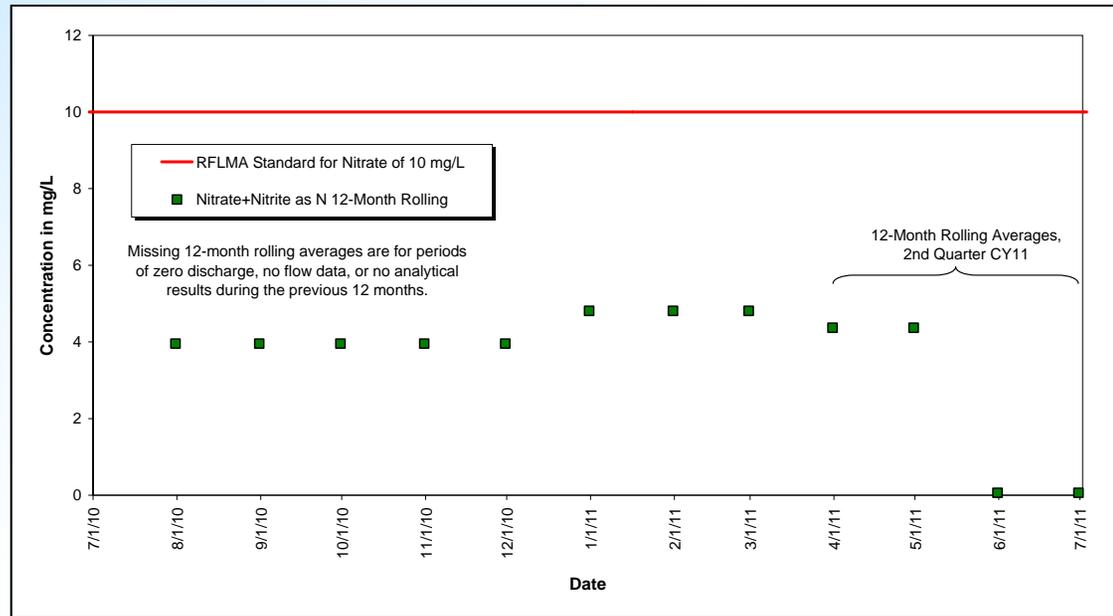
■ Plutonium and Americium

■ Total Uranium



POC GS11

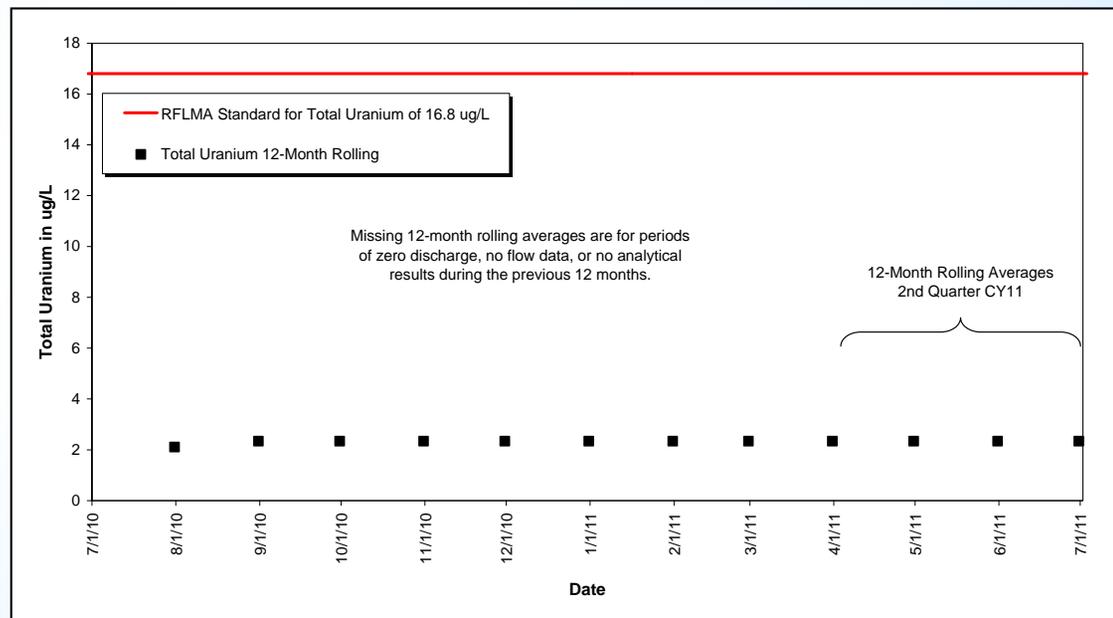
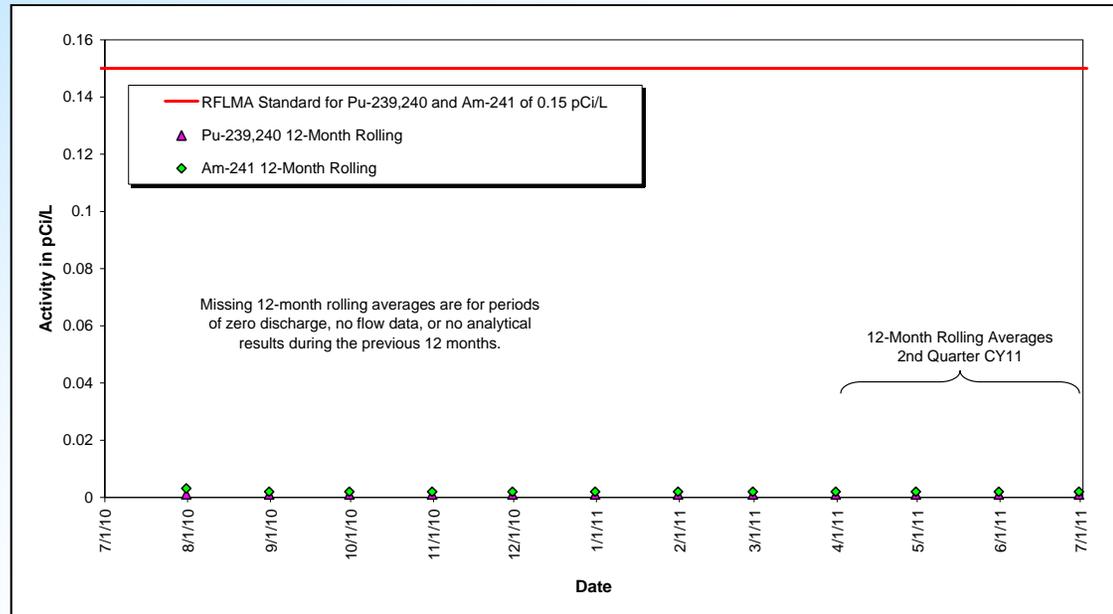
■ Nitrate + Nitrite as Nitrogen



POC GS31

■ Plutonium and Americium

■ Total Uranium

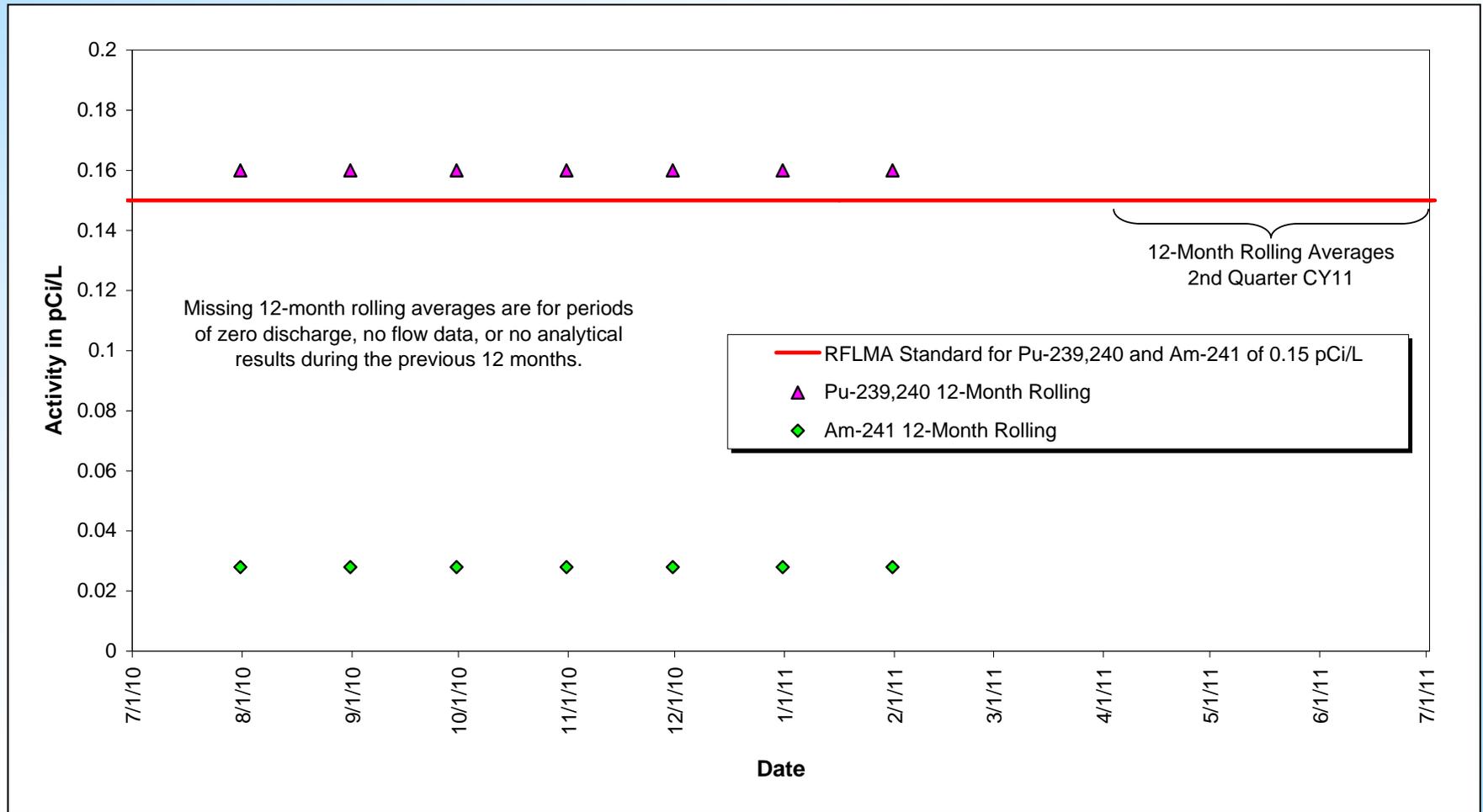


Point of Evaluation (POE) Monitoring – Second Quarter 2011

- 12-month rolling averages at POE SW027 continue to exceed the standard for Pu-239,-240 (0.15 pCi/L) through January 31, 2011
 - The continued exceedance is primarily due to lack of runoff since April 2010 to include in the average
 - Pu sample results from April through October 2010 (one result) were well below the standard
 - There was no flow from October 2010 through May 17, 2011; there has been no subsequent flow since May 21, 2011
 - The composite sample started on February 17, 2011, is still in progress



POE Monitoring – Plutonium at POE SW027

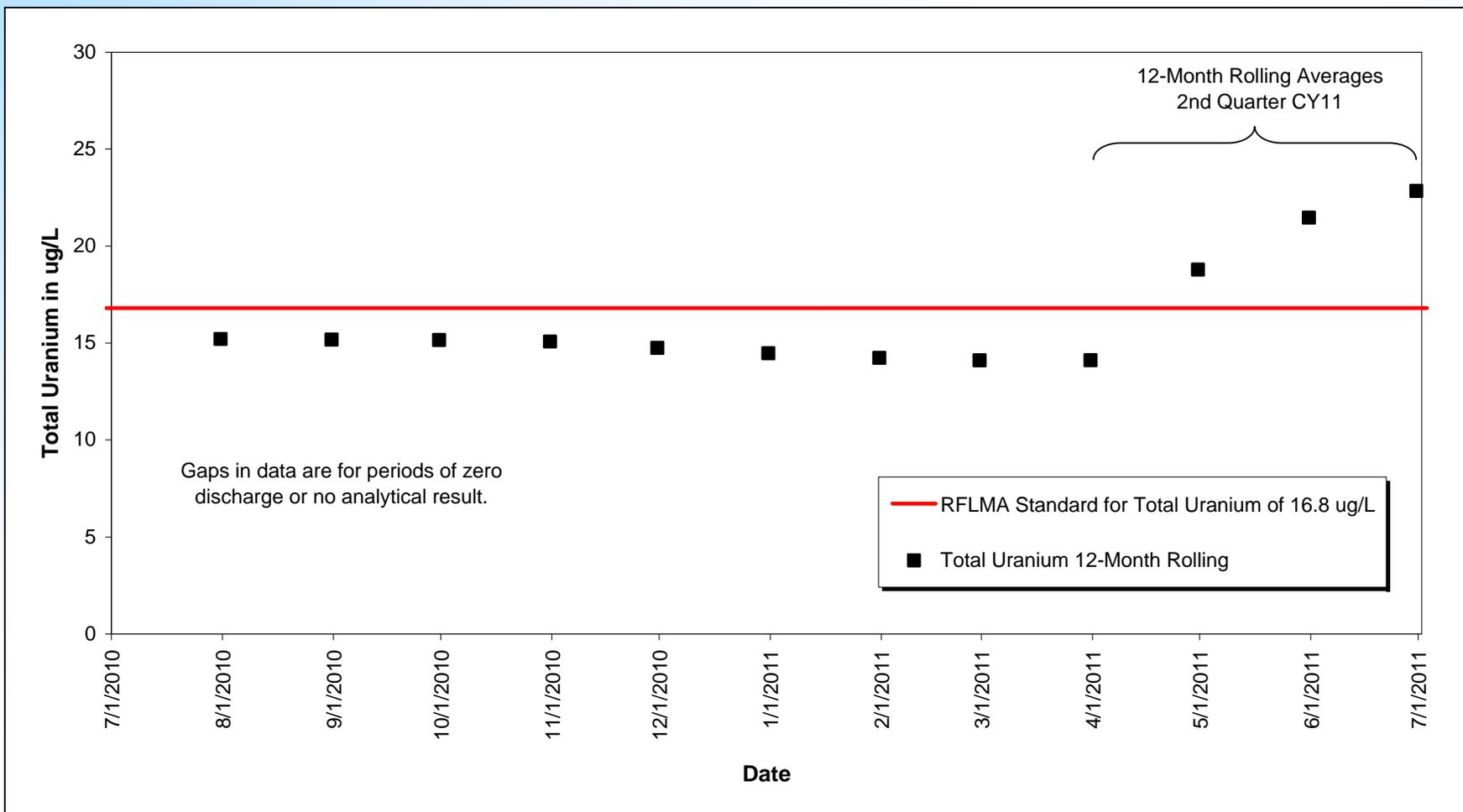


POE Monitoring – Second Quarter 2011

- 12-month rolling averages at POE GS10 exceed the standard for uranium (16.8 ug/L) for the period April 30 through June 30, 2011
 - Validated results to calculate the April 30 value were received on June 14, 2011; notification in accordance with RFLMA was made on June 16, 2011
 - RFLMA Contact Record 2011-04, “Reportable Condition for Uranium at Point of Evaluation GS10,” provides a discussion of the monitoring results and recaps the outcome of the RFLMA parties’ consultation regarding the evaluation steps to be taken
 - The site is contracting with Los Alamos National Laboratory (LANL) for isotopic analyses and is performing additional sampling in the GS10 drainage



POE Monitoring – Uranium at POE GS10



Questions?



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RFLMA Monitoring

- Second quarter is heavy sampling quarter
 - All Sentinel wells
 - All AOC wells
 - All RCRA wells
 - Treatment system locations
 - Surface water support location
- Results reviewed in accordance with the RFLMA Attachment 2 decision flowcharts
- Results will be discussed and statistically evaluated in the 2011 Annual Report



Additional RFMLA Groundwater Topics

- Boundary wells
 - Both were sampled in second quarter
 - Boundary wells removed from RFLMA network late in quarter
- Sentinel well 33703
 - Replaced with 33711 due to kinked casing in original well



Additional (Non-RFLMA) Monitoring

- Several locations associated with treatment systems
 - SPPTS: continued sampling to support optimization and evaluation of system performance
 - MSPTS: sampling to evaluate and optimize air stripper
- Several locations for high-resolution uranium isotopic analysis by LANL
 - Wells near SPPTS
 - Well at former Building 991 that consistently produces samples with elevated concentrations of natural uranium



SPPTS Activities

- Maintenance of Phase III Cell A (inert media dosed with liquid carbon source)

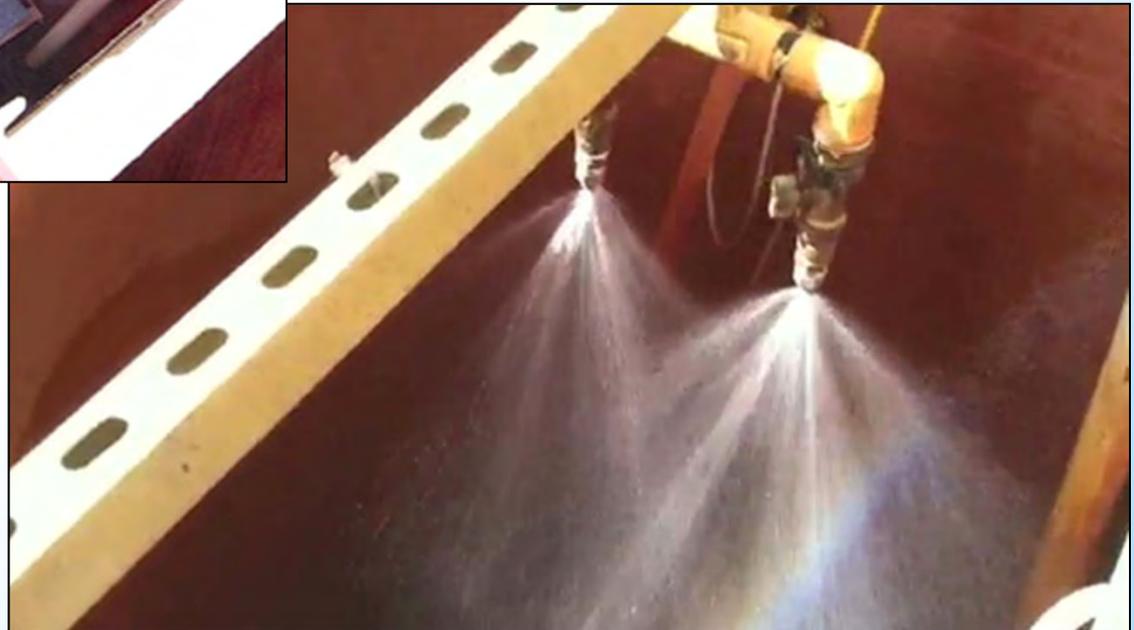


MSPTS Air Stripper Optimization

- Tested several nozzle configurations
- Tested pump settings
- Samples collected to evaluate effectiveness of different settings



MSPTS Air Stripper Optimization



MSPTS Air Stripper Optimization



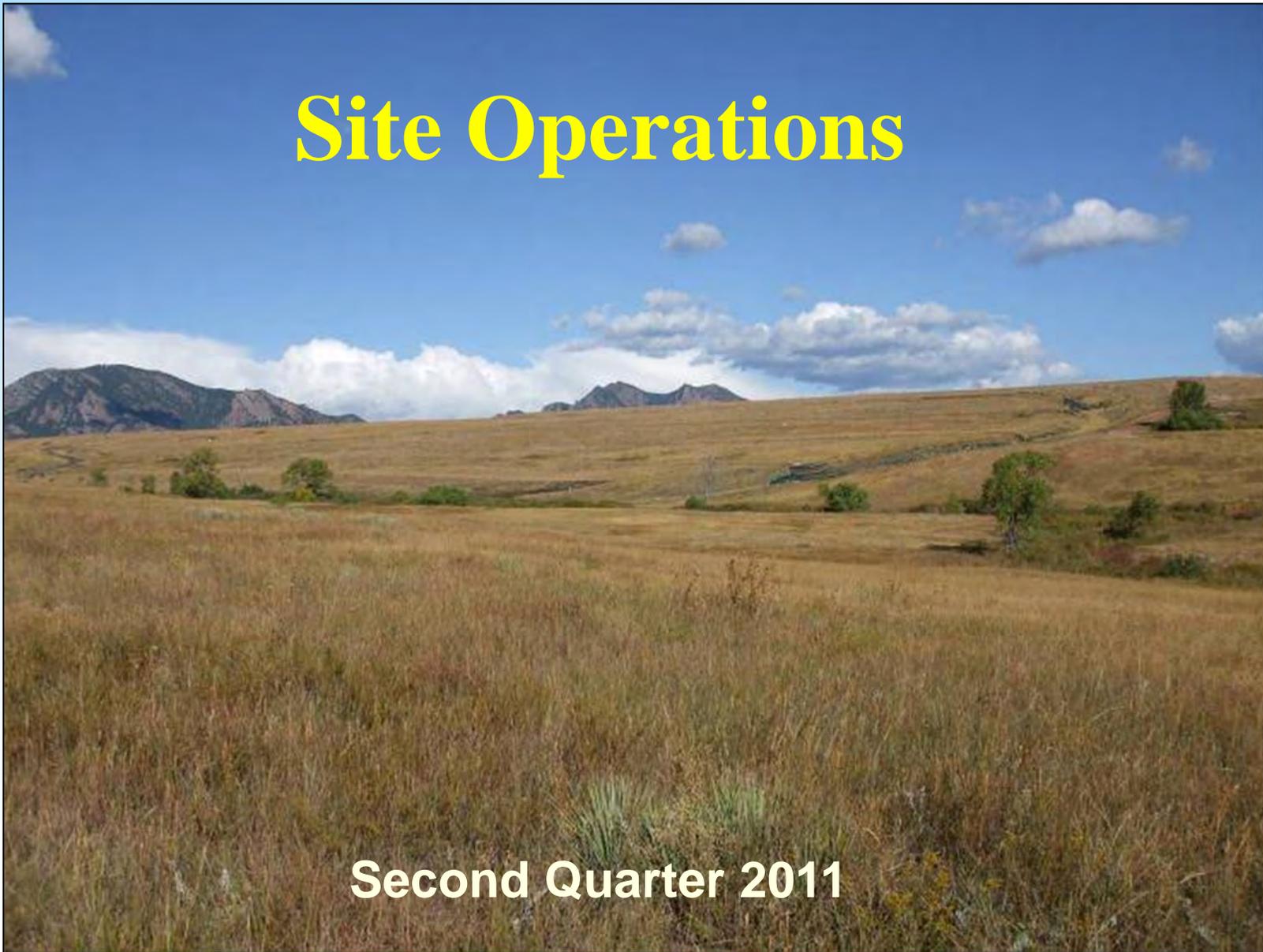
Questions?



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PLF Inspections and Surveys

- The quarterly inspection was completed on May 31
- No areas of concern were observed



OLF Inspections

- Monthly inspections at the OLF were completed on April 29, May 31, and June 30, 2011



OLF Features



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OLF Seeps

- Seep 7 exhibited minor surface expression after the May 2011 precipitation. Seeps 4 and 8 also produced active seepage throughout the quarter. This is typical for the OLF cover during this period.
- Wetland vegetation on the OLF cover was prominent in the vicinity of Seeps 2 through 8 throughout the second quarter



OLF Settlement Monuments

- Settlement monuments were surveyed on June 25, 2011; data are within the expected range per the *Original Landfill Monitoring and Maintenance Plan*



OLF Inclinerometers

- Inclinerometers were measured April 5 and 26, May 26, and June 30, 2011
 - Readings showed very little deflection
 - May 11 and 18 saw precipitation events of more than 1 inch
- Previously, in localized slumping area on western side of OLF, deflection was noted after large precipitation events
- Will review in Annual Report



OLF Slumps

- Berm 1 crack was filled and compacted in 2010; no new cracking appeared in second quarter 2011



OLF Topographic Survey

- Per the OLF Monitoring and Maintenance Plan, survey conducted approximately every 2 years
 - Aid in periodically evaluating subsidence and consolidation, slope stability, and precipitation run on and runoff management structures
- Survey field work completed March 21, 2011
- Geotechnical engineer review
- Maintenance required for approximately 700 feet of diversion berm
 - Add several inches of soil to maintain minimum berm height
 - Recontour and fill minor depressions in localized areas to minimize potential for ponding in berm channels
 - Work completed August 2011



Questions?



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CAD/ROD Amendment

- Proposal released for public review and comment June 3 through August 2, 2011
 - Public meetings June 16 and July 13 and 20
- Clarifies description of institutional controls (ICs) for excavation and soil disturbance
- Any future modification or termination of ICs will follow regulations and guidance in effect at that time



CAD/ROD Amendment (continued)

- Formalizes regulatory review and approval process already applied by RFLMA parties
 - Work subject to ICs must meet CAD/ROD objective and rationale
 - Soil Disturbance Review Plan
- Environmental Covenant granted by DOE to CDPHE modified to incorporate CAD/ROD amendment
- Approved September 21, 2011
- Posted on Rocky Flats website
http://www.lm.doe.gov/Rocky_Flats/Regulations.aspx

