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



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Surface Water Monitoring and Operations



First Quarter 2011



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Pond Operations – First Quarter 2011

- Terminal Pond Discharges:
 - None
- Transfers:
 - None
- Pond Levels:
 - As of April 1, 2011, Ponds A-3, A-4, B-5, and C-2 and the Landfill Pond were holding approximately 8.4 MG (8.5 percent of capacity)



August 8, 2011, Pond Levels

- Landfill (12.9 percent)
- A-3 (2.0 percent)
- A-4 (42.8 percent)
- B-5 (39.2 percent)
- C-2 (11.2 percent)



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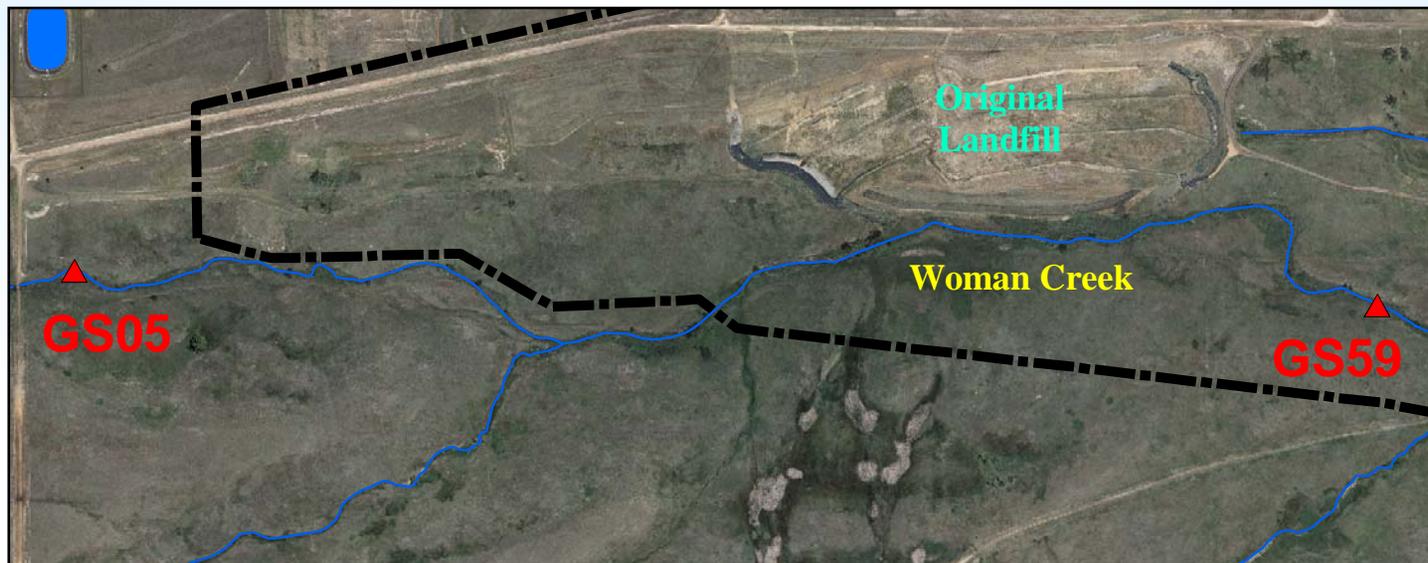
Hydrologic Data – First Quarter 2011

- Precipitation
 - 0.46 inch total precipitation
 - 36 percent of WY 1993–2010 average
- Flow rates (percentage of average)
 - GS01 (33 percent)
 - GS03 (28 percent)
 - GS10 (22 percent)
 - SW027 (no flow)
 - SW093 (21 percent)

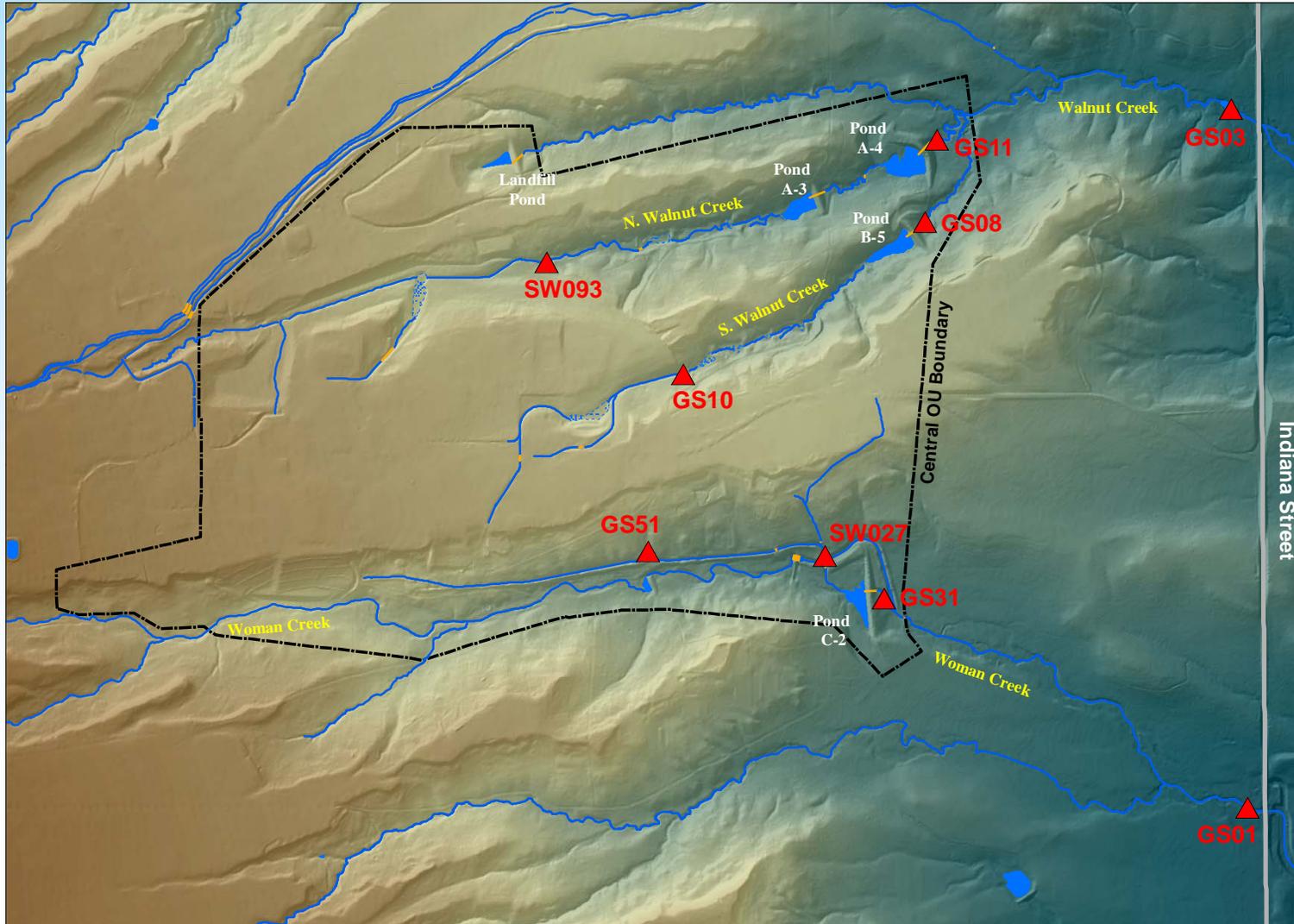


Performance Monitoring – First Quarter 2011 Original and Present Landfills

- **Original Landfill (OLF):** Surface water quality results during first quarter 2011 triggered monthly sampling for silver
 - Silver was not detected in the first monthly sample collected during the second quarter 2011; monthly sampling was discontinued
- **Present Landfill (PLF):** Surface water quality results were all below standards for the quarter



Selected Surface Water Monitoring Locations

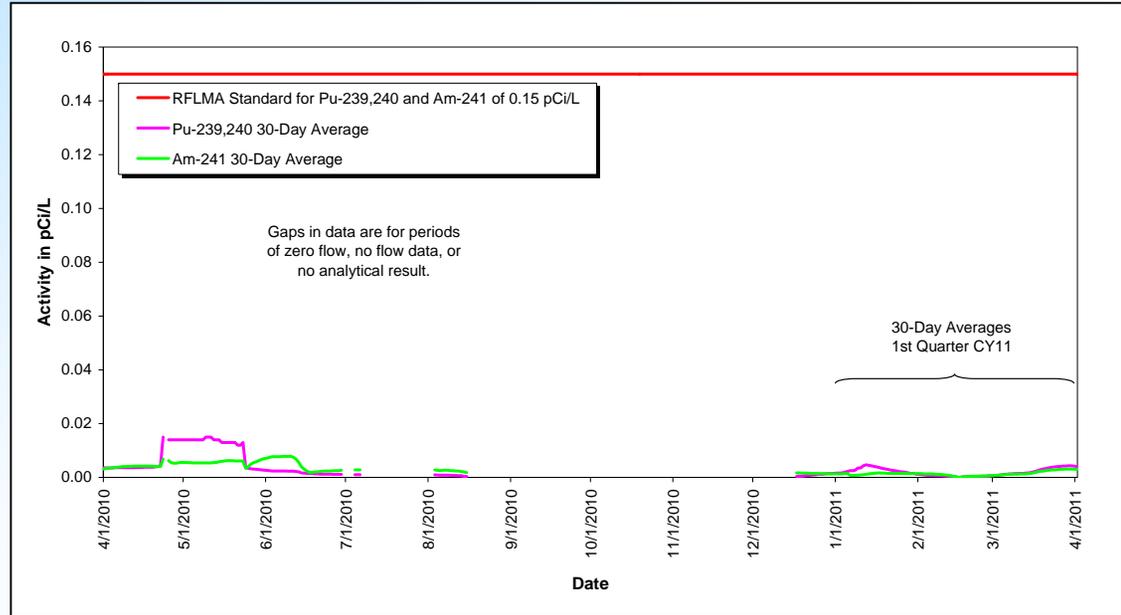


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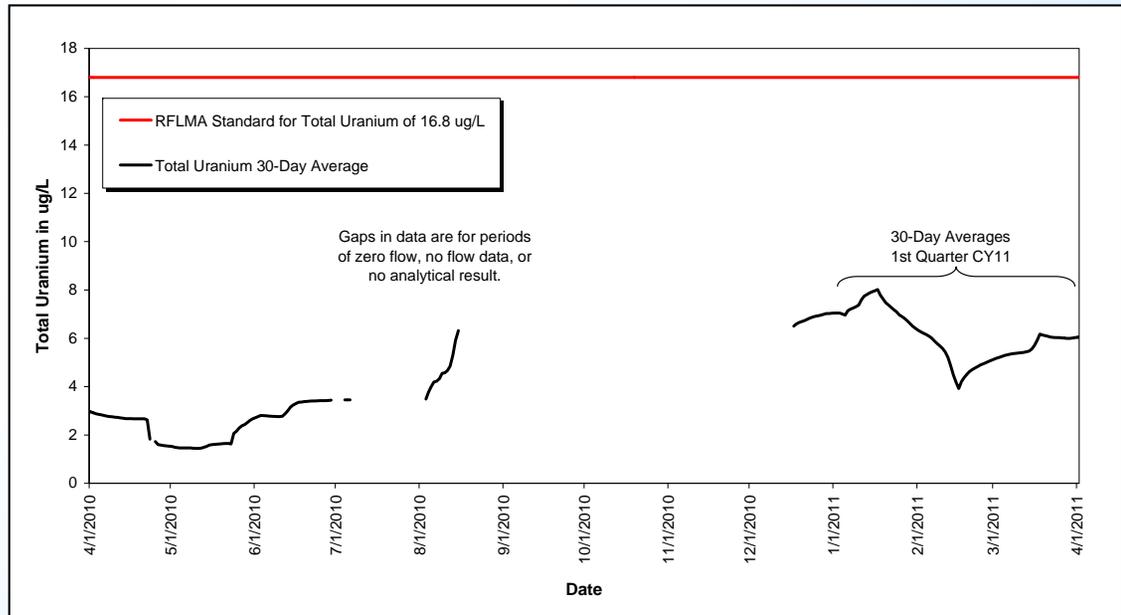
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POC GS01

- Plutonium and Americium

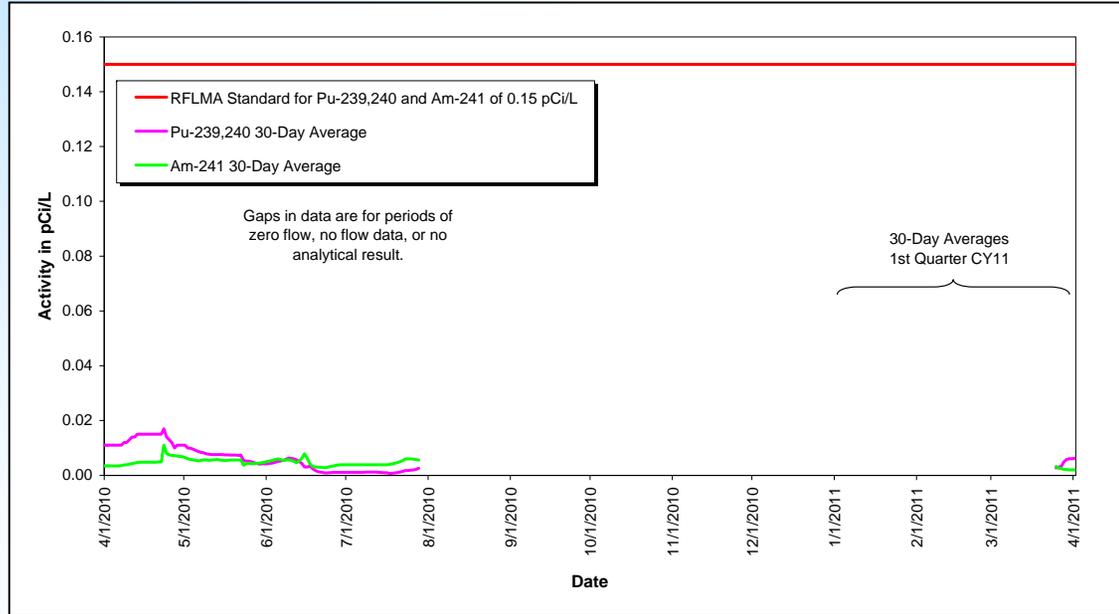


- Total Uranium

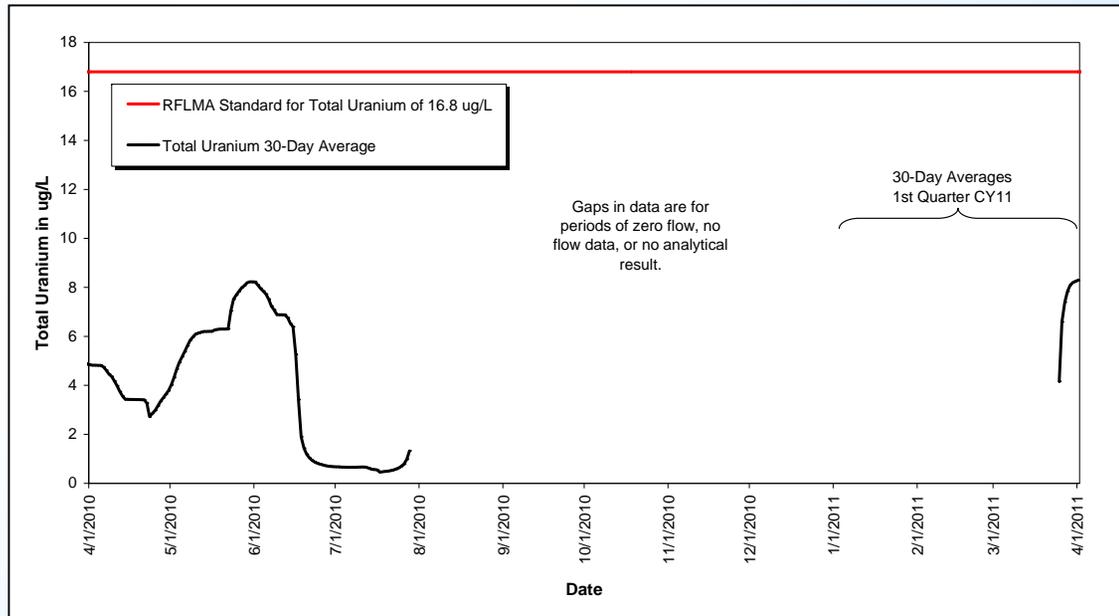


POC GS03

- Plutonium and Americium

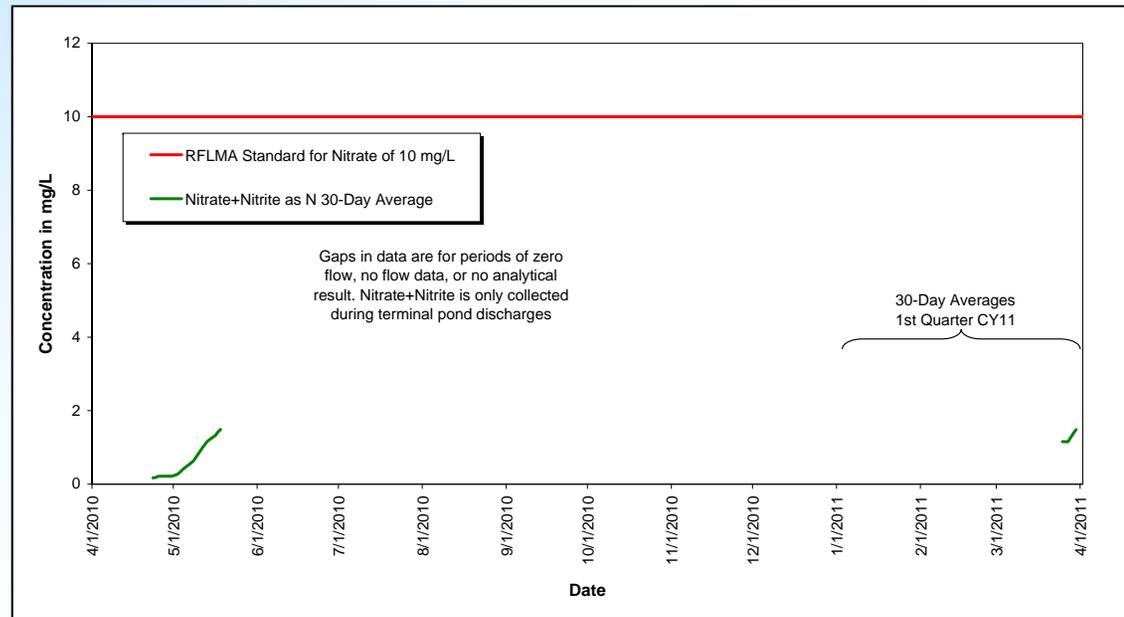


- Total Uranium



POC GS03

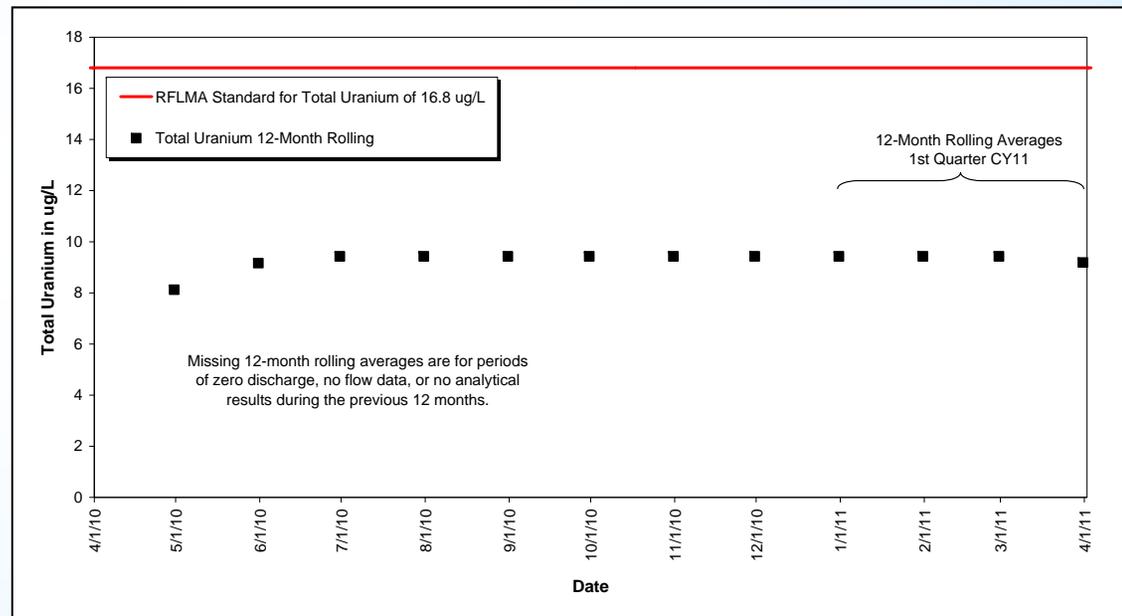
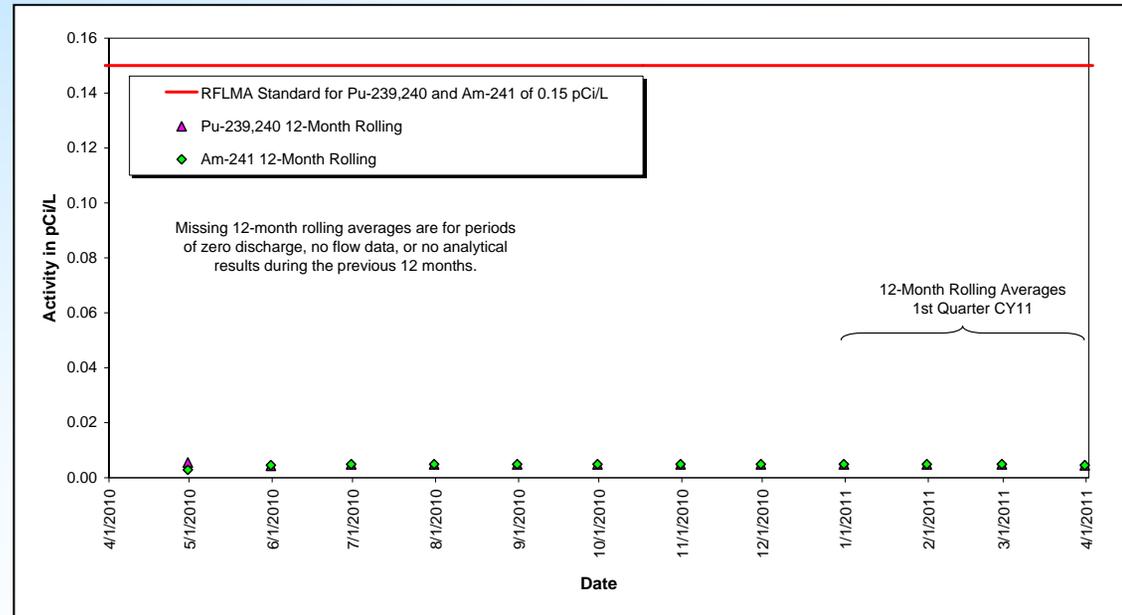
- Nitrate + Nitrite as Nitrogen



POC GS08

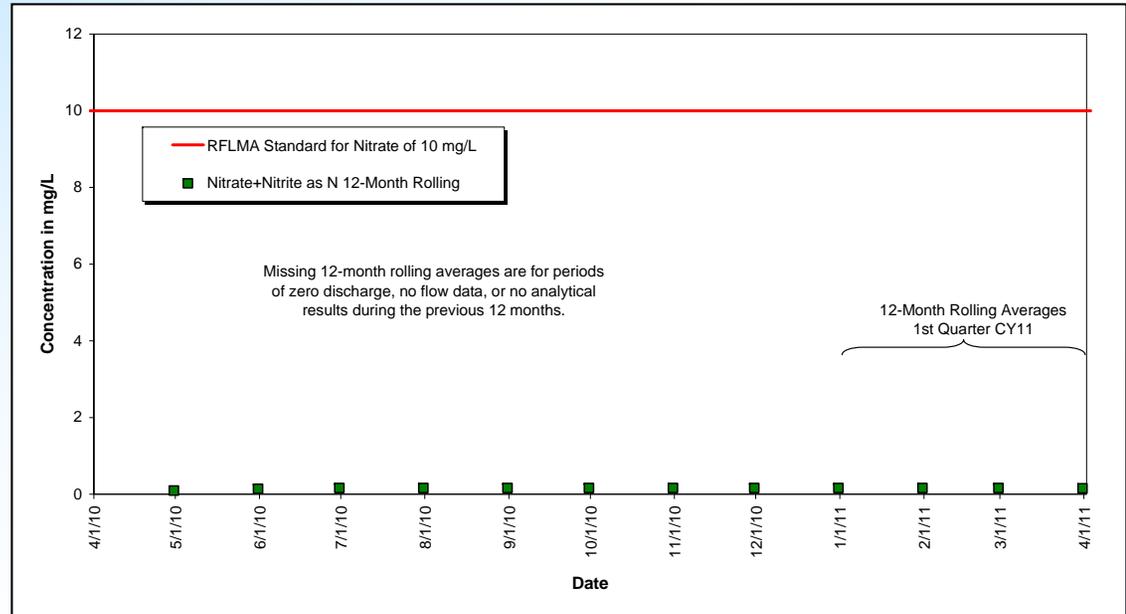
■ Plutonium and Americium

■ Total Uranium



POC GS08

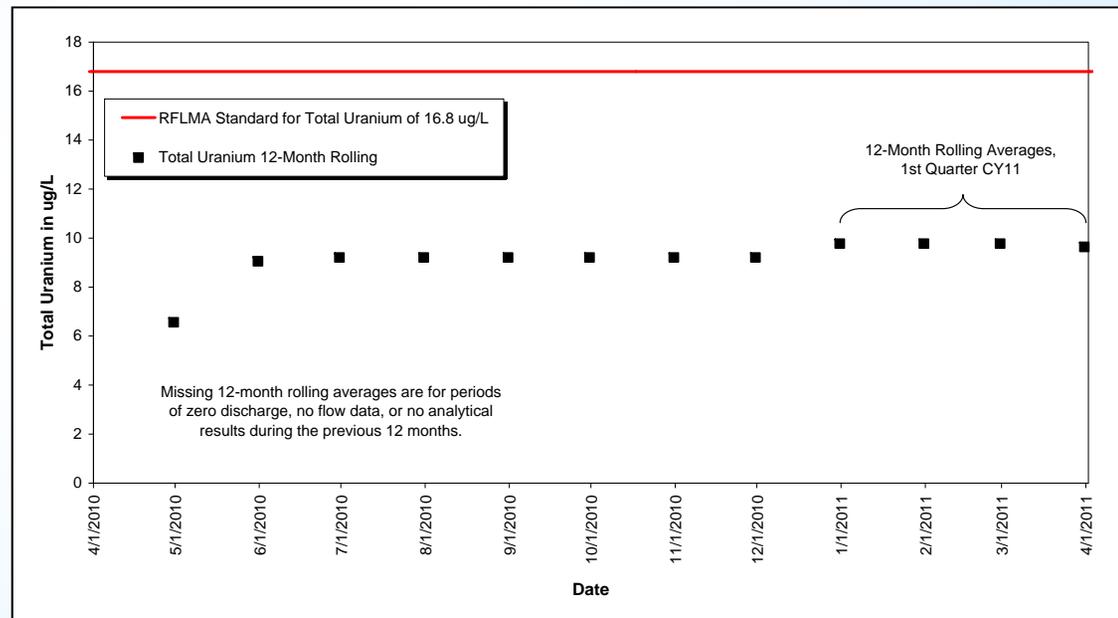
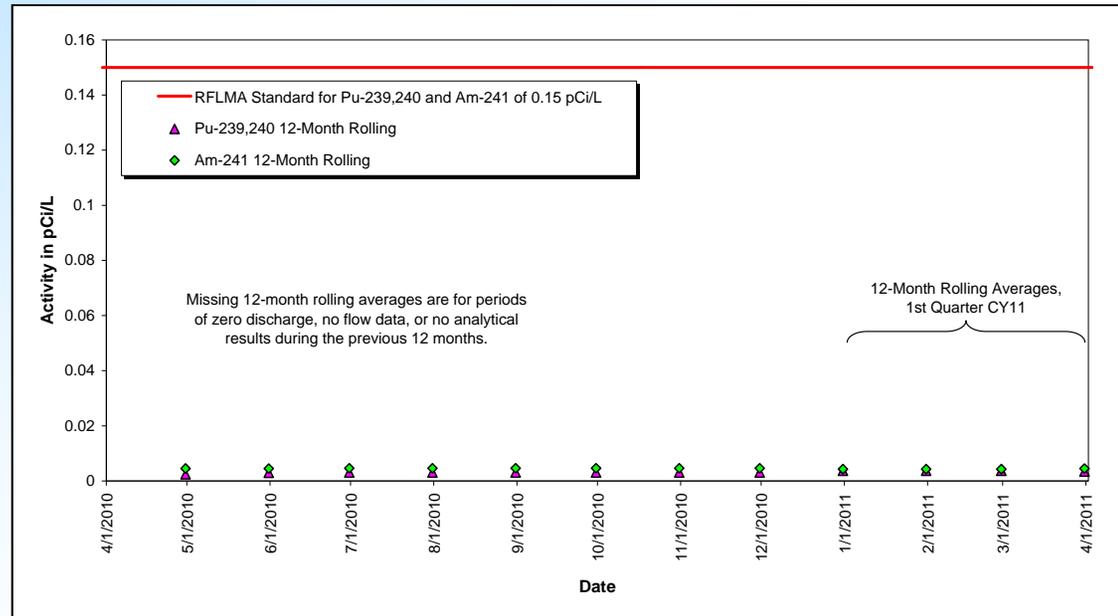
- Nitrate + Nitrite as Nitrogen



POC GS11

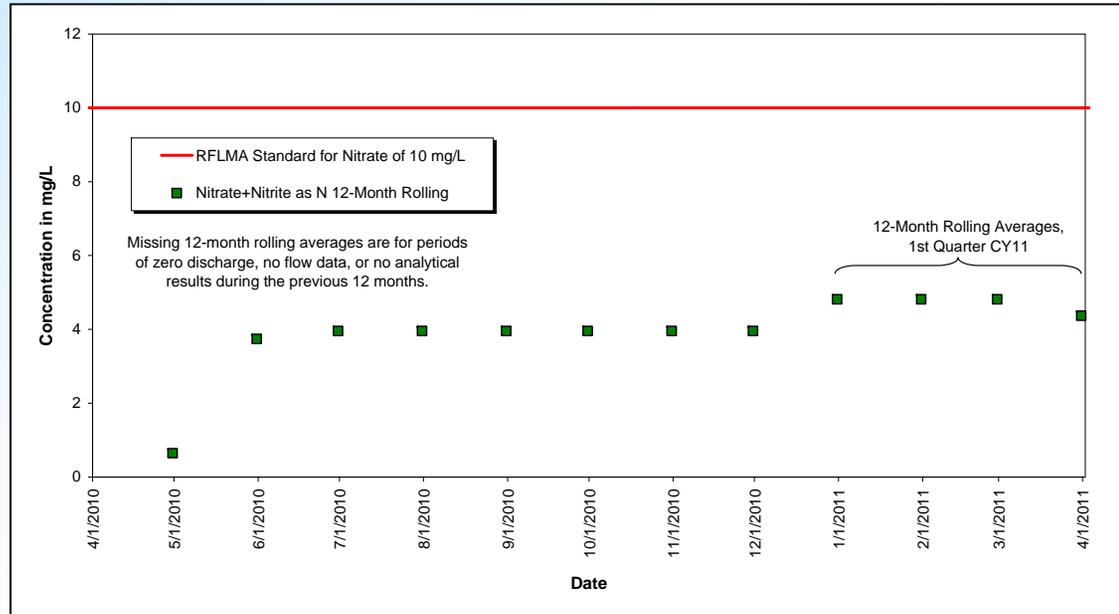
■ Plutonium and Americium

■ Total Uranium



POC GS11

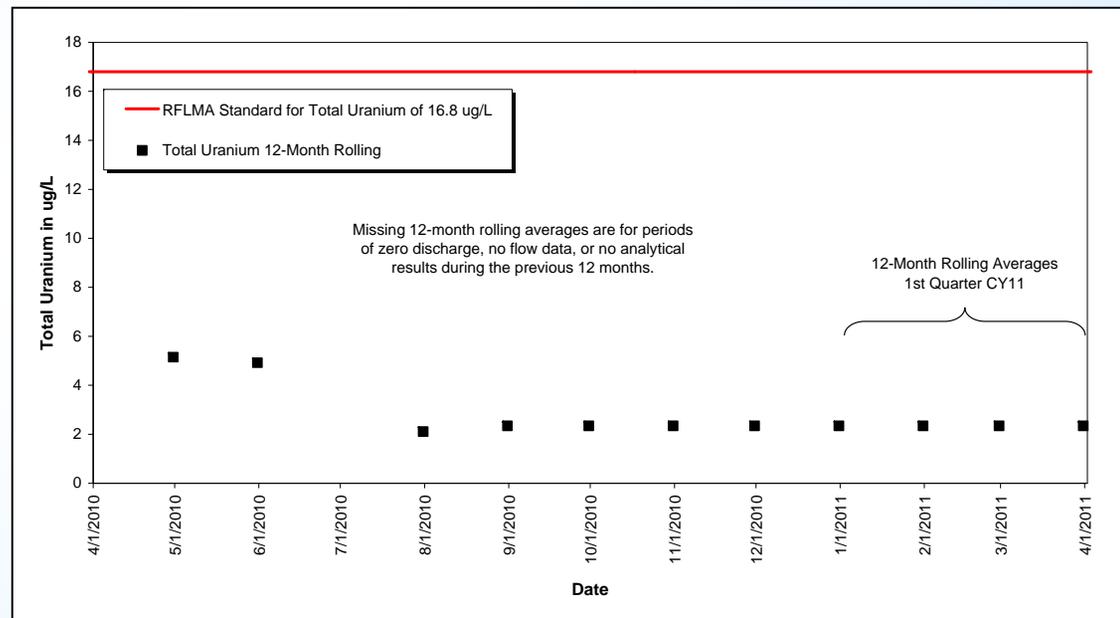
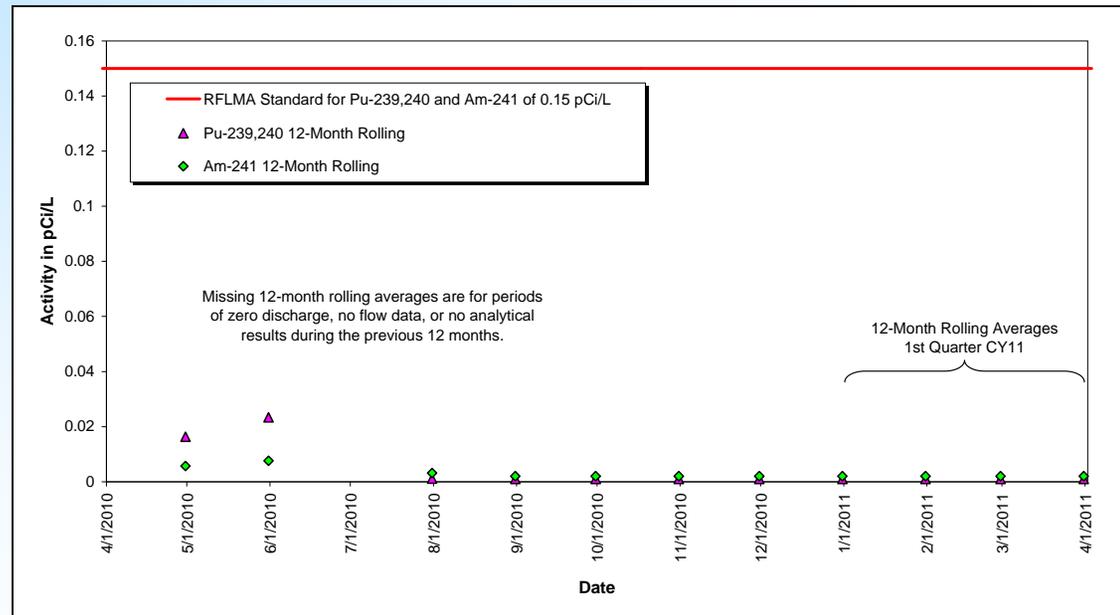
- Nitrate + Nitrite as Nitrogen



POC GS31

■ Plutonium and Americium

■ Total Uranium

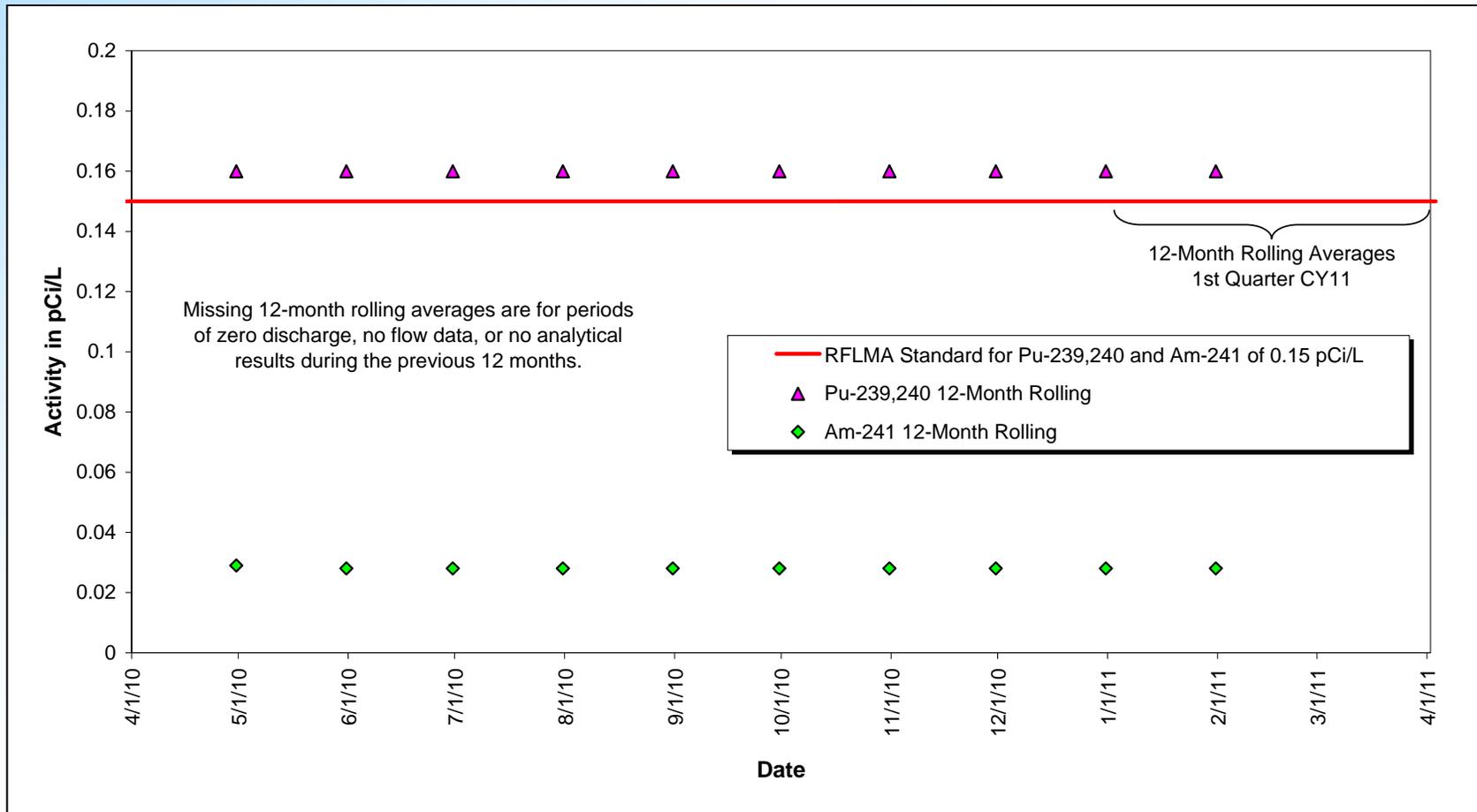


Point of Evaluation (POE) Monitoring – First Quarter 2011

- 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
- Water quality at all other POEs was below applicable standards during the quarter



POE Monitoring – Plutonium at POE SW027



Questions?



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RFLMA Monitoring

- First quarter is light sampling quarter
 - All RCRA wells (10)
- Results reviewed in accordance with the RFLMA Attachment 2 decision flowchart
- Results will be evaluated in the 2011 annual report



Additional (Non-RFLMA) Monitoring

- Several locations associated with MSPTS, SPPTS
 - MSPTS: sampling in preparation of media replacement
 - SPPTS: continued sampling to support optimization and evaluation of system performance



MSPTS Activities in First Quarter 2011

- Replaced treatment media
- Installed piping stubs to accommodate possible future plumbing upgrades
- Repaired subsurface effluent discharge gallery
- Selected, designed, and installed polishing component
 - Innovative, solar-powered air stripper housed within existing effluent manhole
- Fieldwork completed by end of March 2011



SPPTS Update

- Maintenance of Phase III Cell A (inert media dosed with liquid carbon source)
- Disposition of contents of original treatment Cells 1 and 2



Questions?



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PLF Inspections and Surveys

- The quarterly inspection was completed on February 28
- No areas of concern were observed



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OLF Inspections

- Monthly inspections at the OLF were completed on January 28, February 28, and March 30, 2011

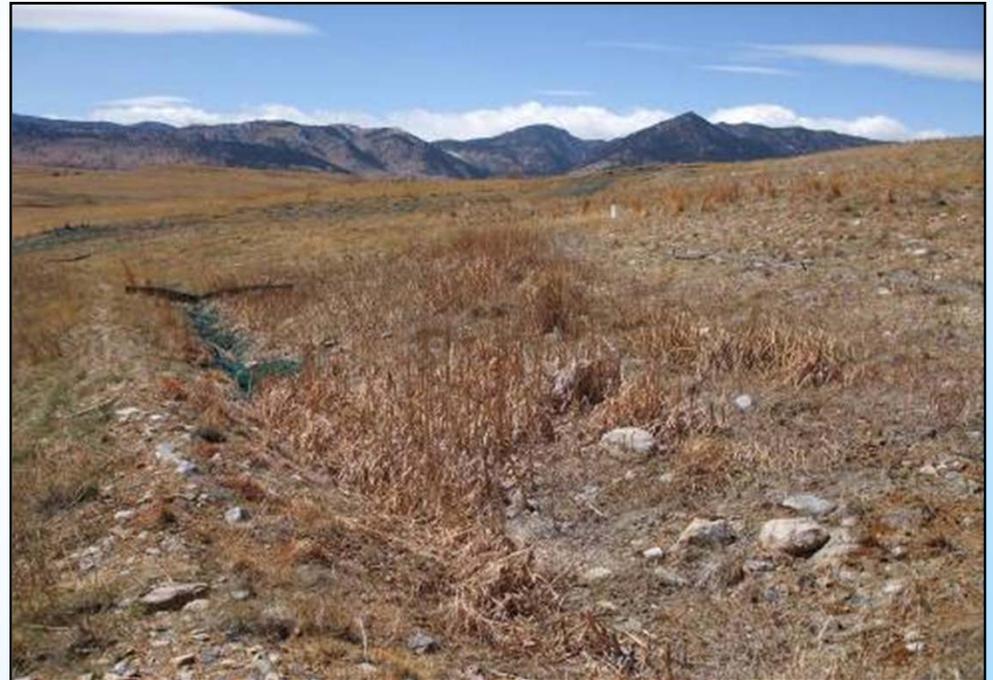


OLF Features



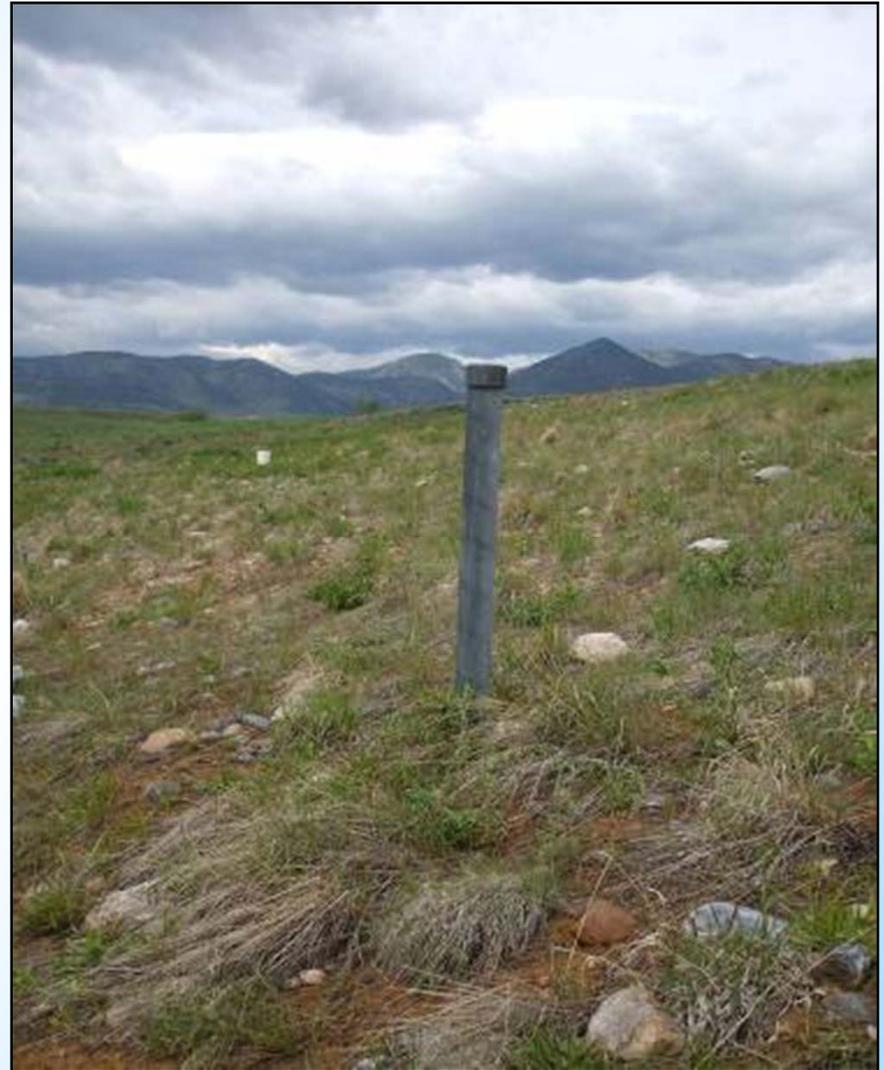
OLF Seeps

- Most seep locations on the OLF were dry throughout the first quarter. Seeps 4 and 8 were the only locations that produced active seepage throughout the quarter. This is typical for the OLF cover during this period.
- Wetland vegetation on the OLF cover was dormant during the first quarter



OLF Settlement Monuments

- Settlement monuments were surveyed on March 23, 2011; data are within the expected range per the *Original Landfill Monitoring and Maintenance Plan*



OLF Inclinometers

- Inclinometers were measured January 26 and February 22, 2011
 - Readings showed very little deflection
- Consistent with expected results
 - No large or prolonged precipitation during quarter



OLF Slumps

- The Berm 1 crack was filled and compacted in 2010; no new cracking appeared in first quarter 2011
- The end of Berm 7 at the East Perimeter Channel was repaired in 2010; no problems were noted in first 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



Annual Site (Central Operable Unit) Inspection – March 15, 2011

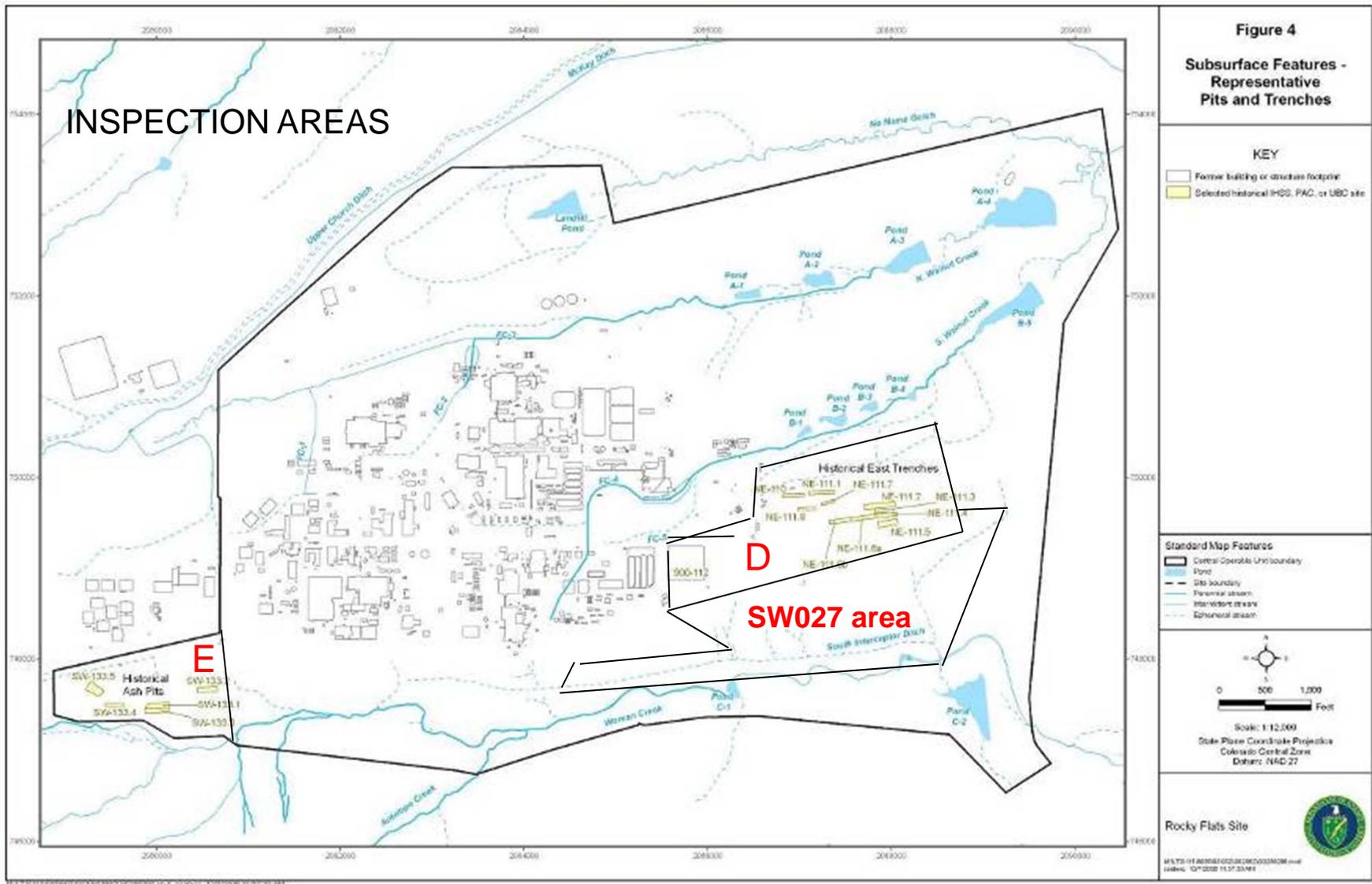
- Inspection and monitoring for evidence of significant erosion
 - Conduct visual observation for precursors of significant erosion
 - Evaluate proximity of any significant erosion to subsurface features
- Inspect effectiveness of institutional controls (ICs)
 - Determine effectiveness by evaluating any evidence of violation of ICs and determine whether required signs are in place
 - Verify that Environmental Covenant is in Administrative Record and on file with Jefferson County (verified March 19, 2011)
- Evidence of any adverse biological conditions observed during inspection



Annual Inspection (continued)

- COU divided into five areas:
 - A – Former 300 and 400 Areas
 - B – Former 700 and 991 Areas
 - C – Former 800 Area
 - D – Former 903 Pad and East Trenches Area
 - E – Former Ash Pits Area
- SW027 drainage area also inspected – erosion controls added in 2010 as follow-up to elevated Pu levels in 2010
- Landfills, treatment systems, and water monitoring stations inspected during the year on a routine basis
- Team walked down surface of each area (A–E) and SW027 drainage area to observe conditions





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Annual Inspection (continued)

- No significant erosion noted – some holes and surface debris
 - Former B881 deep hole – other holes minor
 - Very limited aerial extent – holes filled in
 - Debris and trash collected or flagged for pick up
- No adverse biological conditions noted
- No evidence of IC violations
- Signs in place



Hole at stairwell on SW corner former B881

Small hole former B991 tunnel area – fill added in 2010



Annual Inspection (continued)



Filling hole at former B881



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