

ROCKY FLATS STEWARDSHIP COUNCIL

Monday, June 7, 2021

8:30 – 10:30 AM

Virtual Meeting via WebEx

Board members in attendance: Nancy Ford (Arvada), Summer Laws (Alternate, Boulder County), Sam Weaver (Director, City of Boulder), Taylor Reimann (Alternate, City of Boulder), Deven Shaff (Director, Broomfield), Heidi Henkel (Alternate, Broomfield), David Allen (Alternate, Broomfield), Jim Dale (Director, Golden), Bill Fisher (Alternate, City of Boulder), Pat O’Connell (Alternate, Jefferson County), Shelley Stanley (Alternate, Northglenn), Sophie Porcelli (Alternate, Northglenn), Mark Laxis (Director, Superior), Jan Kulmann (Director, Thornton), James Boswell (Alternate, Thornton), Rich Seymour (Alternate, Westminster), Trea Nance (Alternate, Westminster), Jeannette Hillery (Director, League of Women Voters), Linda Porter (Alternate, League of Women Voters), Kathleen Bacheller (Rocky Flats Homesteaders), Kim Griffiths (Director/Citizen)

Stewardship Council staff members and consultants in attendance: David Abelson (Executive Director), Melissa Weakley (Technical Program Manager), Barb Vander Wall (Seter & Vander Wall, P.C)

Attendees: James Thompson (Sen. Bennet), Andy Keim (DOE-LM), Nicole Lachance (RSI Entech), Dana Santi (RSI Entech), John Boylan (RSI Entech), George Squibb (RSI Entech), John Boylan (RSI Entech), Harry Bolton (RSI Entech), Jody Nelson (RSI Entech), Padraic Benson (RSI Entech), Patti Gallo (RSI Entech), Ryan Wisniewski (RSI Entech), Luke Carelo (RSI Entech), Faith Anderson (RSI Entech), Lindsey Archibald (CDPHE), Lindsey Murl (CDPHE), Cathy Shugarts (Westminster), Lynn Segal, Neshama Abraham, Giselle Hertzfeld, Eric Barnes (Fiscal Focus Partners), Heather Pruitt (Fiscal Focus Partners)

Convene/Agenda Review: Jan Kulmann convened the meeting at 8:30 am. She noted that the Executive Committee met to discuss today’s agenda.

Public Comment: Lynn Segal said that she had difficulty accessing the Webex meeting. She opposes disturbing the soil at Rocky Flats and allowing visitors onsite. Giselle Hertzfeld said she was a youth activist. She said she was opposed to public use of Rocky Flats and thought corners had been cut during cleanup. She also said she would like to see a great deal of discussion regarding the future dam breaches.

Consent Agenda: The consent agenda included the checks written since the May 3, 2021, meeting.

Kim Griffiths moved to approve consent agenda. The motion was seconded by Jeannette Hillery. The motion passed 12-0.

Executive Director’s Report:

David announced that September’s meeting will likely be virtual and there would be time set aside to discuss future in-person versus virtual meetings at that point.

Regarding the future dam breaching, the Rocky Flats site manager, Andy Keim, DOE’s site manager, will be updating the Board later in the meeting. He added that when this issue first came up around 2009, the Stewardship Council agreed that the Standley Lake communities of Westminster, Thornton and Northglenn, along with Broomfield, would take the lead on this issue. He said the there was no risk to

the drinking water of those communities because there is no hydrologic connection between Rocky Flats and their drinking water sources.

David said that the President's budget for next year proposes an increase to the DOE-LM budget, based on the possible inclusion of new properties in the program. Because of this, there are no funding concerns for Rocky Flats.

David shared that EPA had awarded safe reuse awards, including one for Rocky Flats. These awards were for model reuse of contaminated sites.

David concluded by touching on a statement made by Giselle that had been brought up many times over the years. She had noted that the original cleanup estimate for Rocky Flats was 70 years and \$35 billion and posited that because the actual cost and timeframe was much lower, that a lower level of cleanup had been completed. David pointed out that the initial estimate was not an estimate of cleanup costs, but rather was based largely on continued maintenance costs to keep the site in a stable configuration for that time horizon.

Receive Stewardship Council 2020 Financial Audit: David Abelson introduced a review of the Board's 2020 audit. He explained that the Stewardship Council is not required by either state law or the DOE grant to secure an audit. However, the Board has always operated according to a belief that 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.

Eric Barnes and Heather Pruitt with Fiscal Focus Partners were here to present the audit to the Board and answer any questions. Heather began by summarizing that the audit resulted in a 'clean opinion', as it had each year. Heather explained that their work involved obtaining an understanding of the Board's financial processes and then to develop tests to get to level of assurance on balances. She noted that the Board's processes were working as intended. The Stewardship Council was complying with all applicable laws and regulations.

Jeannette Hillery moved to accept the Stewardship Council 2020 Financial Audit. The motion was seconded by Sam Weaver. The motion passed 13-0.

Host DOE Annual Meeting

DOE was on hand to brief the Board regarding on the 2020 Annual Report. Annual Reports are required as part of the Rocky Flats Legacy Management Agreement (RFLMA) to document that the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedy continues to be protective of people and the environment. The Stewardship Council was previously briefed on the first, second and third quarters of 2020. The full report is posted on the Rocky Flats website.

The Rocky Flats Site remedy components include:

- Maintain two landfill covers
- Maintain three groundwater treatment systems
- Monitor surface water and groundwater
- Maintain physical controls

- Signage
- Access restriction
- Institutional controls
 - No occupied building construction
 - Excavation and soil-disturbance restrictions
 - No surface water consumption or agricultural use
 - No groundwater wells, except for monitoring
 - Protection of landfill covers and engineered remedy components

Activities included surface water monitoring, groundwater monitoring, ecological monitoring, and site operations (inspections, maintenance, etc.).

Surface Water Monitoring – George Squibb

George began with a quick review of the COVID-19 Minimum Safe Operations protocols that were used throughout much of the year. He then summarized the monitoring requirements and map of locations and monitoring sites, noting the list of constituents which are monitored for.

At the Original Landfill (OLF) on Woman Creek, quarterly concentrations for all analytes were below applicable RFLMA standards during all of 2020.

At the Present Landfill (PLF):

- Quarterly sample results for the first, second, and third quarters showed arsenic concentrations above the RFLMA water quality standard of 10 ug/L
- According to RFLMA evaluation protocols, each result triggered an increase in sampling frequency from quarterly to monthly during these quarters
- For each quarter, the first monthly sample result showed an arsenic concentration below the RFLMA standard, and sampling frequency returned to quarterly
- For all other monitored constituents during all of 2020, concentrations were below the applicable RFLMA standards

Finally, George reported that no RFLMA Point of Compliance (POC) or Point of Evaluation (POE) analyte concentrations were reportable during 2020.

Jim Dale asked George about the source of the arsenic contamination and whether it was being seen in other drainages. George said it was naturally occurring in the soil.

Groundwater Monitoring – John Boylan

John first reviewed the RFLMA monitoring network, which includes:

- No changes in 2020
- 10 Resource Conservation and Recovery Act (RCRA) wells (sampled quarterly to evaluate potential impacts from OLF and PLF)
- 9 Area of Concern (AOC) wells and one Surface Water Support location (sampled semiannually). These are located in drainages downstream of contaminant plumes and are evaluated for plumes discharging to surface water.

- 27 Sentinel wells (sampled semiannually). These are downgradient of treatment systems, edges of plumes, and in drainages, and are used to look for plumes migrating to surface water and treatment system problems.
- 42 evaluation wells (sampled biennially). These are located within plumes, near source areas, and interior of Central Operable Unit (COU) and are used to evaluate whether monitoring of an area or plume can cease.
- 9 treatment system locations (seven are sampled semiannually, and two are quarterly).

During 2020, all wells were sampled and results were generally consistent with previous data. Several locations were dry when visited for sampling.

- Second and fourth quarters: two wells that are often or usually dry
- Fourth quarter: six other locations that are not usually dry
- AOC well 10304 in 2020 was not reportable for trichloroethene (TCE)
 - Exceeded the 2.5 ug/L RFLMA standard for TCE in second quarter but not fourth quarter
 - Second quarter: 3.9 ug/L
 - Fourth quarter: 2.3 ug/L
 - Modeling predicted higher TCE in this area following wet years
 - See Consultation Posting 010819, Contact Record 2015-10, annual reports for 2015 and 2018
- Woman Creek location SW10200 was not sampled in 2020
- Evaluation well 33502 produced water with unusually low concentrations of VOCs
 - Monitors Vinyl Chloride Plume source area
 - Samples typically contain vinyl chloride and cis-1,2-dichloroethene at concentrations of several hundred to thousands of ug/L
 - Second-quarter results were single-digit ug/L
 - Collected follow-up sample in third quarter to confirm (not a RFLMA requirement)
 - Concentrations in this sample were even lower
 - Natural biodegradation is the reason elevated concentrations of these VOCs are detected here
 - May be a factor in lower concentrations observed in these samples
 - Did not see similar decreases in nearby wells
 - Additional data from well 33502 may help to identify cause(s)

John also reported on the results of statistical evaluations of OLF and PLF data:

- Comparisons of downgradient water quality with upgradient water quality
 - Results: identical or nearly so to results in previous years
- Look at whether downgradient groundwater shows increasing concentration trends
 - Results: also, nearly identical to results in previous years. Only difference was at PLF: boron is no longer calculated to be on an increasing trend in one of the wells (for 2019, calculated to be increasing in all three downgradient wells)
- None of the constituents identified in these statistical evaluations are volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCs)
- Also identified decreasing trends in downgradient groundwater and increasing trends in upgradient groundwater
- See the 2020 annual report for more details

In addition to RCRA wells, the site performed statistical trending calculations for Sentinel and Evaluation wells:

- As in other years, identified numerous concentration trends, both increasing and decreasing
- Statistical evaluations followed two different approaches
 - Same as in 2018 and 2019 annual reports
 - Differences in how non-detects are treated
 - “Conventional” approach is the same as has been used since pre-closure era
 - “Alternate” approach focuses on data collected starting in 2009, for constituents detected in at least 40% of the samples from a given well
 - Results from both approaches are summarized in the text of the report and presented fully in an appendix

John noted that the primary groundwater treatment systems continued to remove contaminants. In summary:

- Total flow at each system in 2020 was less than calculated annual average for post-closure years
- East Trenches Plume Treatment System (ETPTS)
 - Met all treatment objectives for both collection/treatment systems (Mound and East Trenches)
- Solar Ponds Plume Treatment System (SPPTS)
 - Met nitrate treatment objectives except for a couple instances in January
 - Removed approximately 30% of the uranium
 - At performance monitoring location GS13, average uranium concentration was approximately 9.4 ug/L (RFLMA standard is 16.8 ug/L)

Other activities in 2020 included:

- Continued evaluating SPPTS path forward for uranium treatment
 - Preparing procurement package
 - Field-based testing and design
 - Leading to construction of full-scale uranium treatment component
- Installed drain in open-bottomed vault at SPPTS to protect equipment
- Installed additional piezometer to evaluate slump east of SPPTS (North Walnut Creek Slump)
- Installed line of piezometers west of SPPTS groundwater collection trench
 - Evaluate groundwater in an area that was not accessible when SPPTS was built
- Repaired water transfer line from MSPCS to ETPTS
 - Replaced poorly-constructed cleanouts with new molded pieces
 - Replaced covers over cleanouts with stronger units to help protect against future damage from elk
- Replaced batteries at ETPTS
 - Replaced 96 lead-acid batteries with eight lithium-iron-phosphate batteries that have a much longer service life
 - Also replaced several electrical components and rewired power system for better operation
 - Replaced solar panels that had cracked glass

John concluded by reviewing the big-picture results since the site closed:

- Overall groundwater quality in and downgradient of source areas has not changed dramatically

- Treatment systems are collecting and treating more contaminated groundwater

David Abelson asked John about his slide #17. He wanted more information about whether the increase in TCE shown on the graph was more closely related to the 2013 flood event or the 2015 wet spring, or a combination of both. John said he could not say whether it was more strongly related to one or both of these events. George Squibb noted that the 2015 event was spread out over a much longer timeframe, and this may have been a stronger forcing mechanism than the flood. John added that monitoring also confirmed that there was no impact on surface water from the TCE exceedances. David Allen asked whether there could be a delay in seeing any impacts from the groundwater exceedances in the surface water. John said there would be a delay, but that the surface water in this case was monitored for over four years, which should have been enough time to see any impacts.

Site Operations – Harry Bolton

Harry reviewed the Site Operations activities for 2020, beginning with RFLMA-required physical controls. Signs were inspected quarterly and reattached or replaced as needed.

Additional inspections and records confirmations included:

- Restrictive Notice (formerly the Environmental Covenant)
 - Confirmed in Administrative Record and on file in Jefferson County records (March 16, 2020)
- Annual site inspection was completed on May 31, 2020
 - No evidence of violations of institutional or physical controls was observed
 - No adverse biological conditions were noted
- Former building areas (B371, B771, B881, and B991) were inspected as a Best Management Practice, in addition to their inclusion in the annual site inspection
- Filled a small depression at B881 in November
 - Approximately 3-foot diameter and 3-foot depth
 - Identified during December 2019 inspection

Site operations also included the performance of quarterly and weather-related inspections of the PLF:

- Landfill in good condition; no significant issues identified
- Vertical settling at settlement monuments was within design limits

At the OLF, stabilization project field activities were completed in August 2020:

- 267 tie anchors installed along 13 anchor rows (seven on east side, six on west side)
- Permanent drains were installed, eliminating the need to operate pumps in the temporary groundwater intercept (GWI) wells installed previously
- The siphon system installed at Seep 10 in 2018 was replaced with a permanent drain
- The 2-foot-thick soil cover was reestablished, disturbed areas were revegetated, and erosion controls were installed in affected areas

Harry next provided an update on the North Walnut Creek Slump:

- Visual observations made weekly except during MinSafe restrictions
- Slump monitoring points surveyed monthly as a best management practice
 - Visual observations and monitoring data show slope creep
 - Greater movement during wetter periods

- Additional geotechnical investigation fieldwork completed in September
 - Four additional geotechnical borings — three completed as inclinometers and one completed as a piezometer
- Data will be incorporated into the previous slope stability evaluation to provide a more comprehensive hillside stabilization evaluation

Harry provided a few other miscellaneous updates:

- Test pits to supplement piezometers near SPPTS Collection Trench and Interceptor Trench System
- Site roads were regraded and dust suppressant applied to the primary routes (November); a few other spots repaired
- Site erosion controls monitored and maintained.

David Allen asked about investigations into the North Walnut Creek slump and whether the site would be gathering additional information or just looking at existing data. Harry said they want to understand the slope movement through inclinometer data and understand if preferential pathways from abandoned infrastructure are present, as well as ways to enhance the collection of water. David asked what the timing is for the analysis. Harry did not have a specific timeline, but they are looking at their ability to protect existing remedy systems. David said he was concerned about potential damage to the Solar Ponds treatment collection system and thought time was of the essence. Jim Dale asked what dust treatment materials were used. Harry said it was called Durablend, which is part magnesium chloride.

Site Ecology – Jody Nelson

Jody reported on vegetation management activities. Approximately five acres were treated by spot spraying with herbicide in 2020. Approximately 20 acres were revegetated in 2020, most of which was associated with the OLF stabilization project.

Several ecological monitoring activities took place throughout the year, including:

- Revegetation monitoring
 - 17 areas monitored
 - Nine areas continue to meet success criteria
 - Eight areas were newer revegetation areas
- Preble’s meadow jumping mouse mitigation monitoring
 - Habitat continues to establish at mitigation locations
- Wetland mitigation monitoring
- Forb nursery monitoring
- Wildflowers continue to establish and spread

Wildlife monitoring in 2020 included:

- Prairie dog monitoring
 - No active prairie dog towns within the COU
- Nest boxes
 - Five of 25 nest boxes were active in 2020 (tree swallows and house wrens)
 - Others had evidence of activity
- Raptor nests

- No active raptor nests were observed in 2020 in the COU
- Elk
 - Approximately 230 elk in early 2020

Heidi Henkel asked Jody what the success criteria were for revegetation activities. Jody said these included a certain amount of total cover, a certain percentage of noxious weeds, etc. He said the specific criteria could be found in the revegetation plan on the Rocky Flats website.

Dam Breach – Andy Keim

Andy Keim next provided an update on future dam breaching plans. He began by explaining that the dams are not needed to meet the site’s cleanup obligations. He said DOE has planned to remove the dams since before the site was closed. There were originally 12 dams and now there are three. Reasons for breaching the dams include reducing maintenance and monitoring of aging structures, reducing evaporative losses due to impounded water, and returning the site to natural surface water configurations. All three dams have operated in flow-through conditions for 10 years, simulating water quality of breached dams. DOE intends to complete the breaching of the dams, pending schedule and budget availability. Currently, dam breaching is scheduled for 2024 and 2025. As part of the process, DOE will perform a refresh of the 2011 NEPA Environmental Assessment, which will include a public involvement process.

Jan Kulmann said she met with DOE recently as part of federal lobbying. She said that dam breaching was considered a low priority and very likely to be pushed out even further. Deven Shaff asked what criteria would be involved in deciding whether to push out. Andy said it would be based on funding priorities, which are based on maintaining and updating remedy components.

Board Roundtable: There were no updates.

Big Picture/Additional Questions/Issue Identification: David brought up the issue of the resumption of in-person meetings. He noted there were both pros and cons to meeting virtually and meeting in-person. He asked for input from the Board. Jan Kulmann said she much preferred in-person meetings and would like to resume after the September meeting. Jim Dale said he would like to continue online until 2022. Heidi Henkel said she preferred in-person and would like to start as soon as feasible. Deven Shaff suggested looking at hybrid options. David Abelson said they were looking at options but had not found a room that could accommodate a Board of this size for audio and video feeds. Pat O’Connell said Jefferson County will be acquiring this sort of technology. David Abelson said he would keep in touch with Pat about this option.

September 13, 2021

Business Items

- Review draft 2022 work plan
- Review draft 2022 budget
- Resumption of in-person meetings

Briefing Items

- DOE Quarterly Update

November 1, 2021

Business Items

- Adopt 2022 work plan
- Adopt 2022 budget
- New member interviews

Briefing Items

- DOE Quarterly Update
- Overview of CERCLA Five Year Review

Issues to watch:

- Changes at SPPTS
- Status of OLF
- Uranium exceedances in surface water
- Trichloroethylene (TCE) exceedances in groundwater
- North Walnut Creek slump

The meeting was adjourned at 10:36 am.

Respectfully submitted by Erin Rogers.