

ROCKY FLATS STEWARDSHIP COUNCIL
Monday, February 4, 2013, 8:30 AM – 11:45 AM

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

Board members in attendance: Shelley Cook (Director, Arvada), Jim McCarthy (Alternate, Arvada), Lisa Morzel (Director, City of Boulder), Tim Plass (Alternate, City of Boulder), Deb Gardner (Director, Boulder County), Megan Davis (Alternate, Boulder County), Greg Stokes (Director, Broomfield), Mike Shelton (Alternate, Broomfield), David Allen (Alternate, Broomfield), Bill Fisher (Director, Golden), Faye Griffin (Director, Jefferson County), Joyce Downing (Director, Northglenn), Shelley Stanley (Alternate, Northglenn), Emily Hunt (Alternate, Thornton), Chris Hansen (Alternate, Superior), Bob Briggs (Director, Westminster), Mary Fabisiak (Alternate, Westminster), Jeannette Hillery (Director, League of Women Voters), Ann Lockhart (Director, Rocky Flats Cold War Museum), Conny Bogaard (Alternate, Rocky Flats Cold War Museum), Roman Kohler (Director, Rocky Flats Homesteaders), Arthur Widdowfield (citizen).

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

Attendees: Shirley Garcia (Broomfield), Vera Moritz (EPA), John Dalton (EPA), Carl Spreng (CDPHE), Charles Adams (CDPHE), Jeremiah McLaughlin (Stoller), Bob Darr (Stoller), John Boylan (Stoller), Jody Nelson (Stoller), George Squibb (Stoller), Linda Kaiser (Stoller), Tamara Moon (Northglenn), Stuart Feinhor (U.S. Rep. Polis), Dylan Brasious (U.S. Rep. Polis), Creig Veldhuizen (Cimarron Metro District), Harvey Nichols (citizen).

Convene/Agenda Review

Chair Lisa Morzel convened the meeting at 8:34 a.m.

Chairman's Review of January 14th Executive Committee meeting

Chair Morzel noted that an Executive Committee meeting was held on January 14, 2013. Meeting attendees included the Executive Committee and David Abelson. The purpose was to develop the agenda for this meeting. The committee also discussed the draft letter regarding worker benefits, but did not make any changes. These meetings are open to public.

Consent Agenda

Joyce Downing moved to approve the November Board meeting minutes (with minor spelling changes) and the checks. The motion was seconded by Roman Kohler. The motion to accept the minutes and checks passed 14-0.

Election of Stewardship Council Officers for 2013

Each year, the board must elect a Chair, Vice Chair, and Secretary/Treasurer. As provided in the bylaws, the terms shall commence at the first meeting of the Board held on or after February 1.

Prior to the meeting, three people had expressed an interest in serving as an Officer for 2013. These were Deb Gardner as Secretary, Joyce Downing as Vice Chair, and Bob Briggs as Chair. Lisa Morzel then asked if anyone else was interested in being considered for one of the positions. No one replied. Jeannette Hillery moved to close discussion and approve the three candidates for officer positions. The motion was seconded by Murph Widdowfield. The motion passed 14-0.

Bob Briggs took over as Chair of the meeting.

Approval 2013 Meeting Dates and Notice Provisions Resolution

Each year the board is required to adopt a resolution establishing the meeting dates for the given year. The Board was provided with a suggested schedule for 2013 in their meeting packets. Jeannette Hillery moved to approve the resolution and meeting notice provisions. The motion was seconded by Roman Kohler. The motion passed 14-0.

The meeting dates are as follows:

February 4

April 1

June 3

September 9

October 28

Approval of letter supporting Rocky Flats workers

Last fall, the Board agreed to send a letter to the Colorado Congressional delegation supporting efforts to secure compensation due under the Energy Employees Occupational Illness Compensation Program Act (EEOICPA). A draft letter was included in the Board packet. It was vetted with board members and includes all input and edits received.

Roman Kohler summarized some of the problems former workers have been facing when attempting to receive benefits for illnesses resulting from their work at Rocky Flats. One of the biggest difficulties they face is the requirement to prove that their illnesses were caused by job-related exposure to radioactive materials. This issue affects both Rocky Flats workers and workers at DOE facilities throughout the federal complex. Lisa Morzel spoke about the importance of keeping this issue in foreground, as there are other situations in which workers in various fields have been and may be exposed and become ill. Roman Kohler moved to approve sending this letter. The motion was seconded by Murph Widdowfield. The motion passed 14-0.

Executive Director's Report

David began by introducing two new Board members. Conny Bogaard is the Executive Director of the Rocky Flats Cold War Museum and will take over as Alternate for the Museum, with Ann Lockhart becoming the Director. Cathy Shugarts with the City of Westminster will become the Second Alternate. Cathy has been attending meetings for many years and is very well-versed on the issues. David then acknowledged and thanked Shirley Garcia for her service on the Board. She had previously represented the Rocky Flats Cold War Museum.

David noted that annual dues for the governmental members were to be collected soon. He also reminded Board members to let staff know if they run across any additional acronyms that

should be added to the list that is included in each Board packet. He also noted that the Board's quarterly financial report had been distributed, and he would be happy to answer any questions.

David informed the Board that recent re-districting had affected Rocky Flats. The Representative for this area had been Rep. Jared Polis, but will now be Rep. Ed Perlmutter.

In December, David attended an Intergovernmental Meeting, which included attendees from Energy Communities Alliance (ECA), the Environmental Council of the States (ECOS), the National Association of Attorneys General (NAAG), the National Governors Association's Federal Facilities Task Force (FFTF), the National Conference of State Legislatures (NCSL), the State and Tribal Government Working Group (STGWG), and DOE. The purpose of this meeting was to provide opportunities for increased communication and coordination with DOE and among states, tribes and local communities affected by the ongoing cleanup of the nuclear weapons complex. David noted that this meeting was geared more towards cleanup than Legacy Management (LM), but was nevertheless valuable for our work at Rocky Flats. He noted that the biggest issue with the DOE programs right now is the budget uncertainty. He said that the President's budget was going to be delayed until April, and that there would be uncertainty for quite a while.

In 2012, the Stewardship Council was granted a new five-year grant from DOE. As part of this, one year of funding was committed, along with some carryover funds already received. Over the last few weeks, David was able to get additional money committed and the paperwork should be completed soon. This funding will sustain the Board through February 2014.

Barb Vander Wall noted that all Board members should have received copies of their 'Oaths of Office'. All Board member terms commence as of February. These forms show a commitment to service on the Board and support the Board's public entity status. They must be signed and witnessed and then returned to staff.

Public Comment

There was none.

Member Updates

Chris Hanson reported that Joe Cirelli had been re-elected as Trustee for the Town of Superior and will be serving as Mayor Pro Tem. Ann Lockhart thanked the Board for its support, and noted that the Museum would greatly appreciate resolutions of support from other local government entities as well. She also said that the Museum had just elected Dan James, a Humanities Professor at Rocky Mountain College of Art and Design, as its new President. Conny Bogaard, the Museum's new Executive Director, reported that the Museum had an opportunity to purchase former Building 60 at Rocky Flats. However, while the paperwork was in progress, a manufacturing company purchased the property. The Museum Board is still interested in finding another location, as its current building is too small and the lease is up at end of year. Conny said this will be a crucial year for the Museum in terms of looking for different marketing opportunities. She noted that many nuclear museums around the country are looking to re-focus their efforts on current nuclear weapon issues.

Faye Griffin updated the Board that she is serving on a committee to build the ‘Rocky Mountain Greenway’ trail, which is envisioned to connect the Rocky Mountain Arsenal to Rocky Flats and then to Rocky Mountain National Park. She also noted that, in December, Jefferson County, along with Boulder, Boulder County, and state and federal agencies closed on the purchase of ‘Section 16’ which is a parcel south of the Rocky Flats National Wildlife Refuge along Highway 93. The land was transferred to the Fish and Wildlife Service and is now part of the Refuge. Lisa Morzel noted that the Rocky Mountain Greenway, which is part of the President’s ‘America’s Great Outdoors’ program, is not yet funded, but the entities involved are working toward some partnerships to help make this come to fruition. Faye also noted that Jefferson County’s light rail line will be opening in April.

Deb Gardner said that Boulder County was happy to support the former Rocky Flats workers as well as the Rocky Flats Cold War Museum, and was also participating in the Rocky Mountain Greenway discussions. Lisa Morzel added that the area involved in the Section 16 purchase was 627 acres. Bob Briggs noted that the City of Westminster was planning for a community park and station that will be part of the Greenway.

Host DOE Quarterly Meeting

DOE briefed on site activities for the third quarter of 2012 (July – September). DOE posted the report on its website. Activities included surface water monitoring, groundwater monitoring, ecological monitoring, and site operations (inspections, maintenance, etc.).

Site Monitoring and Reporting – Bob Darr

The Rocky Flats Legacy Management Agreement (RFLMA) requires quarterly reports to document that the CERCLA remedy continues to be protective. The primary goal of the remedy is the protection of surface water. The response actions for this remedy include maintaining two landfill covers; maintaining four groundwater treatment systems; and surface water and groundwater monitoring. Additionally, physical controls protecting the remedy include signage and restricted access (note: fences are not part of the remedy). Finally, institutional controls (ICs) are in place to complete the remedy requirements. These IC’s are part of the public record and address the following:

- No building construction or occupation
- Restrictions on excavation and soil disturbance
- No drinking or agricultural use of surface water
- No groundwater wells except for monitoring
- Protecting landfill covers and engineered remedy components

Surface Water – George Squibb

George began by showing the map of the various monitoring points. He next reviewed sampling results for plutonium, americium, uranium, and nitrates at the Points of Compliance (POCs). All were below applicable standards. At both the Original and Present Landfill (OLF and PLF), surface water quality results were below standards for the quarter.

Reportable 12-month rolling average values for uranium at GS10 continued to be observed through the quarter. These reportable results have been seen since closure and are cyclical.

Reportable 12-month rolling average values for americium at GS10 continued to be observed through the quarter. Reportable 12-month rolling average values for plutonium at GS10 were observed starting in May 2012. Additional sampling is being conducted both upstream and downstream of GS10; no downstream results have been detected. There is currently not sufficient water to be able to sample upstream. The Contact Records with additional information on these reportable values can be found on the Rocky Flats website.

Deb Gardner said that the sampling plots seemed to show similar results at various locations. She also said she was concerned about contaminants building up upstream that could be released downstream. George responded that the extremely low levels of plutonium and americium results obscure any attempt to draw correlations between levels at different sites – the technology does not allow for that level of detail within the ranges of uncertainty. However, he said they can identify these kinds of trends with uranium. As previously reported, through specialized testing at the Los Alamos National Laboratory, it has been found that most of the uranium at Rocky Flats is naturally-occurring. The site is also working with a subcontractor to provide a more detailed look at this geochemistry. Tim Plass asked about previous results from LANL, and the ratios of man-made vs. naturally-occurring uranium. George said that at the Solar Ponds, the uranium is mostly anthropogenic (man-made). They have not observed any significant change in these ratios at the site. Also, the baseline ratios are different at different locations. He said the site will be using Berkeley Laboratories for these analyses in the future.

Chris Hanson asked if there was a standard that was less conservative than what was used in the RFLMA. Carl Spreng said that the Rocky Flats standard for plutonium was 100 times more stringent (lower) than the national drinking water standard for plutonium. An audience member, Creig Veldhuizen, asked how uranium levels at Rocky Flats compared with the broader Denver area. George said that creeks in the mountains have higher uranium levels. Vera Moritz said that the uranium drinking water standard is double the Rocky Flats uranium standard. Lisa Morzel asked what the detectable level was for plutonium. George said it was about .01 pCi/l. Emily Hunt asked in which forms each of these major contaminants were found at the site. George said that uranium and nitrates were primarily dissolved, while plutonium and americium were usually stuck to small pieces of sediment or organic matter. He added that sometimes they saw a mix of both dissolved and suspended contaminants.

Groundwater Monitoring - John Boylan

John began by noting that groundwater monitoring and treatment ensured surface water protection at the site, and that monitoring results indicated continued protectiveness. Treatment system enhancements included:

Mound Site Plume Treatment System

- Installed powered ventilation on air stripper
- Air stripping reduced contaminants by 90 percent

Solar Ponds Plume Treatment System

- Continued testing of ZVI-filled microcells for uranium treatment
- Continued testing of lagoons for nitrate treatment

John noted that the Bench Scale Lagoon tests are using two cells (A and B) to evaluate various options using carbon and a bacteria-laced inoculum to treat nitrate. After treatment, nitrate levels have been going down to a non-detectable level, or slightly above. Mary Fabisiak asked if they did any tests during ambient summer conditions. John said that the tests were done below surface, so there were lower temperatures. He added that Cell B, which does not use a re-circulation pump, has been showing non-detectable results. This is good because it is an easier option to implement.

Site Operations - Jeremiah McLaughlin

Jeremiah reported that the site conducted a few road upgrades during the quarter. All landfill inspections were completed, and the landfill covers were found to be in good condition. Settlement monuments were surveyed, and the results indicated that both landfills were stable. Inclinometer measurements were taken at the Original Landfill, and these results also indicated continued landfill stability.

The site conducted a quarterly sign inspection during the quarter to ensure that these physical controls under RFLMA were intact, and they were all found to be in good condition. David Abelson asked the site to provide a copy of the language printed on signage. Deb Gardner asked what was currently in place around the site perimeter. Jeremiah said that there are fences, but nothing designed to prevent entry. Chris Hanson asked how the site would find out if people trespass onsite. Jeremiah said that they have never seen anyone within the COU, which has higher levels of signage and fencing. Vera Moritz noted that they look for evidence of trespassing during the annual site inspections, and have not found any. Jeremiah added that the US Fish and Wildlife Service now has an officer assigned to the Rocky Flats Refuge.

Ecological Monitoring - Jody Nelson

Jody reported that although ecological monitoring activities are not required by the remedy, they are best management practices. He also noted that photo-monitoring photos which compare the same areas onsite over time can be found in the Annual Report. These are the activities that were conducted during the quarter:

- Revegetation monitoring
- Prebles Meadow Jumping Mouse mitigation monitoring
- Wetland mitigation monitoring
- Weed mapping
- Present Landfill (PLF) and Original landfill quarterly vegetation surveys
- Nest box monitoring (tree swallows & wrens)
- Prairie dog surveys (not found in Central Operating Unit [COU])
- Photopoint monitoring

Ecological maintenance activities included:

- Fall herbicide applications (approximately 96 acres treated in COU)
- Treatment of several dozen small Russian olive trees and a few saltcedar (tamarisk) plants with herbicides throughout COU
- Revegetation and installation of erosion controls along former PLF – A-3 ridge top road

- Mowing of several roadside edges and other off-road locations to help control weeds and reduce wildfire risk
- Providing supplemental watering for woody plants that were installed for habitat enhancement

Lisa Morzel asked whether any soil amendments were used. Jody said that not in most places, but some of areas that used to contain roads or parking lots required fertilizer and mulch.

Briefing/Discussion on Off-Site Contamination

At the September 2012 meeting, a Board member asked a question about potential contamination in areas south of the Rocky Flats border. It became clear in the ensuing conversation that the topic of radioactive contamination (originating at Rocky Flats) outside the boundaries of the site continues to draw interest and some concern. Carl Spreng (CDPHE) led the briefing. He started by noting that Rik Getty had prepared a very thorough overview of this topic that could be found in the Board packet.

Carl explained that during cleanup, 20,480 acres of land (about 32 square miles) primarily to the east and south of Rocky Flats was designated as Operable Unit 3 (OU3). OU3 was one of 16 Operable Units identified in the 1991 Interagency Agreement and the 1996 Rocky Flats Cleanup Agreement (RFCA). OU3 was further divided into four Individual Hazardous Substance Sites (IHSSs) – Great Western Reservoir, Mower Reservoir, Standley Lake and Surface Soils.

In 1996, after reviewing the data for OU 3, DOE, EPA and CDPHE released the Proposed Plan in which the selected remedy was the ‘no action’ alternative. The document stated that all IHSSs were already in a state that was protective of human health and the environment, and that offsite areas could safely be available for all uses without restriction. After a public comment period and public hearing, the final Corrective Action Decision/Record of Decision (CAD/ROD) was signed by the three agencies in June 1997. This decision did not consider potential future releases, and was based on what was known as a ‘RCRA Facility Investigation/Remedial Investigation’ (RFI/RI).

The RFI/RI investigated surface soils, subsurface soils, sediments, surface water, ground water and air. The ‘Contaminants of Concern’ were americium (surface soil) and plutonium (surface soil; surface sediment). The agencies conducted both a Human Health Risk Assessment and an Ecological Risk Assessment. For the human health risk assessment, the residential reasonable maximum exposure (RME) used was 3×10^{-6} , and the recreational use RME was 1×10^{-8} . For the ecological risk assessment, a ‘Hazard Quotient’ less than 1 equaled ‘no adverse ecological effects’. After conducting the risk assessments, the agencies concluded that ‘Conditions in OU 3 pose no unacceptable or significant risks to human health or the environment’.

After soil sampling was performed, 17 of 61 areas sampled were found to be above background. These were located closest to the site. The investigation produced a map that showed ‘isopleths’, or contoured areas, reflecting decreasing contamination levels moving outwards from Rocky Flats. This map was based on approximately 750 samples. Plutonium was found to be only in the upper 1-3 centimeters of the soil. Uranium was uniformly distributed down to 96 cm

(evidence that it was natural). The plots were sampled by two different methods, and the results were the same. The highest value found was 6.5 pCi/g.

Deb Gardner asked whether CDPHE would require any re-testing of these areas prior to any potential road construction. Carl said that the agency within CDPHE in charge of that decision, the Radiation Control Division, likely has enough evidence to make a decision without any further testing, but that further testing remained a possibility. Deb noted that the existing data was fairly old.

Carl added that air monitoring (using wind tunnels) and sediment sampling in the three reservoirs was also done as part of the RFI/RI. A class action lawsuit, known as the Cook case, was brought against the agencies in the early 1990s. A jury decision in 2008 awarded \$900 million to the plaintiffs, but was overturned on appeal by the 10th Circuit court of Appeals in 2011. An appeal of that decision was made last May to the Supreme Court, and in June 2012, the Court announced it would not hear the appeal.

Carl next reviewed earlier studies of off-site contamination. He discussed a contamination map, referred to as the Kray-Hardy map, which has been widely circulated. He said the map was done in 1970 and was based on very few samples. He added that the data included multiple analyses by various labs, and did not meet EPA usability criteria. He also noted that much of the map showed levels that were at or below background (.08 pCi/g). Carl showed a long list of contamination studies that have been performed throughout the years, including more than two dozen done on behalf DOE, and more than a dozen each by CDPHE and other sources. (Those slides from his presentation are attached.)

In 2007, OU3 was removed (called “delisting” in regulatory terms) from the CERCLA Superfund list. This process deemed that no further remedial measures pursuant to CERCLA were appropriate. Importantly, these lands were deemed available for any and all use with no restrictions due to contamination levels.

In response to questions, Carl explained that there is no national plutonium standard for soil, only site-specific standards. David Abelson asked Carl to give an overview of how the Rocky Flats standards were set. Carl explained that it was a multi-year process that resulted in the determination of ‘action levels’ for cleanup (not ‘standards’). The process involved detailed studies, as well as public involvement.

OU3 was included in first CERCLA 5-Year Review at Rocky Flats because of new information and studies that had been done since it was designated ‘no action’. Carl said that over the years, results at the same sample areas generally decline. He said that the most likely scenario was that the contamination was being covered and buried with clean dust. Lisa Morzel asked if any studies had looked at core samples of plutonium levels over time. Carl said they see this more with sediments in water bodies, rather than soil areas. This is because in the soil, the depth of the plutonium contamination was too shallow an area to be able to see any stratification. An audience member, Harvey Nichols, suggested that the agencies consider the effects of bioturbation. Carl said that the off-site areas had been thoroughly investigated over decades, and posed no threat to public health.

Murph Widdowfield asked if any testing had been done during construction of off-site developments (east of Indiana). Carl said that none was required, although years previously there was a release form that had to be signed by home buyers in the area. This requirement was discontinued, although he was not sure of the exact date. David Allen asked why the OU3 delisting was called a 'partial' delisting. Carl said that was because the Central Operable Unit (COU) was still listed (and will always be listed). Murph Widdowfield asked about any specific requirements for testing in the event of road construction. Carl said that that state construction standard was about 1 pCi/g, which would trigger an evaluation. Carl said there were enough studies already in place, but they may do additional investigation if there was public interest. Any road construction work would already require dust suppression, and other common practices. Tim Plass asked for the citation for the Cook case. David Abelson said he would get that to him. David added that this case covered three main claims - diminution of value, trespass and nuisance (knowing contamination of property), and medical monitoring (which was thrown out early on).

Public comment

There was none.

Updates/Big Picture Review **April 1, 2013**

Potential Briefing Items

- Special Meeting - Adaptation

June 3, 2013

Potential Briefing Items

- Host DOE Annual Update
- NRD Update
- Solar Ponds Performance
- AMP Monitoring Update

Issues to watch:

Americium and uranium levels upstream of pond B-3

David also brought up the issue of a possibly scheduling a discussion about the potential effects of wildfires at Rocky Flats. He noted that past history shows that great concern would be raised if there were a fire at the site. He said they may add this to the April agenda. Vera Moritz commented that test burns at the site showed very interesting results about the behavior of contaminants during fires, and the effects of wind. Tim Plass referred to the April special meeting on adaptation, and asked if there was a chance of finding someone from DOE-LM who was involved in looking climate change and potential effects on remedy sites who could participate in this meeting. He said he would like to hear about the 'bigger picture' on these issues. Vera noted that there was a task force looking into these issues.

The meeting was adjourned at 11:13 a.m.

Respectfully submitted by Erin Rogers.