

**ROCKY FLATS STEWARDSHIP COUNCIL**  
**Monday, February 6, 2017, 8:30 AM – 11:30 PM**  
**Rocky Mountain Metropolitan Airport, Terminal Building, Mount Evans Room**  
**11755 Airport Way, Broomfield, Colorado**

**Board members in attendance:** Mark McGoff (Director, Arvada), Sandra McDonald (Alternate, Arvada), Lisa Morzel (Director, City of Boulder), Deb Gardner (Director, Boulder County), Megan Davis (Alternate, Boulder County), Mike Shelton (Director, Broomfield), David Allen (Alternate, Broomfield), Laura Weinberg (Director, Golden), Libby Szabo (Director, Jefferson County), Pat O’Connell (Alternate, Jefferson County), Joyce Downing (Director, Northglenn), Shelley Stanley (Alternate, Northglenn), Chris Hansen (Director, Superior), Sandy Pennington (Alternate, Superior), Jan Kulmann (Director, Thornton), Emily Hunt (Alternate, Thornton), Bruce Baker (Director, Westminster), Mary Fabisiak (Alternate, Westminster), Shannon Bird (Alternate, Westminster), Mary Fabisiak (Alternate, Westminster), Jeannette Hillery (Director, League of Women Voters), Sue Vaughan (Alternate, League of Women Voters), Roman Kohler (Rocky Flats Homesteaders), Arthur Widdowfield (Director, Rocky Flats Cold War Museum), Ron Heard (Alternate, Rocky Flats Cold War Museum).

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

**Attendees:** Scott Surovchak (DOE-LM), Gwen Hooten (DOE-LM), Karen Edson (DOE-LM), Jeffrey Murl (DOE-LM), Jeremy Wehner (Navarro), Linda Kaiser (Navarro), Alan Smith (Navarro), Jody Nelson (Navarro), David Ward (Navarro), John Boylan (Navarro), George Squibb (Navarro), Carl Spreng (CDPHE), Lindsay Masters (CDPHE), Rob Beierle (CDPHE), Vera Moritz (EPA), Shirley Garcia (Broomfield), Christine Howly (Woman Creek Reservoir Authority), Bonnie Graham Reed (citizen), Gale Biggs (citizen), Jeff Gipe (citizen), Sally Gipe (citizen), Lynn Segal (citizen), Jon Lipsky (citizen), LeRoy Moore (RMPJC), Judith Mohling (RMPJC), Marian Whitney (citizen), Chris Pash (citizen), Janice Roberts (citizen), Bruce Roberts (citizen), Ted Ziegler (citizen), Diane Vigil (citizen), S Shank (citizen), Irene Rodriguez (The Independent Report), Dean Alie (citizen).

**Convene/Agenda Review**

Chair Joyce Downing convened the meeting at 8:30 a.m. The first order of business was introductions of Board members and the audience. Joyce noted that the Executive Committee met on January 18, 2017, to review the agenda for this meeting.

**Election of Stewardship Council Officers for 2017**

The next item was the election of officers for 2017. As provided in the bylaws, the Board must elect a Chair, Vice Chair, and Secretary/Treasurer each year. The terms commence at this meeting, and there are no limitations as to the number of terms one can serve.

Prior to the meeting, four people had expressed an interest in serving as officers for 2017. Joyce Downing volunteered to serve as Chair, Chris Hansen as Vice Chair and Jeannette Hillery and Lisa Morzel as Secretary/Treasurer. Chair Morzel asked if anyone else was interested in being considered for one of the positions. No one replied.

Bruce Baker moved to approve Joyce Downing as Chair. The motion was seconded by Emily Hunt. The motion passed 13-0.

Joyce Downing moved to approve Chris Hansen as Vice Chair. The motion was seconded by Jeannette Hillery. The motion passed 13-0.

Each candidate for Secretary/Treasurer was given the opportunity to say a few words. Jeannette Hillery said she liked following the fiscal matters of the Stewardship Council, and that she had been dedicated to this organization for several years. Lisa Morzel said she wanted to continue serving on the Executive Committee where important activities included setting meeting agendas, as well as overseeing checks and the budget. She said she had served since 1996 and would like to continue. She said her participation on the Rocky Mountain Greenway commission would provide good consistency and knowledge to both groups. A vote of the Board was then taken with Jeannette receiving 4 votes and Lisa receiving 9.

Joyce Downing moved to approve Lisa Morzel as Secretary/Treasurer. The motion was seconded by Laura Weinberg. The motion passed 13-0.

Barb Vander Wall noted that all 2017 Board members needed to sign the oaths of office which she had distributed. She said she would email the document to those who were not in attendance.

### **Consent Agenda**

The Board moved on to the consent agenda, which included approval of the minutes from the last meeting and the checks written since the last meeting.

There were several corrections to the minutes. Mary Fabisiak pointed to the bottom of page 9 regarding remediation at OU2, OU3, and IHSS 199. She said the minutes were accurate, but she was not sure the answer provided was accurate. David Abelson said he would follow up. Lisa Morzel made a correction on page 10, 2nd paragraph. 'exposer' should be 'exposure'. On page 2, 3<sup>rd</sup> sentence, a comment by LeRoy Moore, reads 'before the monitors reach the point of exceedance'. This needed to be corrected. Shelley Stanley said the spelling of her name needed to be corrected on page 9.

Lisa Morzel moved to approve the October 2017 Board minutes as amended and the checks. The motion was seconded by Bruce Baker. The motion to accept the minutes and checks passed 13-0.

## **Approval 2017 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 2017 in the meeting packets. The dates proposed were:

February 6 (first Monday of the month)  
April 3 (first Monday of the month)  
June 5 (first Monday of the month)  
September 11 (second Monday of the month)  
October 30 (fourth Monday of the month)

Lisa Morzel moved to approve the resolution and meeting notice provisions. The motion was seconded by Bruce Baker. The motion passed 13-0.

## **Executive Director's Report**

David Abelson first welcomed Sandy Pennington, the new Alternate Member from Superior. Chris Hansen will be serving as Director for Superior moving forward. Next, David noted that the new DOE-LM Director was Carmelo Melendez. David said he would be meeting with him later in the week. Mr. Melendez has a long history in DOE, and served in the military. David said that he got a good report on the new Director from the Energy Communities Alliance, which had worked with him quite a bit in the past.

David noted that the Stewardship Council's annual audit process had commenced, and the results would be presented at the June meeting. David explained that, although not required by the Stewardship Council's DOE grant or Colorado law, the Board secures an annually audit. Since the Stewardship Council was created, the Board had always felt it was good practice to have a third party look at their financials. David said that they always get clean reports from the auditors and that he was expecting the same this year. He also noted that the annual notices for local government dues would be sent out soon. The Stewardship Council collects \$1,000 per year from each member government. Other organizations are not asked to pay dues.

David said that staff and the Executive Committee were in the process of reviewing how much information was included in Board packets. He noted that the packet for this meeting was 121 pages. He said staff would try to keep cover pages to 1-2 pages, but would make sure supporting information was easily accessible. He said they would love feedback as they are trying to find a good balance. Lisa Morzel said she did not want to lose hyperlinks within the memos. Finally, David noted that, due to conflicting work priorities, Erin Rogers was no longer able prepare the minutes for the Board, and that he was in the process of finding a replacement.

## **Public Comment**

Marian Whitney she was following up on the discussion from the last meeting. She thanked DOE-LM for sharing information about plutonium moving in water. She noted that plants uptake minerals and pointed to information on the website about a study involving Savannah

River and the EPA. She said that, as a downwinder, she was concerned about future wildfires and that it was important not to get this material in our lungs.

LeRoy Moore pointed to an August 8, 2016, article by Phil Taylor about the Rocky Flats National Wildlife Refuge. In the article, David Abelson was quoted as saying that those raising safety concerns were using ‘fear-mongering’ and ‘scare tactics’. LeRoy questioned why David would say this. He said critics were pointing to the findings of studies, and these were not scare tactics. LeRoy’s comment can be found at:  
[http://rockyflatssc.org/public\\_comment/RFSC%20scare%20tactics%20LMoore%20020617.pdf](http://rockyflatssc.org/public_comment/RFSC%20scare%20tactics%20LMoore%20020617.pdf)

Ted Ziegler said it was no secret that there was contamination at Rocky Flats. He said he had asked many times for soil sampling, and had been given the brush-off by the agencies. He said they need to get to the source of contamination, and use split sampling with an independent lab. He said water sampling was not getting to the source. Ted pointed to burial of waste, implosion of buildings, spray fields, and trenches with contamination buried in them. He said that while the site was telling the public it is safe; it is not safe.

Lynn Segal said her mom died of leukemia, and while she cannot prove it was from nuclear testing, she was concerned. She said there should be no tourism, biking, or other access to Rocky Flats. She said if there was a need for an historical exhibit, they should do it online, and not onsite. She said the whole Denver area was probably subject to trouble from radiation and that she was not going to stand for it. She said that no one should be encouraged to come into this area. She said her father worked in pollution control and was not impressed with the HEPA setup used at Rocky Flats. She said she did not trust the testing, and particulates remain. She concluded by saying she did not want anything going on in this area.

Gale Biggs said that in 1989, he was appointed by Gov. Romer to a committee on Rocky Flats. He said he had been hearing everything was fine and wanted the truth. When the committee submitted its report, they were told there was no funding left to publish the findings. He said DOE heard about the report and suppressed it. He said that the workers the committee talked to were very honest, yet those at the director level and above made it seem like there were no problems. He said that since the site could not get rid of waste, they burned it in Building 771. He said Rocky Flats was not a clean site, and that it was very dangerous. Gale said that scientific studies have shown the dangers of plutonium, and that studies in Russia showed that it will move both horizontally and vertically in the soil. He said at Rocky Flats, they just dumped everything and put a layer of dirt on top and said it was fine, but it is not fine.

### **Host DOE Quarterly Meeting**

DOE was on hand to brief the Board regarding site activities for the third quarter of 2016. The full report was posted on the Rocky Flats website. Activities included surface water monitoring, groundwater monitoring, ecological monitoring, and site operations (inspections, maintenance, etc.). DOE was also asked to provide an update on the CERCLA Five-Year Review

### *Surface Water Monitoring – George Squibb*

George began with a quick review of the monitoring requirements, monitoring locations and constituents DOE is monitoring.

At the Original Landfill (OLF), when routine surface-water sampling was performed in Woman Creek, downstream of the OLF (GS59), the mean concentrations for all analytes were below the applicable surface-water standards.

At the Present Landfill (PLF), routine third-quarter sampling showed one analyte above the applicable RFLMA standard. The arsenic concentration was 14 µg/L, exceeding the standard of 10 µg/L. Per RFLMA evaluation protocols, the result should have triggered a sampling frequency increase from quarterly to monthly (although not consultation). George explained that monthly sampling was not conducted due to a data-entry error. In the following quarterly sample, arsenic was not detected. Because of this process error, additional peer review during the data evaluation process has been implemented. Mike Shelton asked how long the process takes for electronic validation. George said it was about a month. Chris Hansen asked what would trigger consultation. George said it would be after monthly samples showed results above standards. George noted that the January sample also came back high (13 mg/l), so they were going out that day to get a monthly sample.

At the SW027 Point of Evaluation (POE), the 12-month rolling averages for plutonium (Pu) and americium (Am) were reportable as of April 30, 2015, and June 30, 2015, respectively. As of the end of the third quarter 2016, 12-month rolling averages were:

- Pu 0.18 pCi/L; standard is 0.15 pCi/L
- Am is no longer reportable

George said there was no flow during the third quarter of 2016. Per RFLMA Contact Record (CR) 2015-05 (July 8, 2015), mitigating actions at SW027 included enhancing upstream erosion controls, which seems to be working well. Pu and Am concentrations in 2016 were significantly reduced from 2015 levels (2016 results were about 10% of 2015 levels), and concentrations at the downstream location WOMPOC were not reportable. George said the decrease also could be due to weather, as 2015 had more flow, which in turn moved more soils and sediments. No other RFLMA POE analyte concentrations were reportable during the third quarter of 2016. Shelley Stanley asked if SW027 was totally dry. George said it was.

All RFLMA POC analyte concentrations remained below reportable levels throughout the third quarter of 2016

George also noted that the 30-day uranium standard at WALPOC just became a reportable condition. A consultation with regulators was scheduled for the next day with a plan to develop a path forward by the beginning of March. He said this was a composite sample that had 32 grabs in it, and it had run from June 2016-January 2017. He said it had mostly been dry. They took another sample on January 30, and results would take about two weeks. That information will be included in the Contact Record. Shelley Stanley asked if they had isotopic results showing manmade vs. natural concentrations yet. George said they did not. He said that with every

WALPOC sample, they pull aside a small amount to send to a lab for that analysis; however, those results take about 2-3 months. Lisa Morzel asked what options were on the table for follow-up. George noted that the concentration found was only about half of the drinking water standard. He said that the Solar Ponds treatment system affects some of the results. He said in the past, there was a lot more runoff which lowered the concentrations. David Allen interjected that if the concentrations were to rise or remain elevated, Broomfield would ask DOE to turn off the flow. George said that there had been no water flowing out of North Walnut Creek to WALPOC in 6 months. Megan Davis asked David Allen if Broomfield was sampling with increased frequency at their monitors farther down the Creek. David said they were not seeing same results. Chris Pash said that this sampling was not enough to convince the public that it was safe, and asked why soil was not being sampled. George said the samples were well-mixed, and they were not just sampling the top of the water. He said they do not filter the samples, so if there was soil in the water, it would get tested. He said that dirt comes right from the surface soil. He said this was why samplers are at the perimeter of the site. Marian Whitney said that when water gets high and then recedes, this leaves debris on sides of creek and this would be blowing around. She said that there were other ways of presenting data and statistics, and that there was more to the picture. George said that because there were higher levels of plutonium at Rocky Flats, a lot of work had been done to look at risks and how best to conduct monitoring. He said he believed they were doing a good job monitoring. Marian said they needed to look at all the complexities/moving pieces. George said that was exactly what they did. He pointed to the recent geochemistry report as an example of a response to something they wanted to understand on a higher level. They also look at whether any new technologies could help with the issues they face.

#### *Groundwater Monitoring – John Boylan*

John said that the first and third quarters were light sampling periods for groundwater. 10 Resource Conservation and Recovery Act (RCRA) wells were sampled quartered to evaluate for impacts from the OLF and PLF. Third quarter results were consistent with previous data. All data will be evaluated as part of the 2016 annual report.

At the Solar Ponds Plume Treatment System (SPPTS), a reconfiguration project was underway. It was taken offline during the second quarter. The project was completed and flow-through Big Box lagoon was established in July. Insulated, floating tiles cover the water surface. Nitrate treatment is the worst when water temperatures are below approximately 50 °F. As the third quarter ended, the concentrations of nitrate in the lagoon effluent were decreasing. Starting in the early fourth quarter, nitrate was no longer detected. They resumed tests of uranium treatment in early October. This treats water leaving the lagoon, which was already treated for nitrate.

The Mound Site Plume Treatment System (MSPTS) also was subject to a reconfiguration project. The MSPTS was taken offline in June and the project was completed in September. Water is now pumped from a new lift station at MSPTS to the influent manhole at the East Trenches Plume Treatment System (ETPTS). The ETPTS air stripper treats combined waters. Several samples were collected before the project was confirmed as complete. VOCs in effluent from the air stripper meet all RFLMA standards

David Allen asked if they were looking at damage to the treatment system for the landfill. John said they were addressing this in a short-term approach, which included smoothing the surface and discouraging standing water. He said Jeremy would be discussing this more later in the meeting. David Abelson said that at closure, the projections were that these plumes would take 60-70 years to treat, and asked if there was an update on this estimate. John said he was not sure. Shelley Stanley asked if a Contact Record would be posted for work on the slump and she was told it would. She asked what happened April through July when the treatment system was offline. John said the water was not being treated, but it also was not being released. She asked if this would have had any impact on the slump. John said it would not because it was upgradient. She asked what happened to the sludge (media from treatment systems). John said it was first characterized, and then sent to an appropriate facility. John was asked if there were leftover contaminants, where that would go. He said this did not happen. He clarified that this was not treatment of radiological materials. He said VOCs and the other materials were destroyed by ZVI.

Gale Biggs said that all waste from Rocky Flats went to Utah. Scott Surovchak said that was not true. He said most of the waste from Rocky was solid waste that was sent to normal landfills. He said there was some that went to WIPP and some to Envirocare in Utah. Gale said the waste in Utah just dumped on the surface. Scott said that was also not true, and that Envirocare was operated as a landfill. Lisa Morzel asked what kind of maintenance the new interim test lagoon system needed. John said they dose it with a nutrient solution, and need to maintain the power infrastructure. Jon Lipsky asked whether characterization data for treatment system components was publicly available. John said he was not sure and that it might be added to the Annual Report. Scott said if it was not, a FOIA request could be made. Bruce Baker asked if any of the treatment systems worked on radioactive materials. John said that the one that does nitrate (SPPTS) also treats uranium. He said there were no actinide plumes to treat, and that everything else was organics. Bruce asked how uranium was treated. John said they used reducing conditions, which sorbs uranium. Ted Ziegler asked what the future plans were for soil sampling. There was no answer.

#### *Site Operations – Alan Smith*

Because signs are designated as a physical control in RFLMA, they are inspected quarterly. In August, two signs missing information were replaced.

At the OLF, three monthly inspections were performed. Eight settlement monuments were monitored. Vertical settling at each monument was within limits. There was a newly discovered small crack at the end of berm 4 and four small cracks reopened on the east side below berm 5. All cracks were outside the waste footprint. The OLF cover east of the waste footprint was regraded to fill cracks and promote runoff after spring slumping. The Eastern ends of berms 4, 5, 6, and 7 were regraded to increase drainage grade toward East Perimeter Channel. The East Perimeter Channel was regraded and cleaned out. New erosion controls and seeding were also done. Bruce asked Alan to clarify buffer zone trails were not part of this responsibility. Alan said that was correct. Shelley asked if they had to bring in soil to repair cracks on the OLF. Alan said they did not, as it was just smoothed out.

One quarterly inspection PLF was performed; no issues were identified. Former Building Areas 371, 771, 881, and 991 are routinely inspected (quarterly and during weather-related inspections) for subsidence. The quarterly inspection on August 23 indicated no new subsidence

*Site ecology – Jody Nelson*

Jody provided an update on the numerous ecology activities performed during the quarter. Activities included:

- Weed mapping
- Wetland mitigation monitoring
- Conducted prairie dog surveys
- Conducted forb nursery monitoring. John said this was really starting to work and they would be expanding it.
- Conducted photopoint monitoring
- Conducted revegetation monitoring
- Conducted Preble's meadow jumping mouse mitigation monitoring
- Irrigated habitat enhancement plants
- Treated approximately 57 acres along the roadsides with herbicides for weed control

Lisa Morzel asked if they checked for plague in the prairie dogs. Jody said the prairie dog population was actually located in the Refuge, and he just tries to count them using binoculars. Lisa said she was interested in how different species will interact in the adjacent open space. She asked if Jody was looking at this at all. He said he was not. David Abelson asked about a timeline for completing revegetation and species stabilization. Jody said that for the general revegetation that was done at closure, all success criteria have been met. There were 60 revegetation units/parcels. He said the long-term timeline depends on how much disturbance occurs in the future because of sampling, monitoring and any further remediation efforts. Jody was asked what would happen if prairie dogs came back to the COU and got into areas they should not be in. Jody said they would deal with USFWS or the Division of Wildlife to figure out how to deal with them. He was asked if plague was dangerous to humans. He said he was not an expert, but it was very rare. He said it was transmitted by fleas on prairie dogs. He was asked if the plants used for revegetation were native. He said they were and they used volunteers to collect seeds. Lynn Segal asked if the goal of revegetation was to bring wildlife back. Jody said their goal was to make the COU compatible with the Refuge. He added that populations of birds, elk, deer have increased. Marian Whitney noted that vegetation holds soil in place and that was a good thing for Rocky Flats. She thanked Jody for his efforts.

*CERCLA Five-Year Review*

Rather than provide a briefing, DOE asked if there were any questions about this effort. Chris Hansen noted that information about water infiltration into the landfill came after public comments were submitted on the Five-Year Review. He said Superior would like to revise their comments and make sure addressing the landfill was a priority moving forward and incorporated into the CERCLA Review. Scott Surovchak said that everything in that report had been discussed for quite a while and it was not new information. He said that all information would be considered in the Five-Year Review process. Sandy Pennington said that the attorney for Superior would like to amend their comments for the record. She said they were concerned that

comments were due at the end of December, but the landfill memo came out in January. Scott said they can always provide input, but a new letter would not be incorporated into the report.

### **Briefing/Discussion on Original Landfill**

Jeremy Whener began by letting everyone know that the Path Forward Report had been posted to Rocky Flats website ([http://www.lm.doe.gov/Rocky\\_Flats/Documents.aspx](http://www.lm.doe.gov/Rocky_Flats/Documents.aspx)) He then gave a refresher on previous efforts related to the landfill.

The Original Landfill Final Interim Measures/Interim Remedial Action was completed in 2005. It contained a number of Remedial Action Objectives (RAOs), including:

- Prevent direct contact with landfill soil and commingled waste
- Control erosion caused by storm-water run-on and runoff

Remedy components necessary to address RAOs included:

- Remaining uranium-contaminated surface soils removal (completed July 2004)
- Landfill cover to prevent direct contact with landfill soil or debris
- Landfill cover that adequately controls erosion caused by storm-water run-on and runoff

Jeremy then reviewed conditions at the OLF in 2015:

- Movement in previous years was sufficient to weaken soils
- Multiple precipitation events from mid-February through mid-July
- Cracking and slumping in areas along eastern and western edges of the Original Landfill (OLF) (mostly outside waste footprint)
- Most of the landfill area did not experience cracking, slumping, or movement
- Maintenance completed September 22, 2015, to re-establish surface-water management

2016 events included:

- Heavy precipitation, including snowstorms late-February through April (heavy, wet snowstorms with slow water release and high percentage of infiltration)
- Movement area was smaller with less vertical displacement
- Movement area was regraded to enhance storm-water runoff
- Most of the landfill area did not experience cracking, slumping, or movement

The Path Forward Report consists of an engineering evaluation of technical alternatives that maintain cover stability, as required by the Corrective Action Decision/Record of Decision and Rocky Flats Legacy Management Agreement, and minimize future maintenance needs.

Criteria were developed to evaluate options:

- Potential for enhanced stability of the hillside
- Implementability and constructability
- Cost
- Regulatory acceptance
- Minimize future maintenance
- Stakeholder acceptance

Eleven options were evaluated. Selected options intended to reduce the significant slumping and cracking by:

- Limiting the movement of groundwater through the landfill
- Reducing surface-water infiltration
- Stabilizing the hillside

These six options selected for further consideration:

- Install temporary groundwater intercept system to divert groundwater before it enters the OLF (Phase 1 in process)
- Develop east buttress that includes a drainage layer
- Reconfigure erosion control and water diversion system
- Improve use of vegetation to remove water and stabilize soils
- Implement use of soil nails in localized areas
- Construct a slurry wall on the pediment

Several recent actions have been taken:

- Land use history research (preferential groundwater flow paths through utility corridors). Not clear whether there was still gravel/sand in place from those lines, and these areas become preferential pathways for water. Looks like this is happening and is a significant contributor to these issues. They will be installing wells down to bedrock outside of landfill area and are looking to locate the utility lines.
- Geoprobe piezometers provided additional soil lithology information and groundwater level monitoring
- Groundwater modeling update
- Maintenance completed October 12, 2016, to re-establish surface-water management
  - Regraded to fill cracks and enhance runoff
  - Installed aboveground drain pipes
- East Subsurface Drain Upgrade
  - Previously existing drain was clogged
- Temporary Groundwater Intercept System
  - Design complete
  - Subcontractor procurement in process
  - Effectiveness after implementation will be evaluated

Bruce Baker asked what they were doing with wells. Jeremy said they pump to keep groundwater levels consistent, so when it is wet, they pump some water off. Bruce asked if this would be ongoing. Jeremy said it is a temporary setup now, but if it works, they will make it more permanent. Mary Fabisiak asked what kind of utilities had been in the area. Jeremy said storm drains, and footing drains under building. She asked where the water was pumped to. He said it went into the east subsurface drain. He was asked which monitoring sites were downstream of this. George said if there was a flow, it would go into the SID, and be sampled at SW027. George said he did not think the pumped water would get that far. Jeremy said they had performed one set of spot samples, and nothing was above standards. Jeremy was asked if they were updating the groundwater model. He said that were updating the sitewide model, as well as

the one more specific to this area. He was asked if the study recommended replacing inclinometers. He said it did, but that would come later after things were stabilized.

David Abelson commented that the system being put in place could be very long-term, decades or more. He asked if DOE was prepared to sign on to this long of a plan. Scott Surovchak said they were still looking at options and at what would work best. He said that an evaluation of cost-effectiveness was built into the process. Scott was asked if the Board could see a specific design so it could be analyzed. Scott said it was a pretty simple plan involving two wells that was well-described by Jeremy. He said they want it in place before the end of March. He said it would probably be an ongoing, iterative process moving forward, as conditions will be different each year.

Emily Hunt asked if a geophysical evaluation was completed for the entire landfill. Scott said no because they were not seeing impacts in other locations. Chris Hansen asked about a second pipe that was mentioned for future use. Jeremy said it was a discharge location for water coming out of the wells. Lisa asked if the six options were listed in order of priority. Scott said they were somewhat in order, but they were not locked in. Jeremy was asked when they will decide if they need additional options. He said they initially thought it would be two years, but they need to have a wet year to really test it.

Laura Weinberg asked what the success criteria were for evaluating this work. Jeremy said groundwater levels need to be stabilized, and slumping should stop. Pat O'Connell asked if the movement was in fill material or in the natural underlying materials. Jeremy said they were not exactly sure, but are thinking it is in weathered bedrock material/fat clay. They will continue additional geotechnical work. Scott added that a weak organic layer was identified in a 2008 report. Bruce asked what volume of water they were expecting to pump. Jeremy said they did not know, but were guessing about 30 gpm from each well. He expects it will probably be lower than that. Judith Mohling commented that the options seemed complicated and temporary, and asked if they were thinking of longer-term options. Scott said they have a 75-year planning baseline in LM. He said plans remain iterative, as they need to see what works. Bonnie Graham Reed asked if they were comfortable that these options would protect the public that visit the Refuge. Scott said they were. He pointed to a lot characterization work, and groundwater and surface water samples. He said they were just seeing normal metals. He said the biggest issue was the state landfill closure requirements. David Abelson noted that the OLF was a pretty good distance from the Refuge boundary. Bonnie asked what the cost was for this work. Linda Kaiser provided a rough guess of \$200,000-\$300,000.

### **Public Comment**

There was none.

### **Big Picture Review**

Lisa Morzel said she would like and update on the Five-Year Review and not just a question opportunity like today. She would like to hear how public comments will be addressed and to have questions answered.

David Abelson said that an idea came out of the Executive Committee meeting about scheduling additional meetings to explore issues more deeply, when there was not enough time in normal meetings. He said they would not be Board meetings. He asked for input, and overall Board members thought it was a good idea. He said he would work with the executive committee to get more clarity and think about logistics. Sue Vaughan suggested they consider webinars. Sandra Pennington said that when new members come onboard, they may not have sufficient background knowledge about the issues. She said that was the fundamental need.

### **Board Roundtable – Big Picture/Additional Questions/Issue Identification**

Mike Shelton said that Broomfield’s CERCLA 5 Year Review letter was in the Board packet.

Sandy suggested that the Board read all of the responses, because taken together, they were valuable.

Murph Widdowfield said that the Cold War Museum continues to put on many programs. He said they were very active and working hard.

Lisa Morzel said that access to Rocky Flats was still being discussed as part of Rocky Mountain Greenway meetings. She said there would be soil sampling once the communities get together about potential access locations. She said that the USFWS had committed to sample wherever trails will be located.

### **April 3, 2017**

#### *Potential Business Items*

#### *Potential Briefing Items*

- Original Landfill – Briefing on independent analysis

### **June 5, 2017**

#### *Potential Business Items*

- Receive 2016 audit

#### *Potential Briefing Items*

- DOE quarterly update (LSO)
- DOE-USFWS Visitor Center (both LSO & non-LSO)
- USFWS Refuge Update (non-LSO)

#### **Issues to watch:**

- Uranium exceedances
- Plutonium levels at SW027
- Pu/Am levels at SW093
- Groundwater treatment systems

- Plutonium movement in soil column

The meeting was adjourned at 11:41 a.m.

*Respectfully submitted by Erin Rogers.*