

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
Nancy Newell

Board of Directors Meeting – Agenda

Monday, June 2, 2014, 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 April 28th Executive Committee meeting
- 8:40 AM Business Items (briefing memo attached)
1. Consent Agenda
 - o Approval of meeting minutes and checks
 2. Approval of resolution changing November 3 meeting date to October 27
- Action Item: Approve Resolution**
3. Explanation of 2014 Triennial Review of the Stewardship Council’s Intergovernmental Agreement
 4. Executive Director’s Report
- 8:50 AM Public Comment
- 9:00 AM Receive Stewardship Council 2013 Financial Audit (briefing memo attached)
- o The board will be briefed on the results of the audit.
 - o No material problems were found, and the Stewardship Council was found to be in compliance with all applicable laws and regulations.
- Action item: Accept Stewardship Council 2013 Financial Audit**
- 9:10 AM Host DOE Annual Meeting (briefing memo attached)
- o DOE will brief on site activities for calendar year 2013.

- DOE has posted the report on its website and will provide a summary of its activities to the Stewardship Council.
- Activities included surface water monitoring, groundwater monitoring, ecological monitoring, and site operations (inspections, maintenance, etc.).

10:25 AM Briefing/Discussion on Groundwater at Rocky Flats (briefing memo attached)

- Throughout 2014, the Stewardship Council is studying groundwater issues.
- This briefing will be the second in a series of briefings and discussions.
- This briefing will focus on the groundwater monitoring network, contaminants, groundwater treatment systems, and decision-making flowcharts contained in the Rocky Flats Legacy Management Agreement.

11:15 AM Public comment

11:25 PM Updates/Big Picture Review

1. Member Updates
2. Review Big Picture

Adjourn

Upcoming Meetings:

September 8
October 27 (4th Monday of the month)

Rocky Flats Acronym List, Prepared by Rik Getty, Rocky Flat Stewardship Council, November 2012

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. In a mass of Pu, Am increases in concentration over time which can pose personnel handling issues since Am is a gamma radiation-emitter which penetrates many types of protective shielding. During the production era at Rocky Flats, Am was chemically separated from Pu to reduce personnel exposures.
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 decision	The complete final plan for cleanup and closure for Rocky Flats. The Federal/State 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.

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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	Contact Record	A regulatory procedure where CDPHE reviews a proposed action by DOE and either approves the proposal as is or requires changes to the proposal before approval. CRs apply to a wide range of activities performed by DOE. After approval the CR is posted on the DOE-LM website and the public is notified via email.
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

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		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.
LANL	Los Alamos National Laboratory	One of the US government's premier research institutions located near Santa Fe, NM. LANL is continuing to conduct highly specialized water analysis for Rocky Flats. Using sophisticated techniques LANL is able to determine the percentages of both naturally-occurring and man-made uranium which helps to inform water quality decisions.
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.
MOU	Memorandum of Understanding	MOU refers to the formal agreement between EPA and CDPHE which provides that CDPHE is the lead post-closure regulator with EPA providing assistance when needed.
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.

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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 and Recovery Act	Federal law regulating hazardous waste. In 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	The nuts-and-bolt guide for post-closure site activities performed by

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	Operations Guide	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	trichloroethylene	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
- April 7, 2014, draft board meeting minutes
- List of Stewardship Council checks
- Resolution changing November meeting date to October 27

2013 Audit

- Cover memo
- Draft audit

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MEMORANDUM

TO: Board
FROM: David Abelson
SUBJECT: Business Items – Change of November meeting date
DATE: May 20, 2014

At the meeting, we need to adopt a resolution to change the November 3 meeting date to October 27. The reason for this change is that I have to be in New York City for a family obligation and would miss the November 3 meeting. In talking with the Executive Committee, we agreed that it would be best to change the meeting to October 27.

A resolution making this change is attached.

Action Item: Approve resolution

ROCKY FLATS STEWARDSHIP COUNCIL

Monday, April 7, 2014, 8:30 AM – 10:40 AM

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

Board members in attendance: Mark McGoff (Director, Arvada), Lisa Morzel (Director, City of Boulder), Tim Plass (Alternate, City of Boulder), Deb Gardner (Director, Boulder County), Megan Davis (Alternate, Boulder County), Mike Shelton (Director, Broomfield), Sharon Tessier (Alternate, Broomfield), David Allen (Alternate, Broomfield), Pat O'Connell (Alternate, Jefferson County), Joyce Downing (Director, Northglenn), Shelley Stanley (Alternate, Northglenn), Joe Cirelli (Director, Superior), Emily Hunt (Alternate, Thornton), Bob Briggs (Director, Westminster), Mary Fabisiak (Alternate, Westminster), Jeannette Hillery (Director, League of Women Voters), Sue Vaughan (Alternate, League of Women Voters), Arthur Widdowfield (Director, Rocky Flats Museum and Institute), Ann Lockhart (Alternate, Rocky Flats Museum and Institute), Ken Freiberg (Alternate, Rocky Flats Museum and Institute), Nancy Newell (citizen).

Stewardship Council staff members and consultants in attendance: David Abelson (Executive Director), Barb Vander Wall (Seter & Vander Wall, P.C), Erin Rogers (consultant).

Attendees: John Dalton (EPA), Vera Moritz (EPA), Charles Adams (CDPHE), Carl Spreng (CDPHE), Scott Surovchak (DOE-LM), Bob Darr (Stoller), George Squibb (Stoller), Paul Kilburn (Jefferson County Nature Association), Jean Tate (Jefferson County Nature Association), Heather Cronenberg (City of Westminster), Tiffany Hansen (citizen).

Convene/Agenda Review

Board Chair Joyce Downing convened the meeting at 8:35 a.m.

Chair Downing noted that an Executive Committee meeting was held on March 3, 2014. Meeting attendees included the Executive Committee along with David Abelson. The purpose was to develop an agenda for this meeting. These meetings are open to public.

Bob Briggs moved to approve the February 3, 2014 Board meeting minutes (with one spelling change for 'Jehn Building') and the checks. The motion was seconded by Lisa Morzel. The motion to accept the minutes and checks passed 14-0.

Executive Director's Report

David spoke about an upcoming event at the Arvada Center to mark the 25th anniversary of the FBI raid on Rocky Flats, which occurred on June 6, 1989. This symposium will take place June 6-8th and is slated to include photo exhibits and panel discussions. There will be a keynote panel that includes former Governor Roy Romer, former Congressman David Skaggs, Jon Lipsky (FBI) and others. David and Carl Spreng will discuss what is known about contamination at Rocky Flats today. He said there may also be stakeholder booths to provide an opportunity for dialogue and questions. The Stewardship Council may have a booth as well.

David said he had received confirmation of continued DOE funding for the Stewardship Council. He went over the requirement that DOE Legacy Management sites have a designated Local Stakeholder Organization (LSO), which this group fulfills. The primary avenue for stakeholder participation is the Stewardship Council and its Board meetings. David notes that the continued funding should be seen as an affirmation of the value of this organization moving forward. The Stewardship Council operates under a five-year DOE grant that includes an annual evaluation of the need for continued funding.

David gave a quick synopsis of January 2014 draft sitewide Environmental Assessment (EA) at the DOE wind test facility north of Rocky Flats. At a prior meeting, Joe Cirelli (Town of Superior) had wondered about this analysis and any potential impact on Rocky Flats. This EA concerns infrastructure maintenance and the adding of wind turbines. David said that the comment period closed in January and that he had reviewed the EA. He said it was a very standard analysis, and that there was nothing to flag for the Board.

Public Comment

There was none.

Update on Natural Resource Damage Claims

Various speakers were on hand to update the Board on the history and status of natural resource damage (NRD) claims at Rocky Flats, which were driven by CERCLA, the federal Superfund law. The purpose of these actions was to make the public whole for injuries to natural resources due to site actions by restoring or replacing injured natural resources.

The natural resources affected under this program include land, fish, biota, air, water, ground water, drinking water supplies, and other such resources owned, managed or controlled by the state or federal government. 'Injuries' are defined as adverse impacts to a natural resource caused by a release of a hazardous substance. Any damages come in the form of monetary compensation. At Rocky Flats, the claims totaled \$10.5 million. Those claims included acquisition of minerals rights, open space acquisition, and resource restoration.

Carl Spreng (CDPHE) spoke first and noted that Rik Getty had prepared a very good summary of these issues, which was in the Board's meeting packet. Carl stated that NRD claims under CERCLA have been applied at various other sites throughout the state, as well as other nuclear weapons complex sites around the country. He noted that the process had become contentious at other sites, even leading to some lawsuits, but not at Rocky Flats.

Carl said that the primary environmental impact at Rocky Flats was to the groundwater, so this was where most of the damages were assessed. The State settled the claim for \$10 million. Carl also noted that a previous Defense Authorization Act included provisions that DOE acquire essential mineral rights along the west side of the site. After these initial acquisitions, totaling \$5.5 million, all residual funds were turned over to the Colorado Natural Resource Trustees. The trustees include the Departments of Interior and Energy, the state Attorney General, the

Executive Director of CDPHE, and the Department of Natural Resources. The Trustees issued a Request for Proposals (RFP) for the remaining \$4.5 million.

Carl presented an overview of the funds that were awarded. He said that the RFP included a stipulation that required matching funds be secured for each project. He said that this provision resulted in \$26 million of total benefit from the \$10 million investment.

Lisa Morzel asked how the initial \$10 million amount was determined. Carl said that they had some rough estimates of costs and also that \$10 million was a nice round number that was politically palatable. Lisa also mentioned that DOI could not incorporate land into the National Wildlife Refuge that had mining taking place on it. Scott Surovchak said that the mineral rights purchases were also based on improving habitat.

Scott Surovchak (DOE) next presented a map of the mineral acquisition parcels. He said that, at first, DOE did not anticipate that they would be able to purchase parcels owned by Charlie McKay. However, they did end up purchasing most of these parcels. 750 acres have already been transferred from DOE to US Fish and Wildlife Service (USFWS). The remaining parcels will not be transferred for some time, as DOE is waiting until mining operations are completed. Scott added that the only acreage not included in the purchase of Section 16 was an area containing an oil/gas well. He said that approximately 623 out of the 640 acres in this Section had already been transferred to USFWS.

Scott explained that a mineral lease entails ownership of minerals, while the land owner is only entitled to royalties. He said that the better minerals are found in the southern part of site. These areas are better because clay has been washed away by natural processes. Tim Plass asked which entities provided the matching funds for the Spicer/McKay purchase. Scott said that Jefferson County purchased the mineral rights, and DOE bought out the lease. Tim also asked what the requirements were for reclamation in these areas. Scott said this primarily involved removing slopes after mining, as well as revegetation.

Paul Kilburn (Jefferson County Nature Association, JCNA) was next to speak, and discussed weed control and seed picking projects. He said it was a privilege for the JCNA to work with federal and state officials on this project, and that the public really got their money's worth. Paul noted that many weeds (knapweed being one of the worst) have been blowing into the Refuge and becoming a problem to native species. The weeds were taking over areas where the surface had been disturbed as a result of mining activities. As part of this NRD project, the group reached out to sixteen owners and managers of surrounding property. These owners included Denver Water, the Candelas development, Charlie McKay, ranchers and railroads, among others. Fourteen of the sixteen owners/managers came up with very good programs to cut down on weed seeds blowing off their land. Tim Plass asked about the two property owners that did not participate. Paul said these were smaller owners, and they did not respond to inquiries. Lisa Morzel suggested getting other owners to talk to them.

The group also took on seed collection so that Refuge managers could 'overplant' desirable species to encourage growth. Paul said that they try to pick 100 pounds of seeds per year. Some of the seeds are taken CSU in order to determine their germination rates.

Jean Tate (JCNA) spoke next. She thanked Carl and Scott for their efforts. Jean passed out copies of JCNA's annual report, and noted that it included a URL where before and after photos could be found. She said that the goal of seed picking was to provide local genotypes of grasses, as well as more variety. Volunteers were recruited through posted flyers, an email list, and local schools. Pomona High School and the Colorado School of Mines were among the groups that provided volunteers. She said it was a set up as a seven year program, and the fifth year was completed last fall.

Jean noted that the specific picking sites are chosen just a couple weeks prior to the pick. Seeds were also shared with the site ecologist Jody Nelson for replanting. Although it is a very gradual process, she said they are definitely seeing positive results. They collected 182 pounds of seeds last year, and that the total varies year-to-year. Picking dates for 2014 will be September 20, October 11, and October 25. She said they can always use additional volunteers, and that she would send out an email to the Stewardship Council.

Heather Cronenberg (City of Westminster Open Space) presented the next update. Using NRD funds, Westminster acquired a property called Sisters of the New Covenant, on the east side of Indiana and northwest of Standley Lake. This 30-acre site had been on the City's wish list for a number of years. They utilized the Trust for Public Land to facilitate the process, and also to help with obtaining a Great Outdoors Colorado grant. The site also includes a house, which the sisters wanted to keep as a retreat area. Therefore, these five acres were left out of the sale. However, Westminster has a first right of refusal in the event of any future sale of this parcel. The site features yucca, prairie rose, and other interesting plants. Jefferson County holds a conservation easement on this area. Based on easement requirements, Westminster is working on revegetation this year.

Megan Davis (Boulder County) discussed a County-City of Boulder partnership focusing on native plants in the area. This partnership received \$150,000 in NRD funds for native seed collection and generation in 2009. The Rocky Flats National Wildlife Refuge and the Rocky Mountain Arsenal were also involved in this project.

Under this program, seeds were collected and then sent to seed extractor for cleaning. Next, they were sent to a seed lab for germination so that the number of seeds could be increased. Then the seeds were used for replanting. There were 19 seed collection events, involving 518 volunteers and staff, and 1,656 total seed collection hours. These efforts yielded 384 bulk pounds of seeds from nine species. More details are available in the partnership's report to the Trustees. Although the seed collection is complete, some of the funds are still being used for seed increasing, and they are also using transplants for stream stabilization.

Megan next reported on mineral and lease interest purchases that also used NRD funding. These areas included parts of Sections 3, 4, 9, and 16. Section 16 was a high priority, primarily due to its very well-preserved habitat for xeric tallgrass prairie. Lafarge was awarded approximately \$3 million of NRD funds for the purchase and cancellation of its leased mining interests on Sections 3 and 4 in the Refuge. There was a separate request by Jefferson County, Boulder County and the City of Boulder that any additional funds in the NRD pool be used toward surface acquisition

and minerals lease for Section 16. Once the mineral estate is addressed, the Refuge will be expanded to include most of Section 16. The entities are working on exchanges for this right now, which might take a couple years. However, USFWS is already managing this area in accordance with their Comprehensive Conservation Plan. Megan was asked about the expected cost for the mineral estate. She said that the federal government and the State Land Board have been wanting to exchange certain mineral rights for several years and that Section 16 will be a part of this larger exchange. No money will be exchanged.

Update on Reportable Condition for Uranium

On February 13, 2014, DOE notified the community of a reportable condition for uranium at the water quality point of compliance on Walnut Creek. George Squibb was on hand to brief the Board on the monitoring results, and the steps taken to evaluate the reason for the increase in uranium levels in this part of the site.

George explained that, in this case, the 30-day rolling average was in excess of the standard. Under the regulatory framework, this result requires DOE to consult with the regulators in order to determine whether or not mitigating actions are necessary. George noted that the 12-month average is the more stringent regulatory driver for these locations. He said that a report would be posted to the Rocky Flats website within the week.

George clarified that the ratio of natural to man-made uranium in the samples had not changed, and remained at approximately 75-80% natural. He said that part of reason for the exceedance could be heavy rains leading to discharge of additional groundwater. David Allen asked if the results could be related to GS10. George said most likely not. George was also asked if DOE was still monitoring for uranium at GS03, the previous Point of Compliance. He said they were, and that the AMP Annual Report contains those results. Jeannette Hillery asked if the exceedance could have been caused by surface disturbances related to construction of the flumes for surface water. George said that this was also not likely. He added that the levels they were seeing were still below the drinking water standard. Deb Gardner asked about the activities of Wright Water Engineers in relation to this exceedance. George responded that the Wright Water geochemists were looking at how uranium exchanges with sediments, and why they might be seeing so much variability. He said that they are expecting a report on this by late summer or early fall. David Allen asked what the expected turnaround time was for the isotopic analysis of uranium. George said it usually takes about two months.

Updates/Big Picture Review

June 2, 2014

Potential Business Items

- Initial discussion of IGA triennial review
- Receive 2013 audit

Potential Briefing Items

- DOE annual update

- DOE briefing on groundwater treatment

September 8, 2014

Potential Business Items

- Initial review of 2015 budget and work plan
- Continue IGA triennial review

Potential Briefing Items

- DOE quarterly update
- DOE groundwater briefing

Issues to watch:

- Americium, plutonium and uranium levels upstream of pond B-3 and U levels at WALPOC
- AMP sampling
- Original landfill

Member Updates

Mark McGoff announced that Jim McCarthy has retired from his position with Arvada. Joe Cirelli noted that construction was continuing on Superior's Town Center and that with upcoming bridge work, there would be some lane changes and a slower speed limit. Joyce Downing noted that as part of the development at 120th Ave. and I-25, some restaurants were starting to open.

Executive Session

At 10:38 a.m. Joyce Downing made a motion to move into Executive Session for the purpose of discussing certain personnel matters, and discussion with the attorney for any related questions, pursuant to Sections 24-6-402(4)(f) and (g), Colorado Revised Statutes. Lisa Morzel seconded the motion. The motion passed 14-0.

The Board reconvened from Executive Session at 10:50 a.m. and affirmed that no actions had been taken during Executive Session.

The meeting was adjourned at 10:50 a.m.

Respectfully submitted by Erin Rogers.

10:58 PM

05/12/14

Rocky Flats Stewardship Council
Check Detail-2014
 March 15 through May 12, 2014

Type	Num	Date	Name	Account	Paid Amount	Original Amount
Check		3/27/2014		CASH-Wells Fargo-Operating		-3.50
				Admin Services-Misc Services	-3.50	3.50
TOTAL					-3.50	3.50
Bill P...	1666	4/5/2014	Crescent Strategies...	CASH-Wells Fargo-Operating		-7,619.22
Bill	3/31...	3/31/2014		Personnel - Contract	-6,850.00	6,850.00
				Telecommunications	-142.21	142.21
				TRAVEL-Local	-29.12	29.12
				Postage	-15.99	15.99
				Supplies	-32.50	32.50
				Printing	-110.00	110.00
				Subscriptions/Memberships	-439.40	439.40
TOTAL					-7,619.22	7,619.22
Bill P...	1667	4/5/2014	Jennifer A. Bohn	CASH-Wells Fargo-Operating		-697.00
Bill	14-22	3/31/2014		Accounting Fees	-697.00	697.00
TOTAL					-697.00	697.00
Bill P...	1668	4/5/2014	Seter & Vander Wal...	CASH-Wells Fargo-Operating		-1,081.93
Bill	68158	2/28/2014		Attorney Fees	-1,081.93	1,081.93
TOTAL					-1,081.93	1,081.93
Bill P...	1669	4/5/2014	The Rogers Group, ...	CASH-Wells Fargo-Operating		-475.00
Bill	3/10...	2/3/2014		Personnel - Contract	-475.00	475.00
TOTAL					-475.00	475.00
Check	1670	4/5/2014	Century Link	CASH-Wells Fargo-Operating		-26.57
				Telecommunications	-26.57	26.57
TOTAL					-26.57	26.57
Bill P...	1671	5/7/2014	Blue Sky Bistro	CASH-Wells Fargo-Operating		-270.00
Bill	1759	4/6/2014		Misc Expense-Local Government	-270.00	270.00
TOTAL					-270.00	270.00
Bill P...	1672	5/7/2014	Crescent Strategies...	CASH-Wells Fargo-Operating		-7,149.73
Bill	4/30...	4/30/2014		Personnel - Contract	-6,850.00	6,850.00
				Telecommunications	-142.21	142.21
				TRAVEL-Local	-33.60	33.60
				Postage	-15.99	15.99
				TRAVEL-Local	-47.04	47.04
				Misc Expense-Local Government	-60.89	60.89
TOTAL					-7,149.73	7,149.73
Bill P...	1673	5/7/2014	Jennifer A. Bohn	CASH-Wells Fargo-Operating		-484.50
Bill	14-30	4/30/2014		Accounting Fees	-484.50	484.50
TOTAL					-484.50	484.50
Bill P...	1674	5/7/2014	Seter & Vander Wal...	CASH-Wells Fargo-Operating		-1,678.68

10:58 PM

05/12/14

Rocky Flats Stewardship Council
Check Detail-2014
March 15 through May 12, 2014

<u>Type</u>	<u>Num</u>	<u>Date</u>	<u>Name</u>	<u>Account</u>	<u>Paid Amount</u>	<u>Original Amount</u>
Bill	68571	3/31/2014		Attorney Fees	-496.25	496.25
Bill	68622	4/30/2014		Attorney Fees	-1,182.43	1,182.43
TOTAL					-1,678.68	1,678.68
Check	1675	5/7/2014	Century Link	CASH-Wells Fargo-Operating		-26.79
				Telecommunications	-26.79	26.79
TOTAL					-26.79	26.79

**AMENDED RESOLUTION
OF THE
BOARD OF DIRECTORS
OF
ROCKY FLATS STEWARDSHIP COUNCIL**

regarding

2014 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 2014.

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

1. Amended Meeting Schedule/Location. The Board of Directors determines to hold regular meetings the **first Monday of February, April, and June, the second Monday of September, and the fourth Monday of October 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. This schedule shall supersede the regular meeting schedule previously adopted by the Board by Resolution dated February 13, 2014.

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 _____, 2014.

(SEAL)

ROCKY FLATS STEWARDSHIP COUNCIL

By: _____
Chair

ATTEST:

By: _____

ROCKY FLATS STEWARDSHIP COUNCIL

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Boulder, CO 80308-0670
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(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
Nancy Newell

MEMORANDUM

TO: Board
FROM: David Abelson
SUBJECT: 2013 Financial Audit
DATE: May 22, 2014

Attached for your review is Wagner, Barnes and Griggs' draft 2013 financial audit of the Rocky Flats Stewardship Council. As he has done in past years, Eric Barnes will present and discuss the audit at the meeting, and will be prepared to answer any questions. He did not find any material deficiencies, and issued a clean audit.

Neither state law nor our grant with DOE requires the Stewardship Council to seek an audit. However, an independent audit is an important check that confirms both the board and staff are managing the finances in accordance with applicable laws and regulations.

The Stewardship Council will need to formally accept the audit at the meeting. If you have any questions for Eric prior to the meeting, please email me and I will forward them to him.

Action Item: Approve motion accepting Stewardship Council's 2013 audit.

MAY/19/2014

Rocky Flats Stewardship Council
FINANCIAL STATEMENTS
With Independent Auditor's Report
December 31, 2013

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Rocky Flats Stewardship Council

BASIC FINANCIAL STATEMENTS

December 31, 2013

Independent auditor's report I

Basic financial statements:

Government-wide financial statements:

 Statement of net position 1

 Statement of activities 2

Fund financial statements:

 Balance sheet – governmental fund 3

 Statement of revenues, expenditures, and changes in fund balance –
 governmental fund 4

 Statement of revenues, expenditures, and changes in fund balance –
 budget and actual – general fund 5

Notes to financial statements 6

DRAFT

INDEPENDENT AUDITOR'S REPORT

To the Board of Directors
Rocky Flats Stewardship Council

We have audited the accompanying financial statements of the governmental activities and each major fund of Rocky Flats Stewardship Council (the Council) as of and for the year ended December 31, 2013, and the related notes to the financial statements, which collectively comprise the District's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of Rocky Flats Stewardship Council, as of December 31, 2013, and the respective changes in financial position thereof, and the budgetary comparison for the general fund for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Management has omitted management's discussion and analysis that accounting principles generally accepted in the United States of America require to be presented to supplement the basic financial statements. Such missing information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. Our opinion on the basic financial statements is not affected by this missing information.

Lakewood, Colorado
April XX, 2014

DRAFT

ROCKY FLATS STEWARDSHIP COUNCIL
STATEMENT OF NET POSITION
December 31, 2013

	Governmental Activities
ASSETS	
Cash and cash equivalents	\$ 186,530
Total assets	186,530
LIABILITIES	
Accounts payable and accrued expenses	9,258
Deferred revenues	28,232
Total liabilities	37,490
NET POSITION	
Restricted for grant expenditures	28,232
Unrestricted	120,808
Total net position	\$ 149,040

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The accompanying Notes to the Financial Statements are an integral part of these statements.

ROCKY FLATS STEWARDSHIP COUNCIL
STATEMENT OF ACTIVITIES
For the Year Ended December 31, 2013

	Program Revenue			Net (Expense) Revenue and Changes in Net Assets	
Functions/Programs	Expenses	Net Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Governmental Activities
Primary government	\$ 116,676	\$ -	\$ 124,413	\$ -	\$ 7,737
Total primary government	\$ 116,676	\$ -	\$ 124,413	\$ -	\$ 7,737
General revenues:					
Interest income					36
Total general revenues					36
Change in net position					7,773
Net position - beginning					141,267
Net position - ending					\$ 149,040

DRAFT

The accompanying Notes to the Financial Statements are an integral part of these statements.

ROCKY FLATS STEWARDSHIP COUNCIL
 BALANCE SHEET
 GOVERNMENTAL FUND
 December 31, 2013

	<u>General Fund</u>
ASSETS	
Cash and cash equivalents	\$ 186,530
Total assets	186,530
LIABILITIES	
Accounts payable	9,258
Deferred revenue	28,232
Total liabilities	37,490
FUND BALANCES	
Restricted for:	
Grant expenditures	28,232
Unassigned:	
General government	120,808
Total fund balances	149,040
Total liabilities and fund balances	\$ 186,530

Amounts reported for governmental activities in the Statement of Net Position are the same as above.

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ROCKY FLATS STEWARDSHIP COUNCIL
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE
GOVERNMENTAL FUND

For the Year Ended December 31, 2013

	General Fund
REVENUES	
Grants	\$ 114,413
Contributions from local governments	10,000
Interest income	36
Total revenues	124,449
EXPENDITURES	
General government	
Annual Audit	4,001
Accounting Fees	4,225
Attorney Fees	10,114
Administrative Service - miscellaneous	1,091
Insurance	3,356
Miscellaneous Expense - local government	1,352
Personnel - contract	84,050
Postage	660
Printing	935
Subscriptions/membership dues	1,369
Supplies	85
Telecommunications	1,883
Travel - local	765
Travel - out of state	2,790
Total expenditures	116,676
Net change in fund balances	7,773
Fund balances - beginning	141,267
Fund balances - ending	\$ 149,040

Amounts reported for governmental activities in the Statement of Activities are the same as above

The accompanying Notes to the Financial Statements are an integral part of these statements.

ROCKY FLATS STEWARDSHIP COUNCIL

STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE - BUDGET AND ACTUAL -
GENERAL FUND

For the Year Ended December 31, 2013

	Original and Final Budget	Actual	Variance with Final Budget Favorable (Unfavorable)
Revenues			
U.S. Department of Energy - Office of Legacy Management	\$ 125,000	\$ 114,413	\$ (10,587)
Contributions from local governments	10,000	10,000	-
Carry over - Rocky Flats Coalition of Local Governments	19,800	-	(19,800)
Interest income	-	36	36
Total revenues	<u>154,800</u>	<u>124,449</u>	<u>(30,351)</u>
Expenditures			
General government			
Personnel	93,000	84,050	8,950
Travel	5,700	3,555	2,145
Equipment	500	-	500
Supplies	1,200	85	1,115
Contractual	40,100	20,783	19,317
Insurance	4,000	3,356	644
Postage	1,500	660	840
Printing	2,000	935	1,065
Subscriptions/membership dues	2,100	1,369	731
Telecommunications	2,700	1,883	817
Website	2,000	-	2,000
Total expenditures	<u>154,800</u>	<u>116,676</u>	<u>38,124</u>
Change in net assets	<u>-</u>	<u>7,773</u>	<u>7,773</u>
Fund balance - beginning of year	<u>141,267</u>	<u>141,267</u>	<u>-</u>
Fund balance - end of year	<u>\$ 141,267</u>	<u>\$ 149,040</u>	<u>\$ 7,773</u>

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Rocky Flats Stewardship Council

NOTES TO FINANCIAL STATEMENTS

December 31, 2013

Note 1 – Summary of significant accounting policies

A. Reporting entity

The Rocky Flats Stewardship Council (Council) was organized on February 13, 2006 through an Intergovernmental Agreement (IGA) by and among the following governments: the City and County of Broomfield, the Counties of Jefferson and Boulder, the Cities of Arvada, Boulder, Golden, Northglenn, Thornton, and Westminster, and the Town of Superior. All jurisdictions are located adjacent to or near the U.S. Department of Energy's Rocky Flats weapons plant. All jurisdictions are permanent parties, with continuous representation on the Board of Directors. The Council was organized as the successor organization to the Rocky Flats Coalition of Local Governments (Coalition), also formed through an IGA, which concluded its existence shortly following the organization of the Council, having fulfilled its purpose in connection with the closure of the Rocky Flats Site.

The Council was formed for the purpose of overseeing all post-closure Rocky Flats activities. The legislative and administrative power of the Council is vested with a Board of Directors not to exceed 14 in number. Members are community stakeholder representatives, selected by the remaining Board of Directors upon application, and have a right to appoint a Director to the Board.

Under the terms of the IGA, the status of the Council is to be reviewed periodically by the local governments which are parties to the agreements to determine whether the Council will continue in existence. Also under the terms of the IGA, the Council is established as an "enterprise", as defined by Article X, Section 20 of the Colorado constitution, commonly referred to as the Taxpayer's Bill of Rights, or Tabor (Note 5).

The Council follows the Governmental Accounting Standards Board (GASB) accounting pronouncements which provide guidance for determining which governmental activities, organizations and functions should be included within the financial reporting entity. GASB pronouncements set forth the financial accountability of a governmental organization's elected governing body as the basic criterion for including a possible component governmental organization in a primary government's legal entity. Financial accountability includes, but is not limited to, appointment of a voting majority of the organization's governing body, ability to impose its will on the organization, a potential for the organization to provide specific financial benefits or burdens and fiscal dependency.

As of December 31, 2013, no component unit has been identified as reportable to the Council, nor is the Council a component unit of any other primary governmental entity.

Rocky Flats Stewardship Council

NOTES TO FINANCIAL STATEMENTS

(continued)

December 31, 2013

B. Government-wide and fund financial statements

The government-wide financial statements include the statement of net position and the statement of activities. These financial statements include all of the activities of the Council. Both statements distinguish between governmental activities, which normally are supported by taxes and intergovernmental revenues, and business-type activities, which rely to a significant extent on fees and charges for support.

The statement of net position reports all financial and capital resources of the Council. The difference between the assets and liabilities of the Council is reported as net position.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment is offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function or segment. Program revenues include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services or privileges provided by a given function or segment, and 2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as general revenues.

C. Measurement focus, basis of accounting and financial statement presentation

The government-wide financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows.

Governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting.

Eligible grant receipts and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. Other revenue items are considered to be measurable and available only when the Council receives cash.

The government reports the following major governmental fund:

Rocky Flats Stewardship Council

**NOTES TO FINANCIAL STATEMENTS
(continued)
December 31, 2013**

The general fund is the Council's primary operating fund. It accounts for all financial resources of the general government.

When both restricted and unrestricted resources are available for use, it is the Council's policy to use restricted resources first, then unrestricted resources as they are needed.

D. Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires Council management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the reporting period. Actual results could differ from those estimates.

E. Assets, liabilities, and net position

1. Deposits and investments

The Council's cash and cash equivalents are considered to be cash on hand, demand deposits and short-term investments with maturities of three months or less.

Investments for the government are reported at fair value.

2. Capital assets

Capital assets, which include furniture and equipment, are reported in the government-wide financial statements. Capital assets are defined by the Council as assets with an initial, individual cost of more than \$250. Such assets are recorded at historical cost if purchased or constructed. Donated capital assets are recorded at estimated fair market value at the date of donation.

The cost of normal maintenance and repairs that do not add to the value of the asset or materially extend the life of the asset are not capitalized. Improvements are capitalized and depreciated over the remaining useful lives of the related fixed assets, as applicable. Depreciation expense is computed using the straight-line method for all assets, based on the estimated useful lives of the assets, estimated at 3 years.

3. Fund equity

GASB Statement No. 54, "Fund Balance Reporting and Governmental Fund Type Definitions" provides for clearly defined fund balance categories to

Rocky Flats Stewardship Council

NOTES TO FINANCIAL STATEMENTS (continued) December 31, 2013

make the nature and extent of the constraints placed on a government's fund balances transparent to readers. In the fund financial statements the following classifications describe the relative strength of the spending constraints.

Restricted fund balance – The portion of fund balance constrained to being used for a specific purpose by external parties (such as grantors or bondholders), constitutional provisions or enabling legislation.

Unassigned fund balance – The residual portion of fund balance that does not meet any of the above or any other fund balance reporting criteria.

If more than one classification of fund balance is available for use when an expenditure is incurred, it is the Council's policy to use the most restrictive classification first.

At December 31, 2013, the Council had \$28,232 restricted by grantors (for expenses connected with monitoring of post-closure Rocky Flats activities – see Note 1A. above).

The remaining fund balance is considered by the Council to be unassigned. At December 31, 2013, the Council had an unassigned fund balance in the general fund of \$120,808.

F. Budgetary information

Annual budgets are adopted on a basis consistent with generally accepted accounting principles for all governmental funds. In accordance with the Colorado State Budget Law, the Council's Board of Directors follows these procedures in establishing the budgetary data reflected in the financial statements:

1. On or before October 15, the Board prepares a proposed operating budget for each fund, based on their respective basis of accounting, for the fiscal year commencing the following January 1. The operating budget includes proposed expenditures and the means of financing them.
2. After considering comments received, the Board approves the budget. The budget is formally adopted by resolution, published, and filed with the state.
3. Before December 31, the expenditures are appropriated for the ensuing year. The appropriation is at the total fund level and lapses at year-end.

Note 2 – Cash and Investments

Cash and investments as of December 31, 2013 are classified in the accompanying statements as follows:

Rocky Flats Stewardship Council

NOTES TO FINANCIAL STATEMENTS
(continued)
December 31, 2013

Statement of net position:
Cash and cash equivalents \$186,530

Deposits with Financial Institutions

Colorado statutes require that the Council use eligible public depositories as defined by the Colorado Public Deposit Protection Act (the Act). Under the Act, amounts on deposit in excess of federal insurance levels must be collateralized. The eligible collateral is determined by the Act and allows the institution to create a single collateral pool for all public funds. The pool is to be maintained by another institution or held in trust for all the uninsured public deposits as a group. The market value of the collateral must be at least equal to 102% of the aggregate uninsured deposits.

The State Regulatory Commissions for banks and financial services are required by Statute to monitor the naming of eligible depositories and reporting of the uninsured deposits and assets maintained in the collateral pools.

At December 31, 2013, all of the Council's deposits were covered by insurance provided by the federal government. The Council was not subject to custodial credit risk at December 31, 2013.

The Council's cash deposits at December 31, 2013 are as follows:

	Carrying Balance	Bank Balance
Deposits with financial institutions	<u>\$186,530</u>	<u>\$ 186,530</u>
Total cash and cash equivalents	<u>\$186,530</u>	<u>\$ 186,530</u>

Investments

The Council has not adopted a formal investment policy, however, the Council follows state statutes regarding investments. Colorado revised statutes limit investment maturities to five years or less unless formally approved by the Board of Directors. Such actions are generally associated with a debt service reserve or sinking fund requirements.

Colorado statutes specify investment instruments meeting defined rating and risk criteria in which local governments may invest which include:

- Obligations of the United States and certain U.S. government agencies securities
- Certain international agency securities
- General obligation and revenue bonds of U.S. local government entities

Rocky Flats Stewardship Council

NOTES TO FINANCIAL STATEMENTS

(continued)

December 31, 2013

- Bankers' acceptance of certain banks
- Commercial paper
- Local government investment pools
- Guaranteed investment contracts
- Written repurchase agreements collateralized by certain authorized securities
- Certain money market funds

As of December 31, 2013, the Council had no investments.

Note 3 – Capital Assets

An analysis of the changes in capital assets for the year ended December 31, 2013 follows:

	Balance 12/31/12	Additions	Deletions	Balance 12/31/13
Capital assets being depreciated:				
Furniture and equipment	\$ 398	\$ -	\$ -	\$ 398
Total capital assets	398	-	-	398
Accumulated depreciation	(398)	-	-	(398)
Capital assets, net	\$ -	\$ -	\$ -	\$ -

Note 4 – Net position

The Council has net position consisting of three components – invested in capital assets, restricted, and unrestricted.

Invested in capital assets consists of capital assets, net of depreciation. As of December 31, 2013, the Council had \$0 invested in capital assets.

Restricted assets include net position that are restricted for use either externally imposed by creditors, grantors, contributors, or laws and regulations of other governments or imposed by law through constitutional provisions or enabling legislation. As of December 31, 2013, the Council had \$28,232 of restricted net position.

As of December 31, 2013, the Council had unrestricted net position of \$120,808.

Note 5 - Risk management

The Council is exposed to various risks of loss related to torts, thefts of, damage to, or destruction of assets, errors or omissions, injuries to personnel, or natural

Rocky Flats Stewardship Council

**NOTES TO FINANCIAL STATEMENTS
(continued)
December 31, 2013**

disasters. The Council maintains commercial insurance for all risks of loss. Settled claims have not exceeded the commercial insurance coverage limits in any of the past three years.

Note 6 - Concentration

The Council receives the majority of its funding through a grant from the U.S. Department of Energy (DOE). The DOE grant has a current expiration date of February 28, 2017.

Note 7 - Tax, spending and debt limitation

Article X, Section 20 of the Colorado Constitution, referred to as the Taxpayer's Bill of Rights (TABOR), contains tax, spending, revenue, and debt limitations which apply to the State of Colorado and all local governments.

Spending and revenue limits are determined based on the prior year's Fiscal Year Spending adjusted for allowable increases based upon inflation and local growth. Fiscal Year Spending is generally defined as expenditures plus reserve increases with certain exceptions. Revenue in excess of the Fiscal Year Spending limit must be refunded unless the voters approve retention of such revenue.

As an enterprise (Note 1), management believes that the Council is exempt from the provisions of TABOR. However, TABOR is complex and subject to interpretation. Ultimate implementation may depend upon litigation and legislative guidance.

DOE Annual Report

- Cover memo
- Report – Table of Contents
- Report – Executive Summary
- Report – Section 1

ROCKY FLATS STEWARDSHIP COUNCIL

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Nancy Newell

MEMORANDUM

TO: Stewardship Council Board
FROM: Rik Getty
SUBJECT: DOE Annual Report Briefing
DATE: May 21, 2014

We have scheduled 75 minutes for DOE to present its 2013 annual report update. The report includes the fourth quarter of 2013 (October – December).

The report, which is very detailed and lengthy, can be found at: http://www.lm.doe.gov/Rocky_Flats/Documents.aspx The Table of Contents, Executive Summary and Section 1 are attached.

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.).

Please let me know what questions you have.

**Annual Report of
Site Surveillance and
Maintenance Activities at the
Rocky Flats, Colorado, Site**

Calendar Year 2013

April 2014



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Appendixes

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- Appendix C Landfill Inspection Forms—Fourth Quarter CY 2013
- Appendix D Data Evaluation Flowcharts Reproduced from RFLMA and the RFSOG
- Appendix E *Technical Memorandum Regarding Instrumentation and Monitoring at the Rocky Flats OLF*
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- Appendix G U Isotopic Compositions and Concentrations of Rocky Flats Water Samples Submitted to LBNL
- Appendix H 2013 RFLMA Contact Records

Available on DVD:

Ecology DVD: 2013 Annual RFS Ecology Reports

Abbreviations

Ag	silver
Am	americium
ANOVA	Analysis of Variance
AOC	Area of Concern
B	boron
Be	beryllium
BMP	best management practice
Ca	calcium
CAD/ROD	Corrective Action Decision/Record of Decision
Cd	cadmium
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also known as “Superfund”)
CFR	<i>Code of Federal Regulations</i>
cfs	cubic feet per second
COU	Central Operable Unit
Cr	chromium
Cu	copper
CY	calendar year
DCB	dichlorobenzene
DCE	dichloroethene
DER	duplicate error ratio
DNAPL	dense nonaqueous-phase liquid
DO	dissolved oxygen
DOC	dissolved organic carbon
DOE	U.S. Department of Energy
DQA	data quality assessment
DUP	duplicate sample
EPA	U.S. Environmental Protection Agency
ERP	<i>Emergency Response Plan for Rocky Flats Site Dams</i>
ESL	Environmental Sciences Laboratory
ET	evapotranspiration
ETPTS	East Trenches Plume Treatment System
FC	Functional Channel
FR	<i>Federal Register</i>
ft/yr	feet per year
GIS	geographic information system
gpd	gallons per day

gpm	gallons per minute
GWIS	Groundwater Intercept System
HRC	Hydrogen Release Compound
HRT	hydraulic residence time
IA	Industrial Area
IC	institutional control
IHSS	Individual Hazardous Substance Site
IMP	Integrated Monitoring Plan
ITSS	Intercept Trench System Sump
J	For sampling data, a laboratory and/or validation qualifier that indicates an estimated value.
K-H	Kaiser-Hill Company LLC
L	liters
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory
LCS	laboratory control sample
LM	Office of Legacy Management
M&M	monitoring and maintenance
M-K	Mann-Kendall
MCL	maximum contaminant level
µg	micrograms
µg/L	micrograms per liter (sometimes expressed as ug/L)
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
MSPTS	Mound Site Plume Treatment System
N	nitrogen
Ni	nickel
NOIPD	Notice of Intent for Partial Deletion
NPL	National Priorities List
OBP	Oil Burn Pit
OLF	Original Landfill
OU	Operable Unit
PARCC	precision, accuracy, representativeness, completeness, and comparability
PBA	Programmatic Biological Assessment
PCE	tetrachloroethene
pCi	picocuries
pCi/L	picocuries per liter
PIP	Public Involvement Plan
PLF	Present Landfill

PLFTS	Present Landfill Treatment System
POC	Point of Compliance
POE	Point of Evaluation
POU	Peripheral Operable Unit
PQL	practical quantitation limit
Pu	plutonium
PU&D	Property Utilization and Disposal
QA	quality assurance
QC	quality control
R	For sampling data, a laboratory and/or validation qualifier that indicates a value rejected as unusable.
RCRA	Resource Conservation and Recovery Act
Refuge	Rocky Flats National Wildlife Refuge
RER	relative error ratio
RFCA	<i>Rocky Flats Cleanup Agreement</i>
RFETS	Rocky Flats Environmental Technology Site
RFLMA	<i>Rocky Flats Legacy Management Agreement</i>
RFSOG	<i>Rocky Flats, Colorado, Site, Site Operations Guide</i>
RNS	rinsate sample
RPD	relative percent difference
S-K	Seasonal-Kendall
Se	selenium
SED	Sitewide Ecological Database
SEEP	Site Environmental Evaluation for Projects
SEP	Solar Evaporation Pond
SID	South Interceptor Ditch
SPP	Solar Ponds Plume
SPPTS	Solar Ponds Plume Treatment System
STP	Sewage Treatment Plant
SVOC	semivolatile organic compound
TCA	trichloroethane
TCB	trichlorobenzene
TCE	trichloroethene
TOC	total organic carbon
U	uranium
U	For sampling data, a laboratory and/or validation qualifier that indicates an analyte not detected at the indicated concentration.
UHSU	upper hydrostratigraphic unit
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

V&V	validation and verification
VC	vinyl chloride
VOC	volatile organic compound
WQP	water quality parameter
WWTP	Wastewater Treatment Plant
Zn	zinc
ZVI	zero-valent iron

Executive Summary

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is responsible for implementing the final response action selected in the *Final Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit (CAD/ROD)* issued September 29, 2006, for the Rocky Flats, Colorado, Site (Site).

Under the CAD/ROD, two Operable Units were established within the boundaries of the Rocky Flats property: the Peripheral Operable Unit (POU) and the Central Operable Unit (COU). The COU consolidates all areas of the Site that require additional remedial or corrective actions while also considering practicalities of future land management. The POU includes the remaining, generally unimpacted portions of the Site and surrounds the COU. The response action in the Final CAD/ROD is no action for the POU and institutional and physical controls with continued monitoring for the COU. The CAD/ROD determined that conditions in the POU were suitable for unrestricted use. The U.S. Environmental Protection Agency (EPA) subsequently published a Notice of Partial Deletion from the National Priorities List for the POU on May 25, 2007.

DOE, EPA, and the Colorado Department of Public Health and Environment (CDPHE) have chosen to implement the monitoring and maintenance requirements of the CAD/ROD under, and as described in, the *Rocky Flats Legacy Management Agreement (RFLMA)*, executed March 14, 2007. RFLMA Attachment 2 defines the COU remedy surveillance and maintenance requirements. 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.

LM prepared and continually updates the *Rocky Flats, Colorado, Site, Site Operations Guide* (DOE 2013e). It is the primary document to guide work performed to satisfy the requirements of RFLMA and to implement best management practices at the Site.

This report addresses all surveillance and maintenance activities conducted at the Site during calendar year (CY) 2013 (January 1 through December 31, 2013). Highlights of the surveillance and maintenance activities are as follows:

- RFLMA references the use of contact records to document CDPHE approvals of field modifications to implement approved response actions. RFLMA Attachment 2 references the use of contact records to document the outcome of consultation related to addressing any reportable conditions. This report discusses the three RFLMA contact records issued in 2013 and the contact record status as of December 31, 2013.
- Inclinometers were installed at the Original Landfill (OLF) as part of the 2008 geotechnical investigation to address localized slumping and settling of the OLF cover observed in 2007. The localized instability is caused by the weakening of one or more soil layers in the shallow subsurface due to moisture in these layers. To address these conditions, filling and grading to recontour some sideslopes and to minimize and remove subsurface moisture was completed in 2009. This annual report includes the annual review of the inclinometer data by a qualified geotechnical engineer. The data indicate that movement at the OLF is exacerbated by precipitation events and elevated water levels, as seen in September due to the heavy precipitation. While the large-scale, overall OLF slope is stable, localized failures have occurred on the landfill under elevated water level conditions. Continued monitoring

and routine maintenance of the OLF cover are recommended. Localized cracking and subsidence in the northeast portion of the OLF were observed after the September heavy precipitation event. Cracks were filled to minimize infiltration of additional precipitation and a temporary drain was installed to reduce ponding in the new subsidence area. The displaced section of berm 4 will be repaired in summer 2014. Design has been completed for a 2014 project to recontour sideslopes in the East Perimeter Channel to increase slope stability in that area. Berm-height criteria were re-defined based on the observed performance of the berm channels during the September heavy precipitation event.

- Reportable 30-day average uranium concentrations were observed starting on December 18, 2013, in surface water at RFLMA Point of Compliance (POC) monitoring station WALPOC, which is located on Walnut Creek at the eastern COU boundary. Validated results were received on February 3, 2014, and notification to the regulatory agencies and the public—in accordance with RFLMA Attachment 2, Figure 6—was made by e-mail on February 13, 2014. Representatives of the regulatory agencies and DOE met on February 18, 2014, to discuss the observations and develop a path forward.

RFLMA Contact Record 2014-05, “Reportable condition for evaluation purposes for uranium at point of compliance WALPOC,” provides a discussion of the monitoring results and recaps the outcome of the RFLMA Parties consultation regarding the evaluation steps to be taken. This contact record is available on the Rocky Flats website, http://www.lm.doe.gov/Rocky_Flats/ContactRecords.aspx.

- All other POC analyte concentrations/activities remained below reporting levels throughout CY 2013.
- Reportable 12-month rolling average uranium concentrations continued to be observed periodically in CY 2013, in surface water at RFLMA Point of Evaluation (POE) monitoring station GS10, which is located on South Walnut Creek upstream of former Pond B-1. Reportable 12-month rolling average americium (Am) and plutonium (Pu) activities also continued to be observed periodically during CY 2013. However, all sampling results since August 2013 show Am and Pu activities well below the 0.15 picocurie per liter surface water standard. The evaluation of these reportable conditions is ongoing.
- All other POE analyte concentrations/activities remained below reporting levels throughout CY 2013.
- As with many locations on the Front Range, the Site experienced very high water flows due to heavy precipitation during the second week of September 2013. In some cases the high flows and debris caused damage to the automated sampling equipment, resulting in temporary interruptions in composite sampling. At almost all Site locations, the unanticipated runoff volumes caused flow-paced composite bottles to fill before personnel could safely replace them with empty bottles. Access to various areas of the Site was unsafe and restricted by local authorities during certain periods.

Due to the interruptions in automated sampling at RFLMA POCs and POEs, tables have been added to this report (see Sections 3.1.2.1 and 3.1.2.2 below) detailing automated composite sample collection during September 2013. That said, the automated surface-water monitoring network performed as well as could be expected. During September 2013, composite samples collected at RFLMA POCs and POEs included more than 2,000 individual grabs.

- The results of statistical evaluations of groundwater quality at the OLF and Present Landfill (PLF) were largely identical to the results of these evaluations performed in 2012.
- Water monitoring at the Present Landfill Treatment System during CY 2013 showed three analytes detected above the applicable standards for individual sample results. The observed concentrations did not recur and RFLMA consultation was not required during CY 2013. Groundwater samples collected from the three downgradient PLF Resource Conservation and Recovery Act (RCRA) wells indicated notable concentrations of boron in one well; boron and nickel in another; and boron, chromium, and selenium in a third well. These concentrations were statistically higher than in upgradient groundwater and were on increasing trends, although only the selenium results exceeded corresponding RFLMA levels. These conditions are generally consistent with those reported for earlier years. After reviewing the results of statistical evaluation of the 2013 groundwater data presented in this Annual report, the RFLMA Parties may decide that subsequent consultation regarding the appropriate response is required. Such consultation, if it occurs, will be documented in a new contact record (in accordance with guidelines described in Contact Record 2011-03). Surface-water monitoring for the OLF during CY 2013 showed one analyte detected above the applicable standards for individual sample results. The observed concentrations did not recur and RFLMA consultation was not required. Boron was determined to be present at higher concentrations in groundwater at all three downgradient OLF RCRA wells than in upgradient wells. This condition also applied to uranium in two of these wells and nickel in one downgradient well. An increasing trend in downgradient concentrations was only calculated for boron in one downgradient well. These conditions are generally consistent with those reported for earlier years. In all cases, the concentrations of these constituents in downgradient groundwater were below the associated RFLMA limits. After reviewing the results of statistical evaluation of the 2013 groundwater data presented in this Annual report, the RFLMA Parties may decide that subsequent consultation regarding the appropriate response is required. Such consultation, if it occurs, will be documented in a new contact record (in accordance with guidelines described in Contact Record 2011-03). Analytical results for effluent from the Mound Site Plume Treatment System (MSPTS) and East Trenches Plume Treatment System (ETPTS) continued to demonstrate that the vast majority of contaminants have been removed. However, concentrations of some volatile organic compounds (VOCs) in system effluent exceeded target concentrations. Both of these treatment systems received new, larger air strippers in early 2013 that were modeled after the unit installed in the existing effluent manhole at the MSPTS in 2011. The air stripper installed in 2013 at the MSPTS was placed in the effluent manhole, while that at the ETPTS was installed in the influent manhole. Both operated continuously and acted to remove additional VOCs.
- The Solar Ponds Plume Treatment System (SPPTS) was the focus of continued study in an effort to improve cost and treatment effectiveness. Building on results obtained in 2012, pilot-scale lagoons are being tested to treat nitrate. An approach using small containers of treatment media—on the order of 1 to 2 gallons—is being tested to treat uranium. Both of these approaches are being optimized for potential full-scale implementation.
- Groundwater quality and flow at the Site were generally consistent with previous years. No reportable conditions were indicated. Statistical trending calculations indicated numerous significant concentration trends. Conditions observed at some locations, particularly with respect to groundwater elevations, suggested climatic causes (i.e., the extremely heavy precipitation received in September 2013).

- Wetlands constructed to mitigate the impacts to wetlands caused by both Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and non-CERCLA related projects have been managed and monitored in accordance with the *Rocky Flats, Colorado, Site Wetland Mitigation Monitoring and Management Plan* (Plan) (DOE 2006b). That Plan states “The annual report for the fifth year will contain the wetland delineation data and will serve as the final wetland mitigation report (unless further monitoring is required by the regulatory agencies).” This annual report serves as that final wetland mitigation report for those projects that disturbed wetlands in 2009 or earlier and closes out the Plan. In summary, the CERCLA and non-CERCLA wetland impacts were mitigated onsite in a one-to-one ratio. A detail accounting for the impacted and compensatory mitigation wetland acreage is provided in this annual report.

Although the Plan is closed out (with the delivery of this report), projects with wetland impacts after 2009 will continue to be monitored following the same basic methodology as outlined in the Plan. The methodology and process will be documented in the *Rocky Flats, Colorado, Site, Site Operations Guide*. CERCLA-related projects that impact wetlands will have their compensatory wetlands delineated in the fifth year and closed out. Non-CERCLA projects that impact wetlands subject to the U.S. Army Corps of Engineers Clean Water Act Section 404 permitting process will be closed out as required by the permit issued for the project. The status of any CERCLA-related impacted/mitigated wetlands will be reported in future annual reports.

- All RFLMA-required ecological data collection, analysis, and reporting were completed as scheduled.
- Revegetation monitoring data continued to demonstrate the establishment and sustainability of desirable grassland species at the Site.
- The annual data quality assessment showed that the Site continues to collect high-quality data sufficient for decision making.

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 final *Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit (CAD/ROD)* (DOE 2006a) issued September 29, 2006, for the Rocky Flats, Colorado, Site (Site). Prior to the CAD/ROD, cleanup and closure activities were completed in accordance with the requirements of the *Final Rocky Flats Cleanup Agreement (RFCA)* (CDPHE et al. 1996). Under the CAD/ROD, two Operable Units (OUs) were established within the boundaries of the Rocky Flats property: the Peripheral Operable Unit (POU) and the Central Operable Unit (COU). The COU consolidates all areas of the Site that require additional remedial or corrective actions while also considering practicalities of future land management. The POU includes the remaining, generally unimpacted portions of the Site and surrounds the COU. The response action in the final CAD/ROD is no action for the POU and institutional and physical controls with continued monitoring for the COU. The Offsite Areas at Rocky Flats, known as OU 3, were addressed under a separate no-action CAD/ROD dated June 3, 1997.

The CAD/RODs for OU 3 and the POU determined that conditions in those OUs were suitable for unrestricted use. As a result, the U.S. Environmental Protection Agency (EPA) published a Notice of Intent for Partial Deletion (NOIPD) of the Rocky Flats Site (also known as the Rocky Flats Plant) from the National Priorities List (NPL) on March 13, 2007 (Volume 72 *Federal Register* page 11313 [72 FR 11313]), which was a proposal to delete the POU and OU 3 from the NPL. The NOIPD was based on the results of the remedial investigations leading to the CAD/ROD no-action remedies being selected for these OUs. The NOIPD stated that, because no hazardous substances occur in the OUs above levels that allow for unlimited use and unrestricted exposure, a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Five-Year Review was no longer required for these OUs. EPA subsequently published a Notice of Partial Deletion from the NPL for the POU and OU 3 on May 25, 2007 (72 FR 29276).

On July 12, 2007, most of the property outside the COU was transferred to the U.S. Department of the Interior for establishment of a national wildlife refuge managed by the U.S. Fish and Wildlife Service (USFWS). EPA certified that cleanup and closure of Rocky Flats was complete and that the COU remedy was operating properly and successfully, in accordance with requirements for DOE to transfer land to USFWS for establishing the refuge. DOE retained the COU and is responsible for implementing the CAD/ROD final response action and for ensuring that it remains protective of human health and the environment. The monitoring, surveillance, and maintenance activities—for which quarterly, annual, and Five-Year Review reports are issued—are included in the *Rocky Flats Legacy Management Agreement (RFLMA)* (CDPHE et al. 2012).

RFLMA, signed March 14, 2007, superseded the RFCA. RFLMA is a Federal Facility Agreement and Consent Order under CERCLA, the Resource Conservation and Recovery Act (RCRA), and the Colorado Hazardous Waste Act, between DOE, EPA Region 8, and the Colorado Department of Public Health and Environment (CDPHE). The purpose of RFLMA is to establish the regulatory framework for RFLMA Attachment 2, “Legacy Management Requirements.”

RFLMA Attachment 2, Section 7.0, requires DOE to provide reports pertaining to the surveillance and maintenance of the remedy prescribed in the CAD/ROD on a calendar quarter and annual basis. The fourth-quarter report information is to be included in the annual report.

RFLMA Attachment 2, Section 7.2, specifies that the annual reports may include a summary for the previous quarter and shall include the following:

- A discussion of surface-water monitoring data
- A discussion of groundwater monitoring data
- A discussion of groundwater treatment system monitoring data
- A discussion of ecological sampling data
- A description of any adverse biological conditions
- A summary of actions taken in response to reportable conditions
- A summary of maintenance and repairs
- Inspection reports
- Verification of the *Environmental Covenant* (CDPHE 2011a) and evaluation of the effectiveness of institutional controls (ICs)
- Monitoring and maintenance required by the Original Landfill (OLF) Monitoring Report (see Table 3 and Section 6.1 of the final *U.S. Department of Energy Rocky Flats Site, Original Landfill Monitoring and Maintenance Plan* [OLF M&M Plan] [DOE 2009a])
- Monitoring and maintenance required by the Present Landfill (PLF) Monitoring Report (see Table 3 and Section 6.1 of the *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan, U.S. Department of Energy Rocky Flats Site* (PLF M&M Plan) [DOE 2008a])
- Assessments of analytical data, including laboratory audits
- Other conditions or actions taken that are pertinent to the continued effectiveness of the remedy

This calendar year (CY) 2013 Annual Report contains the summary for the fourth quarter of CY 2013.

LM prepared and continually updates the *Rocky Flats, Colorado, Site, Site Operations Guide* (DOE 2013e), also called the RFSOG, as a framework to guide work at the Site. The RFSOG provides details on the surveillance and maintenance needed to satisfy the requirements of the CAD/ROD as well as best management practices (BMPs) at the Site. The RFSOG explains how DOE will fulfill its long-term surveillance and maintenance obligations at the Site.

While the specific BMPs are not subject to regulation under RFLMA, this annual report includes a discussion of activities related to implementing BMPs to document the information for future reference and to provide a perspective of the work conducted over the year.

1.1 Purpose and Scope

The purpose of this report is to inform the regulatory agencies and stakeholders of the surveillance, monitoring, and maintenance activities being conducted at the Site. LM provides

periodic communications such as this report and communicates through other means such as Web-based tools and public meetings.

Topics covered in this annual report include Site operations and maintenance (Section 2.0) and environmental monitoring, including water and ecological monitoring (Section 3.0). Data management, data validation, and an assessment of data quality are also included in Section 3.0. References cited in this report are included in Section 4.0.

Supporting information is provided in a series of appendixes. Appendix A provides the hydrologic data and Appendix B provides the water-quality data. The fourth quarter of CY 2013 landfill inspection forms for the PLF and OLF are included in Appendix C. RFLMA and RFSOG data evaluation flowcharts are provided in Appendix D. Appendix E contains the *Technical Memorandum Regarding Instrumentation and Monitoring at the Rocky Flats OLF*. The *Technical Memorandum on OLF Berm Height Evaluation Using Site-Specific Data* is included as Appendix F. Appendix G consists of the Lawrence Berkeley National Laboratory reports received for selected site samples, and Appendix H contains the RFLMA contact records issued during CY 2013.

1.2 Background

Surveillance, maintenance, and monitoring activities are conducted according to RFLMA. RFLMA incorporates the following plans:

- The OLF O&M Plan (DOE 2009a)
- The PLF M&M Plan (DOE 2008a)

RFLMA Attachment 2 stipulates that DOE employ administrative procedures to control activities in accordance with the ICs and to meet quality assurance and quality control program requirements. Other Site procedures are established to guide work and implement BMPs. These procedures are referenced in the RFSOG and include the *Erosion Control Plan for the Rocky Flats Property Central Operable Unit* (DOE 2007a).

1.3 RFLMA Contact Records

This section provides a summary of the status of activities addressed by RFLMA contact records issued during 2013. RFLMA references the use of contact records to document CDPHE oral approvals of field modifications to implement approved response actions (see RFLMA paragraph 34). 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, and results of consultation will be documented in contact records or written correspondence. RFLMA Attachment 2 also references the use of contact records to document the outcome of consultation related to addressing any reportable conditions (see RFLMA Attachment 2, Section 6.0). Finally, the *Rocky Flats Site Legacy Management Public Involvement Plan* (PIP), in RFLMA Appendix 2, also provides that a contact record of consultative process discussions between the RFLMA Parties will be made available to the Rocky Flats Stewardship Council and other interested stakeholders as early in the process as is practicable following signature approval by the parties. The PIP process to make contact records

available is implemented by posting contact records on the Rocky Flats public website and by promptly notifying stakeholders (by e-mail) that the contact record is posted.

The RFLMA Parties agreed, as documented in RFLMA Contact Record 2007-08, that DOE will document the status of actions or activities in RFLMA contact records from time to time and will include the documentation in RFLMA quarterly and/or annual surveillance and maintenance reports for tracking purposes. The RFLMA Parties also agreed that to facilitate the status reporting, contact records should include a short discussion of the anticipated actions or activities to close out the RFLMA contact record. Thus, RFLMA Contact Record 2007-08 and subsequent contact records will include the closeout discussion.

Under certain situations, activities previously approved in a contact record that has been closed out will need to be performed. A simple notification and approval process has been developed for these situations, which is documented in RFLMA Contact Record 2009-05. CDPHE may receive notification of and approve the activities over the phone or in person, with e-mail follow-ups. The notification and approval of such work shall be reported in the next RFLMA annual report, in relation to the contact record that originally covered the work. This protocol is consistent with RFLMA paragraph 34.

Table 1 lists the RFLMA contact records issued in 2013 and their status at the end of 2013. The table also lists contact records that were issued from 2007 to the end of 2012, were discussed in the 2012 Annual Report, and were not closed by the end of 2013, and shows their status at the end of 2013. The table also lists e-mail approval of activities previously covered by closed-out contact records. Appendix H contains copies of the 2013 contact records.

1.4 RFLMA Modifications

Minor modifications to RFLMA Attachment 1, “Site Map,” and Attachment 2, “Legacy Management Requirements,” were proposed in Contact Record 2012-03. The contact record, which was approved on December 7, 2012, and subsequently posted on the Rocky Flats website, constitutes the public notice required in RFLMA paragraph 66. These minor modifications to RFLMA attachments were approved by CDPHE and EPA on February 21, 2013, and have been incorporated into RFLMA Attachment 1, “Site Map” and Attachment 2, “Legacy Management Requirements,” posted on the Rocky Flats public website. The minor modifications are summarized below.

1.4.1 Attachment 1 “Site Map”

Completion of breaching the Present Landfill Pond and Pond A-3 dams resulted in a change to several map figures to show the new surface water configuration as wetlands. The “Site Map” now reflects the Present Landfill former pond area and A-3 dam former pond area by changing the footprint and the map features to indicate areas as “wetland/marsh.” Also, “McCaslin Road” and “Indiana St.” labels have replaced “County Highway 5” labels to be consistent with road signs.

1.4.2 Attachment 2 “Legacy Management Requirements”

1.4.2.1 Monitoring Requirements

Completion of the installation of the new flumes for surface water monitoring locations WOMPOC and WALPOC and the required notification to CDPHE and EPA completed the requirements for these locations to become new Points of Compliance (POCs). The RFLMA Attachment 2 change is:

Section 5.1, “Monitoring Surface Water”

Points of Compliance (POCs): Located in Woman and Walnut Creeks. These locations are used to demonstrate compliance with the surface-water standards in Table 1. WALPOC, which replaced former POCs GS08 and GS11 on September 28, 2011, and WOMPOC, which replaced former POC GS31 on September 9, 2011, 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 2 years. EPA or CDPHE may extend the 2-year period by requiring DOE to submit a modification to this attachment in accordance with RFLMA paragraph 65 if either determines that such modification is necessary to ensure protection of human health and the environment.

Table 2, “Water Monitoring Locations and Sampling Criteria,” was modified to reflect changes to Section 5.1. The rows for locations GS08, GS11, and GS31 were deleted. Also, in Figure 1, “Water Monitoring at Rocky Flats: RFLMA,” locations GS08, GS11, and GS31 were deleted.

The additional ecological sampling required under RFLMA Attachment 2, Table 5 was completed in CY 2007, and the evaluation of results is included in the *Quarterly Report of Site Surveillance and Maintenance Activities, First Quarter Calendar Year 2008* (DOE 2009c). CDPHE agreed that no further ecological sampling is required, as documented in Contact Record 2008-01. Therefore Section 5.3.7, “Ecological Sampling” has been deleted and Table 5 “Ecological Sampling” was also deleted.

1.4.2.2 Reporting Requirements

Completion of the third Five-Year Review necessitated clarifying the schedule for subsequent reviews. Therefore Section 7.3, “CERLCA 5-Year Review,” was modified by deleting specific dates for the Five-Year Review report and inserting that a “mutually agreeable schedule determined by the RFLMA Project Coordinators in accordance with consultative process in RFLMA paragraph 11, so as to allow for EPA concurrence within five years of the preceding 5-year review report.”

1.4.2.3 Table 1 “Surface Water Standards”

There have been recent changes to Regulation #31, “Basic Standards and Methodologies for Surface Water” (5 CCR 1002-31) (Reg. #31), which required updates to RFLMA Attachment 2, Table 1, “Surface Water Standards.” Table 1 was modified to delete the current standards and replace them with the new Regulation #31 standards, as follows:

Analyte	Current RFLMA Standard (mg/L)	New RFLMA Standard (mg/L)
Acrylamide	7.80E-6	2.20E-5
Carbon tetrachloride	2.30E-4	4.30E-4
1,2-dichloroethene (<i>cis</i>)	7.00E-2	1.40E-2 to 7.00E-2
1,4-dioxane	3.20E-3	3.50E-4
Hexachloroethane	4.00E-4	5.00E-4
Nitrobenzene	3.50E-3	1.40E-2
Pentachlorophenol	2.70E-4	8.00E-5
Tetrachloroethene	6.90E-4	5.00E-3

Abbreviations:

mg/L = milligrams per liter

Table 1 footnotes were modified as follows:

[c] Reserved.

[e] Applies to Segment 4a.

[h] Reserved.

[i] The listed nitrite value is the chronic aquatic life standard based on chloride levels in excess of 22 mg/L in Segment 4. Nitrate and nitrite standards are as nitrogen.

[m] Reserved

[n] The second number in the range for arsenic and 1,2-Dichloroethene (*cis*) is applied as the corresponding or applicable Table 1 standard in the flowcharts in Figures 7 through 11.

1.4.2.4 Table 3, “Present and Original Landfill Inspection and Maintenance Requirements”

The landfill vegetation meets success criteria, and it will be monitored and managed under the sitewide vegetation and revegetation plans as recommended in the third Five-Year Review report. Therefore Table 3, “Present and Original Landfill Inspection and Maintenance Requirements,” has been modified to remove the vegetation and inspection requirements.

Table 1. Status of RFLMA Contact Records

Contact Record No.	Purpose	Approval Date	Status as of December 31, 2012
2013-01	GS10 Flume Replacement Project and Soil Disturbance Review Plan	5/2/2013	Actions completed. Closed.
2013-02	Reportable Condition at Original Landfill	10/21/2013	Contact record will be closed when the construction is completed, post-construction reseeding has been performed, and post-construction erosion controls are in place.
2013-03	Soil Disturbance Review Plan for Regrading the East Perimeter Channel and Associated Diversion Berms at the Original Landfill	11/22/2013	Contact record will be closed when the work is completed, post-construction reseeding has been performed, and post-construction erosion controls are in place. Related to Contact Record 2013-02.
2012-02	Improving Treatment at the East Trenches Plume Treatment System by Adding an Air Stripper Component	10/25/2012	Actions completed. Closed.
2012-03	Minor Modification of <i>Rocky Flats Legacy Management Agreement</i> (RFLMA) Attachment 1, "Site Map," and of RFLMA Attachment 2, "Legacy Management Requirements"	12/7/2012	Actions completed. Closed.
2011-04	Reportable Condition for Uranium at Point of Evaluation GS10	7/8/2011	Contact record serves as the plan and schedule for the evaluation of the reportable condition and will be closed when the evaluation is completed.
2011-05	Update for Reportable Condition for Uranium at Point of Evaluation GS10	10/4/2011	Contact record serves as the plan and schedule for the evaluation of the reportable condition and will be closed when the evaluation is completed. Related to Contact Record 2011-05.
2011-08	Reportable Condition for Americium-241 at Rocky Flats Legacy Management Agreement Point of Evaluation GS10	12/23/2011	Contact record serves as the plan and schedule for the evaluation of the reportable condition and will be closed when the evaluation is completed.
2010-03	Non-Rocky Flats Legacy Management Agreement Surface Water Monitoring Project for North and South Walnut Creeks	3/15/2010	Actions completed. Closed.
2009-01	Phase II and III Upgrades to Solar Ponds Plume Treatment System	2/17/2009	Construction and post-construction revegetation and erosion controls are in place. Optimization of the upgrades and monitoring is ongoing. Contact record will be closed when testing is completed and as-built drawings are completed.
2008-06	Management of Intercepted Groundwater During SPPTS Repair or Maintenance Activities	7/3/2008	Actions continuing.
2007-06	Evaluation of Elevated Nitrate in Groundwater Samples from AOC (Area of Concern) Well B206989	10/12/2007	Actions completed. Closed.

Groundwater

- Cover memo
- RFMLA Attachment 2, Table 2
- RFLMA Figure 1
- Figure 13
- RFLMA Attachment 2, Figures 7-11

ROCKY FLATS STEWARDSHIP COUNCIL

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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
Nancy Newell

MEMORANDUM

TO: Stewardship Council Board
FROM: Rik Getty
SUBJECT: Groundwater Briefing
DATE: May 21, 2014

We have scheduled 50 minutes for DOE to present the second in a series of groundwater (GW) briefings.

As explained in the February meeting GW briefing memo, throughout 2014, DOE will brief on the following topics:

- groundwater hydrology – explaining how groundwater moves at the site
- contaminants of concern (COCs) – volatile organic compounds (VOCs- solvents), nitrates, actinides, etc.
- nature and extent of groundwater contamination at Rocky Flats – where the groundwater plumes are located, the levels of contamination in the plumes
- groundwater monitoring network
- effectiveness of the groundwater treatment systems to reduce contamination levels

This meeting will focus on:

- short summary of February GW briefing
- monitoring network
- contaminants
- treatment
- Rocky Flats Legacy Management Agreement (RFLMA) flowcharts

Summary of previous GW briefing

The previous GW briefing (24 slides) can be found at:

http://www.lm.doe.gov/Rocky_Flats/Sites.aspx?view=5 (click on “Groundwater at Rocky Flats – Characteristics and Hydrogeology”)

Monitoring Network

The GW monitoring network is composed of 89 GW wells and eight Treatment System (TS) grab locations (SPPTS, ETPTS, MSPTS, and the PLFTS).

Excerpting from the RFLMA: GW is monitored in or near areas of GW contamination that might adversely affect surface water quality. Contaminated GW emerges to surface water before leaving the Central Operable Unit (DOE-retained lands). DOE will maintain a network of GW monitoring wells to assess the potential effects of contaminated GW on surface water quality. These wells and sampling criteria are identified in RFLMA Table 2 and shown in Figure 1 with the following well classifications:

- Area of Concern (AOC) Wells: Located within a drainage and downgradient of a contaminant plume or group of contaminant plumes. These wells are monitored to determine whether the plume(s) may be discharging to surface water.
- Sentinel Wells: Typically located near downgradient edges of contaminant plumes, in drainages, and downgradient of groundwater treatment systems. These wells are monitored to determine whether concentrations of contaminants are increasing, which could indicate plume migration or treatment system problems.
- Evaluation Wells: Typically located within plumes and near plume source areas, or in the interior of the Central OU. Data from these wells will help determine when monitoring of an area or plume can cease. A subset of these wells is located in areas that may experience significant changes in groundwater conditions as a result of closure activities.
- RCRA Wells: Dedicated to monitoring the Present Landfill and Original Landfill.

RFMLA Attachment 2, Table 2 is attached. It shows the water monitoring locations and sampling criteria. GW monitoring locations are found in the third column and are labeled “GW.”

Also attached is RFLMA Figure 1 which shows the RFLMA Water Monitoring network (both GW and surface water—I was unable to locate a map of just GW monitoring locations).

Contaminants

Based on thousands of GW monitoring results, the primary COCs in contaminated GW are:

- VOCs – mostly tetrachloroethene, trichloroethene, carbon tetrachloride and breakdown daughter products of these chlorinated solvents such as vinyl chloride
- Uranium isotopes – both man-made and naturally occurring
- Nitrates – water-soluble salt from the extensive nitric acid-based production operations at the site, especially the solar evaporation ponds

While other contaminants can be present, these are the most prevalent. Even COC movement can vary greatly. Nitrates are very soluble in water and can move faster than other contaminants which are less soluble.

Treatment

Groundwater contaminated with VOCs, uranium and nitrates can be found at several site locations, primarily in the former industrial area. Based on the extensive monitoring data, areas where the groundwater contamination showed evidence of a contiguous, mapable plume were identified. (See Figure 13, attached)

The major groundwater plumes contaminated with VOCs, uranium and nitrates, and where groundwater treatment systems are required to treat the water, are:

- East trenches plume – VOCs only
- Mound site plume – VOCs only
- Solar ponds plume – nitrates and uranium

Note: Figure 13 also shows plumes in other areas of the site, but DOE, EPA and CDPHE determined that treatment systems are not needed to protect surface water from contaminated groundwater.

RFLMA Flowcharts

There are four types of GW monitoring wells and four GW treatment systems. When samples are taken, analyzed and the results validated, DOE is required by RFLMA Attachment 2 to evaluate the results using flowcharts associated with each of the sampling locations as follows: (See attached)

- Attachment 2, Figure 7, AOC wells
- Attachment 2, Figure 8, Sentinel wells
- Attachment 2, Figure 9, Evaluation wells
- Attachment 2, Figure 10, RCRA wells
- Attachment 2, Figure 11 GW treatment systems

The flowcharts provide guidance on what, if any, actions may be required if GW standards are exceeded at a particular location. Conversely, the flowcharts provide a potential path to an exit from GW monitoring altogether at a particular location, contingent upon passing numerous requirements.

Please let me know if you have any questions.

Table 2. Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
Points of Compliance (POCs)						
	POC (5)	SW	GS01	Woman Creek at Indiana Street	Flow-paced (varies)	Pu, Am, isotopic U**, flow rate
	POC (5)	SW	GS03	Walnut Creek at Indiana Street	Flow-paced (varies)	Pu, Am, isotopic U**, nitrate (pond discharges only), flow rate
	POC (5)	SW	GS08	Pond B-5 outlet	Flow-paced (varies)	Pu, Am, isotopic U**, nitrate, flow rate
	POC (5)	SW	GS11	Pond A-4 outlet	Flow-paced (varies)	Pu, Am, isotopic U**, nitrate, flow rate
	POC (5)	SW	GS31	Pond C-2 outlet	Flow-paced (varies)	Pu, Am, isotopic U**, flow rate
Points of Evaluation (POEs)						
	POE (6)	SW	GS10	S. Walnut Creek at B-Series Bypass	Flow-paced (varies)	Pu, Am, isotopic U**, dissolved Ag and Cd, total Be and Cr, flow rate
	POE (6)	SW	SW027	SID at Pond C-2	Flow-paced (varies)	Pu, Am, isotopic U**, dissolved Ag and Cd, total Be and Cr, flow rate
	POE (6)	SW	SW093	N. Walnut Creek at end of FC-3	Flow-paced (varies)	Pu, Am, isotopic U**, dissolved Ag and Cd, total Be and Cr, flow rate
Boundary Wells						
	Boundary (7)	GW	10394	Woman Creek at Indiana Street	Annual	VOCs, U, nitrate
	Boundary (7)	GW	41691	Walnut Creek at Indiana Street	Annual	VOCs, U, nitrate
Present Landfill (PLF) Area (2)						
	RCRA (10)	GW	70193	Upgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	70393	Upgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	70693	Upgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	73005	Downgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	73105	Downgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	73205	Downgradient	Quarterly	VOCs, metals
	AOC (7)	GW	4087	Below East Landfill Pond	Semiannual	VOCs, U, nitrate
	AOC (7)	GW	B206989	Below East Landfill Pond	Semiannual	VOCs, U, nitrate
	Treatment System (11)	GW	PLFSEEPINF	Seep influent to treatment system	Quarterly	VOCs, isotopic U**, metals, instantaneous flow rate
	Treatment System (11)	GW	GWISINFNORTH	North GWIS influent to treatment system	Discontinued	VOCs, isotopic U**, metals, nitrate
	Treatment System (11)	GW	GWISINFSOUTH	South GWIS influent to treatment system	Discontinued	VOCs, isotopic U**, metals, nitrate
	Treatment System (11)	SW	PLFSYSEFF	Treatment system effluent	Quarterly; Monthly (if required by decision)	VOCs, SVOCs, isotopic U**, metals
	Treatment System (11)	SW	PLFPONDEFF	East Landfill Pond at outlet	As required by decision rule	As required by decision rule
Original Landfill (OLF) Area (3)						
	RCRA (10)	GW	P416589	Upgradient	Quarterly	VOCs, metals, SVOCs
	RCRA (10)	GW	80005	Downgradient	Quarterly	VOCs, metals, SVOCs
	RCRA (10)	GW	80105	Downgradient	Quarterly	VOCs, metals, SVOCs
	RCRA (10)	GW	80205	Downgradient	Quarterly	VOCs, metals, SVOCs
	AOC (7)	GW	11104	Downgradient, downstream	Semiannual	VOCs, U
	OLF SW (12)	SW	GS05	Woman Creek at west property line (upstream)	Quarterly; Monthly (if required by decision)	VOCs, isotopic U**, metals
	OLF SW (12)	SW	GS59	Woman Creek 700 feet east of OLF (downstream)	Quarterly; Monthly (if required by decision)	VOCs, isotopic U**, metals
Mound Site Plume and Treatment System (MSPTS)						
	Evaluation (9)	GW	00897	Source area	Biennial	VOCs
	Sentinel (8)	GW	15699	Downgradient of intercept trench	Semiannual	VOCs
	Treatment System (11)	GW	MOUND R1-0	Treatment system influent	Semiannual	VOCs
	Treatment System (11)	GW	MOUND R2-E	Treatment system effluent	Semiannual	VOCs
	Treatment System (11)	SW	GS10	S. Walnut Creek at B-Series Bypass	Semiannual	VOCs

Table 2 (continued). Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
East Trenches Plume and Treatment System (ETPTS)						
	Evaluation (9)	GW	3687	Source area	Biennial	VOCs
	Evaluation (9)	GW	05691	Source area	Biennial	VOCs
	Evaluation (9)	GW	03991	East of source area	Biennial	VOCs
	Sentinel (8)	GW	04091	East of source area	Semiannual	VOCs
	Sentinel (8)	GW	95299	Downgradient of intercept trench	Semiannual	VOCs
	Sentinel (8)	GW	95199	Downgradient of intercept trench	Semiannual	VOCs
	Sentinel (8)	GW	95099	Downgradient of intercept trench	Semiannual	VOCs
	Sentinel (8)	GW	23296	Downgradient of intercept trench	Semiannual	VOCs, U
	Sentinel (8)	GW	TH046992	Downgradient of intercept trench	Semiannual	VOCs
	Treatment System (11)	GW	ET INFLUENT	Treatment system influent	Semiannual	VOCs
	Treatment System (11)	GW	ET EFFLUENT	Treatment system effluent	Semiannual	VOCs
	Treatment System (11)	SW	POM2	S. Walnut Creek at Pond B-4 outlet	Semiannual	VOCs
Solar Ponds Plume and Treatment System (SPPTS)						
	Evaluation (9)	GW	P210189	VOC plume source area	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	79102	SPP source area - north	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	79202	SPP source area - north	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	P208989	SPP source area - north	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	79302	SPP source area - northeast	Biennial	U, nitrate
	Evaluation (9)	GW	79402	SPP source area - northeast	Biennial	U, nitrate
	Evaluation (9)	GW	79502	SPP source area - east	Biennial	U, nitrate
	Evaluation (9)	GW	79605	SPP source area - east	Biennial	U, nitrate
	Evaluation (9)	GW	00203	SPP source area - south	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	22205	SPP downgradient plume - north	Biennial	VOCs, U, nitrate
	Sentinel (8)	GW	P210089	SPP downgradient plume - north	Semiannual	VOCs, U, nitrate
	Sentinel (8)	GW	70099	Northwest of system	Semiannual	U, nitrate
	Treatment System (11)	GW	SPIN	Treatment system influent	Semiannual	U, nitrate
	Treatment System (11)	GW	SPPMM01	Treatment system effluent	Semiannual	U, nitrate
	Treatment System (11)	SW	GS13	N. Walnut Creek at A-Series Bypass	Semiannual	U, nitrate
	Evaluation (9)	GW	B210489	Downgradient of treatment system	Biennial	U, nitrate
	Evaluation (9)	GW	51605	Downgradient, adjacent to GS13	Biennial	U, nitrate

Table 2 (continued). Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
Other Areas of Interest						
Rainages Below Impacted Areas	AOC (7)	GW	10594	N. Walnut Creek downstream of Pond A-1	Semiannual	VOCs, U, nitrate
	AOC (7)	GW	00997	S. Walnut Creek upstream of Pond B-5	Semiannual	VOCs, U, nitrate
	AOC (7)	GW	00193	Woman Creek upstream of Pond C-2	Semiannual	VOCs, U
Former Building 371/374	Sentinel (8)	GW	37505	North part of former B371 area	Semiannual	VOCs, U, nitrate
	Sentinel (8)	GW	37405	North/northeast part of former B371/374 area	Semiannual	VOCs, U, nitrate, Pu ⁺ , Am ⁺
Former Building 771/774	Sentinel (8)	GW	37705	East/southeast of former B371/374 area at foundation drain confluence	Semiannual	VOCs, U, nitrate, Pu ⁺ , Am ⁺
	Sentinel (8)	GW	20705	North/northwest of former B771 area	Semiannual	VOCs, U, nitrate, Pu ⁺ , Am ⁺
	Sentinel (8)	GW	20505	North of former B771/774 area	Semiannual	VOCs, U, Pu ⁺ , Am ⁺
	Sentinel (8)	GW	20205	North/northeast of former B771/774 area	Semiannual	VOCs, U, Pu ⁺ , Am ⁺
Former North-Central IA	Evaluation (9)	GW	P114689	Southwest of former B559 area	Biennial	VOCs
	Evaluation (9)	GW	P115589	West part of former B551 Warehouse area	Biennial	VOCs
	Evaluation (9)	GW	70705	East part of former B707 area	Biennial	VOCs, U
	Evaluation (9)	GW	33905	North of former 231 Tanks area	Biennial	VOCs
	Evaluation (9)	GW	21505	West of former B776/777 area	Biennial	VOCs
	Sentinel (8)	GW	52505	West of former IHSS 118.1 area	Semiannual	VOCs
	Evaluation (9)	GW	20902	Northwest of former IHSS 118.1	Biennial	VOCs
Former Building 559	AOC (7)	GW	42505	Terminus of FC-2	Semiannual	VOCs
	Evaluation (9)	GW	55905	North part of former B559 area	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	56305	West part of former B559 area	Biennial	VOCs, U, nitrate
Former IHSS 118.1	Evaluation (9)	GW	18199	North of former IHSS 118.1 area	Biennial	VOCs
	SW Performance [SW018]	SW	SW018	Upstream of FC-2 wetland	Semiannual	VOCs
Former Building 444 Complex	Evaluation (9)	GW	40005	West part of former B444 area	Biennial	VOCs, U
	Evaluation (9)	GW	40205	South part of former B444 end	Biennial	VOCs, U
	Evaluation (9)	GW	P419689	Southeast of former B444 area	Biennial	VOCs, U
	Sentinel (8)	GW	40305	East part of former B444 area	Semiannual	VOCs, U
	Evaluation (9)	GW	P416889	Southeast of former B444 area	Biennial	VOCs, U
	Sentinel (8)	GW	11502	Southeast of former B444 area	Semiannual	VOCs, U
Former Building 881	Evaluation (9)	GW	88205	South part of former B881 area	Biennial	VOCs, U
	Sentinel (8)	GW	88104	South part of former B881 area	Semiannual	VOCs, U
	Sentinel (8)	GW	00797	South of former B881 area	Semiannual	VOCs, U
Former Building 886	Evaluation (9)	GW	22996	East/northeast part of former B886 area	Biennial	VOCs, U
Former Building 991	Sentinel (8)	GW	99305	East part of former B991 area	Semiannual	VOCs, U, nitrate
	Sentinel (8)	GW	99405	Southeast part of former B991 area	Semiannual	VOCs, U, nitrate
Former Oil Burn Pit No. 1	Sentinel (8)	GW	91305	South of confluence of FC-4 and FC-5	Semiannual	VOCs, U, nitrate
	Evaluation (9)	GW	33502	Source area	Biennial	VOCs
	Evaluation (9)	GW	33604	Source area	Biennial	VOCs
Former Oil Burn Pit No. 2	Sentinel (8)	GW	33703	Downgradient of source area	Semiannual	VOCs
	Evaluation (9)	GW	91105	Source area	Biennial	VOCs
	Sentinel (8)	GW	91203	Downgradient of source area	Semiannual	VOCs
Former SW056	Sentinel (8)	GW	45605	Adjacent to French drain remnants and drain interruption	Semiannual	VOCs
	OU1 Plume	GW	891WEL	Source area	Biennial	VOCs
903 Pad/Ryan's Pit Plume	AOC (7)	GW	89104	Downgradient at Woman Creek	Semiannual	VOCs
	Evaluation (9)	GW	00191	East of former 903 Pad area	Biennial	VOCs
	Evaluation (9)	GW	50299	East of former 903 Pad area	Biennial	VOCs
	Evaluation (9)	GW	90402	Southeast of former 903 Pad area	Biennial	VOCs
	Evaluation (9)	GW	00491	Southeast of former 903 Pad area	Biennial	VOCs
	Evaluation (9)	GW	07391	Ryan's Pit source area	Biennial	VOCs, U
	Evaluation (9)	GW	90804	Southeast part of 903 Pad/Ryan's Pit Plume	Biennial	VOCs
	Sentinel (8)	GW	90399	Southeast part of 903 Pad/Ryan's Pit Plume at SID	Semiannual	VOCs
	Sentinel (8)	GW	90299	Southeast part of 903 Pad/Ryan's Pit Plume at SID	Semiannual	VOCs
	AOC (7)	GW	10304	Southeast of 903 Pad/Ryan's Pit Plume at Woman Creek	Semiannual	VOCs, U, nitrate
	PU&D Yard Plume	Evaluation (9)	GW	30900	Source area	Biennial
Sentinel (8)		GW	30002	Downgradient at N. Walnut Creek	Semiannual	VOCs

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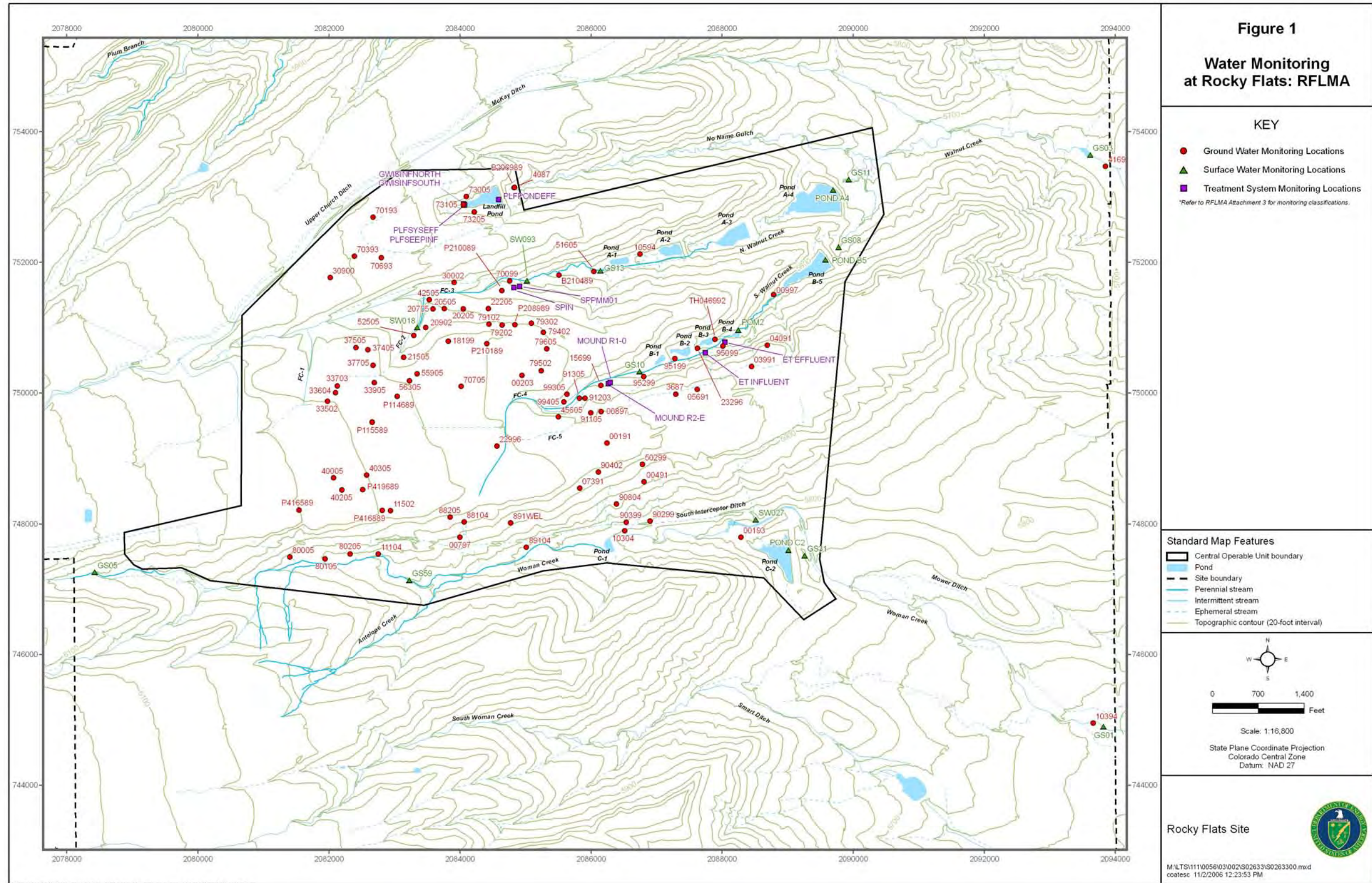









Figure 1. Water Monitoring Locations

Figure 13
Composite Plume Map¹






KEY

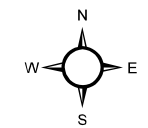
-  Predicted groundwater flow direction (from figure 2.18)²
-  Groundwater treatment system
-  881 Hillside French drain
-  Mound French drain
-  Nitrate exceeds the surface water standard
-  Uranium (unfiltered) exceeds the surface water standard³
-  VOC composite plume⁴

Notes:

- 1) No metals or fluoride were included because of their dissimilar transport characteristics.
- 2) The length of the arrow does not correspond to the groundwater velocity.
- 3) There is no radionuclide filtered uranium standard and thus it has not been represented on the map. (Uranium that exceeded the metal filtered uranium standard is less than 1% of the data and is also not represented.)
- 4) The VOC composite plume is all VOC AOlS that exceed the surface water standard.
- 5) Modeling results indicate that groundwater discharge concentrations will be below surface water standards at these locations.
- 6) Groundwater in the area is in weathered bedrock and is only saturated during wet years, thus AOI transport is limited to wet years (high groundwater levels). See the Groundwater IM/IRA for details.

Standard Map Features

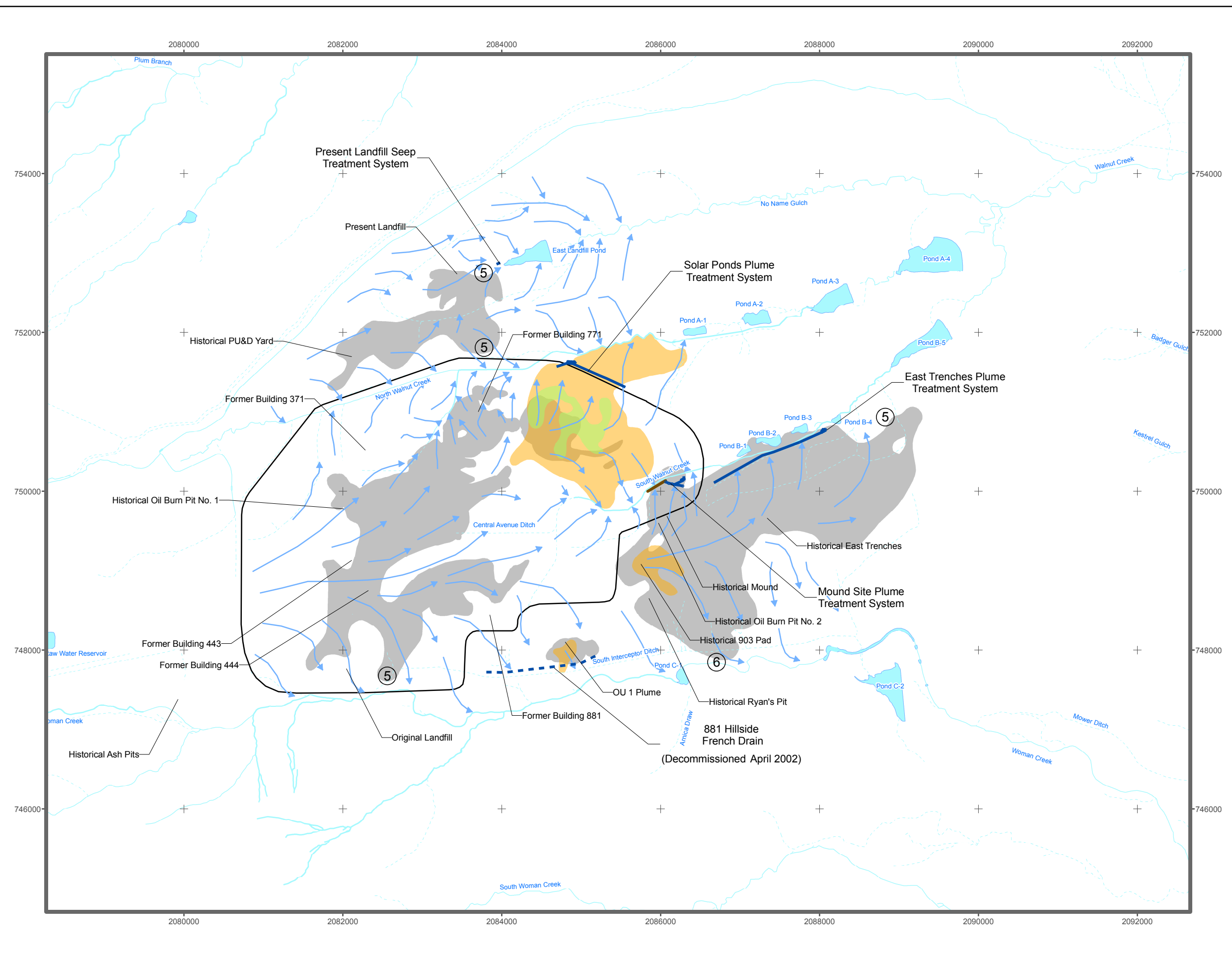
-  IA OU boundary
-  Pond
-  Perennial stream
-  Intermittent stream
-  Ephemeral stream



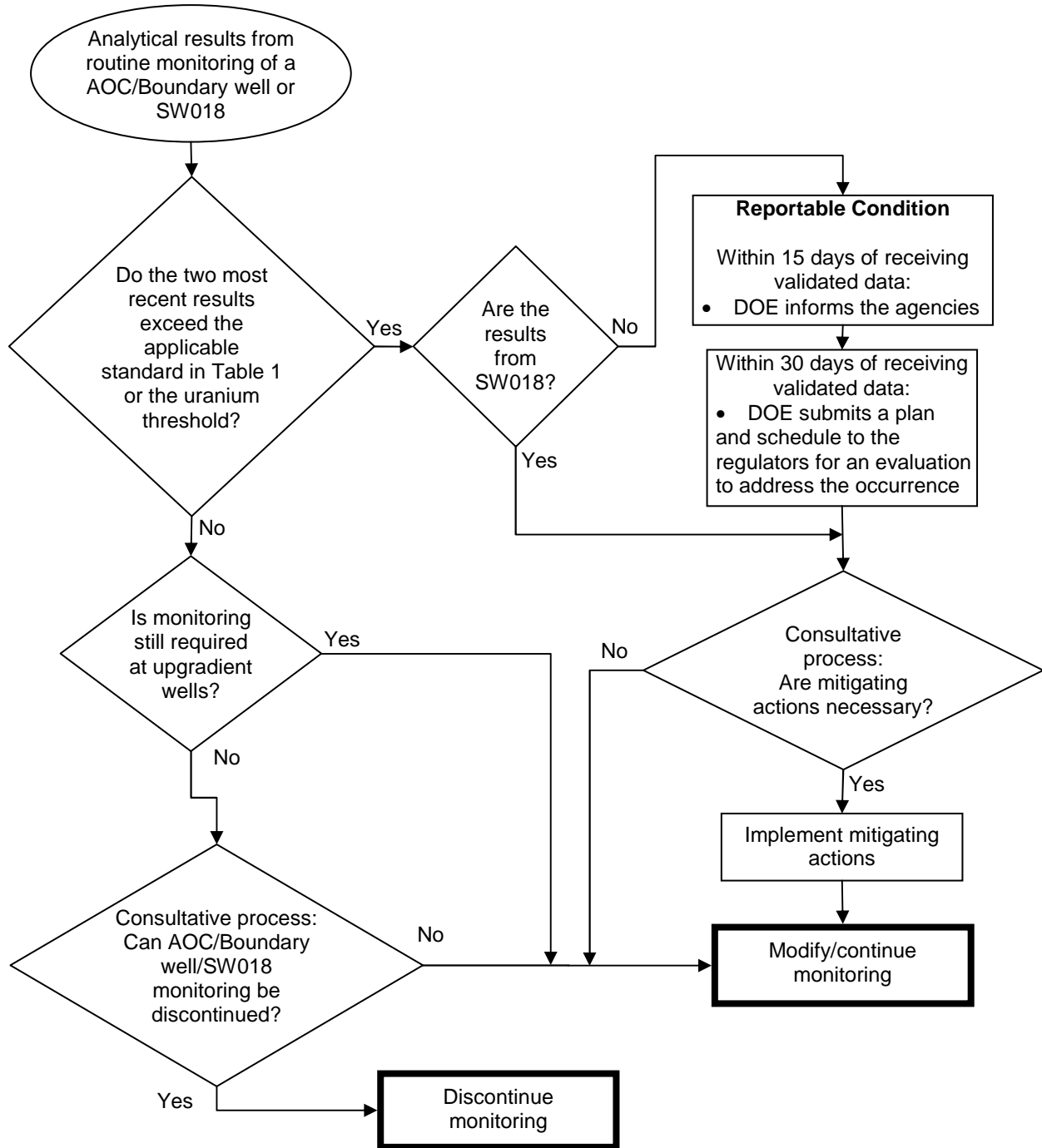
0 600 1,200
Feet

Scale 1:14,400
State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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Rocky Flats Environmental
Technology Site



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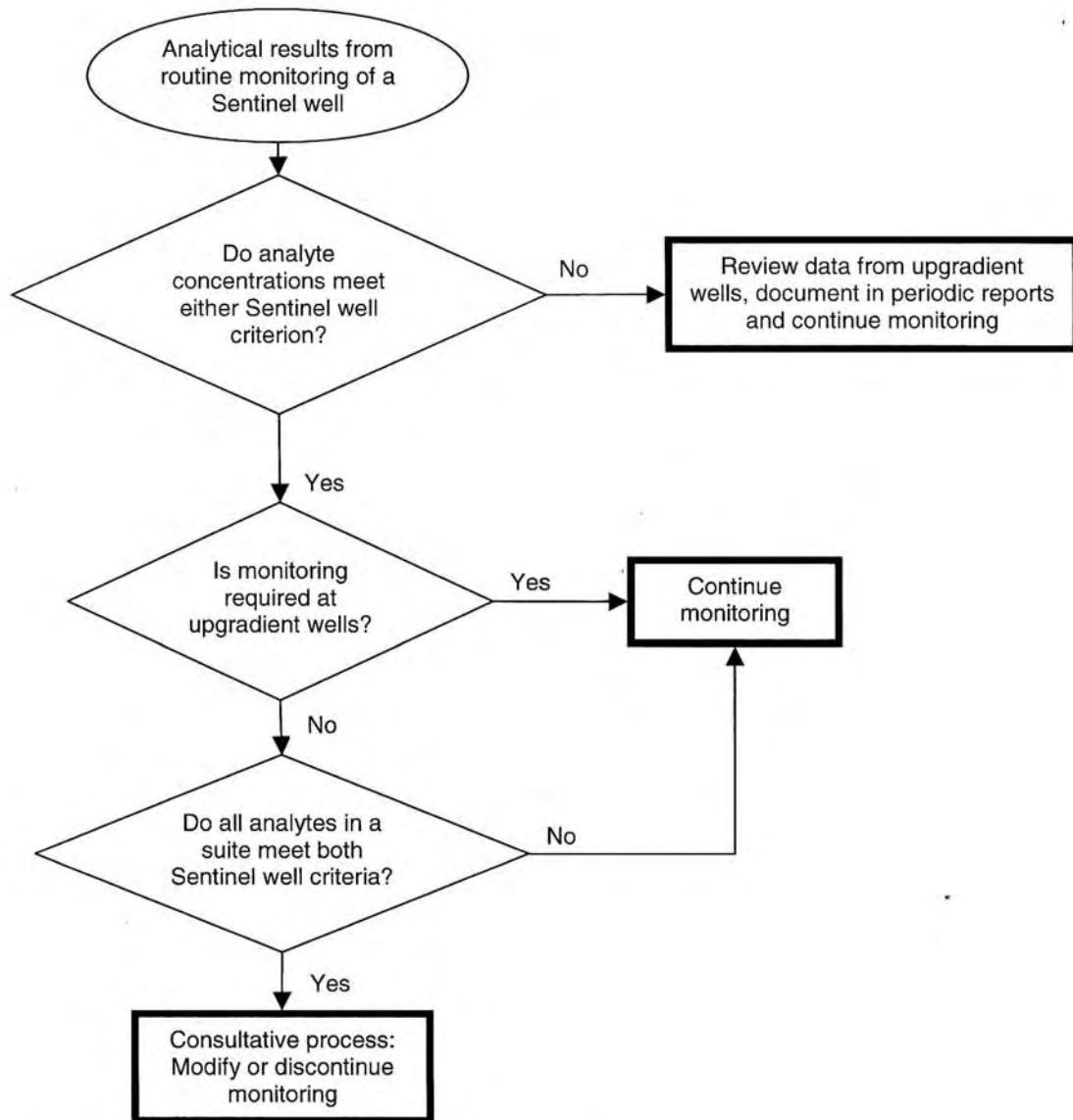


Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

- AOC wells and location SW018 are sampled twice each year; see Table 2.
- Boundary wells are sampled once each year; see Table 2. These wells are not part of the remedy, but are a component of operational monitoring.
- Decisions related to uranium in ground water are based upon a 16 ug/L threshold for Boundary wells (basis: the 11 pCi/L standard) and a 120 ug/L threshold for AOC wells (basis: a grand mean of results from Site-wide high-resolution uranium analyses performed in the late 1990s through mid-2000s), rather than the standard in Table 1.

Figure 7. Area of Concern Wells, Boundary Wells, and SW018

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Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

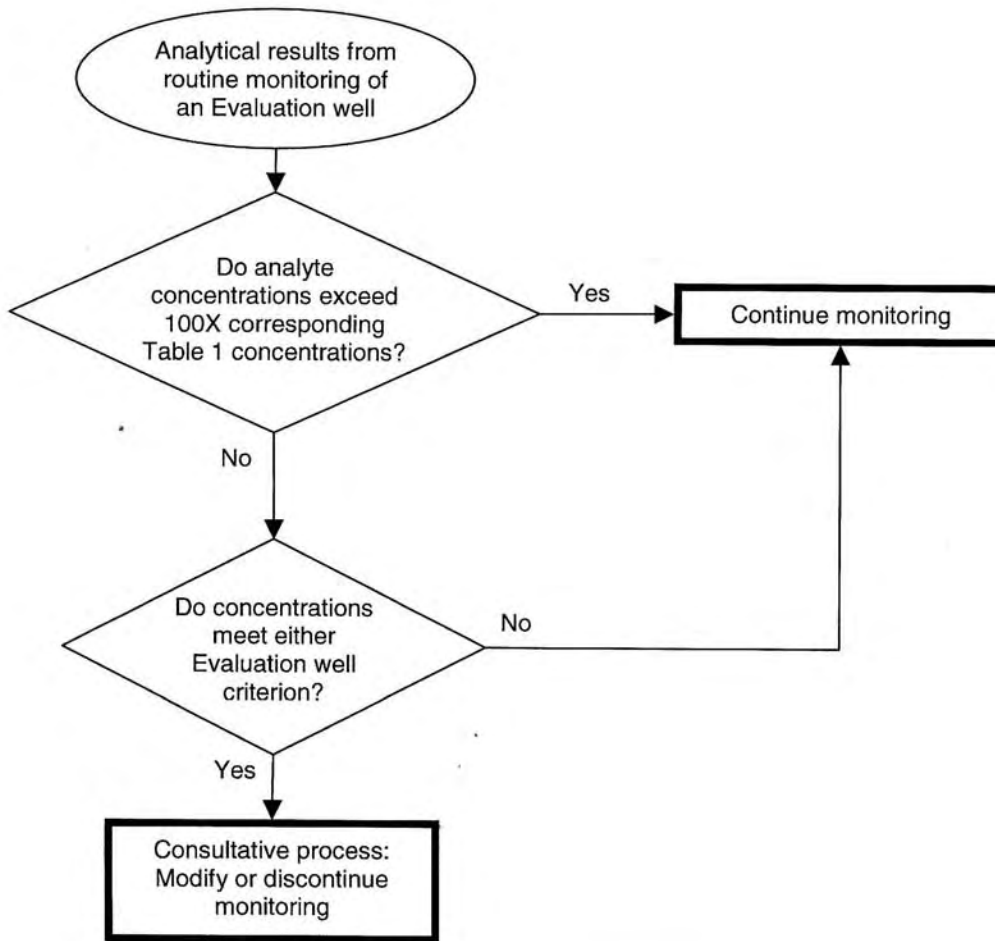
- Sentinel wells are sampled twice each year; see Table 2.
- Decisions related to uranium are based upon a 120 ug/L threshold for AOC wells (basis: a grand mean of results from Site-wide high-resolution uranium analyses performed in the late 1990s through mid-2000s), rather than the standard in Table 1.

Sentinel Well Criteria

1. The 85th percentile concentration of an analyte is less than or equal to the corresponding concentration in Table 1 or, for uranium, the 85th percentile concentration does not exceed 2x120 ug/L or the highest calendar year 2005 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

Figure 8. Sentinel Wells

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Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

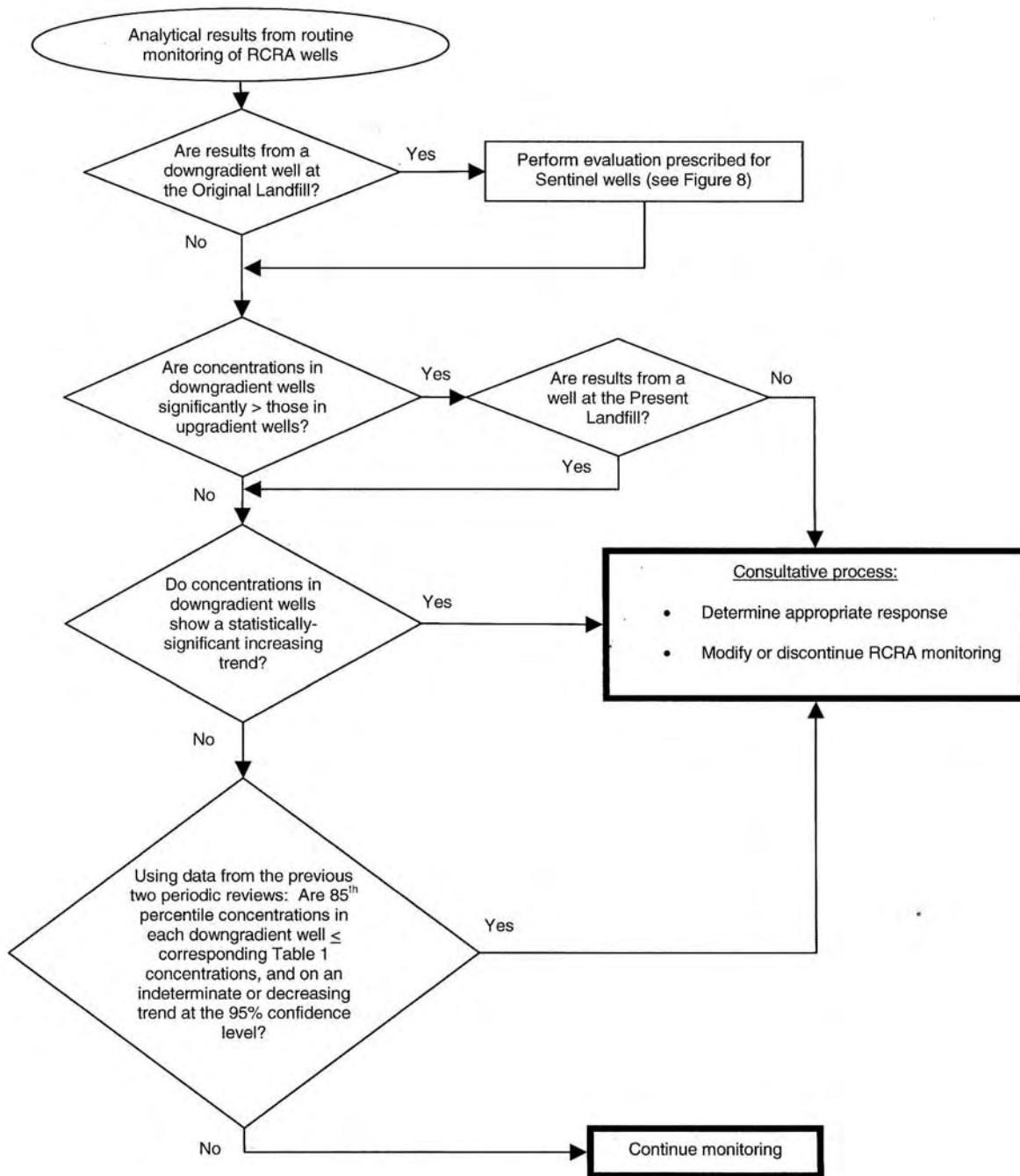
- Evaluation wells are listed in Table 2.

Evaluation Well Criteria:

1. The 85th percentile concentration of an analyte is less than or equal to the corresponding concentration in Table 1, or, for uranium, 240 ug/L or highest pre-CY05 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

Figure 9. Evaluation Wells

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Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria. RCRA wells are sampled quarterly; see Table 2.

Figure 10. RCRA Wells

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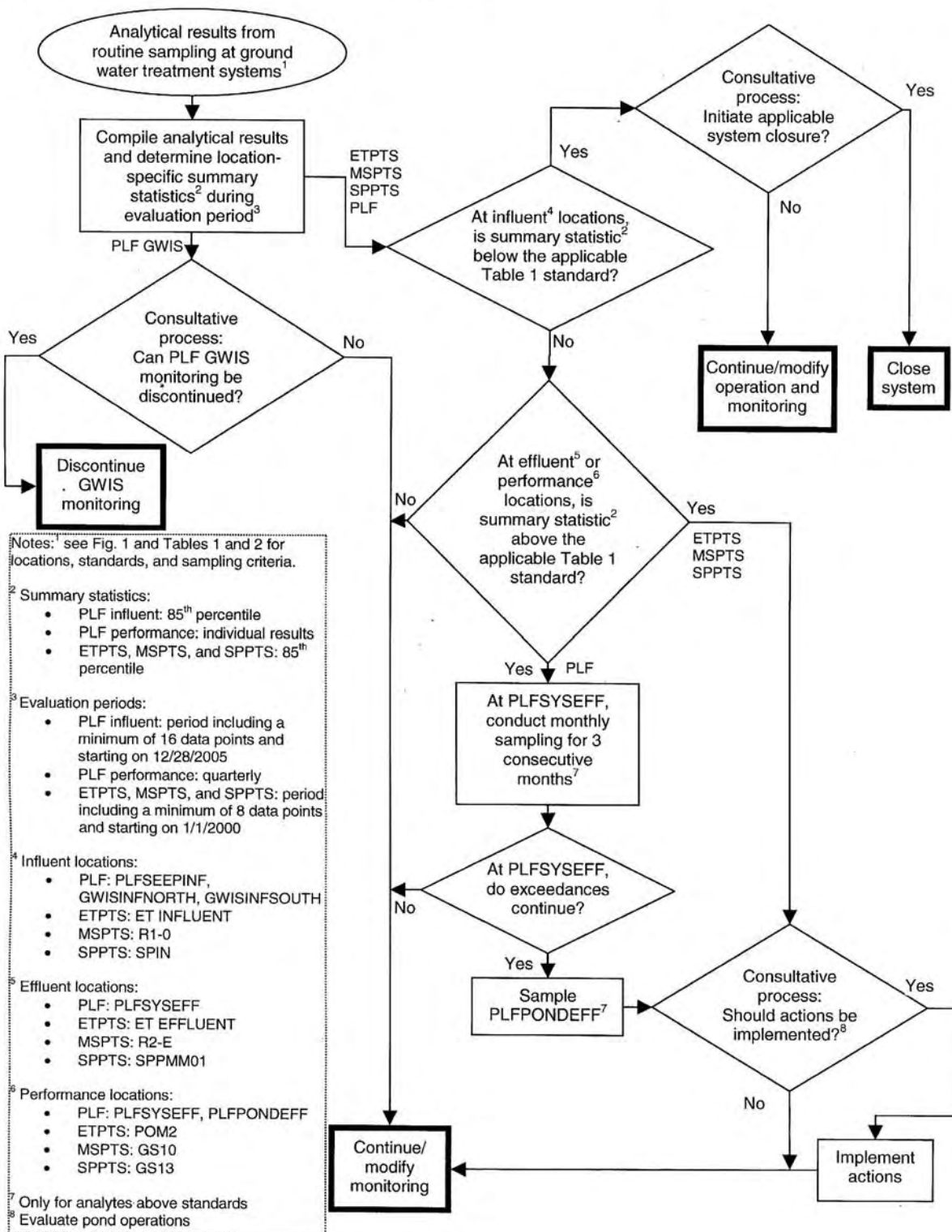


Figure 11. Groundwater Treatment Systems

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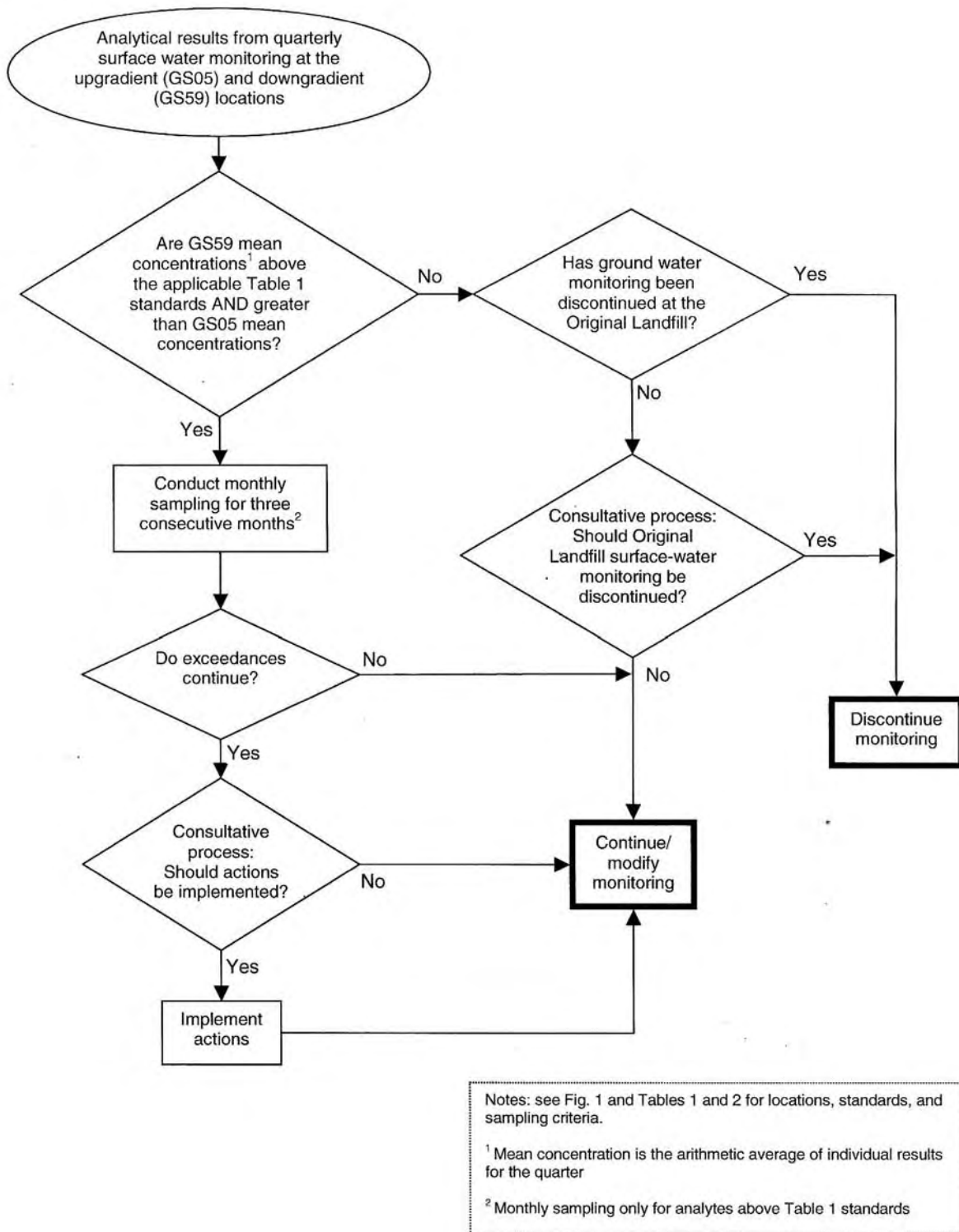


Figure 12. Original Landfill Surface Water