ROCKY FLATS STEWARDSHIP COUNCIL

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Jefferson County -- Boulder County -- City and County of Broomfield -- City of Arvada -- City of Boulder
City of Golden -- City of Northglenn -- City of Thornton -- City of Westminster -- Town of Superior
League of Women Voters -- Rocky Flats Cold War Museum -- Rocky Flats Homesteaders
Arthur Widdowfield

Board of Directors Meeting – Agenda

Monday, February 6, 2012, 8:30 AM – 11:30 AM

Rocky Mountain Metropolitan Airport, Terminal Building, Mount Evans Room
11755 Airport Way, Broomfield, Colorado

8:30 AM Convene/Introductions/Agenda Review

8:35 AM Chairman's Review of January 23rd Executive Committee meeting

8:40 AM Business Items (briefing memo attached)

1. Consent Agenda
   - Approval of meeting minutes and checks

2. Approval of Resolution Re: 2012 Meeting Dates and Notice Provisions

Action item: Adopt resolution and meeting notice provisions

3. Executive Director's Report

8:55 AM Public Comment

9:05 AM Board Member Introductions (briefing memo attached)
- With the expansion of the board and changes to elected official representation, each director and alternate will introduce him or herself.
- Each government and member organization/individual will also identify its interests and priorities for the coming year.

9:25 AM Election of Stewardship Council Officers for 2012 (briefing memo attached)
- The board will need to elect the Chair, Vice Chair, and Secretary/Treasurer for 2012.
- As provided in the bylaws, the terms shall commence at the first meeting of the board held on or after February 1 of each year.

Action Item: Elect officers

9:35 AM Host DOE Quarterly Meeting (briefing memo attached)

- DOE will brief the Stewardship Council on site activities for the third quarter of 2011 (July – September).
- DOE has posted the report on its website and will provide a summary of its activities to the Stewardship Council.
- Activities include surface water monitoring, groundwater monitoring, ecological monitoring, and site operations (inspections, maintenance, etc.).
- As part of the presentation DOE will also discuss its CERCLA five-year review.

10:45 AM Initial Review of Bylaws Amendments (briefing memo attached)

- Due to changes in the IGA – changes to membership and voting requirements – the bylaws need to be amended to align with the IGA.
- As a unit of local government, the Stewardship Council must review the changes at one meeting (February 6) and then adopt the changes at a second meeting (likely April 2).

10:55 AM Briefing by Rocky Flats Cold War Museum (briefing memo attached)

- The Rocky Flats Cold War Museum last briefed the board on its activities in 2009.
- The Museum will brief on steps they are taking to develop exhibits and on other matters.

11:20 AM Public comment

11:30 PM Updates/Big Picture Review

1. Executive Director
2. Member Updates
3. Review Big Picture

Adjourn

Next Meetings: April 2, 2012
June 4, 2012

Rocky Flats Acronym List
Prepared by Rik Getty, Rocky Flat Stewardship Council
October 2011

Acronym or Term	Means	Definition
Alpha Radiation		A type of radiation that is not very penetrating and can be blocked by materials such as human skin or paper. Alpha radiation presents its greatest risk when it gets inside the human body, such as when a particle of alpha emitting material is inhaled into the lungs. Plutonium, the radioactive material of greatest concern at Rocky Flats, produces this type of radiation.
Am	americium	A man-made radioactive element which is often associated with plutonium.
AME	Actinide Migration Evaluation	An exhaustive years-long study by independent researchers who studied how actinides such as Pu, Am, and U move through the soil and water at Rocky Flats
AMP	Adaptive Management Plan	Additional analyses that DOE is performing beyond the normal environmental assessment for breaching the remaining site dams.
AOC well	Area of Concern well	A particular type of groundwater well
B	boron	Boron has been found in some surface water and groundwater samples at the site
Be	beryllium	A very strong and lightweight metal that was used at Rocky Flats in the manufacture of nuclear weapons. Exposure to beryllium is now known to cause respiratory disease in those persons sensitive to it
Beta Radiation		A type of radiation more penetrating than alpha and hence requires more shielding. Some forms of uranium emit beta radiation.
BMP	best management practice	A term used to describe actions taken by DOE that are not required by regulation but warrant action.
BZ	Buffer Zone	The majority of the Rocky Flats site was open land that was added to provide a "buffer" between the neighboring communities and the industrial portion of the site. The buffer zone was approximately 6,000 acres. Most of the buffer zone lands now make up the Rocky Flats National Wildlife Refuge.
CAD/ROD	corrective action decision/record of	The complete final plan for cleanup and closure for Rocky Flats. The Federal/State

	decision	laws that governed the cleanup at Rocky Flats required a document of this sort.
CCP	Comprehensive Conservation Plan	The refuge plan adopted by the U.S. Fish and Wildlife Service in 2007.
CDPHE	Colorado Department of Public Health and Environment	State agency that regulates the site.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	Federal legislation that governs site cleanup. Also known as the Superfund Act
cfs	cubic feet per second	A volumetric measure of water flow.
COC	Contaminant of Concern	A hazardous or radioactive substance that is present at the site.
COU	Central Operable Unit	A CERCLA term used to describe the DOE-retained lands, about 1,500 acres comprised mainly of the former Industrial Area where remediation occurred
Cr	chromium	Potentially toxic metal used at the site.
CRA	comprehensive risk assessment	A complicated series of analyses detailing human health risks and risks to the environment (flora and fauna).
D&D	decontamination and decommissioning	The process of cleaning up and tearing down buildings and other structures.
DG	discharge gallery	This is where the treated effluent of the SPPTS empties into North Walnut Creek.
DOE	U.S. Department of Energy	The federal agency that manages portions of Rocky Flats. The site office is the Office of Legacy Management (LM).
EA	environmental assessment	Required by NEPA (see below) when a federal agency proposes an action that could impact the environment. The agency is responsible for conducting the analysis to determine what, if any, impacts to the environment might occur due to a proposed action.
EIS	environmental impact statement	A complex evaluation that is undertaken by a government agency when it is determined that a proposed action by the agency may have significant impacts to the environment.
EPA	U.S. Environmental Protection Agency	The federal regulatory agency for the site.
ETPTS	east trenches plume treatment system	The treatment system near the location of the east waste disposal trenches which treats

		groundwater contaminated with organic solvents emanating from the trenches. Treated effluent flows into South Walnut Creek.
FC	functional channel	Man-made stream channels constructed during cleanup to help direct water flow.
FACA	Federal Advisory Committee Act	This federal law regulated federal advisory boards. The law requires balanced membership and open meetings with published Federal Register meeting dates.
Gamma Radiation		This type of radiation is very penetrating and requires heavy shielding to keep it from exposing people. Am is a strong gamma emitter.
GAO	Government Accountability Office	Congressional office which reports to Congress. The GAO did 2 investigations of Rocky Flats relating to the ability to close the site for a certain dollar amount and on a certain time schedule. The first study was not optimistic while the second was very positive.
g	gram	metric unit of weight
gpm	gallons per minute	A volumetric measure of water flow in the site's groundwater treatment systems and other locations.
GWIS	groundwater intercept system	Refers to a below ground system that directs contaminated groundwater toward the Solar Ponds and East Trenches treatment systems.
IA	Industrial Area	Refers to the central core of Rocky Flats where all production activities took place. The IA was roughly 350 of the total 6,500 acres at the site.
IC	Institutional Control	ICs are physical and legal controls geared towards ensuring the cleanup remedies remain in place and remain effective.
IHSS	Individual Hazardous Substance Site	A name given during cleanup to a discrete area of known or suspected contamination. There were over two hundred such sites at Rocky Flats.
ITPH	interceptor trench pump house	The location where contaminated groundwater collected by the interceptor trench is pumped to either the Solar Ponds and East Trenches treatment systems
L	liter	Metric measure of volume, a liter is slightly larger than a quart.

LM	Legacy Management	DOE office responsible for overseeing activities at closed sites.
LMPIP	Legacy Management Public Involvement Plan	This plan follows DOE and EPA guidance on public participation and outlines the methods of public involvement and communication used to inform the public of site conditions and activities. It was previously known as the Post-Closure Public Involvement Plan (PCPIP).
M&M	monitoring and maintenance	Refers to ongoing activities at Rocky Flats.
MSPTS	Mound site plume treatment system	The treatment system for treating groundwater contaminated with organic solvents which emanates from the Mound site where waste barrels were buried. Treated effluent flows into South Walnut Creek.
NEPA	National Environmental Policy Act	Federal legislation that requires the federal government to perform analyses of environmental consequences of major projects or activities.
nitrates		Contaminant of concern found in the North Walnut Creek drainage derived from Solar Ponds wastes. Nitrates are very soluble in water and move readily through the aquatic environment
Np	neptunium	A man-made radioactive isotope that is found as a by-product of nuclear reactors and plutonium production.
NPL	National Priorities List	A listing of Superfund sites. The refuge lands were de-listed from the NPL while the DOE-retained lands are still on the NPL due to ongoing groundwater contamination and associated remediation activities.
OLF	Original Landfill	Hillside dumping area of about 20 acres which was used from 1951 to 1968. It underwent extensive remediation with the addition of a soil cap and groundwater monitoring locations.
OU	Operable Unit	A term given to large areas of the site where remediation was focused.
PCE	perchloroethylene	A volatile organic solvent used in past operations at the site. PCE is also found in environmental media as a breakdown product of other solvents.

pCi/g	picocuries per gram of soil	A unit of radioactivity measure. The soil cleanup standard at the site was 50 pCi/g of soil.
pCi/L	picocuries per liter of water	A water concentration measurement. The State of Colorado has a regulatory limit for Pu and Am which is 0.15 pCi/L of water. This standard is 100 times stricter than the EPA's national standard.
PLF	Present Landfill	Landfill constructed in 1968 to replace the OLF. During cleanup the PLF was closed under RCRA regulations with an extensive cap and monitoring system.
PMJM	Preble's Meadow Jumping Mouse	A species of mouse found along the Front Range that is on the endangered species list. There are several areas in the Refuge and COU that provide an adequate habitat for the mouse, usually found in drainages. Any operations that are planned in potential mouse habitat are strictly controlled.
POC	Point of Compliance (surface water)	A surface water site that is monitored and must be found to be in compliance with federal and state standards for hazardous constituents. Violations of water quality standards at the points of compliance could result in DOE receiving financial penalties.
POE	Point of Evaluation (surface water)	These are locations at Rocky Flats at which surface water is monitored for water quality. There are no financial penalties associated with water quality exceedances at these locations, but the site may be required to develop a plan of action to improve the water quality.
POU	Peripheral Operable Unit	A CERCLA term used to describe the Wildlife Refuge lands of about 4,000 acres.
Pu	plutonium	Plutonium is a metallic substance that was fabricated to form the core or "trigger" of a nuclear weapon. Formation of these triggers was the primary production mission of the Rocky Flats site. Pu-239 is the primary radioactive element of concern at the site. There are different forms of plutonium, called isotopes. Each isotope is known by a different number. Hence, there are plutonium 239, 238, 241 and others.
RCRA	Resource Conservation	Federal law regulating hazardous waste. In

	and Recovery Act	Colorado, the EPA delegates CDPHE the authority to regulate hazardous wastes.
RFCA	Rocky Flats Cleanup Agreement	The regulatory agreement which governed cleanup activities. DOE, EPA, and CDPHE were signors.
RFCAB	Rocky Flats Citizen Advisory Board	This group was formed as part of DOE's site-specific advisory board network. They provided community feedback to DOE on a wide variety of Rocky Flats issues from 1993-2006.
RFCLOG	Rocky Flats Coalition of Local Governments	The predecessor organization of the Rocky Flats Stewardship Council
RFETS	Rocky Flats Environmental Technology Site	The moniker for the site during cleanup years.
RFLMA	Rocky Flats Legacy Management Agreement	The post-cleanup regulatory agreement between DOE, CDPHE, and EPA which governs site activities. The CDPHE takes lead regulator role, with support from EPA as required.
RFNWR	Rocky Flats National Wildlife Refuge	The approximate 4,000 acres which compose the wildlife refuge.
RFSOG	Rocky Flats Site Operations Guide	The nuts-and-bolt guide for post-closure site activities performed by DOE and its contractors.
SPPTS	solar ponds plume treatment system	System used to treat groundwater contaminated with uranium and nitrates. The nitrates originate from the former solar evaporation ponds which had high levels of nitric acid. The uranium is primarily naturally-occurring with only a slight portion man-made. Effluent flows into North Walnut Creek
SVOCs	semi-volatile organic compounds	These compounds are not as volatile as the solvent VOCs. They tend to be similar to oils and tars. They are found in many environmental media at the site. One of the most common items to contain SVOCs is asphalt.
TCE	trichloroethlyene	A volatile organic solvent used in past operations at the site. TCE is also found in environmental media as a breakdown product of other solvents.
U	uranium	Naturally occurring radioactive element. There were two primary isotopes of U used

		during production activities. The first was enriched U which contained a very high percentage (>90%) of U-235 which was used in nuclear weapons. The second isotope was U-238, also known as depleted uranium. This had various uses at the site and only had low levels of radioactivity..
USFWS	United States Fish & Wildlife Service	An agency within the US Department of the Interior that is responsible for maintaining the nation-wide system of wildlife refuges, among other duties. The regional office is responsible for the RFNWR.
VOC	volatile organic compound	These compounds include cleaning solvents that were used in the manufacturing operations at Rocky Flats. The VOCs used at Rocky Flats include carbon tetrachloride (often called carbon tet), trichloroethene (also called TCE), perchloroethylene (also called PCE), and methylene chloride.
WCRA	Woman Creek Reservoir Authority	This group is composed of the three local communities, the Cities of Westminster, Northglenn, and Thornton, who use Stanley Lake as part of their drinking water supply network. Water from the site used to flow through Woman Creek to Stanley Lake but the reservoir severed that connection. The Authority has an operations agreement with DOE to manage the Woman Creek Reservoir.
WQCC	Water Quality Control Commission	State board within CDPHE tasked with overseeing water quality issues throughout the state. DOE has petitioned the WQCC several times in the last few years regarding water quality issues.
ZVI	zero valent iron	A type of fine iron particles used to treat VOC's in the ETPTS and MSPTS.

Business Items

- Cover memo
- November 14, 2011, draft board meeting minutes
- List of Stewardship Council checks
- 2012 meeting dates resolution

Board Member Introductions

- Cover memo

2012 Stewardship Council Officers

- Cover memo

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MEMORANDUM

TO: Board
FROM: David Abelson
SUBJECT: Business Items
DATE: January 25, 2012

In addition to approving the consent agenda (minutes and checks), the board will need to adopt a resolution regarding 2012 meeting dates.

Resolution Re: 2012 Meeting Dates and Notice Provisions
Each year the board is required to adopt a resolution establishing the meeting dates for the given year. In 2011, we met in February, April, June, September (second Monday of the month) and November (second Monday of the month).

For 2012, I propose we follow this schedule, but change November to the first Monday. (It had been moved to accommodate my schedule.) If we follow that plan, the board would meet:

February 6
April 2
June 4
September 10 (second Monday of the month)
November 5

There is a chance I will be out of town on November 5th in order to run the New York City Marathon. If I do get selected to run – I will not know until late April – I would then ask the board to move the meeting to October 29th. (The second Monday of November is observed as Veterans Day.) The draft 2012 budget and work plan will be presented at the September 10th meeting with formal approval at the November 5th (or October 29th) meeting.

The attached notice provisions track the Stewardship Council's bylaws.

Action item: Adopt resolution and meeting notice provisions

ROCKY FLATS STEWARDSHIP COUNCIL
Board of Directors Meeting – Agenda
Monday, November 14, 2011, 8:30 AM – 12:00 PM
Rocky Mountain Metropolitan Airport, Terminal Building, Mount Evans Room
11755 Airport Way, Broomfield, Colorado

Board members in attendance: Carl Castillo (Alternate, City of Boulder), Meagan Davis (Alternate, Boulder County), David Allen (Alternate, Broomfield), Greg Stokes (Alternate, Broomfield), Bill Fisher (Director, Golden), Sheri Paiz (Director, Northglenn), Shelley Stanley (Alternate, Northglenn), Joe Cirelli (Director, Superior), Chris Hanson (Alternate, Superior), Bob Briggs (Director, Westminster), Mary Fabisiak (Alternate, Westminster), Shirley Garcia (Director, Rocky Flats Cold War Museum), Ann Lockhart (Alternate, Rocky Flats Cold War Museum), Roman Kohler (Director, Rocky Flats Homesteaders), Jeannette Hillery (Director, League of Women Voters), Sue Vaughan (Alternate, League of Women Voters), Arthur Widdowfield (citizen).

Stewardship Council staff members and consultants in attendance: David Abelson (Executive Director), Rik Getty (Technical Program Manager), Barb Vander Wall (Seter & Vander Wall, P.C.), Jennifer Bohn (RFSC accountant), Erin Rogers (consultant).

Attendees: Vera Moritz (EPA), Carl Spreng (CDPHE), Charlie Adams (CDPHE), John Dalton (EPA), Scott Surovchak (DOE-LM), Rick DiSalvo (Stoller), Jeremiah McLaughlin (Stoller), Robert Hill (Stoller), Bob Darr (Stoller), George Squibb (Stoller), John Boylan (Stoller), Linda Kaiser (Stoller), Steve Berendzen (USFWS), Emily Hunt (City of Thornton), Mike Shelton (Broomfield) Joyce Downing (Thornton).

Convene/Agenda Review

Chairman Bob Briggs convened the meeting at 8:37 a.m. He began by welcoming Joyce Downing, Mayor of the City of Northglenn, as an incoming member of the Stewardship Council. He also noted that Mike Shelton had replaced Lori Cox on the Broomfield City Council, and welcomed Emily Hunt with the City of Thornton, who will be joining as an alternate in February.

Chairman's Review of October 21 Executive Committee meeting

Chairman Briggs noted that an Executive Committee meeting was held on October 21. The purpose was to develop the agenda for this meeting. He asked if there were any questions, and there were not. He noted that these meetings are always open to the public.

Consent Agenda

David Allen noted two minor corrections to the September Board meeting minutes. Meagan Davis' last name was incorrect in one place, and Sheri Paiz' first name was spelled two ways and should be corrected.

Jeannette Hillery moved to approve the September Board meeting minutes as amended and the checks. The motion was seconded by Joe Cirelli. The motion to accept the minutes and checks passed 9-0.

Executive Director's Report

David Abelson began his report to the Board. First, he announced that both Sheri Paiz and Lori Cox were term limited and therefore after this meeting were stepping down from the Stewardship Council Board of Directors. He thanked both for their dedicated service to the Board. David also congratulated Bob Briggs and Lisa Morzel for their election victories.

David mentioned that DOE had begun draining pond C-2 on Woman Creek. He said the notable point with this news was that all three terminal ponds would now be managed in a flow-through configuration. DOE will be reviewing monitoring data over the coming years, and should the data shown that standards are being met, would ultimately lead to the breaching of all dams onsite.

In terms of DOE reorganization, David reminded the Board that the Office of Legacy Management (DOE-LM), along with the Office of Environmental Management (EM), now reports to the Under Secretary for Nuclear Security. David in was in Washington, D.C. in mid-September and met with DOE-LM Director Dave Geiser. He was told that this reorganization was a positive step and one that would benefit DOE-LM.

Next, David provided an update about a Department of Interior Inspector General (IG) report regarding some issues at Rocky Flats. As reported previously, this document implied that the failure to fund the US Fish and Wildlife Service to manage the Rocky Flats Wildlife Refuge, coupled with certain management actions, could lead to potential soil disturbances and the migration of radioactive materials. EPA and CDPHE sent a letter to the IG pointing out information they missed about Rocky Flats. At the end of October, EPA and CDPHE received a letter from the IG thanking them for bringing this information to the attention of the IG, and noting that the report was revised. The IG's concern about contaminant migration was dropped, leaving the report to focus on the threat of invasive species and biodiversity issues at Rocky Flats.

Finally, David discussed steps the Rocky Flats Cold War Museum is taking. The Museum Board hired Exhibit Design Associates to start work on the exhibits for the museum. Part of this process is to hold public meetings and gather public input about content for the exhibits. Information about two upcoming meetings was provided to the Stewardship Council.

Public Comment

There was none.

Host DOE Quarterly Meeting

DOE briefed on site activities for the second quarter of 2011. DOE has posted the report on its website. Activities included surface water monitoring, groundwater monitoring, ecological monitoring, and site operations (inspections, maintenance, etc.).

Site Operations -- Jeremiah McLaughlin
During the quarter DOE did not recorded much movement on the cover at the Original Landfill (OLF), which is a positive trend. Shelly Stanley asked whether a decision had been made to remove woody plants from the cover area. Jeremiah said that these plants were removed in the footprint of the waste area. Shirley Garcia asked how the site will manage depressions in this area. Jeremiah said that they put up signs, and perform inspections as part of the regulatory process.

In the former Building 776/771 area, a buried tunnel area was the subject of discussion. The site reviewed the closeout and engineering information and determined that there should not be slumping within a 2,000 year period. David Allen asked about vegetation monitoring on the Present Landfill (PLF). Jeremiah said that Jody Nelson could answer this question, but he was not in attendance. Scott Surovchak said that the PLF met the criteria for revegetation, and therefore falls under general site procedures for documenting the condition of grasslands. David asked if the site was scaling back on the frequency of these inspections. Scott said that they were. The inspections previously were done monthly, and now they are done quarterly. Rick DiSalvo said that there will be a recommendation about these procedures as part of the site's Five Year Review, and then a formal change to the site Monitoring and Maintenance Plan.

Surface Water Monitoring – George Squibb
George began by showing a photo of the new regulatory monitoring station on Walnut Creek, which is called WAL-POC (Point of Compliance). He said that there were no terminal pond discharges during the quarter as they had been waiting for construction of two new POCs. These are now complete and the valves are open. He said they were still operating the previous POC's as AMP monitoring sites. Pond A-3 has been operating in flow-through configuration. Flow rates continue to be lower than before closure. This was expected, due to the removal of impervious surfaces at the site.

George said that nitrates had only been collected for monitoring at discharge points, but now that the ponds have changed to flow-through, nitrate will be collected more often. At GS31, a continued exceedance is primarily due to lack of runoff since April 2010. Plutonium 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 and there has been no subsequent flow since May 21, 2011. The composite sample started on February 17, 2011, is still in progress. Shirley Garcia asked if this was beyond the recommended hold time. George said that the standard six month hold time does not apply to radioactive materials. He said they might need to wait until spring and start fresh. Shelly Stanley asked how much water is in the sample. George said it was about a liter, and that they need four liters to do a radionuclide analysis properly. Mary asked about possible evaporation in the sample. George said that it is sealed and that would not be a problem.

At GS10, 12-month rolling averages exceeded the standard for uranium (16.8 ug/L) for the period April 30 through June 30, 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. George added that the uranium levels are starting to go down and should be at non-reportable levels soon.

George said that there are new grab sample locations upstream of GS10. The site also performed some ad-hoc sampling at seeps and wells in the area. The first round of LANL samples did show a change in the ratio between natural and anthropogenic (man-made) uranium. There will be more information available at the next meeting. Shelly Stanley asked if the one liter sample at SW027 is large enough to have LANL run it. George said it was not. He added that they did collect pre-discharge samples at pond C-2, which did not show plutonium. There will be two composites at each of three locations downstream along the creek.

George noted that there is likely to be a reportable result for americium (Am) at GS10. A sample taken July 21-August 24 showed an americium concentration of 2.97 picocuries/liter (pCi/L), along with a plutonium (Pu) concentration of 0.938 pCi/L. When put into the 12-month rolling average, the result will be above the standard of 0.15 pCi/L. This data has been validated and the site is re-running the remaining water in the sample. They will compare the two results, average them and then put this result into the rolling average. Shirley Garcia asked if the Am could be soluble. George said it was not really soluble, but they have seen this ratio of Am to Pu on Walnut Creek previously. In weapons-grade material, there is usually a 7 to 1 Pu to Am ratio. He added that Rocky Flats did do some separating of americium. He said that this latest result was the highest by far in the last six years, and it could be a lab error. The site collected three storm event samples to evaluate the transport of Pu and Am, and did not see anything of note. A subsequent sample showed 0.04 for Am and 0.02 for Pu, and results from September were due back soon. The next step will be to evaluate the path forward. Scott Surovchak referred to a description from scientist Bob Niniger about how Pu moves in the environment. He said the particles attach to colloids and it works like a pebble bouncing down a stream. He said there are a few particles sitting in the soil here and there, and that there is a history of Am at GS10. He added that flow-paced sampling offers a better opportunity than a grab sample for seeing what is really happening with this movement. Routine surveys in the area have not turned up any additional erosion or slumps. The site will be doing a walk-through to make sure there is nothing new. There is more complete grass coverage, so they do not expect to find anything. David Allen asked what was the ratio was. George said that it went from 70-72% natural to about 50%, enough change to be significant.

Groundwater – John Boylan

The second quarter is a heavy sampling quarter for groundwater, and includes all Sentinel wells, AOC wells, RCRA wells, treatment system locations, and surface water support locations. Results were reviewed in accordance with the RFLMA Attachment 2 decision flowcharts, and will be discussed and statistically evaluated in the 2011 Annual Report. Both boundary wells

were sampled and removed from the RFLMA network late in the quarter. Sentinel well 33703 was replaced with 33711 due to a kinked casing in the original well. Shelley Stanley asked if the casing was removed. John said it was left in place.

Non-RFLMA monitoring included several locations associated with treatment systems. At the Solar Ponds Plume Treatment System (SPPTS), there was continued sampling to support the optimization and evaluation of system performance. At the Mound Site Plume Treatment System (MSPTS), there was sampling to evaluate and optimize the air stripper. There were also several locations chosen for high-resolution uranium isotopic analysis, including wells near SPPTS, and a well at former Building 991 that consistently had been producing samples with elevated concentrations of natural uranium. Shirley Garcia asked how many wells were included in this sampling, and if these samples were done by LANL. John said he was not sure how many wells, and that they were using LANL. He said they also sampled the influent, and compared before and after results. At well 799, pre-closure results were about 200 micrograms/liter and 100% natural. It was now 300 micrograms/liter and still 100% natural. Shirley Garcia said that it would be helpful to have a map showing these sampling locations for the upcoming technical meetings.

At the SPPTS, the primary activity was maintenance of the Phase III Cell A (inert media dosed with liquid carbon source). John said that they tried steam-cleaning the media in place, but that did not work. They ended end having to remove it and clean it in a wire box. Shelley asked how they disposed of the water used in the cleaning process. John said they pumped out some water into container to serve as inoculum, and put the rest into another container and characterized it via geoprobe.

At the MSPTS, air stripper optimization included testing several nozzle configurations, testing pump settings, and collecting samples to evaluate the effectiveness of different settings.

CAD-ROD Amendment – Rick DiSalvo
Rick noted that the site proposed a CAD/ROD Amendment in the second quarter, which was related to the Environmental Assessment (EA) for the site's dam breach project. He said that they would be notching the dams at pond A-3 and the PLF pond over this winter and spring. The EA public participation pointed out that current Institutional Controls (IC's) did not allow excavation onsite unless it was remedy related, which was not the intent for these requirements. A proposal was released for public review and comment during the June through August timeframe, with three public meetings in June and July. This plan was developed to formalize the regulatory review and approval process already applied by RFLMA parties. The parties agreed that work subject to ICs must meet the CAD/ROD objective and rationale. There is also a specific Soil Disturbance Review Plan. The Environmental Covenant granted by DOE to CDPHE was modified to incorporate the CAD/ROD amendment. Any future modification or termination of ICs will follow regulations and guidance in effect at that time.

Rick also mentioned the site's third Five Year review. There was a briefing at the last meeting. Shirley Garcia asked about the public process. Rick noted that there was a website and email address for comments.

Approve Fiscal Year 2012 Work Plan

The Board reviewed the draft work plan at the September meeting. No changes were offered at that meeting. Jeannette Hillery moved to approve the 2012 Stewardship Council Work Plan. The motion was seconded by Roman Kohler. The motion passed 9-0.

Fiscal Year 2012 Budget Hearings

The Board reviewed the draft budget at the September meeting. One minor change was offered at that time. Chairman Bob Briggs officially opened the budget hearing. There were no comments from the audience. Bob then closed the budget hearing. There were also no comments from Board members.

The Board's attorney, Barb Vander Wall, noted that after the budget is approved, it will be filed with the State by the end of the year. She said there was also a published notice of this meeting as required.

Jeannette Hillery moved to approve the Fiscal Year 2012 budget. The motion was seconded by Joe Cirelli. The motion passed 9-0.

Continue Triennial Review

David Abelson said that this time was set aside to address any questions or concerns about the triennial review and IGA (Intergovernmental Agreement) amendments. He said that both documents had been vetted with city and county staff, including the attorneys, and their input had been incorporated. There were no questions. David asked Board members to keep him informed as to their governments' review and approval timelines and if there were any questions. He noted that the key thing was that the documents had to be approved without any changes. These need to be approved by the end of January. Barb Vander Wall also mentioned that governmental members had also received a request for designation of members (Directors and Alternates). This has the same deadline as the triennial review and IGA, and should include contact information for any members who will be new to the Board.

David also noted that the new Board voting policies (numbers for quorum and approval) will be effective at the next meeting and that bylaw changes would follow.

New Member Interviews and Selection

David began by announcing that the only groups/individuals that applied for membership in 2012 were current members – League of Women Voters, Rocky Flats Cold War Museum, Rocky Flats Homesteaders, and Arthur "Murph" Widdowfield. The governments will need to vote to approve these parties for membership for 2012-2013. David said a few others did ask about membership, but no applications were received.

Joe Cirelli moved to approve the League of Women Voters, the Rocky Flats Cold War Museum, the Rocky Flats Homesteaders, and Arthur "Murph" Widdowfield as Board Members of the Rocky Flats Stewardship Council for 2012. The motion was seconded by Sheri Paiz. The motion was approved unanimously by the member governments in attendance.

Jeannette Hillery passed along a thank you from the League of Women Voters for the approval of another term. She said she hopes that the League is adding continuity and good questions into the process. She said she has enjoyed working with all of the parties and hearing all of the different perspectives. Roman Kohler said he appreciated being on the Stewardship Council and being able to distribute current information to former Rocky Flats workers. Ann Lockhart with the Rocky Flats Cold War Museum said she appreciated the Board's support for the Museum's efforts. She said she enjoyed keeping up with Stewardship Council activities and keeping the Members updated on Museum news. Murph Widdowfield thanked the Board for their confidence and said that over the past year and a half, the Board had done a great job of training him, and he did not feel like he was a beginner any more.

Public comment

Steve Berendzen with USFWS was asked to provide an update on Refuge issues. He said that there was a recent comment period on an expansion of refuge boundaries. 500 public comments were received and the comment period is now closed. Comments included the need to balance between bike and vehicular traffic and also some contamination concerns. He said they were on track with the schedule to announce a decision by mid-December.

Updates/Big Picture Review

February 6, 2012

Potential Business Items

- Elect 2012 officers
- Adopt resolution for 2012 meeting dates
- Review bylaws amendments

Potential Briefing Items

- Host LM quarterly public meeting
- Continue discussion of CERCLA 5-year review
- Briefing by Rocky Flats Cold War Museum

April 2, 2012

Potential Business Items

- Adopt bylaws amendments

Potential Briefing Items

- Continue discussion of CERCLA 5-year review
- AMP monitoring update

- Solar ponds performance
- NRD update

Issues to watch:

Original landfill performance, including special sampling program results.

Executive Session

At 10:12 a.m. Bill Fisher made a motion to move into Executive Session for the purpose of discussing personnel issues, and to receive legal advice on such issues, as authorized under Sections 24-6-402(4)(b) and (f), C.R.S. Sheri Paiz seconded the motion. The motion passed 9-0.

The Board reconvened from Executive Session at 10:17 a.m. and affirmed that no actions had been taken during Executive Session.

Member Updates

Sheri Paiz thanked the Board and wished everyone good luck. She said her time on the Board was enlightening.

The meeting was adjourned at 10:20 a.m.

Respectfully submitted by Erin Rogers.

Rocky Flats Stewardship Council
Check Detail
October 4, 2011 through January 21, 2012

Type	Num	Date	Name	Account	Paid Amount	Original Amount
Check		**10/28/2011**		**CASH-Wells Fargo-Operating**		**-3.50**
				Admin Services-Misc Services	-3.50	3.50
TOTAL					-3.50	3.50
Check		**11/29/2011**		**CASH-Wells Fargo-Operating**		**-3.50**
				Admin Services-Misc Services	-3.50	3.50
TOTAL					-3.50	3.50
Check		**12/28/2011**		**CASH-Wells Fargo-Operating**		**-3.50**
				Admin Services-Misc Services	-3.50	3.50
TOTAL					-3.50	3.50
Check	**1523**	**11/2/2011**	**Century Link**	**CASH-Wells Fargo-Operating**		**-26.47**
				Telecommunications	-26.47	26.47
TOTAL					-26.47	26.47
Bill Pmt...	**1524**	**11/2/2011**	**Jennifer A. Bohn**	**CASH-Wells Fargo-Operating**		**-476.00**
Bill	11-87	10/31/2011		Accounting Fees	-476.00	476.00
TOTAL					-476.00	476.00
Bill Pmt...	**1525**	**11/2/2011**	**Seter & Vander Wall, P.C.**	**CASH-Wells Fargo-Operating**		**-1,964.42**
Bill	61666	9/30/2011		Attorney Fees	-1,964.42	1,964.42
TOTAL					-1,964.42	1,964.42
Bill Pmt...	**1526**	**11/2/2011**	**The Rogers Group, LLC**	**CASH-Wells Fargo-Operating**		**-550.00**
Bill	10/15...	9/30/2011		Personnel - Contract	-550.00	550.00
TOTAL					-550.00	550.00
Bill Pmt...	**1527**	**11/11/2011**	**Crescent Strategies, LLC**	**CASH-Wells Fargo-Operating**		**-7,339.66**
Bill	10/31...	10/31/2011		Personnel - Contract	-6,850.00	6,850.00
				Telecommunications	-133.88	133.88
				TRAVEL-Local	-75.49	75.49
				Postage	-15.99	15.99
				Printing	-220.10	220.10
				Supplies	-44.20	44.20
TOTAL					-7,339.66	7,339.66
Bill Pmt...	**1528**	**11/11/2011**	**Seter & Vander Wall, P.C.**	**CASH-Wells Fargo-Operating**		**-1,217.50**
Bill	61881	10/31/2011		Attorney Fees	-1,217.50	1,217.50
TOTAL					-1,217.50	1,217.50
Check	**1529**	**12/1/2011**	**Century Link**	**CASH-Wells Fargo-Operating**		**-27.02**
				Telecommunications	-27.02	27.02
TOTAL					-27.02	27.02
Bill Pmt...	**1530**	**12/8/2011**	**Blue Sky Bistro**	**CASH-Wells Fargo-Operating**		**-195.85**

Rocky Flats Stewardship Council
Check Detail
October 4, 2011 through January 21, 2012

Type	Num	Date	Name	Account	Paid Amount	Original Amount
Bill	796	11/14/2011		Misc Expense-Local Government	-195.85	195.85
TOTAL					-195.85	195.85
Bill Pmt...	**1531**	**12/8/2011**	**Crescent Strategies, LLC**	**CASH-Wells Fargo-Operating**		**-7,066.65**
Bill	11/30...	11/30/2011		Personnel - Contract	-6,850.00	6,850.00
				Telecommunications	-137.38	137.38
				TRAVEL-Local	-63.28	63.28
				Postage	-15.99	15.99
TOTAL					-7,066.65	7,066.65
Bill Pmt...	**1532**	**12/8/2011**	**Jennifer A. Bohn**	**CASH-Wells Fargo-Operating**		**-314.50**
Bill	11-95	11/30/2011		Accounting Fees	-314.50	314.50
TOTAL					-314.50	314.50
Bill Pmt...	**1533**	**12/8/2011**	**Seter & Vander Wall, P.C.**	**CASH-Wells Fargo-Operating**		**-1,176.32**
Bill	62081	11/30/2011		Attorney Fees	-1,176.32	1,176.32
TOTAL					-1,176.32	1,176.32
Bill Pmt...	**1534**	**1/12/2012**	**Crescent Strategies, LLC**	**CASH-Wells Fargo-Operating**		**-7,872.64**
Bill	12/31...	12/31/2011		Personnel - Contract	-6,850.00	6,850.00
				Telecommunications	-140.88	140.88
				TRAVEL-Local	-84.36	84.36
				Postage	-235.99	235.99
				TRAVEL-Out of State	-152.84	152.84
				Website	-408.57	408.57
TOTAL					-7,872.64	7,872.64
Bill Pmt...	**1535**	**1/12/2012**	**Jennifer A. Bohn**	**CASH-Wells Fargo-Operating**		**-263.50**
Bill	11-102	12/31/2011		Accounting Fees	-263.50	263.50
TOTAL					-263.50	263.50
Bill Pmt...	**1536**	**1/12/2012**	**Seter & Vander Wall, P.C.**	**CASH-Wells Fargo-Operating**		**-1,317.48**
Bill	62293	12/31/2011		Attorney Fees	-1,317.48	1,317.48
TOTAL					-1,317.48	1,317.48
Check	**1537**	**1/12/2012**	**Century Link**	**CASH-Wells Fargo-Operating**		**-27.46**
				Telecommunications	-27.46	27.46
TOTAL					-27.46	27.46

RESOLUTION
OF THE
BOARD OF DIRECTORS
OF
ROCKY FLATS STEWARDSHIP COUNCIL

regarding

2012 MEETING SCHEDULE AND NOTICE PROVISIONS

WHEREAS, pursuant to an Intergovernmental Agreement dated as of February 13, 2006, and as amended thereafter, (the "IGA"), the Rocky Flats Stewardship Council ("Stewardship Council") was established; and

WHEREAS, the Stewardship Council was created to allow local governments to work together on the continuing local oversight of the activities occurring on the Rocky Flats site to ensure that government and community interests are met with regards to long term stewardship of residual contamination and refuge management; and

WHEREAS, the Board of Directors of the Stewardship Council has a duty to perform certain obligations in order to assure the efficient operation of the Stewardship Council; and

WHEREAS, on March 6, 2006, the Board of Directors of the Stewardship Council adopted Bylaws regarding the operations of the Stewardship Council, governing, *inter alia*, meeting and notice requirements; and

WHEREAS, § 24-6-402, C.R.S., of the Colorado Sunshine Law, specifies the duty of the Board of Directors at its first regular meeting of the calendar year to designate a public posting place within the boundaries of the Stewardship Council for notices of meetings, in addition to any other means of notice; and

WHEREAS, pursuant to its Bylaws and Colorado laws, the Stewardship Council desires to establish its regular meeting schedule and location, and to designate its public posting place(s) for 2012.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE ROCKY FLATS STEWARDSHIP COUNCIL THAT:

1. Meeting Schedule/Location. The Board of Directors determines to hold regular meetings the **first Monday of February, April, June, and November, and the second Monday of September at 8:30 AM** at the Rocky Mountain Metropolitan Airport Terminal Building, 11755 Airport Way, Broomfield, Colorado; and to hold special meetings as may be necessary, in accordance with the Bylaws of the Stewardship Council.

2. Regular Meeting Notice. The Board of Directors determines to annually post its regular meeting schedule at the Clerk and Recorder's office of the following counties: Jefferson, Boulder, Broomfield, Adams and Weld; and at the City or Town Clerk's Office of the following cities and/or towns: Arvada, Boulder, Broomfield, Westminster, Golden, Superior, Thornton, and Northglenn, for posting in a public place. In addition, the Board shall post its regular meeting schedule on the website established for the Stewardship Council. These notices shall remain posted throughout the year. At least seven (7) days advance notice of the regular meeting time, place and date shall be provided to the

directors and alternate directors, and to those members of the public who so request. The general nature of the business proposed to be transacted or the purpose of any meeting of the Board of Directors shall be specified in the notices of such meeting where possible.

3. Special Meeting Notice. In the event of a special meeting, a notice of such special meeting shall be posted at least seventy-two (72) hours in advance at the clerks' offices of the counties, cities and towns indicated above, for posting in a public place. At least seventy-two (72) hours advance notice of the special meeting time, place and date shall be provided to the directors and alternate directors, and to those members of the public who so request. The general nature of the business proposed to be transacted at or the purpose of any meeting of the Board of Directors shall be specified in the notices of such meeting where possible. The Board of Directors' ability to act on matters brought before it at a special meeting is restricted to those items specified in the notice.

4. Emergency Meeting Notice. Should the Board of Directors determine an emergency special meeting is necessary, a notice of such emergency meeting shall be posted at least twenty-four (24) hours in advance at the clerks' offices of the counties, cities and towns indicated above in accordance with the Colorado Open Meetings Act. The general nature of the business proposed to be transacted at, or the purpose of, any meeting of the Board of Directors shall be specified in the notices of such meeting where possible. The Board of Directors' ability to act on matters brought before it at a special meeting is restricted to those items specified in the notice.

5. Written Notice Requirements. Written notice of each meeting of the Board of Directors shall be given by telefax or electronic mail; provided, however, that in the instance of any Director who in writing requests that such notice not be given by telefax or electronic mail, the notice shall be by hand delivery to an address within the boundaries of the Parties designated in writing.

6. Additional Notification. The Stewardship Council shall maintain a list of persons who, within the previous two years, have requested notification of all meetings, or of meetings with discussions of certain specified policies, and shall provide reasonable advance notification of such meetings to the individuals.

APPROVED AND ADOPTED THIS _____ DAY OF _____, 2012.

(SEAL)

ROCKY FLATS STEWARDSHIP COUNCIL

By: _____
Chair

ATTEST:

By: _____

RFSCo/RESO
ST1026
0756.0008; .0007

ROCKY FLATS STEWARDSHIP COUNCIL

P.O. Box 17670
Boulder, CO 80308-0670
www.rockyflatssc.org

(303) 412-1200
(303) 600-7773 (f)

Jefferson County -- Boulder County -- City and County of Broomfield -- City of Arvada -- City of Boulder
City of Golden -- City of Northglenn -- City of Thornton -- City of Westminster -- Town of Superior
League of Women Voters -- Rocky Flats Cold War Museum -- Rocky Flats Homesteaders
Arthur Widdowfield

MEMORANDUM

TO: Board
FROM: David Abelson
SUBJECT: Introductions of Directors and Alternate Directors
DATE: January 25, 2012

With the changes to the IGA, coupled with recent elections and a resignation at Boulder County, there are eight new members on the board of directors. To help set the working foundation of this board, each member will introduce him or herself, and each government and member organization/individual will also identify its interests and priorities for the coming year.

In preparation for this conversation, I encourage you to review the 2012 work plan. I previously emailed copies to the board. Copies can also be found at: http://rockyflatssc.org/RFSC%202012%20Work%20Plan%20FINAL.pdf

The full list of the board of directors follows. The new directors and alternate directors are noted in **bold**:

City of Arvada
- **Hon. Shelley Cook, Director**
- **Hon. Mark McGoff, First Alternate Director**
- Jim McCarthy, Second Alternate Director

Boulder County
- **Hon. Deb Gardner**
- Megan Davis, Alternate Director

City of Boulder
- Hon. Lisa Morzel, Director
- **Hon. Tim Plass, First Alternate Director**
- Carl Castillo, Second Alternate Director

City and County of Broomfield
- Hon. Greg Stokes, Director
- **Hon. Mike Shelton, First Alternate Director**

- David Allen, Second Alternate Director

City of Golden
- Hon. Bill Fisher, Director
- Dan Hartman, Alternate Director

Jefferson County
- Hon. Faye Griffin, Director
- Kate Newman, Alternate Director

City of Northglenn
- **Hon. Joyce Downing, Director**
- Shelly Stanley, First Alternate Director
- Ray Reling, Second Alternate Director

City of Thornton
- **Hon. Eric Tade, Director**
- **Emily Hunt, Alternate Director**

Town of Superior
- Hon. Joe Cirelli, Director
- Hon. Chris Hansen, Alternate Director

City of Westminster
- Hon. Bob Briggs, Director
- Mary Fabisiak, Alternate Director

League of Women Voters
- Jeannette Hillery, Director
- Sue Vaughan, Alternate Director

Rocky Flats Homesteaders
- Roman Kohler
- Kathleen Bacheller

Rocky Flats Cold War Museum
- Shirley Garcia, Director[1]
- Ann Lockhart, Alternate Director

Arthur "Murph" Widdowfield, Director

In addition to the board the following contract with the Stewardship Council:
David Abelson, Executive Director

[11] Shirley works for Broomfield in their water resources division. She is one of their Rocky Flats leads, but does not represent Broomfield on the Stewardship Council.

Rik Getty, Technical Program Manager
Barb Vander Wall, attorney
Jennifer Bohn, accountant
Erin Rogers, webmaster and minutes preparer

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League of Women Voters -- Rocky Flats Cold War Museum -- Rocky Flats Homesteaders
Arthur Widdowfield

MEMORANDUM

TO: Board
FROM: David Abelson
SUBJECT: 2012 Stewardship Council Officers
DATE: January 23, 2012

In accordance with the Stewardship Council bylaws, "the Chair, Vice Chair, and Secretary/Treasurer shall be elected annually by the Board of Directors. The terms shall commence at the first meeting of the Board held on or after February 1 of each year." There are no limitations as to the number of terms one can serve.

If you are interested in serving as an officer and have not yet let me know of your interest, please email or call me. That way I can notify your fellow board members of your interest. As of the drafting of this memo, the following people expressed interest in serving on the executive committee:

Lisa Morzel (City of Boulder) – Chairman
Bob Briggs (Westminster) – Vice Chairman or Secretary/Treasurer
Jeannette Hillery (League of Women Voters) – Secretary/Treasurer
Shirley Garcia (Rocky Flats Cold War Museum) – Secretary/Treasurer

Action Item: Elect officers

DOE Quarterly Report Briefing

- Cover memo
- Quarterly report (minus appendices)

ROCKY FLATS STEWARDSHIP COUNCIL

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League of Women Voters -- Rocky Flats Cold War Museum -- Rocky Flats Homesteaders
Arthur Widdowfield

MEMORANDUM

TO: Stewardship Council Board
FROM: Rik Getty
SUBJECT: DOE Quarterly Briefing
DATE: January 25, 2012

We have scheduled 70 minutes for DOE to present its quarterly briefing for the third quarter of 2011 (July-September). Attached to this briefing memo is the report text (minus blank pages and the two appendices). Appendix A consists of the landfill inspection forms, and Appendix B consists of the analytical results for water samples. The entire report can be found at: http://www.lm.doe.gov/Rocky_Flats/Documents.aspx

DOE will brief on the following topics in a format similar to past quarterly and annual report updates:

- surface water monitoring;
- groundwater monitoring;
- ecological monitoring; and,
- site operations (inspections, pond operations, security, general maintenance, etc.).

DOE will also provide a short update on the status of the 2012 CERCLA 5-year review.

Highlights of the surveillance and maintenance activities are excerpted from the quarterly report as follows.

Amendment of the CAD/ROD and Modification of RFLMA Attachment 2
[Note: This topic has been discussed extensively at RFSC meetings.]
On September 22, 2011, DOE, CDPHE and EPA (the Rocky Flats Legacy Management [RFLMA] parties) issued the approved *Final Corrective Action Decision/Record of Decision Amendment for Rocky Flats Plant Peripheral Operable Unit and Central Operable Unit* and *Modification of the Rocky Flats Legacy Management Agreement*. These changes allow DOE to excavate deeper than 3 feet in order to breach additional dams and other future projects with regulatory approval.

These documents can be found at: http://www.lm.doe.gov/Rocky_Flats/Regulations.aspx

Point of Compliance (POC) changes
In accordance with changes to monitoring locations that CDPHE and EPA approved on May 2, 2011, during this quarter DOE began making the following changes to surface water monitoring locations:

- Designation of new Point of Compliance (POC) along Walnut Creek (called WALPOC) inside the DOE boundary, removing monitoring points GS08 and GS11 as POCs after completion of installation of the new flume for WALPOC.
- Designation of new POC along Woman Creek (called WOMPOC) inside the DOE boundary, removing GS31 as a POC at the outfall of the Pond C-2 dam upstream of WOMPOC, after completion of installation of the new flume for WOMPOC.

Present Landfill (PLF) Inspection
The routine PLF inspection for the third quarter was performed on August 30, 2011. No significant problems were observed during this inspection. Copies of the landfill inspection forms are presented in Appendix A.

Original Landfill (OLF) Inspection
Routine OLF inspections during the third quarter were performed on July 28, August 30, and September 20, 2011. The landfill cover vegetation was evaluated on August 2, 2011. The completed inspection forms are presented in Appendix A.

Groundwater Treatment Systems

Mound Site Plume Treatment System (MSPTS)
Routine maintenance activities and optimization of the air stripper polishing unit continued at the MSPTS through the third quarter. Some of the aspects tested and optimized include the number and configuration of spray nozzles, the pump rate, ventilation of the air stripper housing (the manhole), and the system flow rate. Because of the numerous variables and ongoing optimization of the unit, the component that was installed is designed for only half-time operation (during the daytime). Testing is being performed to identify adjustments needed to achieve optimal effectiveness.

In late September, two extended tests were performed on the air stripper. The first, on September 21, focused on polishing the treated effluent water from the zero-valent iron (ZVI) cells. The second, on September 28, focused on using the air stripper to treat raw, untreated water (which is normally influent to the ZVI cells). The results from these tests will help determine future treatment needs and methods. The 2011 annual report will provide a more comprehensive discussion of the unit and its associated optimization.

East Trenches Plume Treatment System (ETPTS)
Routine maintenance activities continued through the third quarter. These activities included checking influent and effluent flow conditions, and water levels in the cells.

Solar Ponds Plume Treatment System (SPPTS)
Routine maintenance activities continued through the third quarter. These activities included weekly inspections of the solar/battery systems that power the pumps, the operation of the

pumps, and influent and effluent flow conditions. The Phase II and III upgrades that were completed in the second quarter of CY 2009 continued to be a focal point for optimization efforts. Most of these efforts were directed to operation of Phase III Cell A (the cell filled with inert media, which is dosed with liquid carbon to support denitrifying bacteria) and included adjustments to flow rates and dosing. In addition, due to accumulation of biomass in the cell, routine maintenance included using a rod or similar tool to puncture and break apart the biomass and liberate trapped gases.

In late July, Cell A was taken offline and emptied for more aggressive biofilm management. A small volume of water from the cell was set aside to act as an inoculum, then the media were removed and pressure-washed. The inside of the cell was sprayed out. The cleaned media were then returned to the cell and the inoculum was added. The cell was refilled with dosed influent, but remained offline for several days while the water within was recirculated to allow the denitrifying bacteria to colonize the cleaned media. The cell was then put back online.

Present Landfill Treatment System (PLFTS)
Routine maintenance activities continued at the PLFTS through the third quarter. These activities generally consisted of inspecting the system for potential problems.

Erosion Control and Re-vegetation
Maintenance of the site erosion control features required continued effort throughout the third quarter, especially following high-wind or precipitation events. Erosion wattles and matting loosened and displaced by high winds or rain were repaired. Erosion controls were installed and maintained for the various projects that were ongoing during the third quarter. Several areas were interseeded with additional native species to increase vegetation cover.

Water Monitoring Highlights
Water quality data at the RFLMA POCs remained well below the applicable standards through the third quarter. The RFLMA network consists of 10 automated gaging stations, 12 surface water grab-sampling locations, 8 treatment system locations, 99 wells, and 10 precipitation gages. During the quarter, 31 flow-paced composite samples, 15 surface water grab samples, 10 treatment system samples, and 11 groundwater samples were collected (in accordance with RFLMA protocols) and submitted for analysis. Analysis is pending for three flow-paced composites that were started during the quarter and have been retrieved from the field. Two additional flow-paced composites are still in progress, and analytical data were not available for this report.

In the third quarter of 2010, elevated levels of plutonium-239,240 were measured at SW027, a point of evaluation (POE) in the Woman Creek drainage near the east end of the SID. These data are presented and discussed further in Section 3.1.3.2. Since SW027 has seen very little flow since April 2010, no additional composite samples have been collected. Thus, no new analytical data are available to include in the 12-month rolling average, and the 12-month rolling average for plutonium remains at reportable levels.

Elevated levels of uranium were measured at POE GS10 in the South Walnut Creek drainage upstream from pond B-1. These data are presented and discussed further in Section 3.1.3.1. The

12-month rolling average for uranium first became reportable on 4/30/11 and remains at reportable levels through 9/30/11.

Elevated levels of americium-241 were measured at POE GS10 during the third quarter. These data are presented and discussed further in Section 3.1.3.1. Based on validated results received after the end of the third quarter, the 12-month rolling average for americium resulted in a reportable condition as of 8/31/11 and remained at reportable levels through 9/30/11. The status of DOE's evaluation regarding the elevated levels of americium-241 is discussed in Section 3.1.3.1.

Groundwater monitoring results will be evaluated as part of the annual report for 2011.

Please contact me if you have any questions.

LMS/RFS/S08538

Rocky Flats, Colorado, Site

Quarterly Report of Site Surveillance and Maintenance Activities Third Quarter Calendar Year 2011

January 2012

U.S. DEPARTMENT OF ENERGY | Legacy Management

Contents

Figures

Tables

Appendixes

Abbreviations

AOC	area of concern
CAD/ROD	Corrective Action Decision/Record of Decision
CDPHE	Colorado Department of Public Health and Environment
COU	Central Operable Unit
CY	calendar year
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ETPTS	East Trenches Plume Treatment System
IC	institutional control
LANL	Los Alamos National Laboratory
LM	Office of Legacy Management
µg/L	micrograms per liter
M&M	monitoring and maintenance
MSPTS	Mound Site Plume Treatment System
OLF	Original Landfill
pCi/L	picocuries per liter
PLF	Present Landfill
PLFTS	Present Landfill Treatment System
PMJM	Preble's meadow jumping mouse
POC	point-of-compliance
POE	point-of-evaluation
RCRA	Resource Conservation and Recovery Act
RER	relative error ratio
RFLMA	*Rocky Flats Legacy Management Agreement*
RFSOG	*Rocky Flats Site Operations Guide*
SID	South Interceptor Ditch
Site	Rocky Flats Site
SPPTS	Solar Ponds Plume Treatment System
USFWS	U.S. Fish and Wildlife Service
WQCC	Water Quality Control Commission
ZVI	zero-valent iron

1.0 Introduction

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is responsible for implementing the final response action selected in the *Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit* (CAD/ROD) (DOE, EPA, and CDPHE 2006) issued on September 29, 2006, for the Rocky Flats Site (the Site) in Colorado. DOE, the U.S. Environmental Protection Agency (EPA), and the Colorado Department of Public Health and Environment (CDPHE) have chosen to implement the monitoring and maintenance requirements of the CAD/ROD as described in the *Rocky Flats Legacy Management Agreement* (RFLMA) (DOE 2007a). Attachment 2 of the RFLMA defines the Central Operable Unit (COU) remedy surveillance and maintenance requirements, the frequency for each required activity, and the monitoring and maintenance locations. The requirements include environmental monitoring; maintenance of the erosion controls, access controls (signs), landfill covers, and groundwater treatment systems; and operation of the groundwater treatment systems. The RFLMA also requires that the institutional controls, in the form of use restrictions as established in the CAD/ROD, be maintained.

This report is required in accordance with Section 7.0 of RFLMA Attachment 2. The purpose of this report is to inform the regulatory agencies and stakeholders of the remedy-related surveillance, monitoring, and maintenance activities being conducted at the Site. LM provides periodic communications through several means, such as this report, web-based tools, and public meetings.

LM prepared the *Rocky Flats Site Operations Guide* (RFSOG) (DOE 2011b) to serve as the primary internal document to guide work to satisfy the requirements of the RFLMA and to implement best management practices at the Site.

Several other Site-specific documents provide additional detail regarding the requirements described in RFLMA Attachment 2, including all aspects of surveillance, monitoring, and maintenance activities, as well as data evaluation protocols.

Monitoring data and summaries of surveillance and maintenance activities for past quarters are available in the quarterly reports. Extensive discussion and evaluation of surveillance, monitoring, and maintenance activities are presented each calendar year in the annual report of Site surveillance and maintenance activities.

This report addresses remedy-related surveillance, monitoring, and operations and maintenance activities conducted at the Site during the third quarter of calendar year (CY) 2011 (July 1 through September 30). This report describes the following activities:

- Maintenance and inspection of the Original Landfill (OLF) and Present Landfill (PLF)
- Maintenance and inspection of the four groundwater treatment systems
- Erosion control and revegetation activities
- Routine (in accordance with the RFLMA and the RFSOG) water monitoring

This report also provides a summary of the following activities during this reporting period:

- CAD/ROD amendment and RFLMA Attachment 2 modification that was approved during this reporting period

1.1 Amendment of the CAD/ROD and Modification of RFLMA Attachment 2

As discussed in the second quarterly report for CY 2011 (DOE 2011e), on June 3, 2011, the RFLMA Parties released a *Proposed Plan for Amendment of the Corrective Action Decision/Record of Decision* (DOE, EPA, and CDPHE 2011a) (Proposed Plan) for public review and comment. The RFLMA Parties also released for public review and comment in Attachment 1 of the Proposed Plan a modification to RFLMA Attachment 2, *Legacy Management Requirements,* to implement the CAD/ROD amendment.

The RFLMA Parties hosted a public meeting to discuss the proposed amendments and receive verbal comments on June 16, 2011. Two additional public meetings to provide information regarding the proposal, answer questions, and encourage the submittal of written comments were held by DOE on July 14 and July 20, 2011. The public comment period ended on August 2, 2011.

The RFLMA Parties released the approved *Final Corrective Action Decision/Record of Decision Amendment for Rocky Flats Plant Peripheral Operable Unit and Central Operable Unit* and *Modification of the Rocky Flats Legacy Management Agreement*, Attachment 2, "Legacy Management Requirements" on September 22, 2011 (DOE, EPA, and CDPHE 2011b). The CAD/ROD amendment includes a comment responsiveness summary regarding the consideration of public comments by the RFLMA Parties in finalizing the CAD/ROD amendment and the RFLMA Attachment 2 modification.

In the 2006 CAD/ROD, the original response actions selected for the COU were institutional controls (ICs), physical controls, and continued monitoring. The CAD/ROD amendment clarifies the description of certain ICs required for the COU to more accurately reflect the objective and rationale of the ICs as stated in the 2006 CAD/ROD. The objective and rationale of the ICs have not changed.

In addition, the CAD/ROD amendment:

- Removes the 2006 CAD/ROD requirement that any modification to ICs can be made only by a formal CAD/ROD amendment, providing instead that proposed changes to ICs in the future will follow the process in regulations and guidance in effect at the time of the proposal.
- Requires that the existing environmental covenant granted by DOE to CDPHE in accordance with State law will be modified to reflect the IC clarifications.

The environmental covenant modification is expected to be signed by DOE and CDPHE and filed in the land records of Jefferson County before the end of 2011.

The modification of RFLMA Attachment 2 incorporates the IC description changes made in the CAD/ROD amendment and also incorporates the objective and rationale of each IC. The RFLMA Attachment 2 modification implements the Soil Disturbance Review Plan, which is required by the CAD/ROD amendment. Excavation or soil disturbance activities that are subject

to ICs must have prior regulatory review and approval pursuant to the Soil Disturbance Review Plan in RFLMA Attachment 2, Section 4.1.

The newly added Soil Disturbance Review Plan in the RFLMA Attachment 2 modification essentially formalizes a process that was already being used to evaluate proposed soil-disturbing activities that are subject to ICs.

The modification requires that the use restrictions specified as ICs be implemented to meet the objective and rationale of the IC as provided in the CAD/ROD. DOE shall follow the RFLMA consultative process pursuant to Part 5 of RFLMA for any regulatory determination required regarding activities subject to an IC.

Results of consultation will be documented in contact records or written correspondence. Except for situations where immediate action is warranted, DOE will not implement the activity for which the regulatory determination is required until 10 calendar days after the contact record or written correspondence approving the activity is posted on the Rocky Flats website and notification of the posting is made to stakeholders in accordance with the RFLMA Public Involvement Plan.

1.2 Changes to Points of Compliance

As discussed in the second quarterly report for CY 2011 (DOE 2011e), a RFLMA Attachment 2 modification, dated March 2011, for changes to monitoring locations was approved by CDPHE and EPA on May 2, 2011 (CDPHE and EPA 2011). The following changes to surface water monitoring locations were made:

- Designation of new Point of Compliance (POC) WALPOC inside the COU boundary, removing GS08 and GS11 as POCs in Walnut Creek, after completion of installation of the new flume for WALPOC
- Designation of new POC WOMPOC in Woman Creek inside the COU boundary, removing GS31 as a POC at the outfall of the Pond C2 Dam upstream of WOMPOC, after completion of installation of the new flume for WOMPOC

The modification retained the Woman Creek and Walnut Creek POCs at Indiana Street (GS01 and GS03, respectively) in the Peripheral Operable Unit for a period of 2 years after the new flumes in the COU are operational.

In accordance with RFLMA Attachment 2, Section 5.1, "Monitoring Surface Water,"

> After each new flume and associated sampling equipment is installed and tested for proper operation, DOE shall notify CDPHE and EPA that construction is complete. WALPOC will replace GS08 and GS11 on the date of the DOE notification for that location. WOMPOC will replace GS31 on the date of the DOE notification for that location. WALPOC and WOMPOC will also replace GS03 and GS01 respectively upon DOE notification to EPA and CDPHE certifying that WALPOC and WOMPOC have been functioning as POCs for at least two years.

DOE provided the notification that construction was complete to CDPHE and EPA for WALPOC on September 9, 2011 (DOE 2011c) and for WOMPOC on September 28, 2011 (DOE 2011d).

2.0 Site Operations and Maintenance

2.1 Landfills

2.1.1 Present Landfill

The PLF is inspected quarterly in accordance with the requirements of the PLF Monitoring and Maintenance (M&M) Plan (DOE 2008a) and the RFLMA (DOE 2007a). Vegetation monitoring has been conducted on the PLF according to the requirements in RFLMA Attachment 2, Table 3. The exit strategy for vegetation monitoring, as outlined in Table 3, states that when the PLF M&M Plan grassland success criteria have been met, vegetation monitoring will be no longer required. Based on the vegetation monitoring conducted in 2009 and reported in the 2009 Annual Report (DOE 2010a), these success criteria have been met. Therefore, the specific PLF vegetation monitoring as outlined in the RFLMA will no longer be conducted; rather, the PLF vegetation will be monitored as part of the ongoing general Site vegetation monitoring.

2.1.1.1 Inspection Results

The routine PLF inspection for the third quarter of CY 2011 was performed on August 30, 2011. No significant problems were observed during this inspection. Copies of the landfill inspection forms are presented in Appendix A.

2.1.1.2 Settlement Monuments

The annual settlement monument surveys were performed on December 22, 2010. The 2011 survey of the PLF settlement monuments was completed at the end of the calendar year. Additional information on the settlement monuments is included in the *Rocky Flats Site Quarterly Report of Site Surveillance and Maintenance Activities, First Quarter Calendar Year 2008* (DOE 2008b).

2.1.2 Original Landfill

The OLF is inspected monthly, in accordance with the requirements in the OLF M&M Plan (DOE 2009a) and the RFLMA. It was anticipated that after the first year, the inspection frequency might be reduced to quarterly for an additional 4 years. However, because of observed localized slumping and seep areas, and investigation and repairs to the OLF cover that were being planned at the time, no change to the monthly inspection frequency was recommended in the second five-year review of the Site (DOE 2007b).

2.1.2.1 Inspection Results

Routine OLF inspections during the third quarter of CY 2011 were performed on July 28, August 30, and September 20, 2011. The landfill cover vegetation was evaluated on August 2, 2011. The completed inspection forms are presented in Appendix A.

2.1.2.2 Settlement Monuments

The OLF settlement monuments were surveyed on September 8, 2011. Survey data indicate that settling at each monument does not exceed the limits published in the OLF M&M Plan (DOE 2009a). The survey results are presented in Appendix A.

2.1.2.3 Inclinometers

As discussed in the quarterly report for the second quarter of CY 2009 (DOE 2009b), seven inclinometers were installed in boreholes at the OLF in 2008 as part of the geotechnical investigation (Figure 1).

Movement of the inclinometers has been monitored approximately monthly since installation. Inclinometers deflect by lateral movement of the ground in which they are located and can deflect enough to cause the inclinometer tubes to break. Once an inclinometer tube breaks, the inclinometer will no longer be monitored. Inclinometer monitoring data provide information on localized soil movement and serve to focus the periodic inspections of the soil cover surface on signs of potential instability, such as cracking, vertical displacement, and slumping. A deflection of more than 1 inch is used as a trigger for evaluation of the data by a qualified geotechnical engineer. The engineer determines the significance of the deflection in relation to recommendations for maintenance or repairs to address potential instability in accordance with the OLF M&M Plan (DOE 2009a).

Inclinometer measurements were taken on July 29, August 31, and September 27, 2011. The readings showed very little deflection for any inclinometer over this quarter. One notable precipitation event occurred during this period. The site received approximately 1.2 inches of precipitation on July 7, 2011. Several other heavy precipitation events, but less than 1 inch in a 24-hour period, occurred in July and September. These events did not appear to result in any significant inclinometer deflection. Previously, large precipitation events have generally resulted in more noticeable inclinometer deflection for the inclinometers on the western side of the OLF, where localized slumping and settling occurred and led to the geotechnical investigation. The third quarter also had occurrences of heavy precipitation. It appears that precipitation events over the year may not have lubricated the organic layer that is believed to contribute to localized instability. The routine monitoring and maintenance of the cover to identify and repair any observed surface cracks help to prevent infiltration of precipitation from the cover surface.

2.1.2.4 Slumps

As discussed in the quarterly report for the first quarter of CY 2010 (DOE 2010b), areas where the landfill cover is pushed up or rolling are noticeable on the western end of the OLF between Berms 2 and 3; however, no new slumps were observed during the third quarter of 2011.

Berm 1

No new cracking was observed in the Berm 1 area during the third quarter of CY 2011. Staff continued to perform routine and nonroutine inspections of the Berm 1 area to monitor this location for any changes.

2.1.2.5 Topographic Survey

A topographic survey was completed in March 2009; the survey serves as a baseline for continued observation of berms and helps to identify areas for additional maintenance. Subsequent topographic surveys are used to identify areas that require additional soil to maintain minimum heights and to identify areas of ponding or slopes indicating channel areas that may be conducive to ponding.

In accordance with Section 3.1 of the OLF M&M Plan, "Inspection Procedures," a topographic survey will be conducted approximately every 2 years as an aid in periodically evaluating the subsidence and consolidation, slope stability, and storm water management structure conditions at the OLF.

The survey results were mapped by engineering staff during this quarter, and plans were developed (1) for adding minor amounts of soil to specific areas on the diversion berms to maintain minimum berm height and (2) for minor adjustments to the slope in some locations in berm channels. The results of the survey were forwarded to a qualified geotechnical engineer for review. The Technical Memorandum of the geotechnical engineer review of the survey results is included in Appendix A. Berm maintenance was completed in the third quarter. Maintenance was performed for portions of berm lengths identified in the survey as requiring maintenance to maintain minimum berm heights and eliminate channel areas that may be conducive to ponding. Maintenance consisted of adding soil to the top of berms to raise heights as needed (approximately 1–2 inches of height along portions of berm lengths as indicated by the survey) and minor grading of the berm channels to remove high spots and fill depressions that are conducive to ponding and maintain required slopes. The survey confirmed that the minimum average slope of the berm channels was 2 percent. Appendix A includes a table showing the locations along each berm that were maintained.

2.1.2.6 Seeps

Seeps at the OLF were evaluated during the monthly inspections and during unscheduled visits. Individual seep location flow rates can be found in the monthly inspection reports. Seeps 7, 7A, and 8 were sampled on September 7, 2011; these are not specified by RFLMA, but provide periodic documentation of the water quality of the seeps to support evaluation of termination of post closure criteria.

Figure 1. Original Landfill Observed Surface Cracking Location and Inclinometer Locations

Table 1 includes the results for RFLMA analytes above detection levels or practical quantitation limits. The samples for several metal analytes were inadvertently collected as unfiltered samples for analysis, and RFLMA standards are based on dissolved concentrations for these analytes. Those analytes are shown as not analyzed for the dissolved concentration, but the total concentration is shown in Table 1. Future periodic sampling will specify filtered samples for the dissolved concentration analysis, as appropriate. At Seep 8, arsenic was detected above the RFLMA standard, which is a range from 0.02–10 micrograms per liter (µg/L), based on the Colorado Water Quality Control Commission (WQCC) promulgated numeric standard. The upper level, 10 µg/L, is applied in RFLMA as the trigger for RFLMA party consultation for those RFLMA monitoring locations where arsenic monitoring is required.

Table 1. OLF Seep Samples—RFLMA Analytes Above Detection Limits or PQLs

RFLMA Analyte	Location	Result (µg/L)	Other Result (µg/L)	RFLMA Standard
Uranium	Seep 7	6.8		16.8
	Seep 7A	5.7		16.8
	Seep 8	15.1		16.8
Arsenic, total	Seep 7	ND		0.02-10
	Seep 7A	5.4		0.02-10
	Seep 8	**23.8**		0.02-10
Boron, total	Seep 7	243		750
	Seep 7A	137		750
	Seep 8	157		750
Chromium, total	Seep 7	42.6		50
	Seep 7A	15.7		50
	Seep 8	28.2		50
Copper, dissolved	Seep 7	NA	75.7, total	16
	Seep 7A	NA	20.8, total	16
	Seep 8	NA	45.8, total	16
Lead, dissolved	Seep 7	NA	21.3, total	6.5
	Seep 7A	NA	7.8	6.5
	Seep 8	NA	19.6, total	6.5
Mercury, total	Seep 7	0.196		1 (PQL)
	Seep 7A	ND		1 (PQL)
	Seep 8	ND		1 (PQL)
Nickel, dissolved	Seep 7	NA	66.7, total	123
	Seep 7A	NA	13.3, total	123
	Seep 8	NA	38.4, total	123
Zinc, dissolved	Seep 7	NA	185, total	141
	Seep 7A	NA	45, total	141
	Seep 8	NA	69.7, total	141
Diethyl phthalate	Seep 7	**134**		5.6
	Seep 7A	ND		5.6
	Seep 8	ND		5.6

ND = Non detect
NA = Not analyzed
PQL = Practical quantitation limit

Under WQCC rules, the arsenic standard is applied at the intake to the public drinking water supply, and surface water in the COU is remote from any drinking water supply intake.

Diethyl phthalate was detected above the RFLMA standard at the Seep 7 sampling location. Diethyl phthalate was not detected at the seep sampling location 7A, which is approximately 30 feet south of the Seep 7 location. The other detected analytes were below RFLMA standards.

It is notable that the analytes of interest based on OLF soil sampling are the various semivolatile organic compounds known as poly aromatic hydrocarbons, such as benzo(a)pyrene. The results of OLF soil sampling are reported in Appendix F in the 2010 Annual Report (DOE 2011a). These compounds were below detection in the seep samples.

OLF groundwater monitoring is discussed in Section 3.1.8. Arsenic and diethyl phthalate were not detected in the OLF groundwater wells for samples collected in the third quarter.

As reported in the 2010 Annual Report (DOE 2011a), evaluation by a qualified geotechnical engineer concluded that the Seep 7 runoff drained by the diversion berm channels does not cause instability of the berms.

2.2 Groundwater Treatment Systems

Four groundwater treatment systems are operated and maintained in accordance with requirements defined in the RFLMA and the RFSOG. Three of these systems (the Mound Site Plume Treatment System [MSPTS], East Trenches Plume Treatment System [ETPTS], and Solar Ponds Plume Treatment System [SPPTS]) include a groundwater intercept trench (collection trench), which is similar to a French drain with an impermeable membrane on the downgradient side. Groundwater entering the trench is routed through a drain pipe into one or more treatment cells, where it is treated and then discharged. The fourth system, the PLF Treatment System (PLFTS), treats water from the northern and southern components of the Groundwater Intercept System and flow from the PLF seep.

2.2.1 Mound Site Plume Treatment System

Routine maintenance activities and optimization of the air stripper polishing unit continued at the MSPTS through the third quarter of CY 2011. Some of the aspects tested and optimized include the number and configuration of spray nozzles, the pump rate, ventilation of the air stripper housing (the manhole), and the system flow rate. Because of the numerous variables and ongoing optimization of the unit, the component that was installed is designed for only half-time operation (during the daytime). Testing is being performed to identify adjustments needed to achieve optimal effectiveness.

In late September, two extended tests were performed at the MSPTS air stripper. The first, on September 21, focused on polishing the treated effluent water from the zero-valent iron (ZVI) cells. The second, on September 28, focused on using the air stripper to treat raw, untreated water (which is normally influent to the ZVI cells). The results from these tests will help determine future treatment needs and methods. The 2011 annual report will provide a more comprehensive discussion of the unit and its associated optimization.

On July 27, a new timer was installed on the air stripper to improve the operational efficiency of the system.

The parallel upflow configuration established in June 2010 was maintained and will remain the primary flow configuration at the MSPTS until further notice.

Refer to Section 3.1.9.1 for information on water quality sampling.

2.2.2 East Trenches Plume Treatment System

Routine maintenance activities continued at the ETPTS through the third quarter of CY 2011. These activities included checking influent and effluent flow conditions and water levels in the cells.

Refer to Section 3.1.9.2 for information on water quality sampling.

2.2.3 Solar Ponds Plume Treatment System

Routine maintenance activities continued at the SPPTS through the third quarter of CY 2011. These activities included weekly inspections of the solar/battery systems that power the pumps, the operation of the pumps, and influent and effluent flow conditions.

The Phase II and III upgrades that were completed in the second quarter of CY 2009 continued to be a focal point for optimization efforts. Most of these efforts were directed to operation of Phase III Cell A (the cell filled with inert media, which is dosed with liquid carbon to support denitrifying bacteria) and included adjustments to flow rates and dosing. In addition, due to accumulation of biomass in the cell, routine maintenance included using a rod or similar tool to puncture and break apart the biomass and liberate trapped gases.

In late July, Cell A was taken offline and emptied for more aggressive biofilm management. A small volume of water from the cell was set aside to act as an inoculum, then the media were removed and pressure-washed. The inside of the cell was sprayed out. The cleaned media were then returned to the cell and the inoculum was added. The cell was refilled with dosed influent but remained offline for several days while the water within was recirculated to allow the denitrifying bacteria to colonize the cleaned media. The cell was then put back online.

Section 3.1.9.3 summarizes the non-RFLMA sampling conducted at the SPPTS in the third quarter of CY 2011.

2.2.4 Present Landfill Treatment System

Routine maintenance activities continued at the PLFTS through the third quarter of CY 2011. These activities generally consisted of inspecting the system for potential problems.

Refer to Section 3.1.9.4 for information on water quality sampling.

2.3 Erosion Control and Revegetation

Maintenance of the site erosion control features required continued effort throughout the third quarter of CY 2011, especially following high-wind or precipitation events. Erosion wattles and matting loosened and displaced by high winds or rain were repaired. Erosion controls were

installed and maintained for the various projects that were ongoing during the third quarter of CY 2011. Several areas were interseeded with additional native species to increase vegetation cover.

3.0 Environmental Monitoring

This section summarizes the environmental monitoring conducted in accordance with the RFLMA.

3.1 Water Monitoring

This section includes:

- A discussion of analytical results for the POC, Point of Evaluation (POE), PLF, and OLF surface-water monitoring objectives.
- A summary of Area of Concern (AOC) well, Boundary well, Evaluation well, and Sentinel well monitoring; treatment system monitoring; and Resource Conservation and Recovery Act (RCRA) groundwater monitoring and Surface Water Support monitoring at the Site.

Monitoring locations, sampling criteria, and evaluation protocols for water monitoring objectives in the following sections are detailed in RFLMA Attachment 2 and the RFSOG. Appendix B provides analytical water quality data for the third quarter of CY 2011. More detailed interpretation and discussion will be provided in the annual report for CY 2011.

3.1.1 Water Monitoring Highlights

During the third quarter of CY 2011, the water monitoring successfully met the targeted monitoring objectives as required by the RFLMA and was in conformance with RFSOG implementation guidance. The RFLMA network consists of 10 automated gaging stations, 12 surface water grab-sampling locations, 8 treatment system locations, 99 wells, and 10 precipitation gages. During the quarter, 31 flow-paced composite samples, 15 surface water grab samples, 10 treatment system samples, and 11 groundwater samples were collected (in accordance with RFLMA protocols) and submitted for analysis.[1] Analysis is pending for three flow-paced composites that were started during the quarter and have been retrieved from the field. Two additional flow-paced composites are still in progress, and analytical data were not available for this report.

Water quality data at the RFLMA POCs remained well below the applicable standards through the third quarter of CY 2011.

Elevated levels of plutonium-239,240 were measured at POE SW027 during the third quarter of 2010. These data are presented and discussed further in Section 3.1.3.2. Since SW027 has seen very little flow since April 2010, no additional composite samples have been collected. Thus, no new analytical data are available to include in the 12-month rolling average, and the 12-month

[1] Composite samples consist of multiple aliquots ("grabs") of identical volume. Each grab is delivered by the automatic sampler to the composite container at each predetermined flow volume or time interval. During the third quarter of CY 2011, the 31 flow-paced composites comprised 1,857 individual grabs.

rolling average for plutonium remains at reportable levels through 1/31/11 (the latest composite sample started on 2/17/11 is still in progress).

Other analyte concentrations at SW027 remained below reporting levels as of the end of the third quarter of CY 2011.

Elevated levels of uranium were measured at POE GS10 during the third quarter of 2011. These data are presented and discussed further in Section 3.1.3.1. The 12-month rolling average for uranium first became reportable on 4/30/11 and remains at reportable levels through 9/30/11.

Elevated levels of americium-241 were measured at POE GS10 during the third quarter of 2011. These data are presented and discussed further in Section 3.1.3.1. Based on validated results received after the end of the third quarter, the 12-month rolling average for americium resulted in a reportable condition as of 8/31/11 and remained at reportable levels through 9/30/11. The status of DOE's evaluation regarding the elevated levels of americium-241 is discussed in Section 3.1.3.1.

Except for the three analytes discussed, all other analyte concentrations at GS10 remained below reporting levels as of the end of the third quarter of CY 2011.

Analyte concentrations at SW093 remained below reporting levels as of the end of the third quarter of CY 2011.

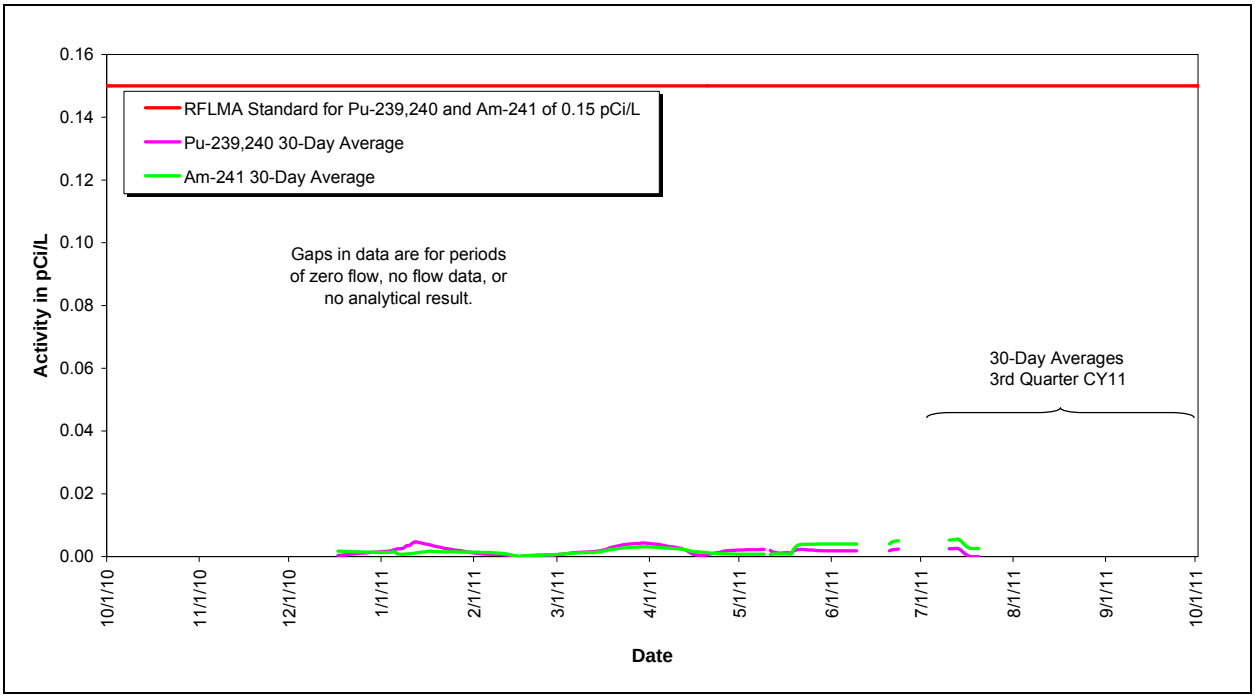
Groundwater monitoring results will be evaluated as part of the annual report for CY 2011.

3.1.2 POC Monitoring

The following sections include summary tables and plots showing the applicable 30-day and 12-month rolling averages for the POC analytes.

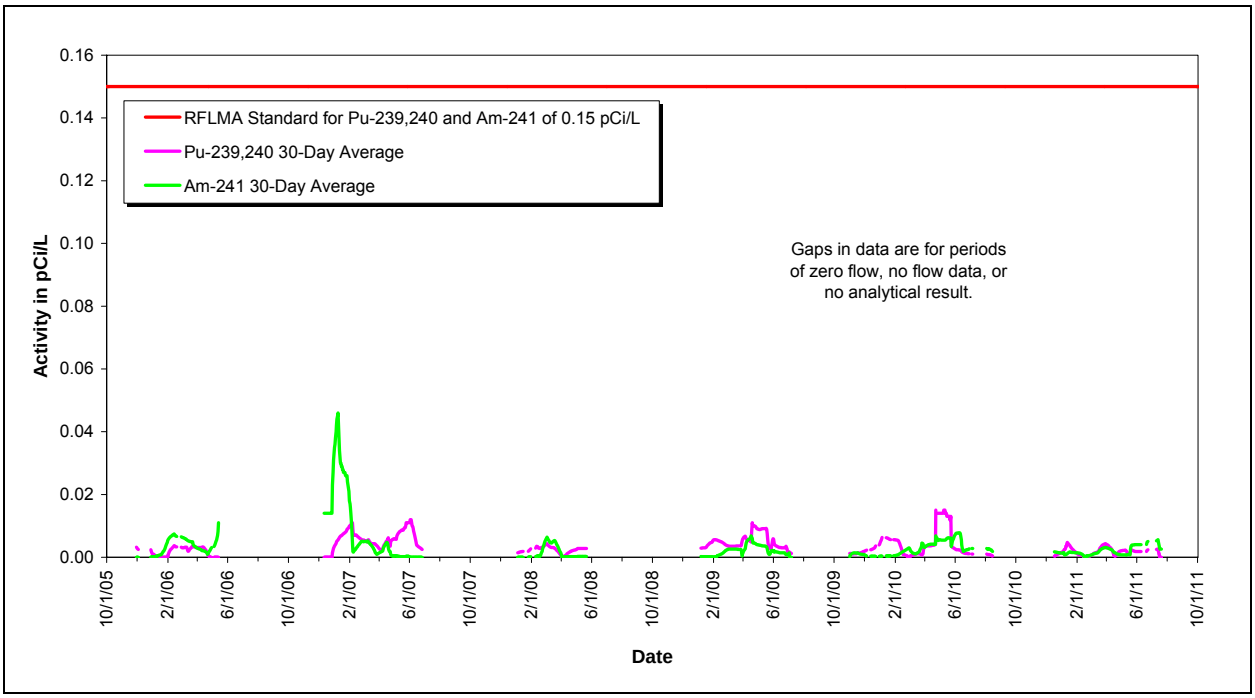
3.1.2.1 Monitoring Location GS01

Monitoring location GS01 is on Woman Creek at Indiana Street. Figure 2 and Figure 4 show no occurrences of reportable 30-day averages for the quarter using the available data. Figure 3 and Figure 5 show sampling data from 2005 through the third quarter of CY 2011.



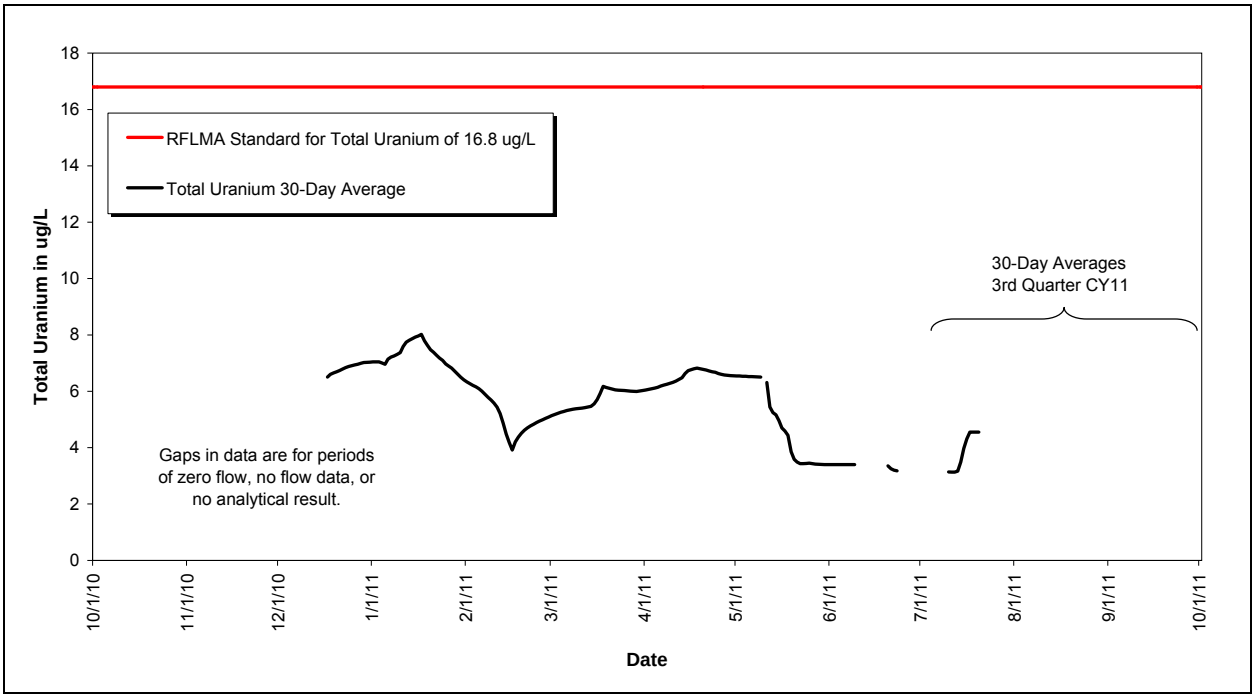
pCi/L = picocuries per liter; as of this report, analysis was pending for the composite sample collected 8/17-11/10/11; there was no flow at GS01 from 7/21/11 through 10/24/11

Figure 2. Volume-Weighted 30-Day Average Plutonium and Americium Activities at GS01: Calendar Year Ending Third Quarter CY 2011



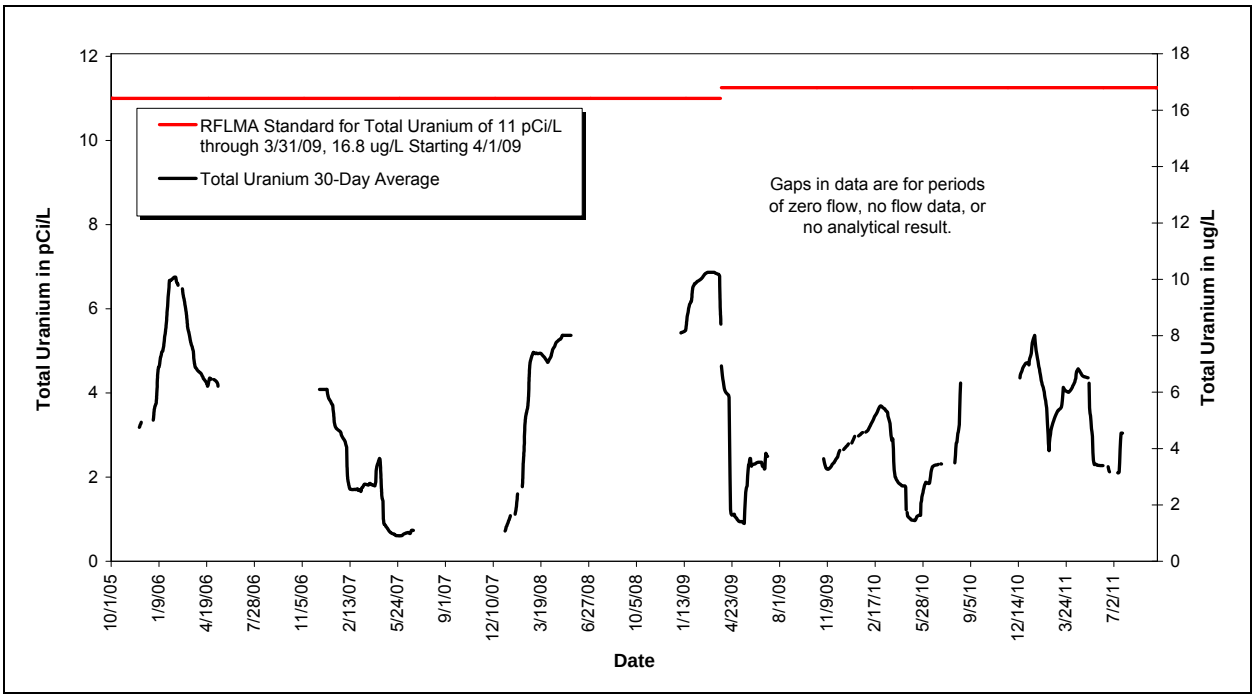
pCi/L = picocuries per liter; as of this report, analysis was pending for the composite sample collected 8/17-11/10/11; there was no flow at GS01 from 7/21/11 through 10/24/11

Figure 3. Volume-Weighted 30-Day Average Plutonium and Americium Activities at GS01: Post-Closure Period Ending Third Quarter CY 2011



µg/L = micrograms per liter; as of this report, analysis was pending for the composite sample collected 8/17-11/10/11; there was no flow at GS01 from 7/21/11 through 10/24/11

Figure 4. Volume-Weighted 30-Day Average Total Uranium Concentrations at GS01: Calendar Year Ending Third Quarter CY 2011

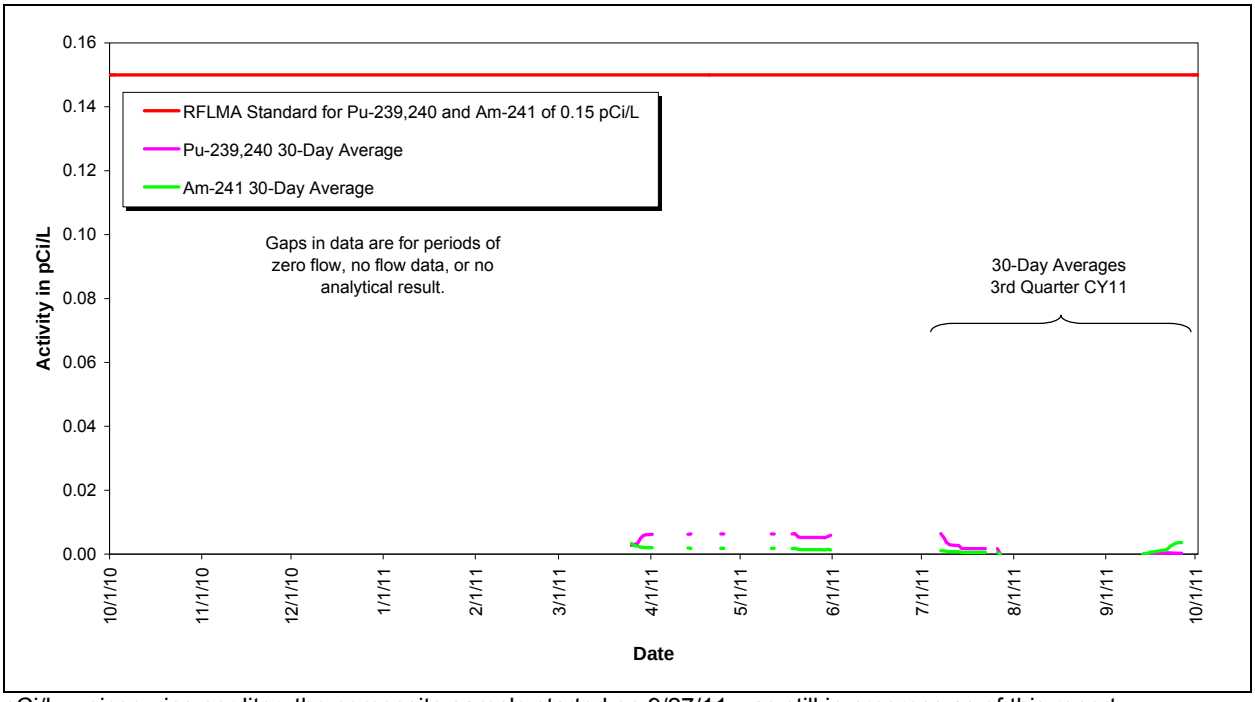


pCi/L = picocuries per liter; µg/L = micrograms per liter; as of this report, analysis was pending for the composite sample collected 8/17-11/10/11; there was no flow at GS01 from 7/21/11 through 10/24/11

Figure 5. Volume-Weighted 30-Day Average Total Uranium Concentrations at GS01: Post-Closure Period Ending Third Quarter CY 2011

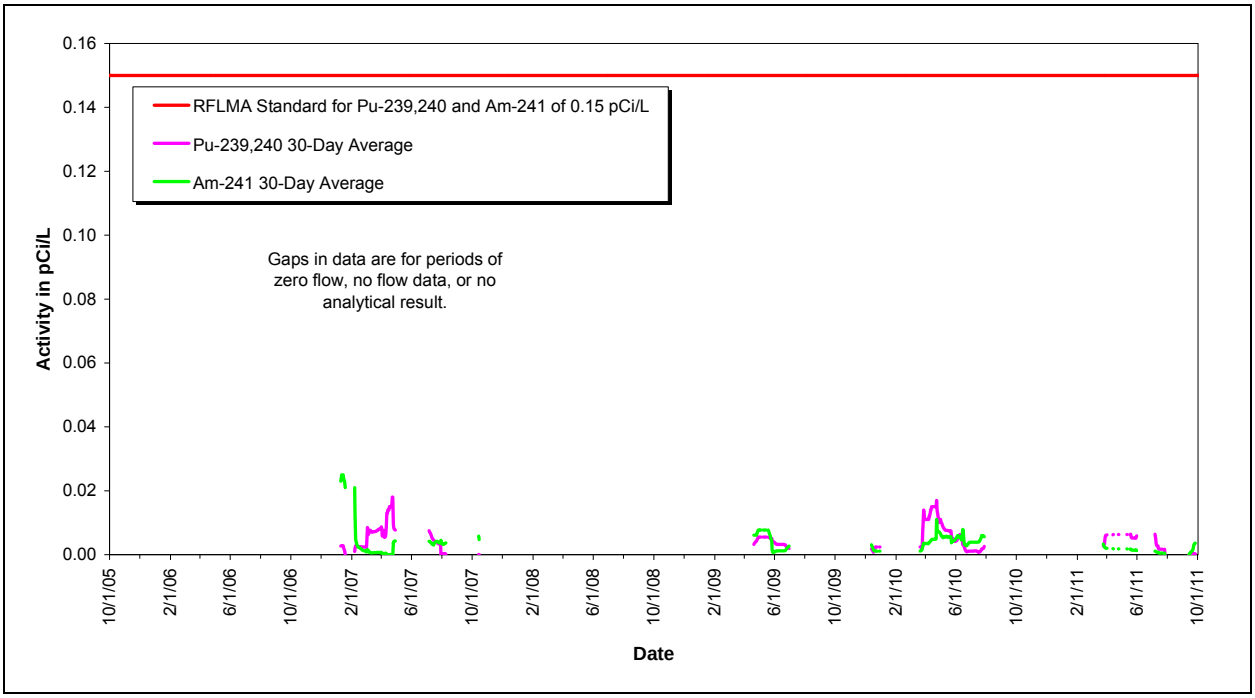
3.1.2.2 Monitoring Location GS03

Monitoring location GS03 is on Walnut Creek at Indiana Street. Figure 6, Figure 8, and Figure 10 show no occurrences of reportable water quality for the quarter using the available data. Figure 7, Figure 9, and Figure 11 show sampling data from 2005 through the third quarter of CY 2011.



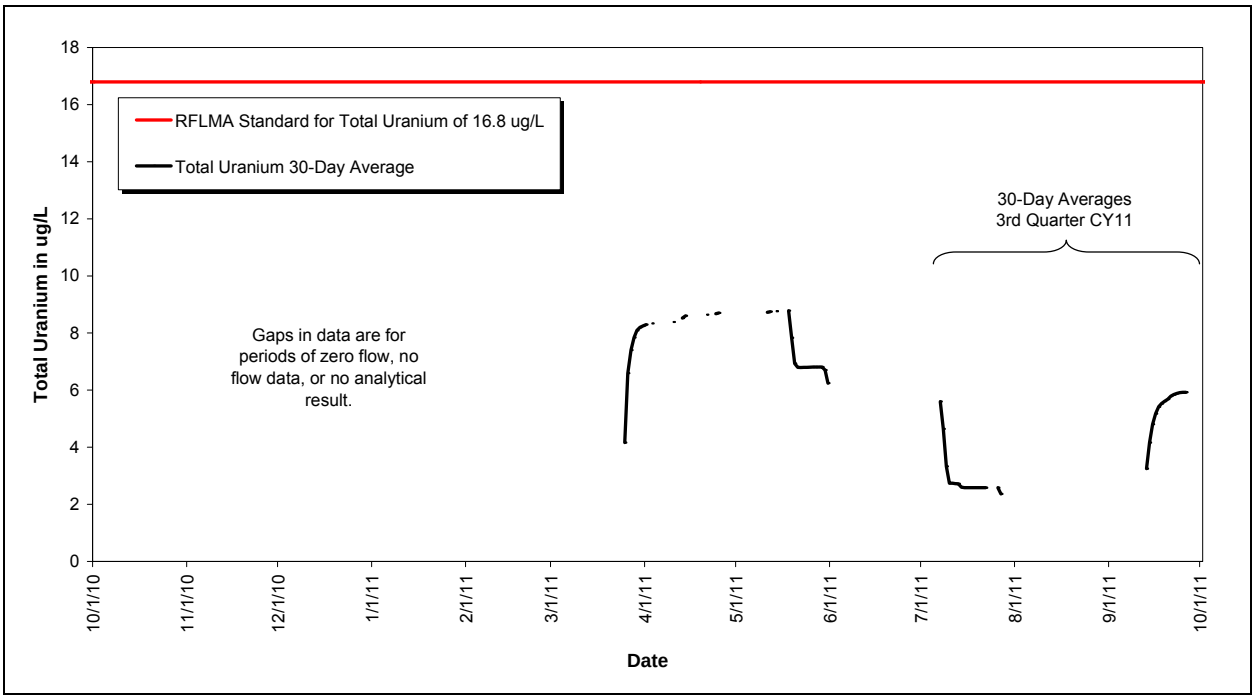
pCi/L = picocuries per liter; the composite sample started on 9/27/11 was still in progress as of this report

Figure 6. Volume-Weighted 30-Day Average Plutonium and Americium Activities at GS03: Calendar Year Ending Third Quarter CY 2011



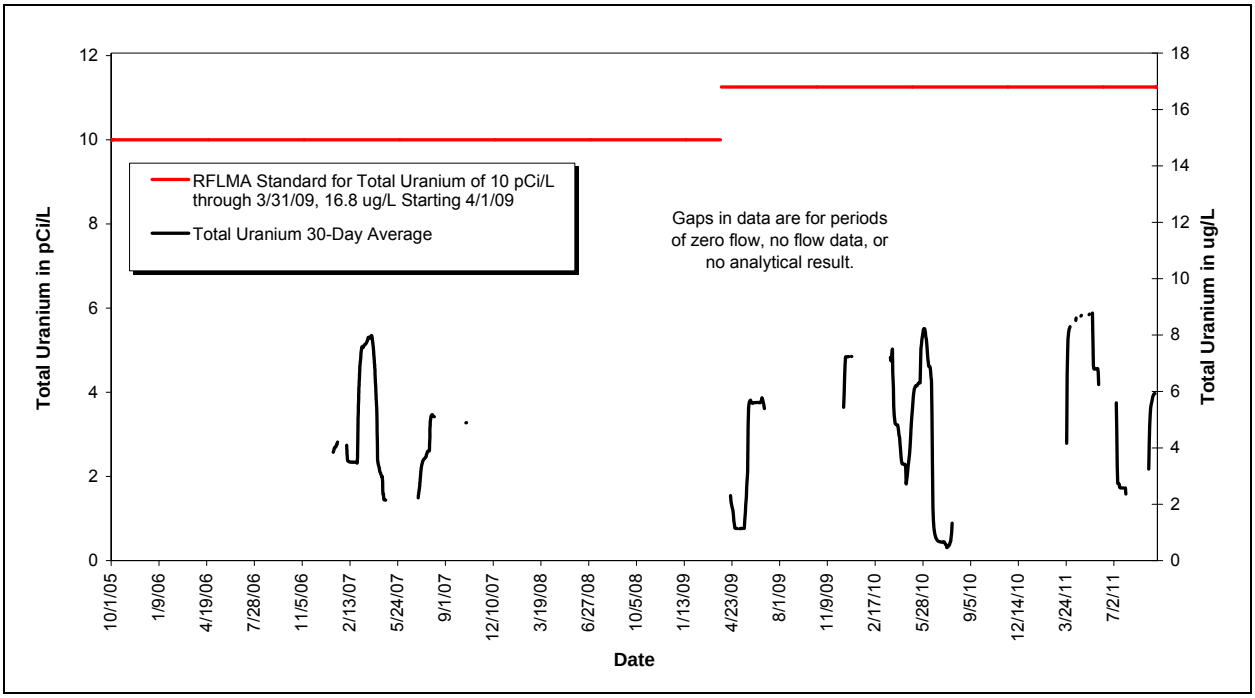
pCi/L = picocuries per liter; the composite sample started on 9/27/11 was still in progress as of this report

Figure 7. Volume-Weighted 30-Day Average Plutonium and Americium Activities at GS03: Post-Closure Period Ending Third Quarter CY 2011



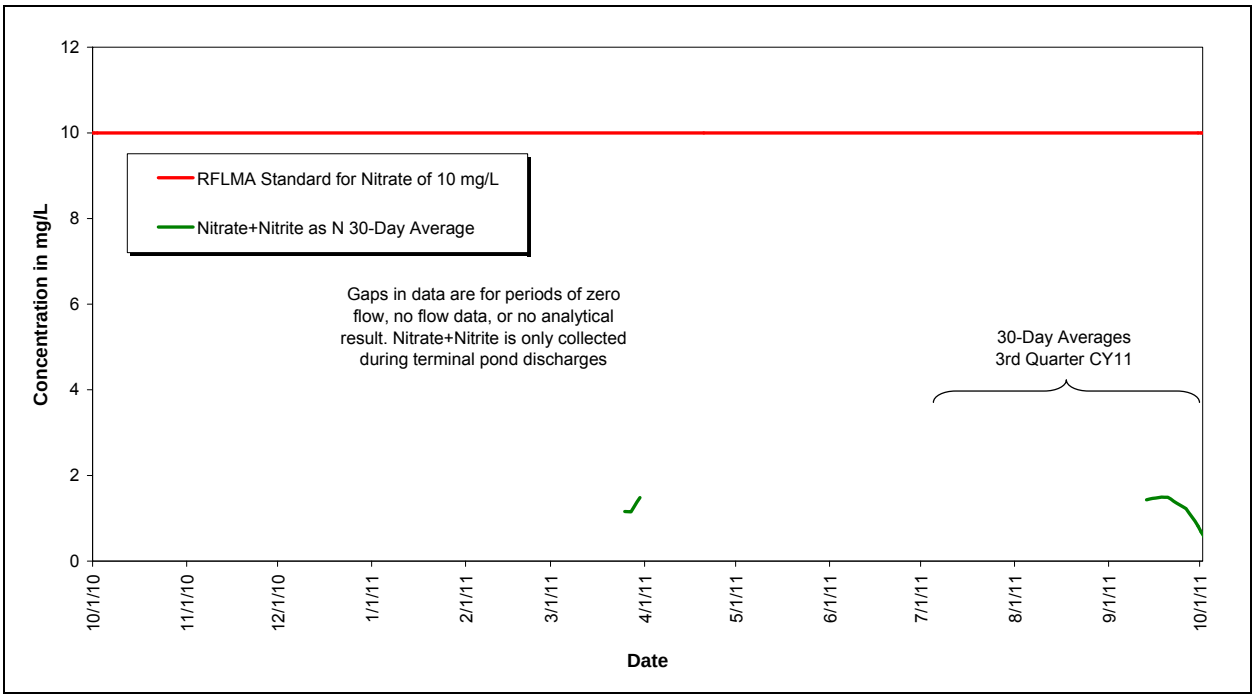
µg/L = micrograms per liter; the composite sample started on 9/27/11 was still in progress as of this report

Figure 8. Volume-Weighted 30-Day Average Total Uranium Concentrations at GS03: Calendar Year Ending Third Quarter CY 2011



µg/L = micrograms per liter; pCi/L = picocuries per liter; the composite sample started on 9/27/11 was still in progress as of this report

Figure 9. Volume-Weighted 30-Day Average Total Uranium Concentrations at GS03: Post-Closure Period Ending Third Quarter CY 2011



mg/L = milligrams per liter

Figure 10. Volume-Weighted 30-Day Average Nitrate + Nitrite Concentrations at GS03: Calendar Year Ending Third Quarter CY 2011

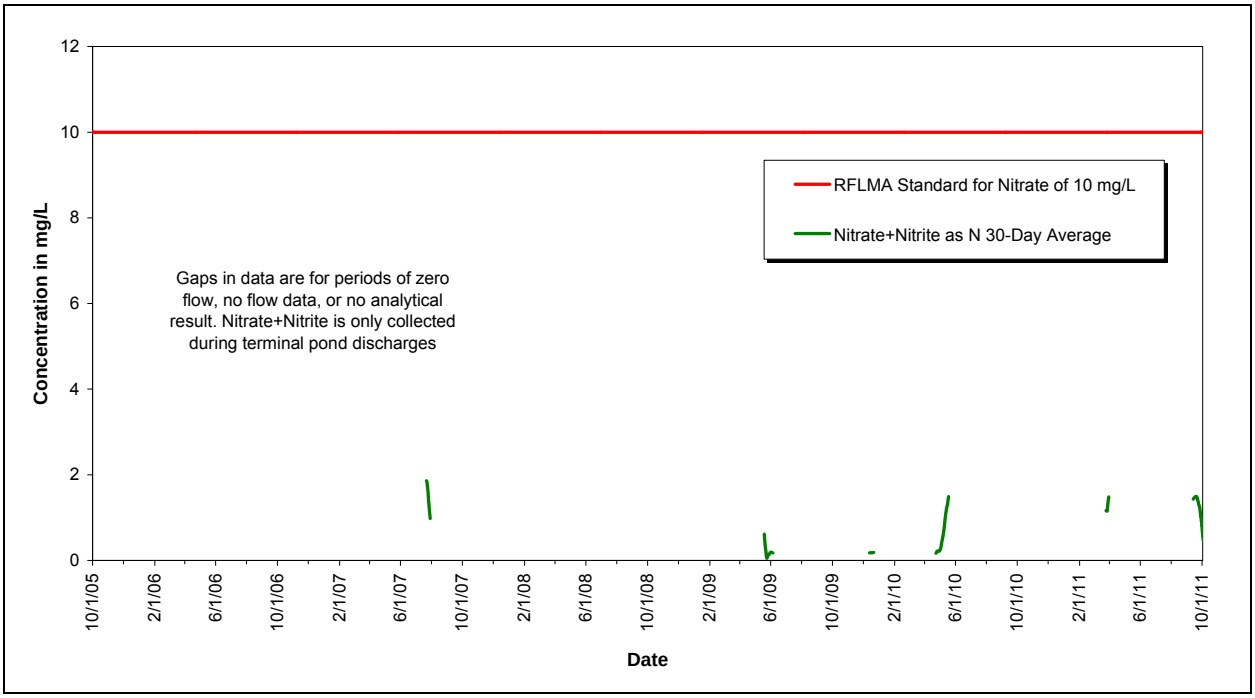
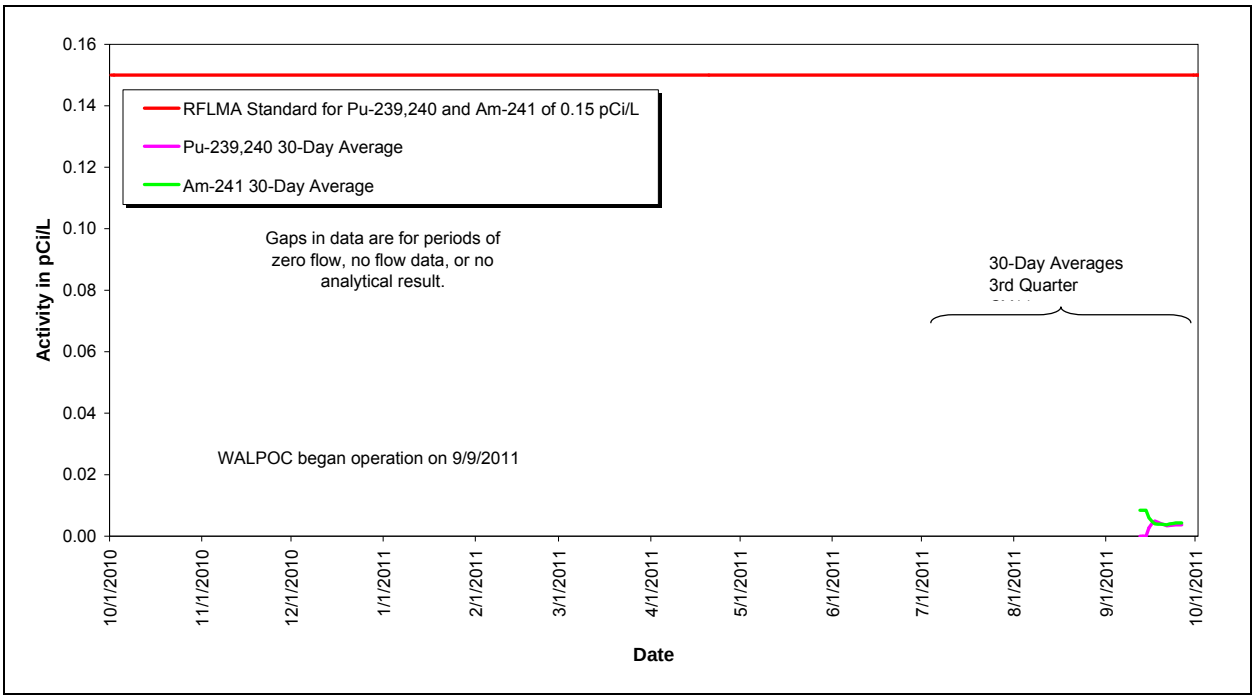


Figure 11. Volume-Weighted 30-Day Average Nitrate + Nitrite Concentrations at GS03: Post-Closure Period Ending Third Quarter CY 2011

3.1.2.3 Monitoring Location WALPOC

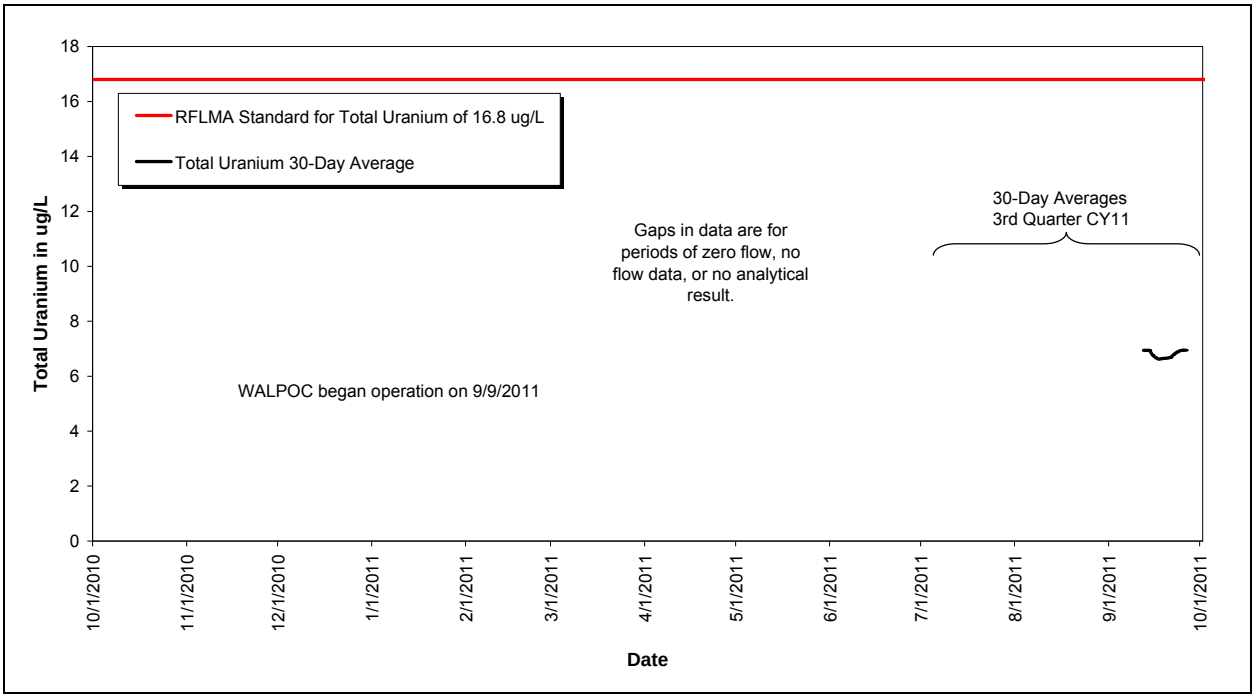
Monitoring location WALPOC is on Walnut Creek at the eastern COU boundary. Figure 12 through Figure 15 show no occurrences of reportable 12-month rolling or 30-day averages[2] for the quarter using the available data. WALPOC began operation as a RFLMA POC on 9/9/11. Since Pu, Am, and U analytical data are only available for the period 9/9–9/26/11, the corresponding 12-month rolling average values for 9/30/11 cannot be calculated; no 12-month rolling average plots are presented for these analytes.



pCi/L = picocuries per liter; as of this report, analysis was pending for the composite sample collected 9/27-11/30/11

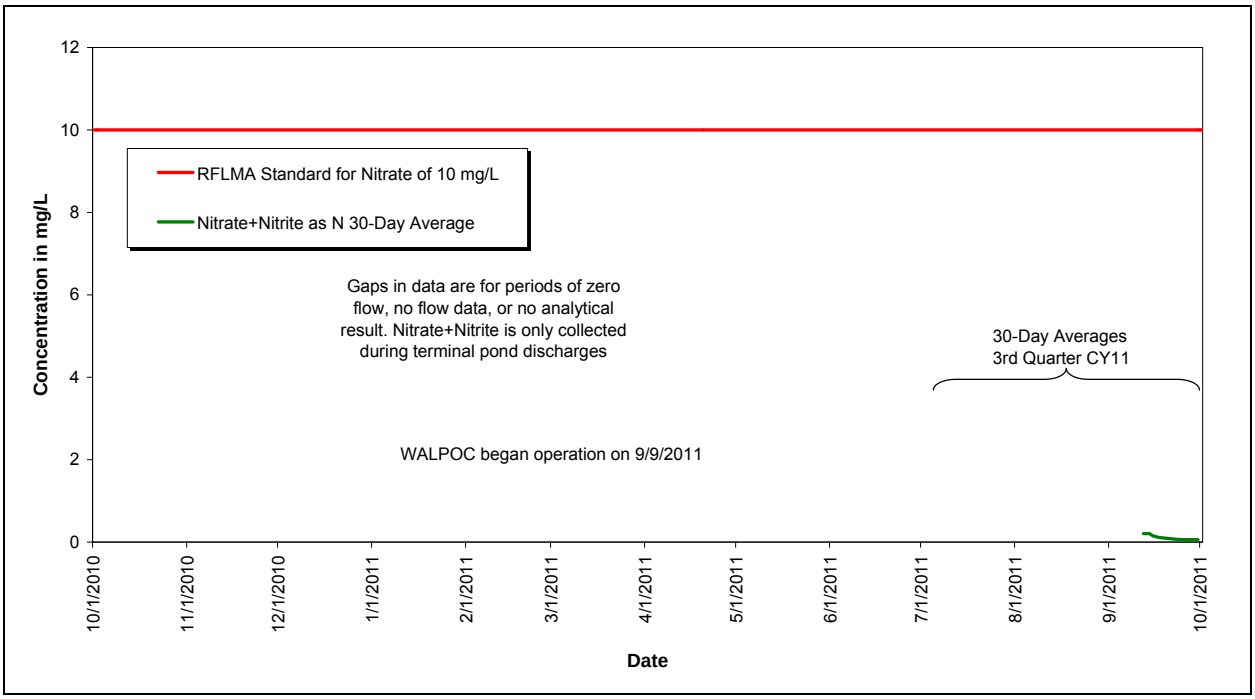
Figure 12. Volume-Weighted 30-Day Average Plutonium and Americium Activities at WALPOC: Calendar Year Ending Third Quarter CY 2011

[2] The first flow was observed (and sample collection began) at WALPOC on 9/12/11. Therefore, based on the data evaluation protocols, a 30-day average cannot be formally calculated until 30 days of flow have occurred. The 30th day of flow was 11/4/11. Similarly, a 12-month rolling average cannot be formally calculated until one calendar year has elapsed from the date WALPOC began operation as a RFLMA POC. Since WALPOC began operation as a POC on 9/9/11, the first formal 12-month rolling average will be calculated on 9/8/12. Therefore, the values shown here for WALPOC use only the available data.



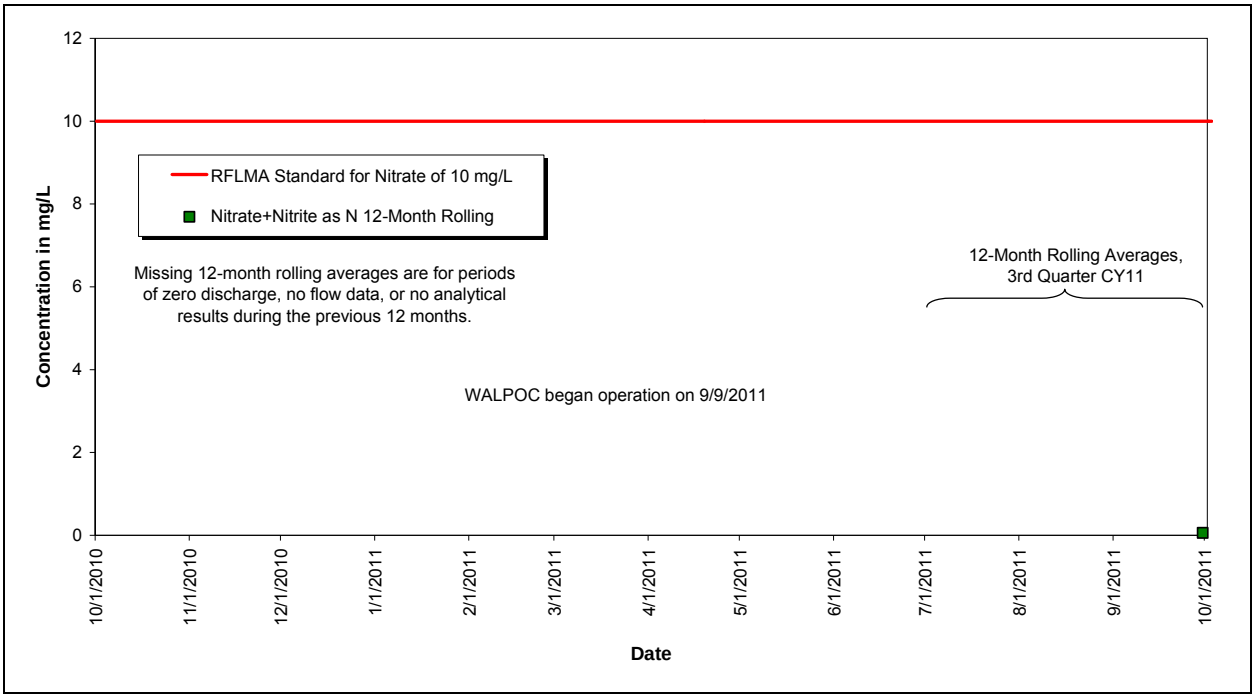
µg/L = micrograms per liter; as of this report, analysis was pending for the composite sample collected 9/27-11/30/11

Figure 13. Volume-Weighted 30-Day Average Total Uranium Concentrations at WALPOC: Calendar Year Ending Third Quarter CY 2011



mg/L = milligrams per liter

Figure 14. Volume-Weighted 30-Day Average Nitrate + Nitrite Concentrations at WALPOC: Calendar Year Ending Third Quarter CY 2011



Note: Nitrate + nitrite as nitrogen 12-month averages are conservatively compared to the nitrate standard only.
mg/L = milligrams per liter

Figure 15. Volume-Weighted 12-Month Rolling Average Nitrate + Nitrite as Nitrogen Concentrations at WALPOC: Calendar Year Ending Third Quarter CY 2011

3.1.2.4 Monitoring Location WOMPOC

Monitoring location WOMPOC is on Woman Creek at the eastern COU boundary. WOMPOC began operation as a RFLMA POC on 9/28/11. As no analytical data are available since flow was first observed on 10/14/11, no corresponding 12-month rolling and 30-day average values can be calculated.[3]

3.1.3 POE Monitoring

The following sections include summary plots showing the applicable 12-month rolling averages for the POE analytes.

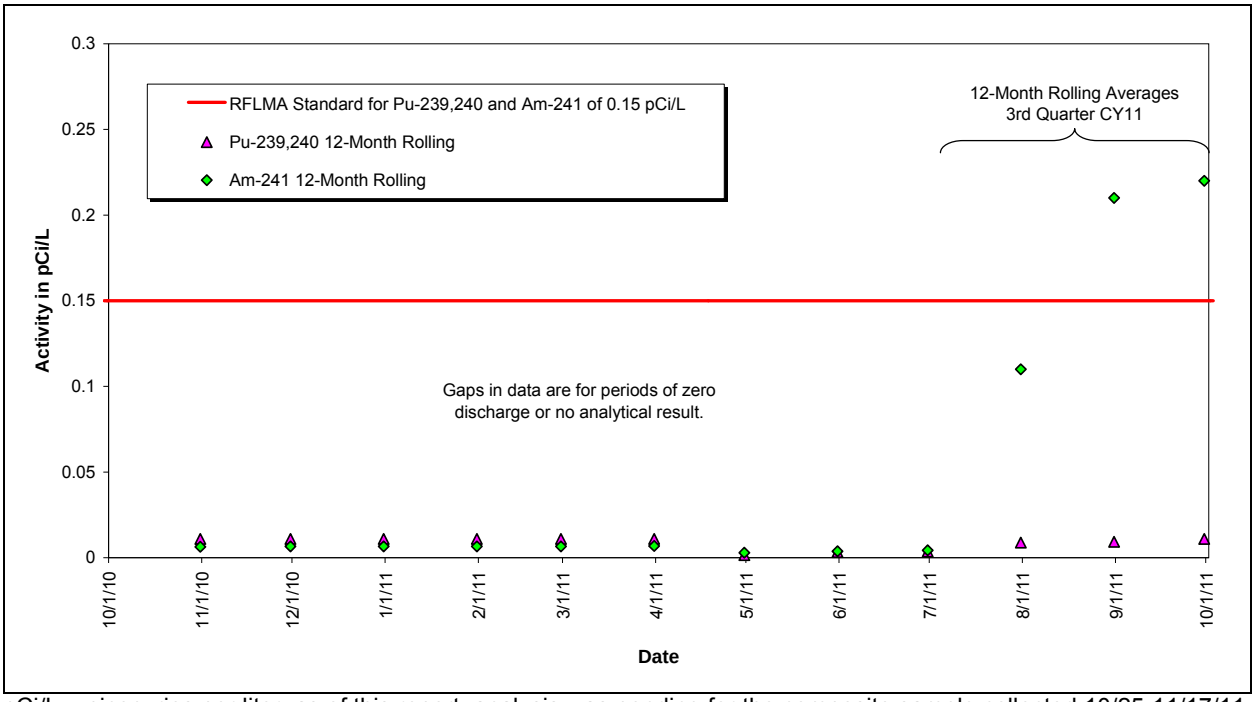
3.1.3.1 Monitoring Location GS10

Monitoring location GS10 is on South Walnut Creek just upstream of the B-Series ponds. Figure 16 and Figure 18 show the 12-month rolling averages for plutonium, americium, and total uranium values during the quarter. Figure 17 and Figure 19 show sampling data from 2005 through the third quarter of CY 2011.

Figure 18 shows that the 12-month rolling average for uranium exceeds the RFLMA standard of 16.8 µg/L. Figure 16 shows that the 12-month rolling average for americium exceeds the RFLMA standard of 0.15 picocuries per liter (pCi/L). The composite sampling results for

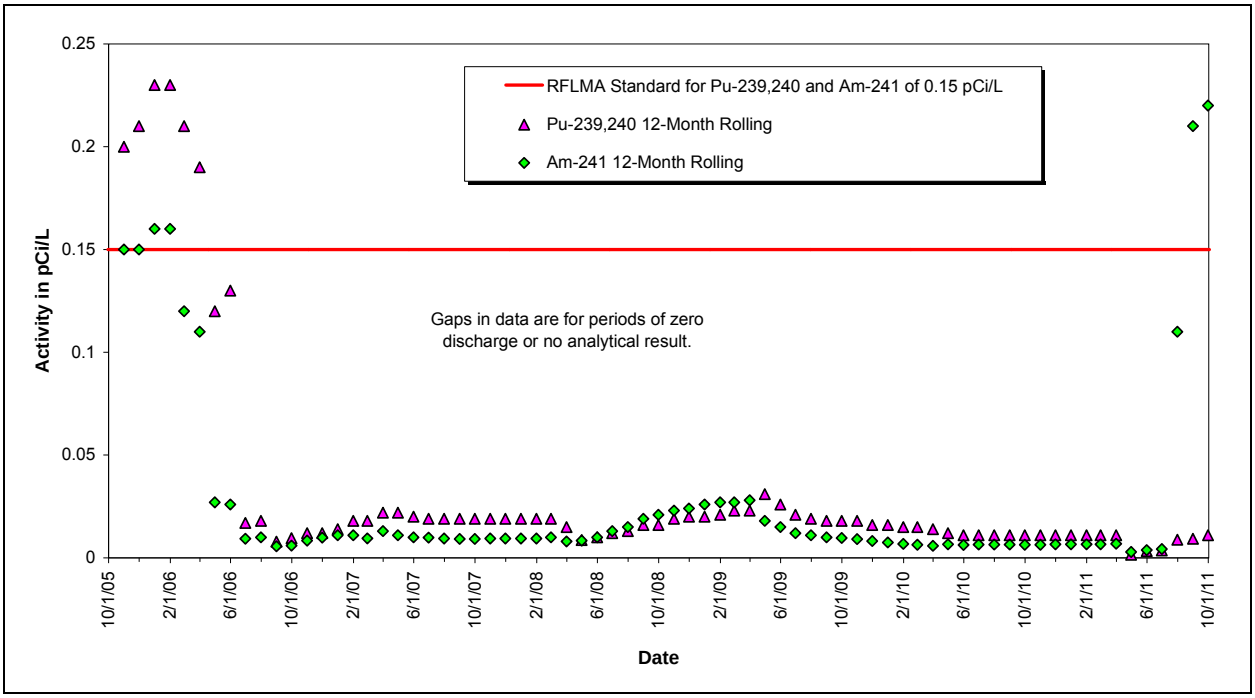
[3] Three flow-paced composite samples have been collected and submitted for analysis.

plutonium, americium, and uranium from composite samples collected at GS10 during CY 2011 are given below. All other analytes were not reportable during the third quarter of CY 2011. Table 2 lists the plutonium, americium, and uranium results for composite samples collected during CY 2011.



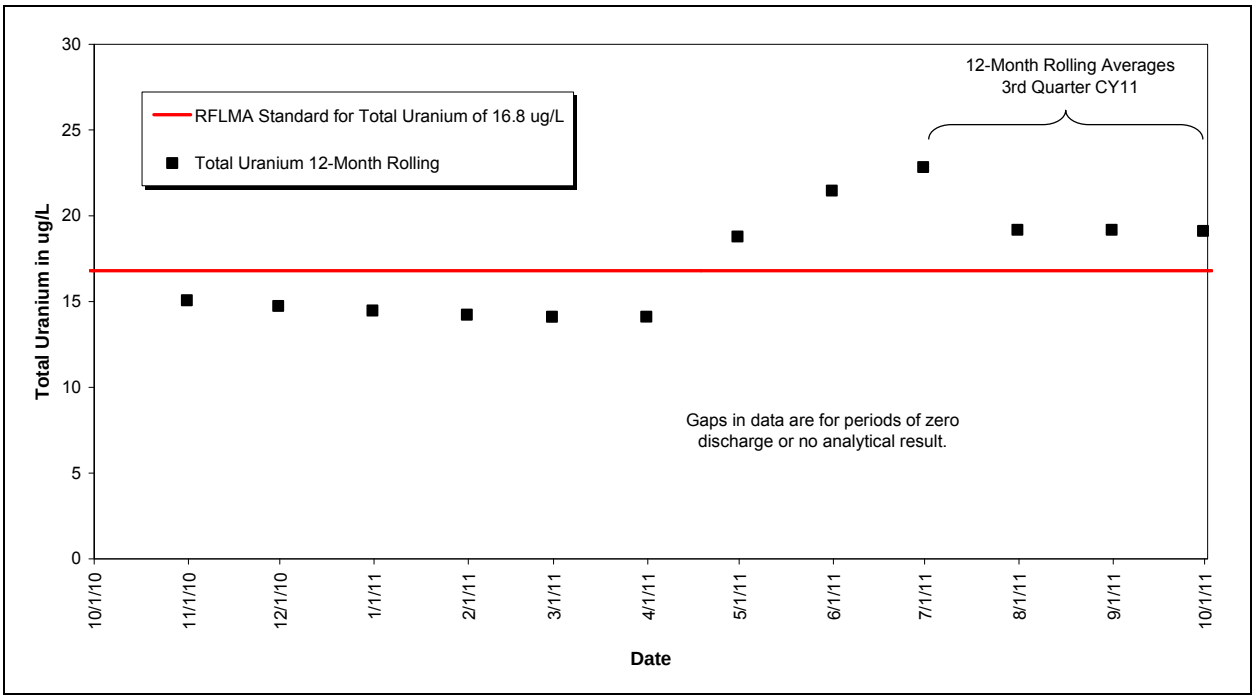
pCi/L = picocuries per liter; as of this report, analysis was pending for the composite sample collected 10/25-11/17/11

Figure 16. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at GS10: Calendar Year Ending Third Quarter CY 2011



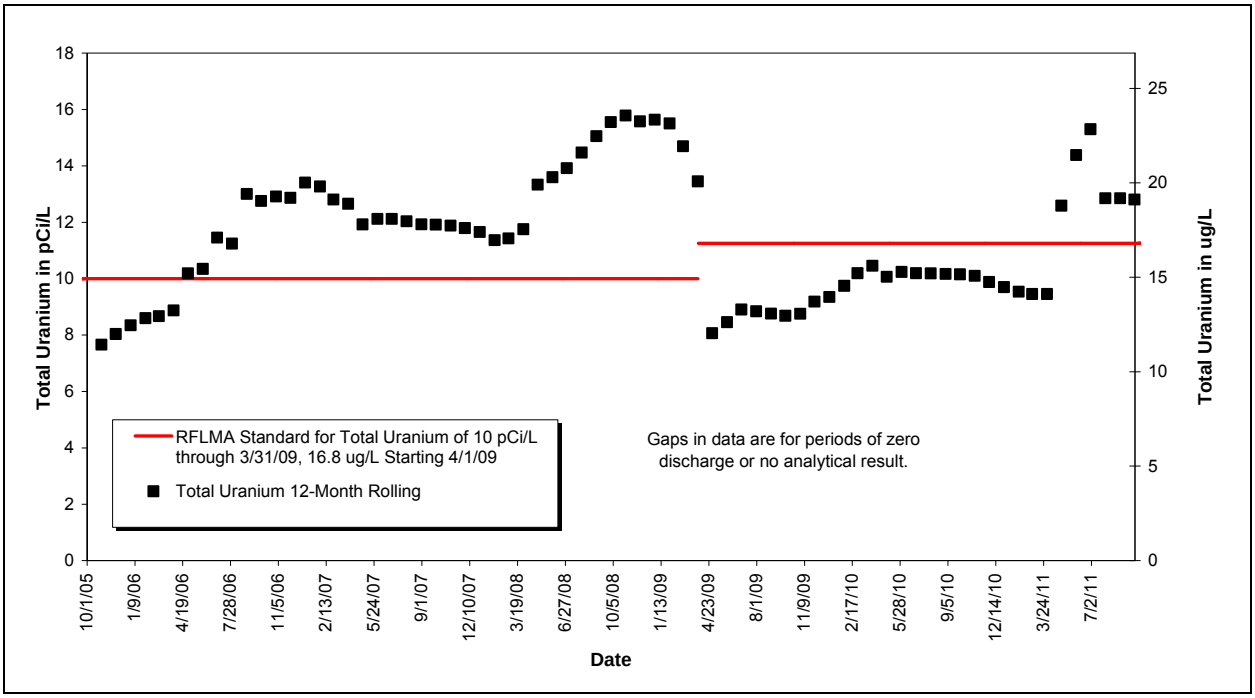
pCi/L = picocuries per liter; as of this report, analysis was pending for the composite sample collected 10/25-11/17/11

Figure 17. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at GS10: Post-Closure Period Ending Third Quarter CY 2011



µg/L = micrograms per liter; as of this report, analysis was pending for the composite sample collected 10/25-11/17/11

Figure 18. Volume-Weighted 12-Month Rolling Average Total Uranium Concentrations at GS10: Calendar Year Ending Third Quarter CY 2011



µg/L = micrograms per liter; pCi/L = picocuries per liter; as of this report, analysis was pending for the composite sample collected 10/25-11/17/11

Figure 19. Volume-Weighted 12-Month Rolling Average Total Uranium Concentrations at GS10: Post-Closure Period Ending Third Quarter CY 2011

Table 2. CY 2011 Composite Sampling Results at GS10

Date—Time Start	Date—Time End	Am-241 Result (pCi/L)	Pu-239, 240 Result (pCi/L)	Uranium Result (µg/L)
1/3/2011 10:25	2/16/2011 9:47	0.000	0.000	21.8
2/16/2011 9:47	4/11/2011 10:50	0.000	0.013	89.2
4/11/2011 10:50	5/4/2011 11:39	0.023	0.021	71.0
5/4/2011 11:39	5/13/2011 12:25	0.019	0.017	46.5
5/13/2011 12:25	5/20/2011 12:03	0.003	0.007	18.6
5/20/2011 12:03	6/3/2011 10:56	0.004	0.001	35.8
6/3/2011 10:56	6/13/2011 10:22	0.015	0.000	20.1
6/13/2011 10:22	7/1/2011 9:00	0.010	0.004	10.6
7/1/2011 9:00	7/8/2011 11:08	0.008	0.008	7.75
7/8/2011 11:08	7/10/2011 11:05	0.015	0.005	4.36
7/10/2011 11:05	7/11/2011 10:59	0.020	0.011	6.06
7/11/2011 10:59	7/21/2011 8:56	0.058	0.037	11.3
7/21/2011 8:56	8/24/2011 9:41	3.490	[a]	7.82
8/24/2011 9:41	9/29/2011 12:35	0.044	0.020	8.16
9/29/2011 12:35	10/25/2011 10:27	0.877	0.658	8.24
10/25/2011 10:27	11/17/2011 10:40	[b]	[b]	[b]
11/17/2011 10:40	in progress	[c]	[c]	[c]

Notes:
[a] Through data validation, results determined to be unusable
[b] Analysis pending
[c] Sample in progress

The GS10 uranium evaluation was performed in accordance with RFLMA Attachment 2, Figure 6, "Points of Evaluation," which resulted in a calculated 12-month rolling average concentration for uranium on April 30, 2011, of 18.8 µg/L. More recent 12-month rolling averages through 9/30/11 continue to exceed the RFLMA applicable Table 1 standard of 16.8 µg/L. Initial notification to the regulatory agencies and the public, in accordance with RFLMA Attachment 2, Figure 6, was made by e-mail on June 16, 2011. RFLMA Contact Record 2011-04 (July 8, 2011), "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. RFLMA Contact Record 2011-05 (October 4, 2011), "Update for Reportable Condition for Uranium at Point of Evaluation GS10," provides an update of the monitoring results and provides further discussion of the path forward. Both contact records are available on the Rocky Flats website, http://www.lm.doe.gov/Rocky_Flats/ContactRecords.aspx.

The following bullets provide an update to the ongoing GS10 uranium evaluation:

- Downstream monitoring at B5INFLOW, GS08, WALPOC, and GS03 (Figure 20) continue to show uranium concentrations below 16.8 µg/L. Recent analytical results at downstream locations are given in Table 3. The latest available 12-month rolling and 30-day average uranium concentrations calculated from flow-paced composite samples are shown in Figure 21.

Table 3. Recent Uranium Flow-Paced Composite Sample Results

B5INFLOW		GS08		WALPOC		GS03	
Sample Period	Result (µg/L)	Sample Period	Result (µg/L)	Sample Period	Result (µg/L)	Sample Period	Result (µg/L)
1/18–4/11/11	13.5	3/24–3/26/11	7.9			3/24–3/26/11	8.0
4/11–5/4/11	9.1	3/26–3/28/11	7.5			3/26–3/28/11	9.1
5/4–5/13/11	14.6	3/28–3/30/11	7.9			3/28–3/31/11	9.2
5/13–5/18/11	11.9					3/31–5/20/11	3.3
5/18–5/19/11	8.0					5/20–9/12/11	2.4
5/19–5/20/11	10.3						
5/20–6/3/11	10.5						
6/3–7/1/11	6.2						
7/1–7/10/11	5.3						
7/10–7/11/11	4.7						
7/11–7/14/11	6.2						
7/14–7/21/11	12.2	9/12–9/15/11	5.6	9/12–9/15/11	6.9	9/12–9/15/11	6.1
7/21–8/24/11	11.2	9/15–9/18/11	5.4	9/15–9/18/11	6.3	9/15–9/18/11	6.9
8/24–9/29/11	[a]	9/18–9/21/11	5.7	9/18–9/22/11	6.8	9/18–9/22/11	6.7
9/29-11/1/11	[a]	9/21–9/27/11	6.0	9/22–9/27/11	7.6	9/22–9/27/11	6.2
11/1/11–	[b]	9/27–11/9/11	[a]	9/27–11/30/11	[a]	9/27/11–	[b]
		11/9–11/29/11	[a]				
		11/29/11–	[b]	11/30/11–	[b]		

Notes: Some results are preliminary and subject to revision.
[a] Analysis pending
[b] Sample in progress

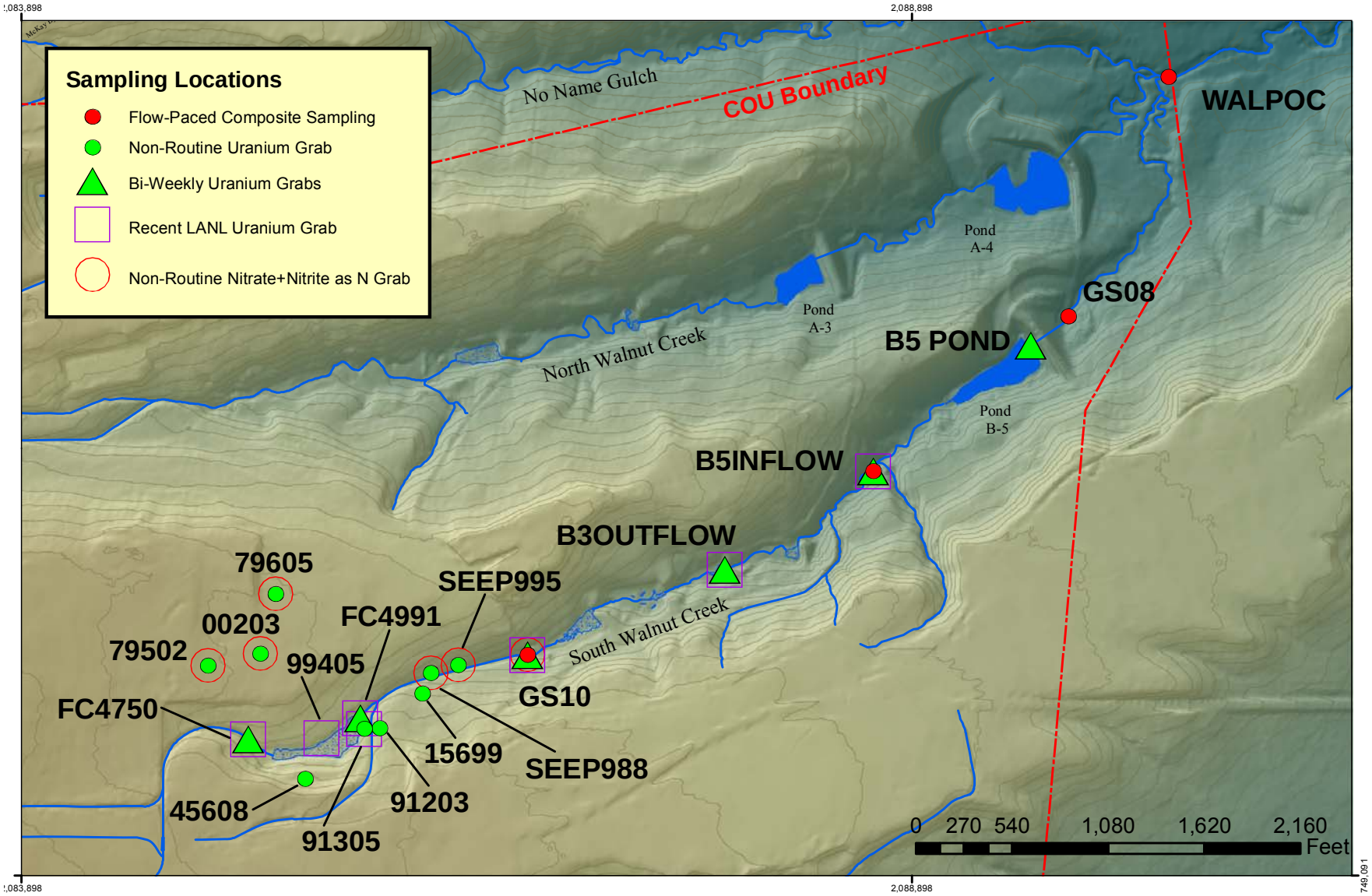


Figure 20. Uranium Evaluation Sampling Location Map for GS10 Drainage Area

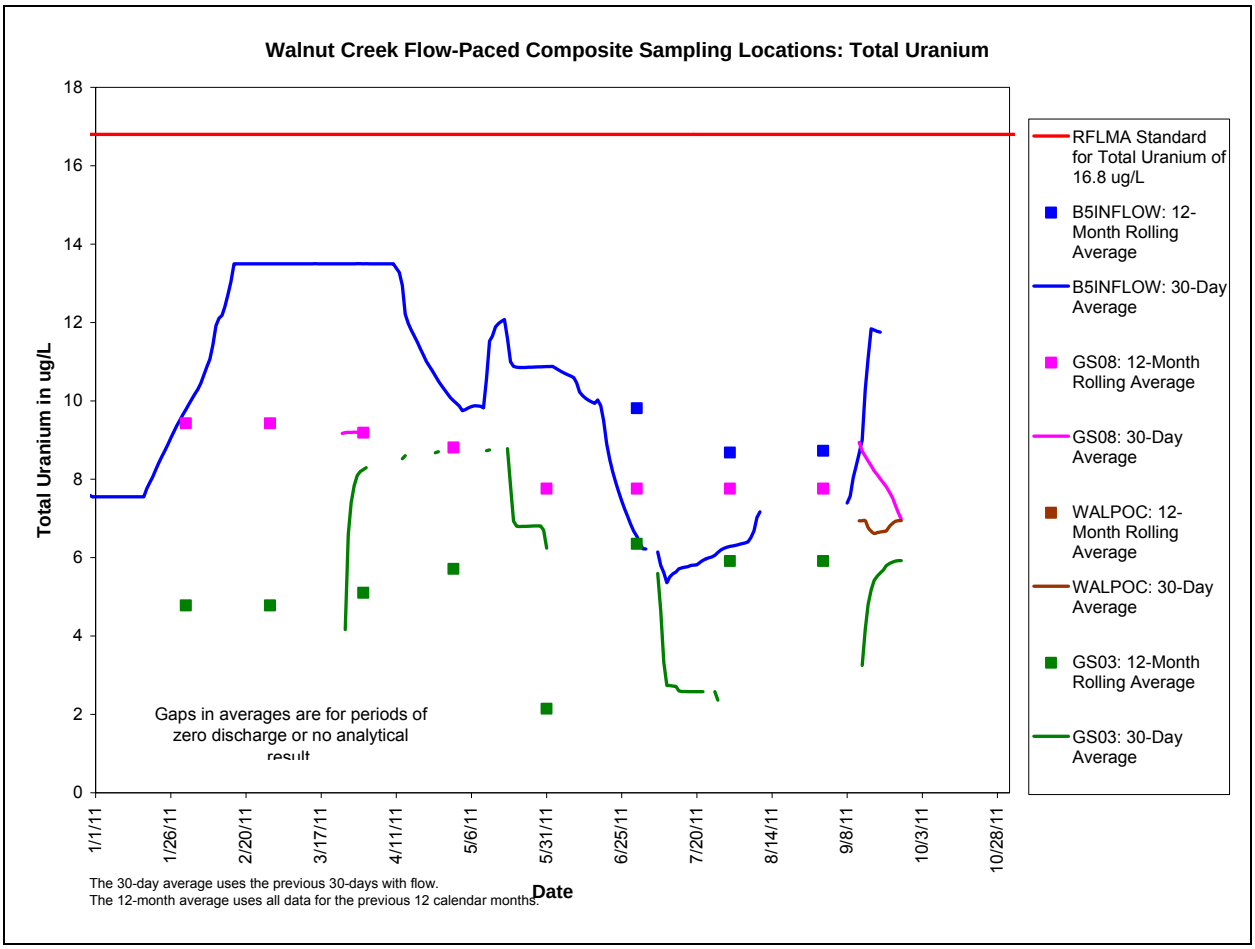


Figure 21. Average Uranium Concentrations at Locations Downstream of GS10

- Additional sampling and analysis for uranium within the GS10 drainage continues. Following consultation, two temporary surface water sample locations upstream of GS10 have been established for biweekly uranium grab sampling (FC4991 and FC4750; Figure 20 and Figure 22). Biweekly sampling at these locations was initiated on June 30, 2011.

  These new locations supplement GS10, B3OUTFLOW, B5INFLOW, and B5 POND (Figure 20), which have been sampled bi-weekly for uranium since 1/27/10. Data from these six locations are summarized in Table 4.

Table 4. Summary of Bi-Weekly Uranium Grab Sampling in South Walnut Creek

South Walnut Creek		Uranium (ug/L)			
	Location Code	Average	Sample Count	85th Percentile	50th Percentile
Upstream	FC4750	21.8	10	23.0	17.0
⬇	FC4991	7.6	10	10.2	6.1
⬇	GS10	15.8	48	24.0	14.0
⬇	B3OUTFLOW	15.4	44	23.0	15.5
⬇	B5INFLOW	11.7	40	16.5	11.0
Downstream	B5 POND	8.1	50	9.0	7.2

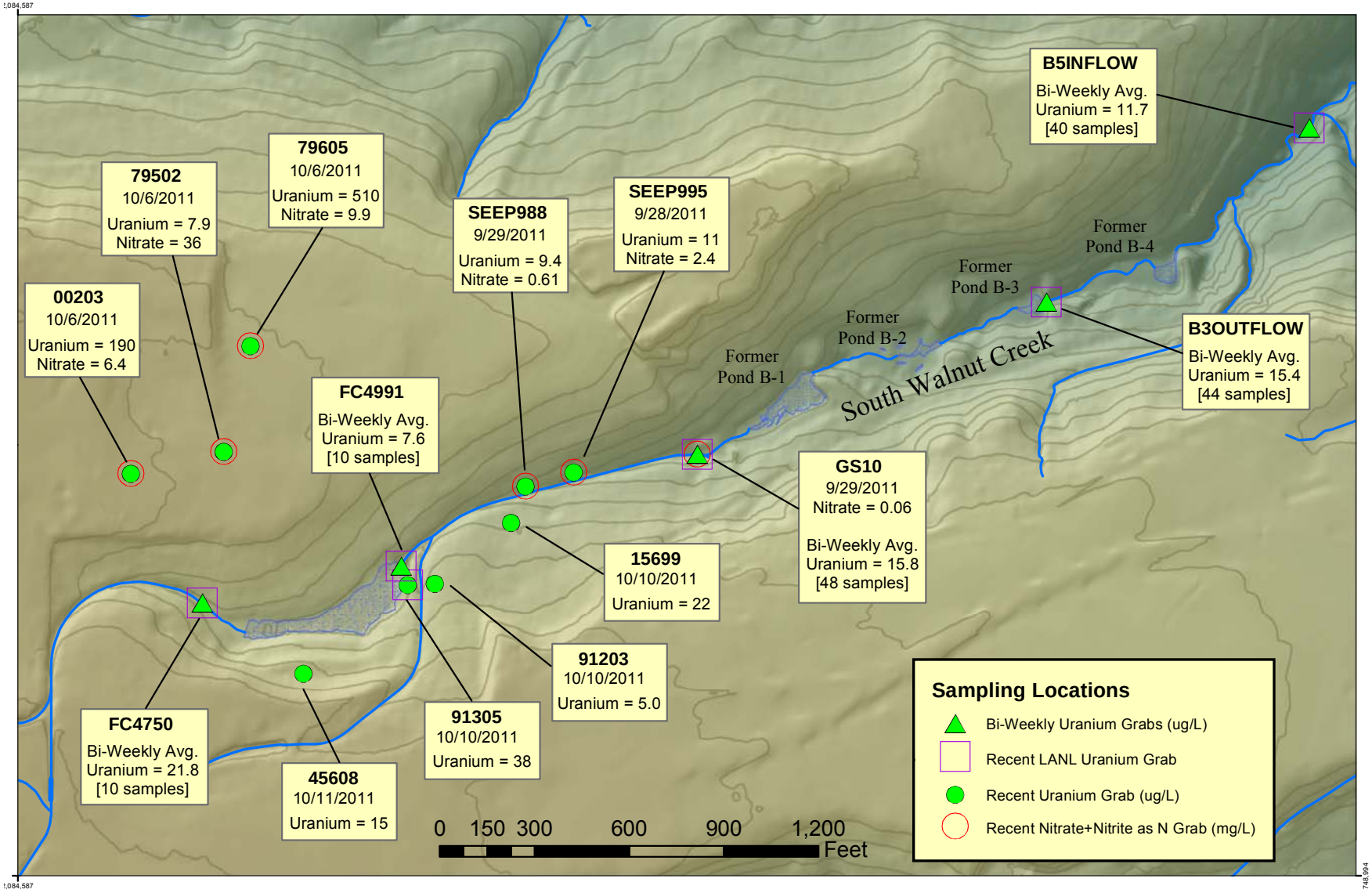


Figure 22. Uranium and Nitrate+Nitrite as N Results for Non-Routine Grab Samples Collected Upstream of GS10

- As noted in the previous RFLMA Quarterly report, the following samples were sent to Los Alamos National Laboratory (LANL) for isotopic analysis. LANL determines the percentages of natural and anthropogenic uranium to compare with percentages in pre-closure and post-closure samples previously analyzed by LANL. The locations are shown on Figure 20:

  — Flow-paced surface water sample from GS10 for the period June 13 to July 1, 2011. (Historically, this location has had approximately 70 percent natural uranium.)

  — Groundwater sample from upgradient well 99405. (Historically, this location has reported uranium concentrations that typically exceed 100 µg/L and have been 99.9 to 100 percent natural uranium.)

  The results of the LANL analysis have been informally reported by LANL to Stoller staff while the formal LANL report is being prepared:

  — The signature results for GS10 do not match the historical natural uranium percentage of approximately 70 percent. Natural uranium was reported as 49 percent. The uranium concentration was 21.6 µg/L. The previous LANL sample, taken on March 17, 2010, was 24.1 µg/L and 71.7 percent natural uranium.

  — The results for well 99405 were 411.1 µg/L uranium, with a 100 percent natural uranium signature. These results are consistent with historical data.

- Based on the above LANL results for GS10, the following additional samples were collected to be sent to LANL for isotopic analysis. The locations are shown on Figure 22.

  — Water from the routine flow-paced composite sample collected at GS10 during the period 8/24–9/29/11 to help confirm the previous sample results.

  — Grab samples at FC4750 and FC4991 collected on 10/29/11.

  — Water from the routine flow-paced composite sample collected at B5INFLOW during the period 8/24–9/29/11. This location does not have previous LANL results.

  — A grab sample at B3OUTFLOW collected on 10/28/11. One post-closure LANL sample has been collected at B3OUTFLOW. The result was a 74.3 percent natural uranium signature.

  — A grab sample at well 91305, which is upgradient of GS10, collected on 10/10/11.

  Additional non-routine grab samples have been collected to assist in the possible identification of a source that may have contributed to elevated uranium levels at GS10. The samples listed below will also help determine if and where further evaluation samples may be taken. The results are shown on Figure 22.

  — Wells 15699, 45608, 91305, and 91203 were grab sampled for uranium on 10/10–10/11/11.

  — Wells 00203, 79502, and 79605 were grab sampled for uranium and nitrate+nitrite as N on 10/6/11.

  — GS10 and hillside seep locations SEEP988 and SEEP995 were also grab sampled for uranium and nitrate+nitrite as N on 9/28–9/29/11.

Formal notification of a reportable condition for 12-month rolling average americium values at GS10 was made on 12/2/11. The reportable condition was determined based on evaluation of recently available validated analytical results for americium (Am-241) from the composite samples collected during the period 7/21/11–10/25/11. Following is a synopsis of the data:

- Composite 7/21–8/24/11 (initial analysis; results validated 11/2/11) Pu = 0.938 pCi/L, Am = 2.97 pCi/L
- Composite 7/21–8/24/11 (laboratory re-analysis completed 11/15/11; results validated 11/22/11) Pu = 4.07 pCi/L, Am = 4.01 pCi/L
- Composite 8/24–29/11 (results validated 11/30/11) Pu = 0.020 pCi/L, Am = 0.044 pCi/L
- Composite 9/29–10/25/11 (results validated 11/22/11) Pu = 0.658 pCi/L, Am = 0.877 pCi/L

Under routine data validation protocols, the relative error ratio (RER) is used to evaluate data pairs (i.e., an initial analysis and a duplicate analysis). If the RER for a data pair is >3 and <=5, then the results are "J" qualified (estimated). If the RER for a data pair is >5, then the results are "R" qualified (unusable result). During validation of the 7/21-8/24/11 analytical results, the Am results were determined to be "J" qualified, while the Pu results were determined to be "R" qualified. Therefore, the arithmetic average of the Am results is used in the calculation of the 12-month rolling average for Am; the Pu results were rejected and not included in calculation of the 12-month rolling average for Pu.

The evaluation was performed in accordance with RFLMA Attachment 2, Figure 6, “Points of Evaluation,” which resulted in 12-month rolling average values for Am of 0.21 pCi/L on 8/31/11 and 0.22 pCi/L on 9/30/11. The applicable RFLMA Table 1 Standard for Am and Pu is 0.15 pCi/L.

While the 12-month rolling average for Pu is not reportable, the evaluation of the reportable Am values will include consideration of the Pu results.

Downstream monitoring at GS08, WALPOC, and GS03 continue to show Pu and Am activities well below 0.15 pCi/L. Recent analytical results at downstream locations are given in Table 5. The latest available 12-month rolling and 30-day average Pu/Am activities calculated from flow-paced composite samples are shown in Figure 18. The latest available 12-month rolling and 30-day average Pu/Am activities calculated from flow-paced composite samples are shown on Figure 23 and Figure 24.

Table 5. Recent Pu and Am Flow-Paced Composite Sample Results

GS08		WALPOC		GS03	
Sample Period	**Result Am/Pu (pCi/L)**	**Sample Period**	**Result Am/Pu (pCi/L)**	**Sample Period**	**Result Am/Pu (pCi/L)**
3/24–3/26/11	0.002/0.003			3/24–3/26/11	0.0/0.002
3/26–3/28/11	0.002/0.004			3/26–3/28/11	0.002/0.003
3/28–3/30/11	0.003/0.0			3/28–3/31/11	0.001/0.011
				3/31–5/20/11	0.002/0.007
				5/20–9/12/11	0.0/0.0
9/12–9/15/11	0.002/0.002	9/12–9/15/11	0.008/0.0	9/12–9/15/11	0.0/0.0
9/15–9/18/11	0.001/0.0	9/15–9/18/11	0.0/0.009	9/15–9/18/11	0.002/0.0
9/18–9/21/11	0.0/0.0	9/18–9/22/11	0.003/0.0	9/18–9/22/11	0.003/0.001
9/21–9/27/11	0.0/0.005	9/22–9/27/11	0.006/0.004	9/22–9/27/11	0.009/0.0
9/27–11/9/11	[a]	9/27–11/30/11	[a]	9/27/11–	[b]
11/9–11/29/11	[a]				
11/29/11–	[b]	11/30/11–	[b]		

Notes: Some results are preliminary and subject to revision; negative results are set to zero
[a] Analysis pending
[b] Sample in progress

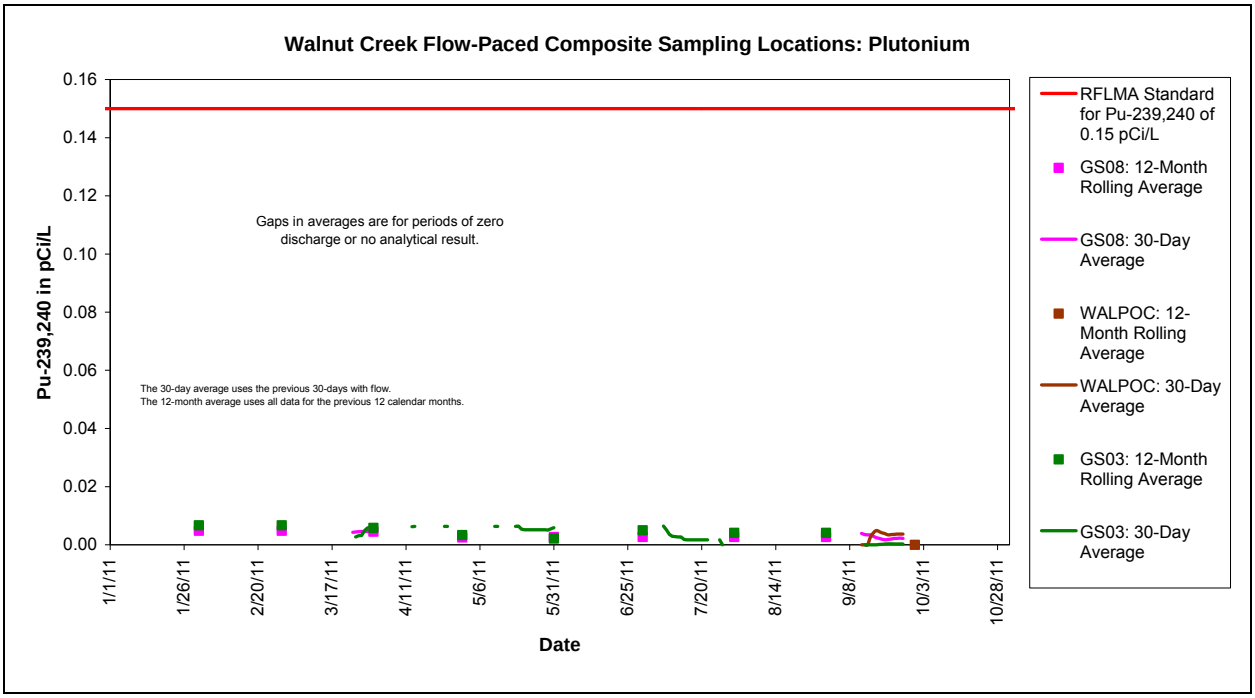


Figure 23. Average Plutonium Activities at Locations Downstream of GS10

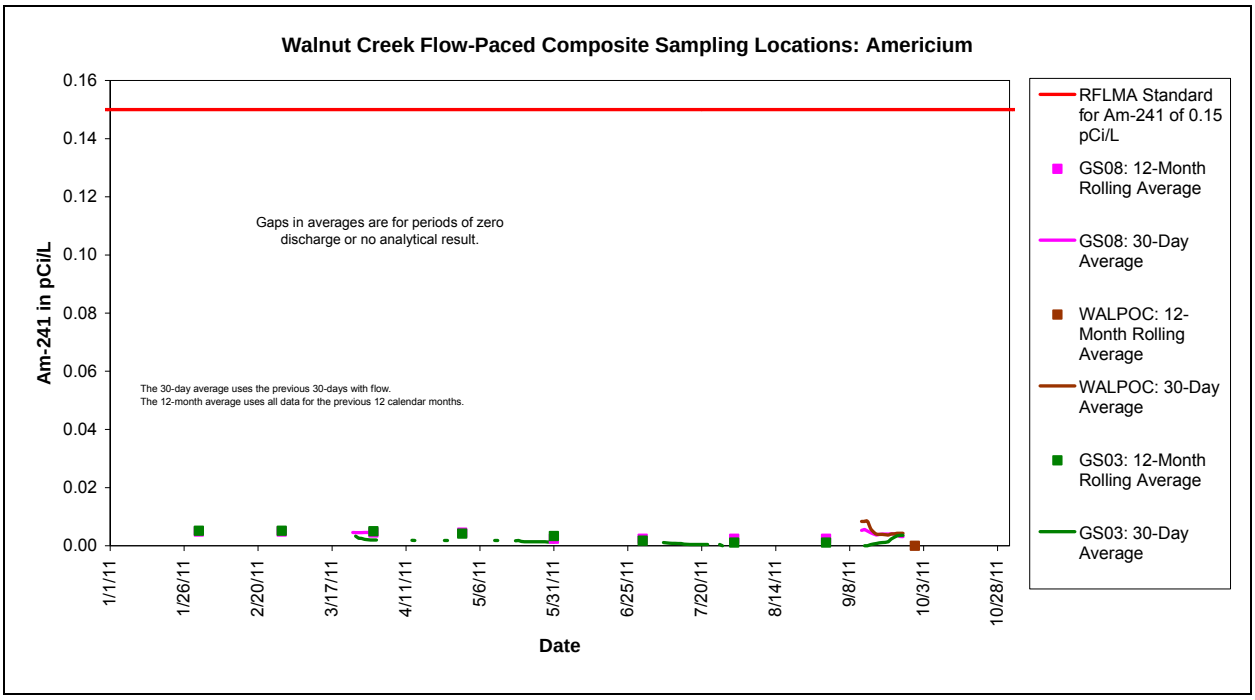


Figure 24. Average Americium Activities at Locations Downstream of GS10

Although further evaluation and consultation is required, some preliminary steps have been taken that will inform the evaluation:

- Rocky Flats staff walked down the GS10 drainage on 11/16/11 to see if any obvious conditions were promoting potential soil erosion. Some thin vegetation spots were noted on the north side of the rip-rap upstream of GS10. Some reseeding/erosion matting could be applied in spots, and a map of the areas to be addressed will be prepared. A closer examination of the drainage to focus on seeps and former utility corridors was conducted on 11/22/11; representatives from DOE and EPA were in attendance.
- Several of the sampling locations already designated for the evaluation of the reportable condition for uranium at GS10 (FC4991, GS10, and B3OUTFLOW; Figure 25) were grab sampled on 11/25/11. These samples are being analyzed for Pu and Am on 2-week turnaround.
- Several seep sampling locations (SEEP995, SEEP995A, SEEP995B, and SEEP995C; Figure 25) were also grab sampled on 11/25/11. These samples are being analyzed for Pu and Am on 2-week turnaround.
- An aliquot from each flow-paced composite sample routinely being collected at B5INFLOW (supporting the GS10 uranium evaluation) will also be obtained and held for Pu and Am analysis if upstream samples results suggest analysis would inform the evaluation.
- Flow-paced composite samples routinely being collected at WALPOC will continue to be analyzed on 2-week turnaround. Analyses for flow-paced composite samples routinely being collected at GS10 and GS08 will be accelerated to 2-week turnaround.

- Historical Pu and Am well data from wells in the drainage have been reviewed. The review gave no indication that additional well sampling would be informative at this stage.
- The previous GS10 evaluation reports are being reviewed for information that may aid this current evaluation.

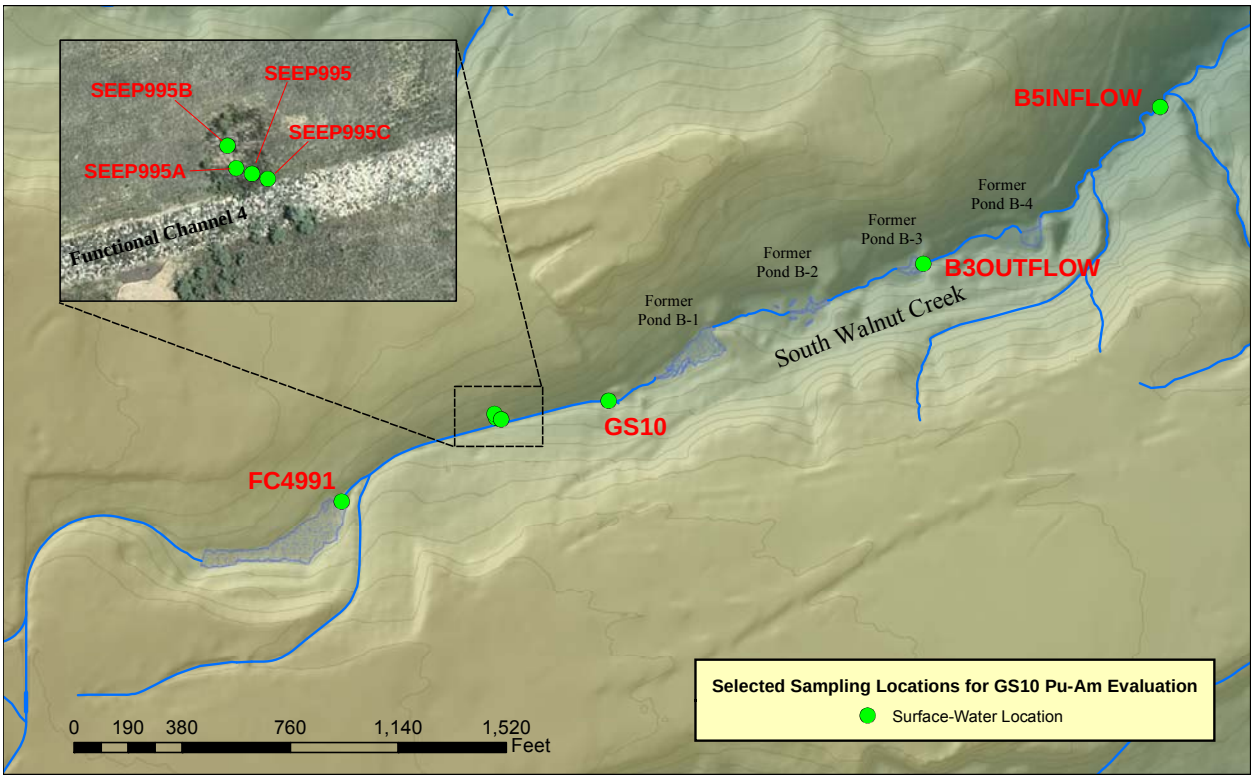
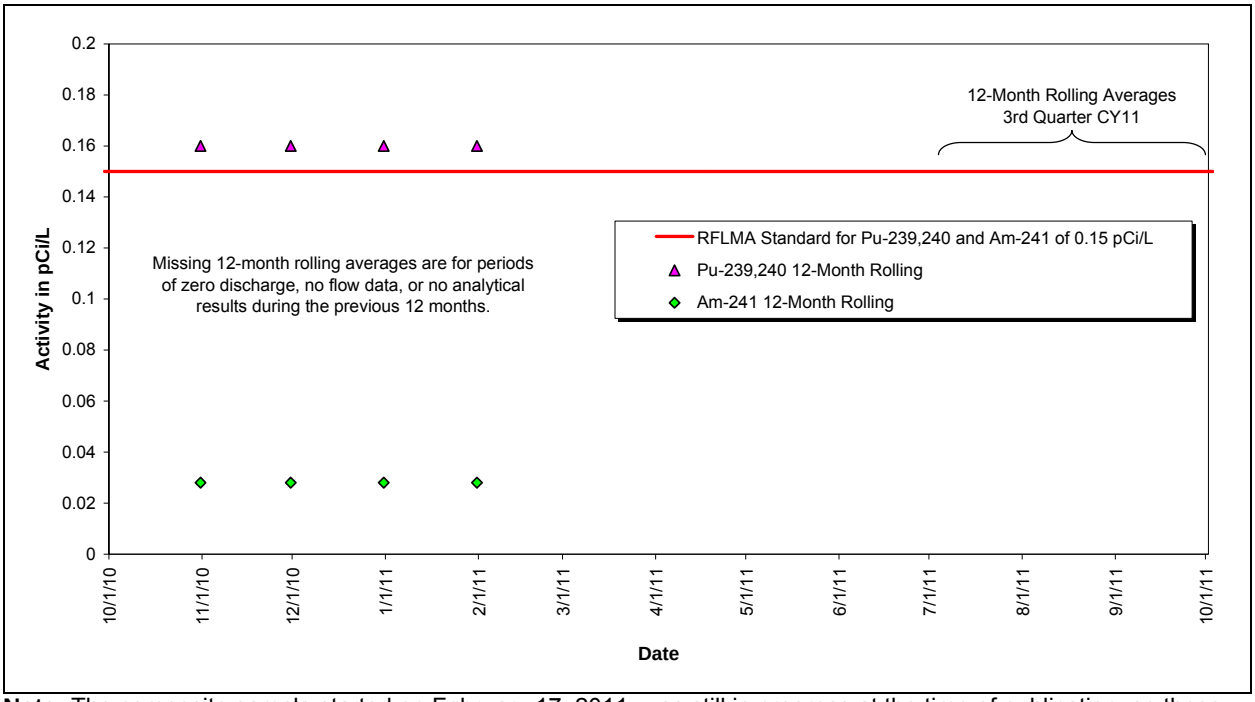


Figure 25. Pu/Am Evaluation Sampling Location Map for GS10 Drainage Area

3.1.3.2 Monitoring Location SW027

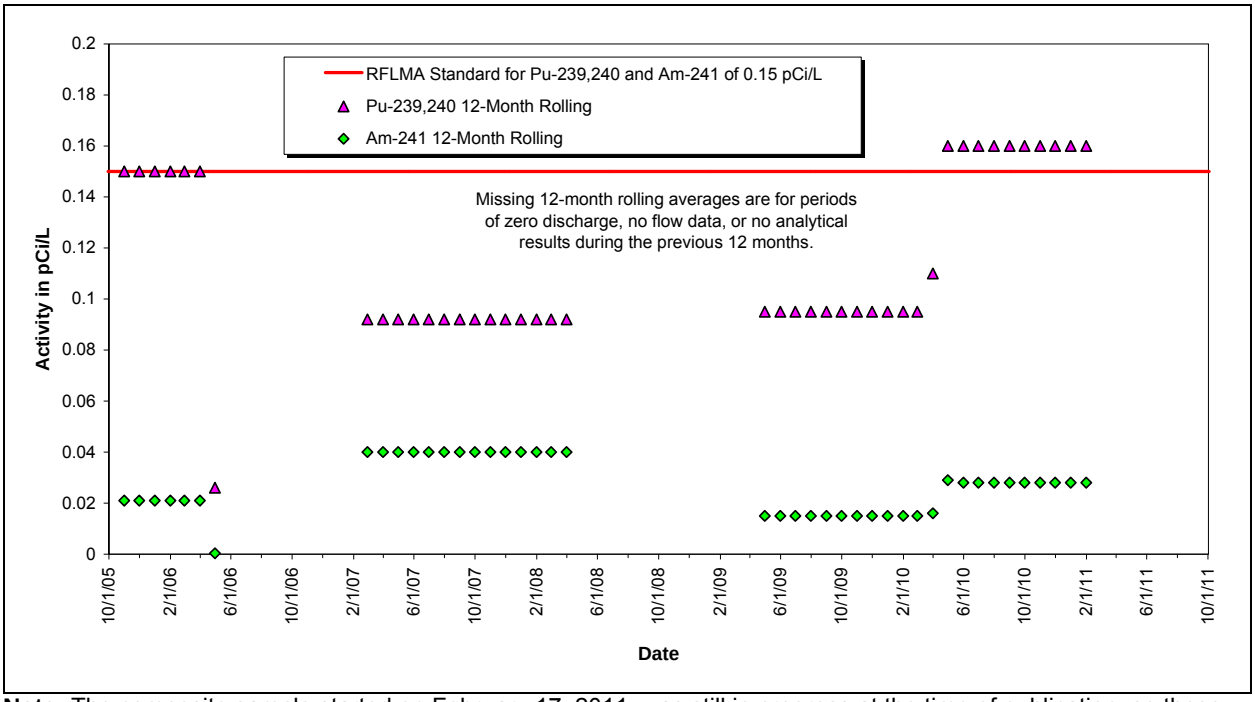
Monitoring location SW027 is at the end of the South Interceptor Ditch (SID) at the inlet to Pond C-2. Figure 26 and Figure 28 show the 12-month rolling averages for plutonium, americium, and total uranium during the quarter. Figure 27 and Figure 29 show sampling data from 2005 through the third quarter of CY 2011.

Figure 26 shows that the 12-month rolling average for plutonium exceeds the RFLMA standard of 0.15 pCi/L. The composite sampling results for plutonium at SW027 collected during 2010 and 2011 are given in Table 6. All other analytes were not reportable during the third quarter of CY 2011.



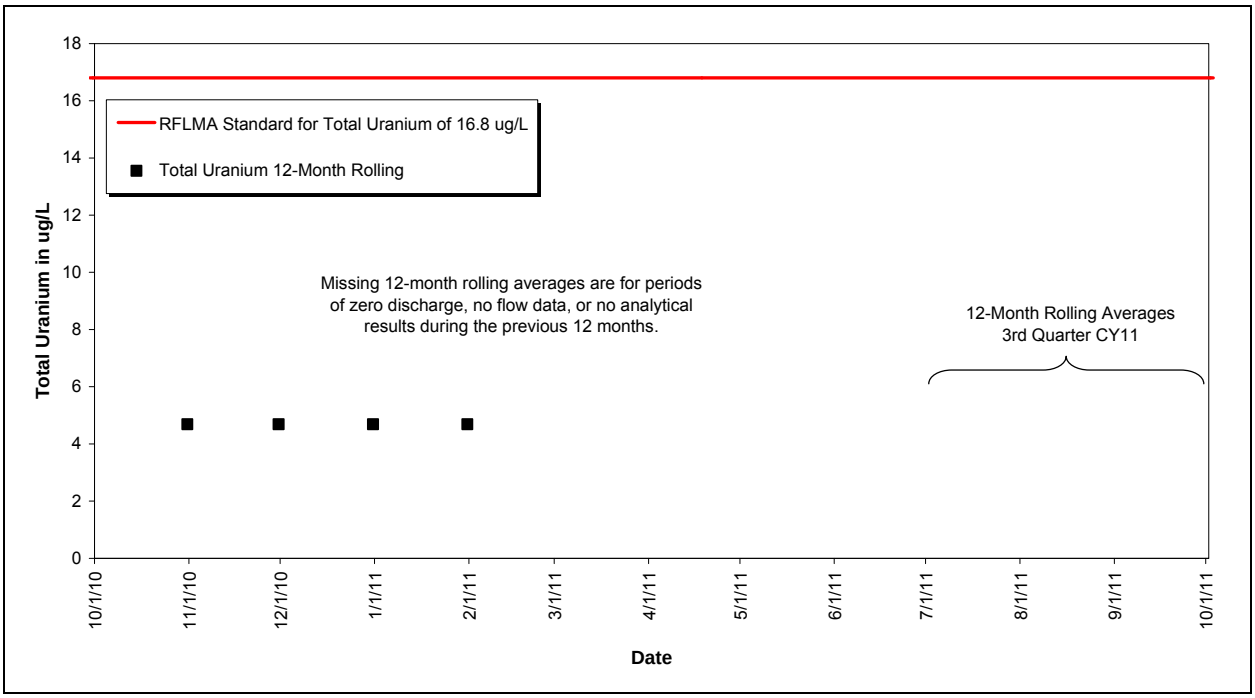
Note: The composite sample started on February 17, 2011, was still in progress at the time of publication, so those results for this composite sample were not available for this report.
pCi/L = picocuries per liter

Figure 26. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at SW027: Calendar Year Ending Third Quarter CY 2011



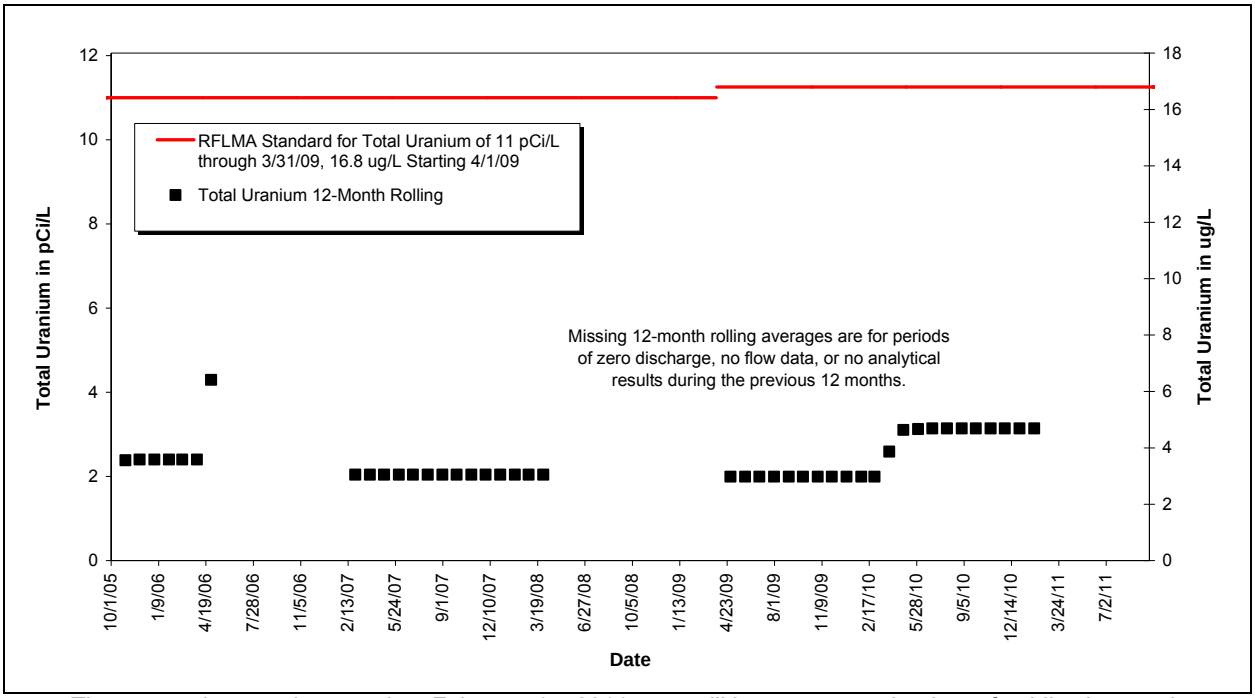
Note: The composite sample started on February 17, 2011, was still in progress at the time of publication, so those results for this composite sample were not available for this report.
pCi/L = picocuries per liter

Figure 27. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at SW027: Post-Closure Period Ending Third Quarter CY 2011



Note: The composite sample started on February 17, 2011, was still in progress at the time of publication, so those results for this composite sample were not available for this report.
µg/L = micrograms per liter

Figure 28. Volume-Weighted 12-Month Rolling Average Total Uranium Concentrations at SW027: Calendar Year Ending Third Quarter CY 2011



Note: The composite sample started on February 17, 2011, was still in progress at the time of publication, so those results for this composite sample were not available for this report.
µg/L = micrograms per liter; pCi/L = picocuries per liter

Figure 29. Volume-Weighted 12-Month Rolling Average Total Uranium Concentrations at SW027: Post-Closure Period Ending Third Quarter CY 2011

Table 6. CY 2010–2011 Composite Sampling Results for Plutonium at SW027

Date—Time Start	Date—Time End	Plutonium Result (pCi/L)
1/13/10—11:11	3/29/10—11:55	0.122
3/29/10—11:55	4/23/10—11:11	0.300
4/23/10—11:11	4/23/10—19:12	0.294
4/23/10—19:12	4/27/10—12:07	0.029
4/27/10—12:07	10/4/10—12:39	0.040
10/4/10—12:39	2/17/11—9:23	NA; No Flow
2/17/11—9:23	Sample in Progress	NA

Although the 12-month rolling average values could not be formally calculated until complete analytical results were available for the April 27–October 4, 2010, sample, DOE initiated preemptive consultation with CDPHE on June 2, 2010. RFLMA Contact Record 2010-06, "Monitoring Results at Surface Water Point of Evaluation (POE) SW027," provides a discussion of the monitoring results and recaps the outcome of the RFLMA Parties' consultation regarding steps to be taken to evaluate the SW027 drainage area. Contact Record 2010-06 is available on the Rocky Flats website, http://www.lm.doe.gov/Rocky_Flats/ContactRecords.aspx.

Subsequent to Contact Record 2010-06, the *Report of Steps Taken Regarding Monitoring Results at Surface Water Point of Evaluation (POE) SW027* (DOE 2010c) was completed on August 31, 2010. This report provides data evaluation and an update on the steps taken in

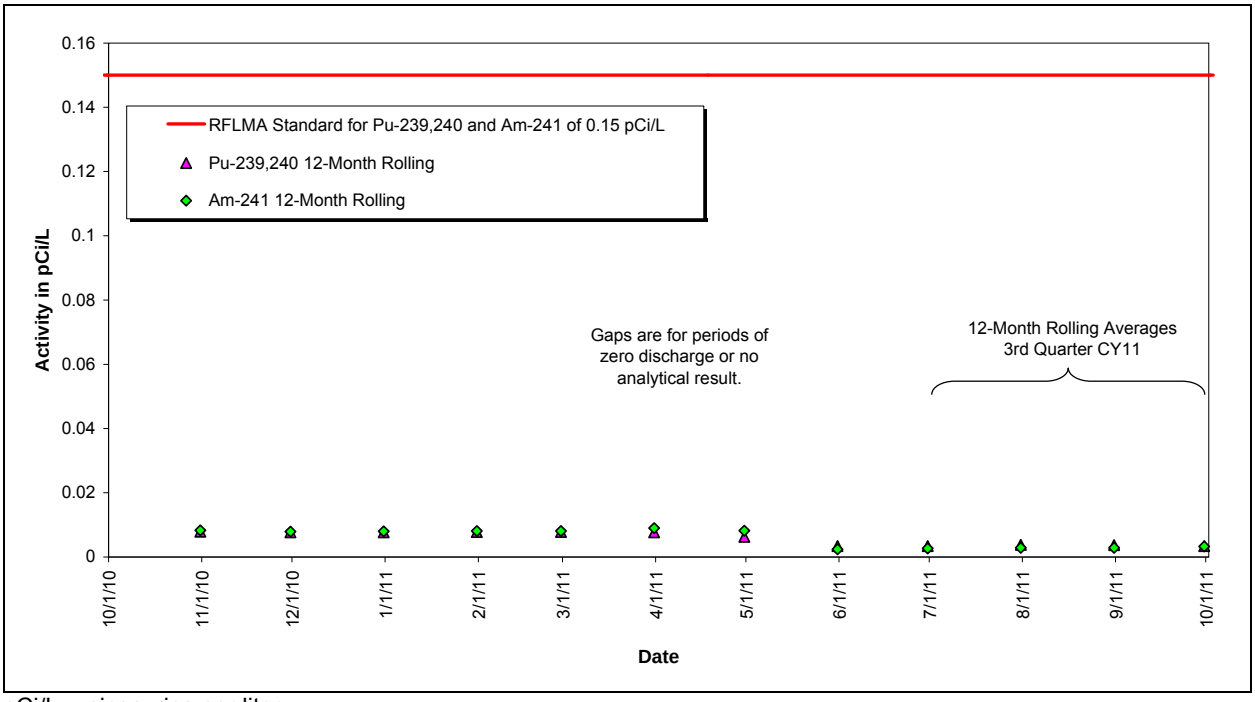
accordance with Contact Record 2010-06. Recommendations beyond the actions already taken and discussed in the Contact Record are also provided. The August 31, 2010, report on the status of actions related to evaluation of the conditions is also available on the Rocky Flats website, http://www.lm.doe.gov/Rocky_Flats/ContactRecords.aspx.

The recommendations in the evaluation included installing additional erosion control wattles in locations along the hillside north of the SID, installing permanent erosion blankets, and reseeding three areas in the SID. This work was successfully completed on December 20, 2010. Approximately 2,560 linear feet of Filtrexx wattles and 8,452 square feet of permanent erosion matting were installed.

SW027 has seen very little flow since April 2010, so no additional composite samples have been collected. Thus, no new analytical data are available to include in the 12-month rolling average.

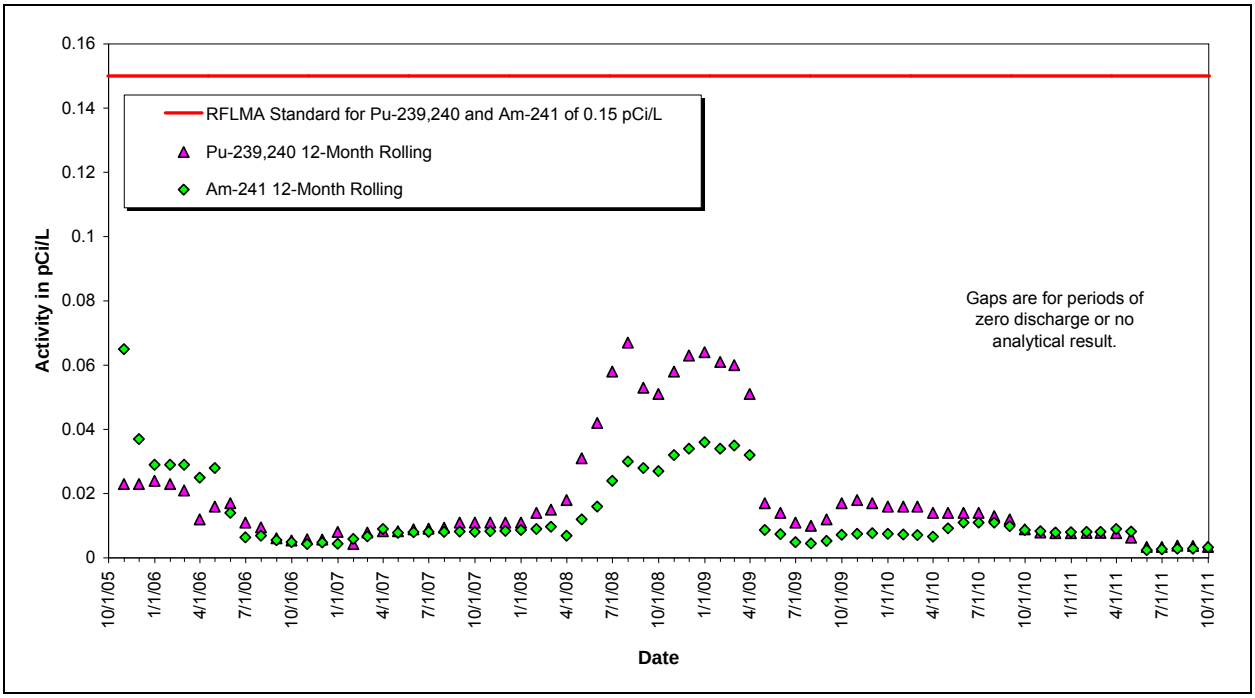
3.1.3.3 Monitoring Location SW093

Monitoring location SW093 is on North Walnut Creek 1,300 feet upstream of the A-Series ponds. Figure 30 and Figure 32 show no reportable plutonium, americium, or total uranium values during the quarter. Figure 31 and Figure 33 show sampling data from 2005 through the third quarter of CY 2011. All other analytes were not reportable for the quarter.



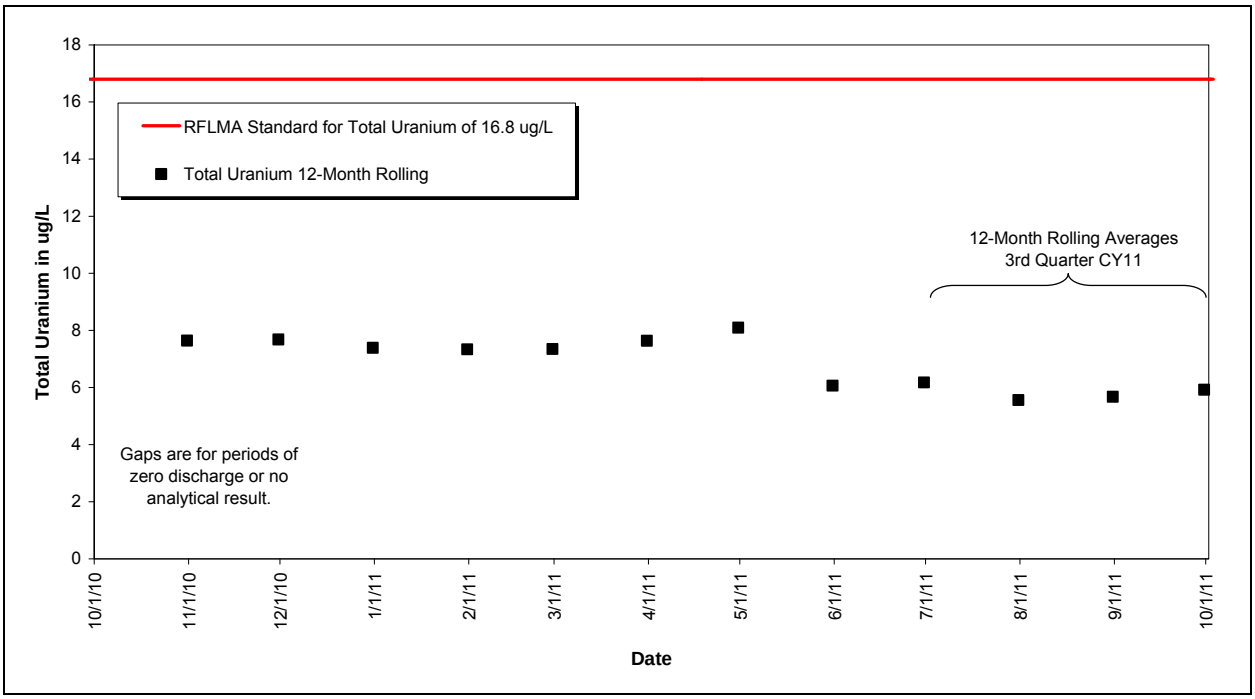
pCi/L = picocuries per liter

Figure 30. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at SW093: Calendar Year Ending Third Quarter CY 2011



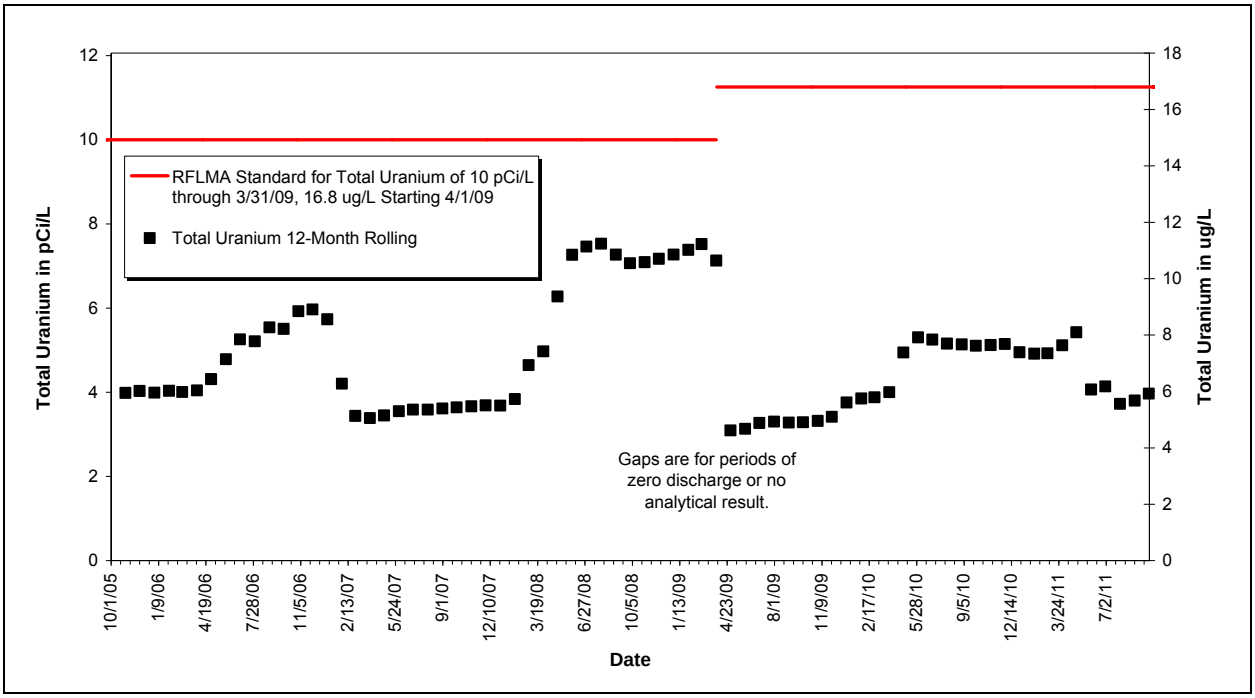
pCi/L = picocuries per liter

Figure 31. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at SW093: Post-Closure Period Ending Third Quarter CY 2011



µg/L = micrograms per liter

Figure 32. Volume-Weighted 12-Month Rolling Average Total Uranium Concentrations at SW093: Calendar Year Ending Third Quarter CY 2011



µg/L = micrograms per liter; pCi/L = picocuries per liter

Figure 33. Volume-Weighted 12-Month Rolling Average Total Uranium Concentrations at SW093: Post-Closure Period Ending Third Quarter CY 2011

3.1.4 AOC Wells and Surface Water Location SW018

Neither the AOC wells nor SW018 were scheduled for RFLMA monitoring in the third quarter of CY 2011.

3.1.5 Sentinel Wells

None of the Sentinel wells were scheduled for RFLMA monitoring in the third quarter of CY 2011. Extra (not required by RFLMA) samples were collected from well 33711 in July to compare with second-quarter 2011 data from this well and data from well 33703. Well 33711 replaced damaged well 33703 prior to the second quarter 2011 and is located just a few feet away from the original well location. Additional discussion will be provided in the 2011 annual report.

3.1.6 Evaluation Wells

None of the Evaluation wells were scheduled for RFLMA monitoring in the third quarter of CY 2011.

3.1.7 PLF Monitoring

All RCRA groundwater monitoring wells at the PLF were sampled during the third quarter of CY 2011. Analytical results (Appendix B) were generally consistent with past samples and will

be discussed and statistically evaluated as part of the annual report for CY 2011. Section 3.1.9.4 discusses monitoring the PLFTS.

3.1.8 OLF Monitoring

All RCRA groundwater monitoring wells at the OLF were sampled during the third quarter of CY 2010. Analytical results (Appendix B) were generally consistent with past samples and will be discussed and statistically evaluated as part of the annual report for CY 2011.

During the third quarter of CY 2011, when routine surface water sampling was performed in Woman Creek downstream of the OLF (GS59), all analytical results were less than the applicable surface water standards.

3.1.9 Groundwater Treatment System Monitoring

As described in Section 2.2, contaminated groundwater is intercepted and treated in four areas of the Site. The MSPTS, ETPTS, and SPPTS include a groundwater intercept trench. Groundwater entering the trenches is routed through a drain pipe into one or more treatment cells, where it is treated and then discharged to surface water. The PLFTS treats water from the northern and southern components of the Groundwater Intercept System and flow from the PLF seep.

3.1.9.1 Mound Site Plume Treatment System

MSPTS monitoring locations were not scheduled for RFLMA sampling in the third quarter of CY 2011. However, 31 non-RFLMA samples were collected at the MSPTS to support optimization of the air stripper. The associated results and discussion will be provided in the 2011 annual report.

3.1.9.2 East Trenches Plume Treatment System

ETPTS monitoring locations were not scheduled for RFLMA sampling in the third quarter of CY 2011.

3.1.9.3 Solar Ponds Plume Treatment System

SPPTS monitoring locations were not scheduled for RFLMA sampling in the third quarter of CY 2011. However, 26 non-RFLMA samples were collected at several monitoring locations within the system (i.e., influent and effluent plus selected points along the treatment train) to support continuing evaluation and optimization of the Phase II and Phase III upgrades (Section 2.2.3). The majority of these screening/optimization samples are typically analyzed by the in-house Environmental Sciences Laboratory in Grand Junction, Colorado, rather than by an EPA-certified contract laboratory and cannot be validated. All SPPTS data will be discussed in the 2011 Annual Report.

3.1.9.4 PLF Treatment System

During collection of the July 26, 2011, sample at the system influent (monitoring location PLFSEEPINF), the flow rate was 1.11 gallons per minute As of September 30, 2011, the PLF Pond outlet remained in an open configuration.

During the third quarter of CY 2011, routine sampling of the treated effluent exiting the system (monitoring location PLFSYSEFF) showed arsenic and selenium above the RFLMA standard. Per the RFLMA data evaluation protocols, sampling frequency was increased to monthly.

In the first monthly sample collected on 8/24/11, both arsenic and selenium were not detected. Therefore, sampling frequency returned to quarterly.

No other analyte concentrations were greater than the applicable surface water standards during the routine quarterly sample.

3.1.10 Pre-Discharge Monitoring

Pre-discharge samples are collected prior to discharge at Ponds A-4, B-5, and C-2 on North Walnut Creek, South Walnut Creek, and Woman Creek, respectively.

No pre-discharge samples were collected at Ponds A-4, B-5, or C-2 during the third quarter of CY 2011.

3.1.11 Additional Monitoring

In addition to the RFLMA-required monitoring discussed in the previous sections, non-regulatory monitoring is performed at the Site to further describe the fate and transport of selected constituents at the Site. Data in this section are not limited to the current quarter but include all available data.

3.1.11.1 High-Resolution Inductively Coupled Plasma/Mass Spectrometry and Thermal Ionization Mass Spectrometry Analyses

Prior to and after Site closure, groundwater and surface water samples from select locations were sent to LANL for high-resolution inductively coupled plasma/mass spectrometry and/or thermal ionization mass spectrometry analyses. These analytical methods measure mass ratios of four U isotopes (masses 234, 235, 236, and 238). Isotopic ratios provide a signature that indicates whether and to what extent the uranium content is natural or anthropogenic (manmade).

Table 7 lists the locations most recently sampled and analyzed by LANL for uranium. Results from these analyses have not yet been finalized and will be provided in the next RFLMA report following the validation of these data.

Table 7. Locations Sampled During Second Quarter 2011 for High-Resolution Uranium Analysis

Sample Location	General Area
Well 51605	Downgradient of SPPTS, adjacent to GS13
Well 70099	Northwest of SPPTS
Well 99405	South Walnut Creek near former B991
Well B210489	Downgradient of SPPTS
Well P210089	SPPTS area
SPIN	SPPTS influent
SPOUT	SPPTS effluent
SW093	Upgradient of SPPTS
GS10	South Walnut Creek upstream of B-series ponds
GS13	Downgradient of SPPTS
A1EFF	Farther downstream of SPPTS
A2EFF	Farther downstream of SPPTS
A3EFF	Farther downstream of SPPTS
A4 Pond	Farther downstream of SPPTS

4.0 Adverse Biological Conditions

No evidence of adverse biological conditions (e.g., unexpected mortality or morbidity) was observed during monitoring and maintenance activities in the third quarter of CY 2011.

5.0 Ecology Monitoring

During the third quarter of CY 2011, Preble's meadow jumping mouse (PMJM) mitigation monitoring and wetland mitigation monitoring were conducted. The PMJM monitoring data will be summarized and delivered to the U.S. Fish and Wildlife Service (USFWS) in the 2011 Preble's Meadow Jumping Mouse Mitigation Monitoring Report for Biological Opinions at the Rocky Flats Site. These reports were due to USFWS on December 1, 2011. The wetland monitoring data will be summarized and delivered to EPA in the 2011 Rocky Flats Site Annual Wetland Mitigation Monitoring Report due on March 1, 2012. A brief summary of the information from both reports will be included in the annual report for CY 2011. In late August through early September 2011, EPA conducted vegetation monitoring as part of its own evaluation of revegetation success. The conclusion of the EPA evaluation is that the revegetation areas at Rocky Flats have achieved above-average results with respect to established success criteria, the vegetation is expected to continue to provide effective soil stability, and the DOE success criteria are more stringent than the EPA criteria. The EPA monitoring report summary will be included as an appendix in the annual report for CY 2011. Other ecological monitoring conducted during the third quarter included revegetation monitoring, weed mapping, PLF/OLF quarterly vegetation surveys, nest box surveys, and photopoint monitoring.

6.0 References

CDPHE (Colorado Department of Public Health and Environment) and EPA (U.S. Environmental Protection Agency), 2011. Letter, C. Spreng, CDPHE and V. Moritz, EPA, to S. Surovchak, DOE-LM, subject: Transmittal of Modification to RFLMA Attachment 1, Site Map and Attachment 2, Legacy Management Requirements, for approval, May 2.

DOE (U.S. Department of Energy), 2007a. *Rocky Flats Legacy Management Agreement*, Rocky Flats Environmental Technology Site, Golden, Colorado, March 14.

DOE (U.S. Department of Energy), 2007b. *Second Five-Year Review Report for the Rocky Flats Site, Jefferson and Boulder Counties, Colorado*, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE (U.S. Department of Energy), 2008a. *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan*, Rocky Flats Environmental Technology Site, Golden, Colorado, March.

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DOE (U.S. Department of Energy), 2011c. Letter, S. Surovchak to C. Spreng, CDPHE and V. Moritz, EPA, subject: Construction completion for new flume in Walnut Creek and changes to RFLMA Points of Compliance (POCs), September 9.

DOE (U.S. Department of Energy), 2011d. Letter, S. Surovchak to C. Spreng, CDPHE and V. Moritz, EPA, subject: Construction completion for new flume in Woman Creek and changes to RFLMA Points of Compliance (POCs), September 28.

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DOE, EPA, and CDPHE (U.S. Department of Energy, U.S. Environmental Protection Agency, and Colorado Department of Public Health and Environment), 2006. *Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit*, EPA/541/R-06/197, September 29.

DOE, EPA, and CDPHE (U.S. Department of Energy, U.S. Environmental Protection Agency, and Colorado Department of Public Health and Environment), 2011a. *Proposed Plan for Amendment of the Corrective Action Decision/Record of Decision*, June 1.

DOE, EPA, and CDPHE (U.S. Department of Energy, U.S. Environmental Protection Agency, and Colorado Department of Public Health and Environment), 2011b. *Final Corrective Action Decision/Record of Decision Amendment for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit*, September 22.

Bylaws Amendments

- Cover memo
- Draft bylaws amendments

Rocky Flats Cold War Museum Briefing

- Cover memo
- Fact Sheet
- March 30, 2011, news release

ROCKY FLATS STEWARDSHIP COUNCIL

P.O. Box 17670
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(303) 412-1200
(303) 600-7773 (f)

MEMORANDUM

TO: Board
FROM: David Abelson
SUBJECT: Second Amendment to Bylaws – First Review
DATE: January 25, 2012

As we discussed at the September and November meetings, due to changes in the Intergovernmental Agreement (IGA), the board needs to adopt three changes to the bylaws. The changes, which are noted in redline in the attached document, are as follows:

1. Specify that the maximum number of directors is 14 (an increase from 12).
2. Increase from nine to 11 the number of directors needed to approve an action, as well as to meet a quorum.
3. Delete any reference to "rotating parties."

The attached bylaws also include changes the board approved in 2007. Those changes, which are found in Section XI(E), clarified the appointment of non-governmental members to the board of directors.

Per our bylaws, and in accordance with state law, the board must review the proposed changes at this meeting and adopt such changes, as modified, at the April meeting. However, since the IGA governs the organization and these changes are included in the IGA, both provisions will be in effect at the February meeting. That means, as we discussed last fall, that 11 votes will be needed to approve a motion, and all parties have voting rights.

Please let me know what questions you have.

ROCKY FLATS STEWARDSHIP COUNCIL

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Jefferson County -- Boulder County -- City and County of Broomfield -- City of Arvada -- City of Boulder
City of Golden -- City of Northglenn -- City of Thornton -- City of Westminster -- Town of Superior
League of Women Voters -- Rocky Flats Cold War Museum -- Rocky Flats Homesteaders
Arthur Widdowfield

BYLAWS OF
THE BOARD OF DIRECTORS
OF THE
ROCKY FLATS STEWARDSHIP COUNCIL

Approved March 6, 2006
Amended by First Amendment November 5, 2007
DRAFT Second Amendment February 6, 2012 (First Reading)

PREAMBLE

The object of the Rocky Flats Stewardship Council (the "Stewardship Council") shall be to carry out its purposes as described in and pursuant to the Intergovernmental Agreement establishing the Rocky Flats Stewardship Council (the "IGA") and amendments thereto.

ARTICLE I.

Offices

Principal Office. The principal office of the Stewardship Council shall be located within the boundaries of any Party to the IGA and amendments thereto, as designated by the Board of Directors. The Stewardship Council may have other offices and places of business at such places within the State of Colorado as shall be determined by the Board.

ARTICLE II.

Board of Directors

A. Number, Qualifications and Term of Office. The business and affairs of the Stewardship Council shall be managed by a Board of Directors not to exceed ~~twelve~~ fourteen (14~~2~~) members, not including ex-officio members. When used herein, the term "Director" shall include that Director's alternate director, as provided in the IGA, unless the context requires otherwise. Each Director shall be appointed pursuant to the provisions of the IGA for a term of one year, from February 1 to the succeeding last day of January; provided, however, that the initial Directors shall be appointed as of the effective date of the IGA and serve until the last day of January, 2007. There shall be no limitation on the number of terms to which a Director may be appointed.

B. Performance of Duties. A Director shall perform his/her duties as a Director, including his/her duties as a member of any committee of the Board upon which he/she may serve, in good faith, in a manner he/she believes to be in the best interests of the Stewardship Council. An alternate Director shall serve in the absence of the Director for which he/she is an alternate.

C. Vacancies. Any Director may resign at any time by giving written notice to the chair of the Board of Directors. Such resignation shall take effect at the time specified therein; and, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective. In the case where the Director is an elected official, a Director's office shall be deemed to be vacant upon the failure of any Director to be re-elected to public office of the Director's designating Party. A vacancy will occur if a Director dies during his or her term of office. Any vacancy occurring on the Board of Directors shall be filled as provided in the IGA.

D. Expenses. By resolution of the Board of Directors, any Director may be paid his/her direct expenses, if any, of attendance at meetings or other Stewardship Council business.

E. Conflict of Interest. No Director (including alternate Directors who are elected public officials) may enter into an employment relationship with the Stewardship Council (1) while serving on the Board or (2) for twelve months thereafter. An alternate Director who is not an elected official may not enter into an employment relationship with the Stewardship Council (1) while serving on the Board or (2) for twelve months thereafter.

F. Ex-Officio Members of the Board. At its discretion, the Board may appoint ex-officio members to the Board from federal and state agencies, including the U.S. Department of Energy, the Environmental Protection Agency, the Colorado Department of Public Health and Environment, and/or the U.S. Fish and Wildlife Service. Ex-officio members shall not be a Party to the IGA but shall have the ability to designate a non-voting representative to the Board of Directors.

G. Removal of Directors. Any Director may be removed from the Board by a vote of the Board of Directors with or without cause whenever in its judgment the best interests of the Stewardship Council will be served by such removal. A Director who is absent for three consecutive regular meetings of the Board of Directors and whose absence is deemed unexcused by the Board of Directors shall automatically be removed from the office of Director.

ARTICLE III.

Officers of the Board

A. General. The Chair, Vice Chair, and Secretary/Treasurer shall be elected annually by the Board of Directors. The terms shall commence at the first meeting of the Board held on or after February 1 of each year. There shall be no limitation on the number of terms for which a person may serve as an officer, except as provided in Article III.G. herein.

An officer shall hold office until he/she is no longer qualified to serve or his/her successor is chosen, until his/her death, or until he/she shall resign. All officers of the Stewardship Council shall be Directors of the Stewardship Council; provided, however, that an alternate Director shall not assume any office held by the Director for whom the alternate Director is substituting.

B. General Duties. All officers and agents of the Stewardship Council, as between him or her and the Stewardship Council, shall have such authority and shall perform such duties as may be provided in these Bylaws or as may be determined by resolution of the Board of Directors not inconsistent with these Bylaws.

C. Vacancies. When a vacancy in one of the Board offices occurs due to any of the reasons listed in paragraph III.A., it shall be filled by a resolution of the Board of Directors at the following meeting of the Board at which a quorum is present.

D. Chair of the Board. The Chair of the Board shall preside as chair at meetings of the Board of Directors. He/she shall, in addition, execute resolutions and documents, represent the Board and Stewardship Council at public functions and perform such other duties as the Board may prescribe.

E. Vice-Chair. The Vice-Chair shall fulfill the responsibilities of the Chair when the Chair is unavailable to do so.

F. **Secretary/Treasurer.** The Secretary/Treasurer shall perform both the duties of a secretary and of a treasurer, as follows:

- The Secretary/Treasurer shall keep or cause to be kept, in books provided for that purpose, the minutes of the meetings of the Board. The Secretary/Treasurer may have one or more assistant secretaries, which need not be Directors and which shall be appointed by the Board.

- The Secretary/Treasurer shall have oversight of Stewardship Council funds and assets. He/she shall review accounts of receipts, disbursements and deposits of all Stewardship Council monies and other valuable effects in the name and to the credit of the Stewardship Council and report to the Board of Directors upon request. The Secretary/Treasurer or his/her designee shall provide a detailed quarterly financial statement to the Board. The financial statement shall include all revenue, revenue sources, expenditures and balances, and include quarterly and year-to-date figures.

G. **Delegation of Duties.** Except for the Chair, whenever an officer is unable to perform the duties of his/her office for any reason, the Board may delegate the powers and duties of an officer to any other officers or to any qualified Director or Directors.

ARTICLE IV.

Stewardship Council Staff

At its discretion, the Board may hire an Executive Director who shall serve at the pleasure of and report directly to the Board of Directors of the Stewardship Council, and who shall be responsible for implementing the Board's policies, and for the overall management of all activities of the Stewardship Council.

ARTICLE V.

Meetings of the Board

A. Place of Meetings. The regular or special meetings of the Board of Directors or any committee designated by the Board shall be held at the principal office of the Stewardship Council or at any other place within or without the boundaries of the Parties that the Board of Directors, any such committee, or Stewardship Council staff, as the case may be, may designate from time to time.

B. Regular Meetings. The Board of Directors shall meet quarterly, or as otherwise determined by a quorum of the Board of Directors, for the purpose of transacting such business as may come before the Board.

C. Special Meetings. Special meetings of the Board of Directors may be called by any three members of the Board of Directors, and held at any time.

D. Notice of Meetings. Notice of the regular or special meetings of the Board of Directors or any committee designated for such notice by the Board shall be as follows:

(1) Regular Meetings. The time, date and place of regular meetings shall be set by the Board and notice thereof shall be provided (a) to the city/county/town clerk of all Stewardship Council Parties for posting in a public place, with at least seven (7) days advance notice of the meeting time, place and date, (b) to the Directors and alternate Directors, with at least seven (7) days advance notice of the meeting time, place and date, and (c) to those members of the public who so request.

(2) Special Meetings. Written notice of each special meeting of the Board of Directors setting forth the time and the place of the meeting shall be given as follows: (a)

by telefax or electronic mail to each Director not less than 72 hours prior to the time fixed for the meeting; provided, however, that in the instance of any Director who in writing requests that such notice not be given by telefax or electronic mail, the notice shall be by hand delivery to an address within the boundaries of the Parties designated in writing; (b) to the clerk of each Stewardship Council Party for posting in a public place, not less than 72 hours prior to the time fixed for the meeting; and (c) to those members of the public who so request.

(3) Emergency Special Meetings. When necessary, an emergency special meeting may be called with notice given in the same manner as provided for special meetings, except that notice may be given not less than 24 hours prior to the time fixed for the meeting, in accordance with the Colorado Open Meetings Act.

Unless notice is required herein to be given by telefax or delivery, all notices of meetings may be given either by sending a copy of the notice through the United States mail, or by telegram, telex, telefax or electronic transmission (unless a Director requests in writing that such notice not be given by electronic mail), any charges prepaid, to the work or home address of each Director and alternate Director and to the designated addresses of Stewardship Council participants, and the public who so request appearing on the books of the Stewardship Council. If mailed, such notice shall be deemed to be delivered 72 hours after deposit in the United States mail so addressed, weekends and holidays excluded. If notice be given by telegram, telex, telefax or electronic mail, such notice shall be deemed to be delivered when the telegram, telex, telefax or electronic mail is transmitted.

The general nature of the business proposed to be transacted at, or the purpose of, any meeting of the Board of Directors shall be specified in the notices of such meeting where possible. The Board of Directors' ability to act on matters brought before it at a special meeting is restricted to those items specified in the notice.

E. Voting.

1. Quorum. At meetings of the Board of Directors, eleven~~nine~~ (11~~9~~) of the appointed Directors (or their alternate if a Director is not present) shall be necessary to constitute a quorum for the transaction of business. If a quorum is present, an affirmative vote of at least eleven~~nine~~ (11~~9~~) Directors shall be required to be the act of the Board of Directors

2. Consent Agenda. Within a meeting agenda, Stewardship Council staff may place on the consent agenda any one or more items which staff believes do not give rise to discussion by the Board, and which may be acted upon by singular action and vote of the Board. Any Director may pull from the consent agenda any one or more items which shall then be separately and individually discussed and voted on by the Board.

F. Conduct of Meetings. The Board may adopt such rules of procedure as it deems proper. To the extent any rules adopted by the Board do not specify how an item of business of the Board is to be conducted, Roberts' Rules of Order shall apply.

ARTICLE VI.

Open Records and Open Meetings

A. All accounts and records of the Stewardship Council and its committees shall be open to the public as provided for in the Colorado Open Records Act and any other applicable laws, at all reasonable times under reasonable regulation, except where a specific

determination is made by the Stewardship Council that there is a legitimate public purpose achieved by withholding a document concerning legal, personnel, or private proprietary information.

B. All meetings of the Board of Directors of the Stewardship Council and any of its committees are open to the public as provided for in the Colorado Open Meetings Act. Any meetings at which the adoption of any proposed policy, position, resolution, rule, regulation or other formal action occurs or at which a quorum of the Board is in attendance, or is expected to be in attendance, shall be held only after full and timely notice to the public as provided herein. In accordance with Colorado statutes, executive sessions may be held upon the affirmative vote of two-thirds of the quorum present, for the sole purpose of considering any of the following matters: the purchase, acquisition, lease, transfer, or sale of any real, personal or other property interest; conferences with legal counsel for the Stewardship Council for the purpose of receiving legal advice on specific legal questions; matters required to be kept confidential by federal or state law or rules and regulations; specialized details of security arrangements or investigations; determining positions relative to matters that may be subject to negotiations, developing strategy for negotiations, and instructing negotiators; personnel matters; or consideration of any documents protected by the mandatory nondisclosure provisions of the "Open Records Act". No adoption of any proposed policy, position, resolution, rule, regulation, or formal action shall occur at any executive session, except for the approval of executive session minutes, as allowable by law.

C. Minutes or similar record shall be kept of all meetings of the Board of Directors of the Stewardship Council.

ARTICLE VII.

Committees

A. Stewardship Council Committees. The Stewardship Council is interested in working with the public and will seek the input of the local community and other interested parties. As necessary, and to the extent practicable, the Stewardship Council will seek the input of the local community and other interested parties by establishing *ad hoc* committees and task forces, and by holding public meetings, workshops, special meetings, or other forums of public involvement, from time to time as may be deemed appropriate by the Board. By resolution or motion of the Board, the Stewardship Council may establish such working committees from time to time as it deems appropriate. These committees shall be open to all persons interested in participating with the Stewardship Council. Each committee shall have a chair appointed by the Board of Directors. Committees may consider issues consistent with the Stewardship Council's purposes and make recommendations for actions to the Board of Directors. Any such recommendations, together with any minority reports, shall be made to the Board of Directors. The Board may consider and comment on committee recommendations and formulate its own recommendations for official action by the Board. Any minority report(s) from a committee shall be transmitted simultaneously with such recommendations. The Board of Directors may take such actions as it deems appropriate, notwithstanding recommendations or lack thereof or the fact of pending deliberations of committees and of the Stewardship Council.

B. Board Committees. The Board may have committees on finance, personnel and such other matters as the Board deems proper for the administration of the Stewardship Council.

ARTICLE VIII.

Fiscal Year

Fiscal Year. The fiscal year of the Stewardship Council shall be January 1 to December 31. Said fiscal year may be changed from time to time by motion or by formal resolution of the Board of Directors in its discretion.

ARTICLE IX.

Amendments

A. General. The Board of Directors may amend, supplement or repeal these Bylaws or adopt new Bylaws, and all such changes shall affect and be binding upon the Stewardship Council. Any amendment, supplement or repeal of these Bylaws or adoption of new Bylaws shall require consideration at two meetings of the Board.

B. Notice of Consideration. Specific notice of each meeting at which consideration of proposed amendment to, supplementation of or repeal of these Bylaws or adoption of new Bylaws shall be given in the same manner as notice of special meetings is to be given pursuant to III.D.(2) hereof.

C. Vote Necessary. Amendment to, supplementation of or repeal of these Bylaws or adoption of new Bylaws shall require approval by eleven~~nine~~ (11~~9~~) Directors of the Board at the second meeting at which the amendment, supplement, repeal or adoption is considered.

ARTICLE X.

Annual Review

On an annual basis, any one or all of the parties to the IGA may request Stewardship Council to submit an annual report which shall generally address Stewardship Council's operations for the previous year; Stewardship Council's proposed plans for the upcoming year; a summary of Stewardship Council's financial status, including revenue projections and operating costs; and any

changes or proposed changes in Stewardship Council's policies. Upon request, the Executive Director shall present an oral presentation of the annual report at a designated board or council meeting of the requesting party.

ARTICLE XI.

Miscellaneous

A. Invalid Provision. The invalidity or non-enforceability of any particular provision of these Bylaws shall not affect the other provisions herein, and these Bylaws shall be construed in all respects as if such invalid or unenforceable provision was omitted.

B. Governing Law. These Bylaws shall be governed by and construed in accordance with the constitution and laws of the State of Colorado and the IGA, as amended from time to time. To the extent there are inconsistencies between the IGA and any amendments thereto and these Bylaws and any amendments thereto, the IGA and amendments thereto shall control.

~~**C. Rotating Parties.** Each Rotating Party shall have the right to select a Director (and Alternate Directors) to the Board, in accordance with the IGA, on an annually rotating basis. By agreement between the two Rotating Parties, the city of Golden will serve first for one year until the last day of January 2007 at which time the city of Northglenn shall serve for one year until the last day of January 2008. After such time as each Rotating Party has had an opportunity to serve on the Board, then the rotation shall continue in the same order. During the year(s) in which a Rotating Party is not serving on the Board, then such Rotating Party may continue to participate in a non-voting capacity.~~

C~~D~~. **Debt.** The incurrence of any revenue-based or other non-general obligation debt shall be subject to the prior approval of the governing body of each Party.

D~~E~~. **Members' Terms.** Members' terms shall be limited to two years at which time such members must reapply for membership to the Stewardship Council.

E~~F~~. **Selection Process for Members.** At least two months prior to the expiration of the Members' terms, the Stewardship Council shall publish a Notice advertising the Stewardship Council's solicitation of Member Applications. In addition to any other means selected by the Stewardship Council, notice shall be provided by a one-time publication in a newspaper of general circulation, and posted on the Stewardship Council website. Any entity or person who desires to become a Member of the Rocky Flats Stewardship Council shall submit a Membership Application on the form provided by the Stewardship Council. The Executive Director shall forward all completed Membership Applications to the Board for review. The Director representatives for the ~~Permanent and Rotating~~ Parties shall interview representatives of the prospective Members, at a public meeting as determined by the Board. Following completion of the interviews, at a Stewardship Council Board meeting the Director representatives for the ~~Permanent and Rotating~~ Parties shall nominate and vote to appoint up to four (4) Members from the Membership Applications. The procedures for voting shall be pursuant to a process identified by the Board in advance.

ROCKY FLATS STEWARDSHIP COUNCIL

P.O. Box 17670
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Jefferson County -- Boulder County -- City and County of Broomfield -- City of Arvada -- City of Boulder
City of Golden -- City of Northglenn -- City of Thornton -- City of Westminster -- Town of Superior
League of Women Voters -- Rocky Flats Cold War Museum -- Rocky Flats Homesteaders
Arthur Widdowfield

MEMORANDUM

TO: Board of Directors
FROM: David Abelson
SUBJECT: Rocky Flats Cold War Museum briefing
DATE: January 24, 2012

The Rocky Flats Cold War Museum, an original member of the Rocky Flats Stewardship Council, will brief on steps they are taking to establish the museum. Their mission is "to document the historical, environmental, and scientific aspects of Rocky Flats, and to educate the public about Rocky Flats, the Cold War, and their legacies. These goals will be accomplished through preservation of key artifacts, and development of interpretive, educational, and outreach programs." Their website is: http://www.rockyflatscoldwarmuseum.org/

Attached is a fact sheet that outlines the organization's goals and achievements. Also attached is their March 2011 release announcing their leasing of the old Arvada Post Office to house the museum.

Board membership is as follows:

Name	Affiliation
Ann J. Lockhart **Board President**	Retired, Colorado Department of Public Health & Environment; part-time Writer/Editor, Eagle Eye Editing
Shirley Garcia **Board Vice President**	Environmental Services Division, City of Broomfield
Barbara Donachy **Board Secretary**	Research Associate, Bardwell Consulting
Kim Grant **Board Treasurer**	Grants Administrator, City of Arvada
Susan M. Flack	Senior Associate, Crestone Consulting Group

Ken Freiberg	Retired, Rocky Flats; Consultant
Dan James	Humanities Professor, Rocky Mountain College of Art and Design
LeRoy Moore, Ph.D.	Rocky Mountain Peace & Justice Center
Doug Parker	Retired, Rocky Flats; part-time Boulder County Hazardous Waste Management Facility
Phil Saba	Retired Rocky Flats; President of Rocky Flats Homesteaders
Arthur “Murph” Widdowfield	Retired Industrial Contractor; Consultant
John Boylan, *ex-officio*	Rocky Flats Site Groundwater Lead, S. M. Stoller Corporation
Bob Darr, *ex-officio*	Public Affairs, S.M. Stoller Corporation
Scott Surovchak, *ex-officio*	Site Manager, DOE Legacy Management
Charles C. McKay *Honorary Board Member*	Rancher & Developer, Church Ranch

Rocky Flats Cold War Museum

FACT SHEET www.rockyflatsmuseum.org

What was Rocky Flats?
Rocky Flats was a secret, high security federal facility that produced cores for nuclear weapons for the nation's defense, using plutonium, highly enriched uranium and other materials. The site in northern Jefferson County was selected and building began in 1951. Production continued from about 1952 to 1989.

After a decision was made in 1992 to decommission and decontaminate the plant, the Superfund cleanup began in 1995. It took 10 years and $7 billion to complete; 800 structures and buildings were demolished and removed. Nuclear material was shipped to other sites. Radioactive wastes were disposed. Soil was remediated. Groundwater treatment systems were installed and monitoring is ongoing.

Why create a museum?
Former Rocky Flats workers, interested citizens, university professors, local, state and federal government representatives and peace activists met in the late 1990s to discuss the idea and to save artifacts before the buildings on the site were demolished and their contents removed as part of the Superfund cleanup. They formed the Rocky Flats Cold War Museum board which incorporated in July 2001 as a 501(c)(3) organization. Its mission is to document the historical, social, environmental and scientific aspects of Rocky Flats, and to educate the public about Rocky Flats, the Cold War and their legacies through preservation of key artifacts and development of interpretive and educational programs. The board is committed to telling all sides of the story. Here are reasons for creating this museum.

- No other Colorado museum is documenting this compelling history.
- Rocky Flats produced the plutonium core of every nuclear weapon of the United States from 1952-1989. Those cores are deployed in weapons around the world in missiles and submarines.
- The Rocky Flats plant offered well-paying jobs with education and training for thousands of Rocky Flats workers who had a big economic and social impact on nearby communities. Plant workers earned a number of patents and developed innovations that are now used elsewhere.
- Rocky Flats was an important part of the national and international history of the Cold War—the central conflict of the second half of the 20th century. Two superpowers, the U.S. and the Soviet Union, faced off in a deadly arms race, developing nuclear weapons and political alliances.

- The plant had two major fires, leaking waste barrels and routine releases, leaving trace amounts of plutonium in the soil, causing concern about nearby drinking water supplies.
- Maintaining accessible records of the Superfund cleanup and long-term monitoring of groundwater and surface water are essential for the protection and peace of mind of nearby communities.
- Thousands have protested Rocky Flats in the past four decades--against nuclear weapons, producing nuclear weapons components so close to a major population center, environmental contamination and potential health effects.

Where is Rocky Flats?
The 6,200-acre site, which had a central industrial area surrounded by a buffer zone, is located about 16 miles northwest of downtown Denver, Colorado, between Golden and Boulder. Rocky Flats is bounded by Highway 93 on the west, Indiana St. on the east, Highway 128 on the north and Highway 72 on the south.

How did the site become the Rocky Flats National Wildlife Refuge?
Federal legislation sponsored by former U.S. Senator Wayne Allard and U.S. Representative Mark Udall was signed into law in 2001 designating most of the Rocky Flats site a National Wildlife Refuge, forbidding development of the land. The law included a provision to study the feasibility of developing a museum to commemorate the historical, scientific and environmental legacy of the site. The U.S. Fish and Wildlife Service is managing the refuge and intends to open it for public recreation at some point. However, the central industrial area where the former plant was located, is fenced off and will not be open to the public.

Where will the museum be located?
The Rocky Flats Cold War Museum, which plans to open in September 2012, is located at 5612 Yukon St. in Olde Town Arvada, a block west of Olde Wadsworth Blvd. and north of Grandview Ave. In April, 2011, the board leased the old Arvada post office, a one-story, 7,000 square foot building, to develop into a museum. The facility has open exhibition space, a library, a classroom, offices, two functional kitchen areas and storage rooms. Some Rocky Flats artifacts are also stored in an Arvada warehouse.

The board hired a part-time project manager in June and contracted with Exhibit Design Associates in October to develop exhibits on themes identified by an ongoing committee.

What has the museum board accomplished so far?
Early on, the board secured a planning grant, some of which was used for a feasibility study in 2003 which concluded that a museum would be economically viable. A State Historical Fund grant was obtained in 2004 for videotaping and transcribing 90+ oral histories of former workers, activists, regulators and community and political leaders. The collection now has over 150 oral histories. Board members hosted an October 2006 teepee event for activists. A periodic online museum newsletter, *Weapons to Wildlife,* was begun in 2007. In late 2007, Sen. Allard helped the museum secure a $492,000 federal appropriation for development of the museum. In January 2009, volunteers moved the many artifacts collected into an Arvada warehouse and volunteers worked

with a museum consultant to develop a database describing the collection. Board members continue to make presentations about Rocky Flats to community and school groups. Eight nearby cities and two counties have passed resolutions supporting this museum.

How can YOU get involved?
Visit www.rockyflatsmuseum.org or read the oral histories at www.boulderlibrary.org/oralhistory. Make a tax deductible contribution or volunteer to help or serve on a committee. Call 720-287-1717 today.
Rocky Flats Cold War Museum, 5612 Yukon St., Arvada, CO 80002.

Rocky Flats Cold War Museum

NEWS RELEASE

For immediate release March 30, 2011

Contact: Shirley Garcia, 303-619-0757
Kim Grant, 720-898-7125
Ann Lockhart, 303-388-6978

MUSEUM BOARD APPROVES LEASE OF OLD ARVADA POST OFFICE

The Rocky Flats Cold War Museum board signed an agreement to lease the old Arvada Post Office building at 5608-5610 Yukon St. in Olde Town Arvada beginning April 1, but it will likely take a year or more to develop exhibits and related educational programs, hire staff and open the museum.

The one-story, 7,000 square foot property has open exhibition space, two functional kitchen areas and several classrooms and offices. Minor remodeling will be done to meet the needs of the museum.

The mission of the museum is to document the historical, social, environmental and scientific aspects of Rocky Flats, the former nuclear weapons plant in northern Jefferson County. The board is committed to telling all sides of the colorful, complex story of Rocky Flats.

Shirley Garcia, president of the museum board, said, “We are delighted to find a central location for our museum. We hope to attract many school groups and others interested in science, local history and the role Rocky Flats played in the Cold War. We have fascinating oral histories and artifacts to share for all age levels.”

Garcia said the building’s location, a block west of Olde Wadsworth Blvd. and north of Grandview Ave., should be convenient for tourists, area residents, history buffs, former Rocky Flats workers and school groups. The facility is one block from a future light rail stop and has street parking in front and 13 parking spaces in back.

Former U.S. Senator Wayne Allard helped secure a Congressional appropriation of $492,000 in late 2007 for a museum building and exhibits. The museum board created an oral history collection of more than 100 interviews of former workers, activists, community and political leaders and others. A consultant is currently documenting the artifacts in a museum database with the help of volunteers who worked at Rocky Flats.

The Rocky Flats Plant was a secret, high security federal facility that produced cores for nuclear weapons for the nation's defense using plutonium, highly enriched uranium and other materials. Construction of the plant started six years after the end of World War II.

The U.S. Department of Energy plant was built in 1951 and contractors operated it. The 6,200-acre site is located about 16 miles northwest of downtown Denver, between Golden and Boulder, bounded by Highway 93 on the west, Indiana St. on the east, Highway 128 on the north and Highway 72 on the south.

Production at the plant stopped after an FBI Raid in June 1989; the site was later fined for violations of environmental laws. After a decision was announced in 1992 to decommission and decontaminate the site, a Superfund cleanup began in 1995. It took 10 years and $7 billion to complete the massive project. Some 800 structures and buildings were demolished and removed, and nuclear material was shipped to other sites. Radioactive wastes were removed, soil was remediated, and groundwater treatment systems were installed. Long-term environmental monitoring continues at the site, primarily to protect area drinking water sources and to ensure the remedy is functioning as designed.

A 2001 law designated most of the Rocky Flats site a National Wildlife Refuge, preventing development of the land. The central industrial area is fenced off and would not be open to the public. The U.S. Fish and Wildlife Service had not yet opened the refuge.

Interested citizens began meeting in 1999 to preserve the site's history and incorporated the Rocky Flats Cold War Museum in July 2001 as a 501(c) 3 organization. Eight nearby cities and two counties have passed resolutions supporting the museum.

Volunteers are needed to help develop the museum. They may call 720-898-7125 or go to www.rockyflatsmuseum.org to volunteer, donate artifacts or sign up for the museum newsletter *Weapons to Wildlife*,.

# # #