



## AGENDA

Left Hand Watershed Center

BOARD MEETING

1:45-4:30 pm, April 19, 2022

FIELD VISIT TO CAPTAIN JACK

Meet at Left Hand Water District Parking lot (6800 Nimbus Road)

at 1:45 to carpool up to the site.

We will return by 4:30.

Carpool to Site	All	1:45 PM
Captain Jack 5 year Review & Site Visit	Deb/Joe	2:20 PM
Adjourn	Christopher Smith	3:45 PM
Carpool back to LHWD	All	4:30 PM

NOTE: The Watershed Center will make reasonable accommodation for individuals with known disabilities at meeting and events per our non-discrimination notice. Visitors needing accommodation are encouraged to contact any staff member to request such accommodation 48 hours in advance of such event.



04/12/2022

To: Left Hand Watershed Center Board of Directors

From: Jessie Olson, Executive Director

RE: April board meeting agenda items

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## Meeting Minutes

Draft meeting minutes for March are attached (attachment 1) for review and approval.

## Board/Organizational Items

- Our Strategic planning committee will meet this week and we will provide an update at the May board meeting. We are currently crafting the agenda for the strategic planning meeting in June and outlining the updated plan.
- On Monday, I was honored to participate in the announcement of [Infrastructure Bill Funding](#) coming to Colorado to implement fire mitigation projects. 18 million will be directed to the Front Range in this fiscal year. I gave a 5-minute presentation to our federal and local leaders, highlighting the work St. Vrain Forest Health Partnership's collaborative and science-based approach to landscape scale forest restoration. Throughout the day, the SVFHP was emphasized as a priority location that the funding will be directed to. I enjoyed meeting Secretary Haayland, Senator Hickenlooper, Senator Bennet, and Congressman Neguse along with the leadership from the USFS.

## Fundraising

- We continue to work with SVP on several tasks including developing our fundraising plan, setting up a new donor database and on-line giving platform.
- We're continuing to schedule follow up meetings following our March fundraising event in Boulder.
- We submitted the [NOAA Environmental Literacy grant](#) on March 17. The project focuses on supporting community-driven climate/hazard resilience. We won't hear back until September, but will keep you posted.
- We met with Boulder County's One Water group this month to discuss the County's annual contribution this year and moving forward into future years.

## Project updates

### 1. Adaptive Management, Stewardship & Monitoring

- Data collection and analysis continues in preparation for the annual State of the Watershed report. Staff will give a presentation on the annual state of the watershed report at the May board meeting.

### 2. Adaptive Management at Scale

- Staff completed new version on Draft Plan including new sections on grassland and forest monitoring, flow desired conditions and monitoring, and 2022 monitoring framework.

- Staff continued refining and collaborating on discrete monitoring efforts including mine impacts in Left Hand Creek, post-fire impacts following the Marshall Fire, and expanded flow monitoring.
- Staff completed a new survey to better understand grassland and forest monitoring data being collected across the basin.
- Staff continued meetings with Partners including City of Lafayette, City of Louisville, and Town of Superior, CPW, City of Boulder, and others. Staff also conducted additional site visits for long-term monitoring.

### **3. Bureau of Reclamation Water SMART Grant: Watershed Restoration Plan**

- The project will contribute \$100,000 toward the development of a Watershed Restoration Plan for the St. Vrain Basin. This project also helps fund organizational development, partnership building and development of conceptual restoration designs. This past month we've continued to meet with partners and continue partnership building. We've also finalized two draft conceptual designs working with Biohabitats and are wrapping up final deliverables for this project that closes out in June 2022.

### **4. Mines, Water Quality Monitoring & Analysis**

- This month we will have a field trip to Captain Jack Mine to discuss the 5-year review response.
- Topics of Discussion at Field Trip:
  - Five Year Review Feedback and Participation: Staff have drafted a Five Year Review and a supplementary cover letter that incorporates key requests and recommendations presented in Joe's most recent Captain Jack progress memo (discussed in the March Board Meeting) (Attachment 2). We request feedback on these documents, and we recommend Board members also participate by submitting additional Five Year Reviews (submissions/interviews). To aid in this, Board members can consider including key points provided in our cover letter.
  - Five Year Review Community Outreach: Staff will continue advertising to local residents through the newsletter and direct contact with local residents. Please connect interested residents with Deb.
- Monthly water quality sampling continues.

### **5. Fish Passage Feasibility Study and Education Initiative**

- Staff completed the first draft "Fish Passage Playbook" with Boulder County, City of Longmont and St. Vrain Left Hand Water Conservancy District and is now working on incorporating edits and comments into the final draft.

### **6. Fire recovery**

- Fire recovery projects are in the adaptive management phase. We are continuing data entry and analysis tasks from the 2021 field season and planning for 2022. We also visited Cal-Wood last week to ID follow up needs and potential warranty items. We will do the same for the Left Hand burn footprint in the coming weeks.

### **7. St. Vrain Forest Health Partnership**

- We hosted a full partnership priority project mapping workshop last week. This week we are kicking off our first community meeting in Allenspark, with other neighborhoods to follow in the coming months.
- Staff continue to work with the Science Team to provide USFS with comments on draft NEPA scoping documents.
- Staff are also continue to finalize the SVFHP Adaptive Management Plan.

## **8. Jamestown Fire Mitigation Project**

- Jamestown project landowner meetings are underway! Chiara has been meeting with landowners over the past couple weeks with Boulder Valley Longmont Conservation District staff to define project extent.

## **9. Watershed Education & Outreach**

- Earth Day event planning is well underway! We've partnered with Yellow Barn Farm and Drylands Agroecology Research for a wildfire recovery event at Mountain Ridge on Saturday, April 23rd. Sign up here: <https://www.yellowbarn.farm/event-details/earth-day>
- Staff are teaching Watershed Science this month at Lyons Middle Senior school grades 6-8.

## **Attachments:**

1. BOD March Meeting Minutes
2. Captain Jack 5-year Review response

**Attachment 1**  
Board meeting minutes



## Board Minutes – March 15, 2022

### **Attendees**

1. Jessie Olson
2. Barbara Luneau
3. Kathy Peterson
4. Darren Beck (left at 3:06)
5. Roger loving
6. Sue Schaffler
7. Mark Schueneman
8. Joe Ryan
9. Eric Smith
10. Monica Bortolini
11. Erica Crosby
12. Yana Sorokin
13. Julie Trumpler
14. Deb Hummel

### **Welcome and Introductions**

- Sue called the meeting to order at 2:04 and went through introductions.
- All went through introductions, welcoming Darren as the new BOD member representative from Boulder County.

### **Approval of Minutes**

- Roger moved, Monica seconded, to approve the minutes from the Feb 15 meeting; the motion carried unanimously.

### **Financial Policy Update**

- Jessie reviewed updates to the Financial Policies. Finance committee met last month and made red-line edits to update the policy to allow us to accept cryptocurrency for donations and obtains credit cards for staff. Jessie went through red-line edits on the screen. Noted the cryptocurrency would be converted to cash if we get a donation. Explained how credit card maximum was selected and would be divided.

- Barbara moved, Roger seconded, to approve the financial policy edits; the motion carried unanimously.

### **Captain Jack Update**

- Deb and Joe provided an update about Captain Jack (see memo and presentation). Deb explained current status and next steps. Joe explained recommendations as Technical Advisor. Joe noted that concern is that it doesn't seem like enough sulfide is being generated to remove the iron, so if anything changes in the future this treatment may not be effective. Also added that the pH and oxidation-reduction potential are right at thresholds but not much better than that, so a slight change could cause them to exceed their thresholds (in an undesirable direction). Overall this may not be a good basis to predict where to go in the future. Deb noted potential next steps given Joe's concerns, notable ex-situ reactor and five year review feedback.
  - Sue asked about change in graphs in recent time where data is more consistent. Joe explained that this is likely because microbial communities built up over time. Sue followed up to ask what it would take to improve the numbers more than just meeting thresholds. Joe noted that presumably it would be adding even more carbon but he is not sure why MineWater has not taken it further. Sue suggested that we could make this recommendation in the five year review and Joe agreed.
  - Monica asked what is meant by "needing confidence" and if that is coming from EPA. Deb responded that both EPA/CDPHE and Watershed Center see a need to build more confidence. See memo for example of how EPA/CDPHE was to build more confidence.
  - Eric asked about recording issues which may have left some gaps. Joe added that the probe for measuring oxidation reduction reaction was not operating correctly and they fixed it though it was unclear how long it was not operating. Joe noted that over the past 18 months MineWater should have experimented more about how they added treatments and there seems to be a lack of clear plan from the start about how additions should be made and the approach was generally piecemeal.
  - Eric asked about expanding the dosing area. Deb responded that EPA is still figuring out legal implications of that but likely we could use TA support for outreach related to that aspect if it does happen.
  - Darren asked about who the permit holder for the Captain Jack Mine and what are the permit limits. Joe responded that EPA did not go back to original owners and there is no responsible party.

- Kathy asked about ownership of the property. Joe noted that it is a patchwork of ownership – piece are owner by Boulder County, USFS, and a mix of private landowners.
- Sue asked about point of compliance. Joe clarified that EPA/CDPHE confirmed that the point of compliance will remain consistent as point of compliance continuing to be Puzzler Gulch into the future. Licksillet is an interim point during the treatability study.
- Roger asked about ex-situ treatment and if it is economically feasible. Joe noted that temporary treatment plant is too expensive but ex-situ treatment that's a passive treatment like a trench or pool outside of the mine where sludge would need to be removed periodically is potentially economically feasible.
- Eric asked what approach will get us to our goal quicker – ex-situ or treatment? Joe noted that the current in-situ treatment is experimental and ex-situ treatment is more tested. Eric asked if anything has changed since the record of decision to improve how we treat acid mine drainage and Joe said that no, not much has changed.
- Barbara asked whatever situation follows – new/proven treatment or experimental treatments – if the long-term vision is to convert and superfund site to a community asset what then is the scale of area impacted and the dangers to public usage of that area. Joe responded that the dangerous areas that would be need to be fenced off/contained is fairly small – about one acre out of 50 acres (rough guess).
- Board members suggested a field trip to the site.
- Sue asked about getting the experimental system incorporated while they are doing the treatment would be ideal and all agreed that the most expedient pathway to good water quality is the preferred approach.
- Deb tabled broader discussion about watershed vision until another meeting with additional board members.

### **Partner Updates**

- Sue noted that two offices will be available at the Fire District and noted that there may be new rental rates. Will follow up with Jessie brainstorm.
- Jessie noted that the Jamestown project is underway and there's a community meeting coming up. Chiara will send out information about the meeting.
- Monica asked about in-person meetings. Jessie will follow up. Roger said he is unlikely to go to in-person meetings. Others suggested hybrid meetings.
- Eric asked if there was movement on the Earth Day event. Jessie noted this will take place on the 23<sup>rd</sup> at the Mountain Ridge Subdevelopment. Timing is TBD. We are doing a joint-project with Yellow Barn Farm and Drylands Agro-Ecology Research (Elk Run Farm).

- Erica updated that they are bidding out two mine closure projects – Jamestown project and Beck project – which includes 60 dangerous mine-closure opening. Anticipating fall construction. Currently in NEPA process.

### **Adjournment**

The meeting was adjourned at 3:30 pm.

**Attachment 2**

Captain Jack 5-year response review



April 19, 2022

Joy Jenkins  
Environmental Protection Agency  
State Project Manager

Mary Boardman  
Colorado Department of Public Health and the Environment  
State Project Manager

Re: Captain Jack Mill Second Five Year Review, 2022

Dear Joy and Mary,

The Left Hand Watershed Center Board of Directors is pleased to submit Five Year Review feedback on the Captain Jack Mill Record of Decision (ROD). The Watershed Center's board is comprised of 13 diverse stakeholders and community members, all of whom are supportive and invested in the CDPHE and EPA's efforts to successfully implement the remedial action objectives at Captain Jack. At this time, we have identified the following key points of feedback. These points are further described in the questionnaire.

1. We are concerned about the approach and the success of the current treatability study at predicting future performance. In this regard:
  - a. We recommend MineWater creates a quantitative model of the mine pool geochemistry and hydrology to properly forecast the future performance of the *in situ* treatment system and to design a system for additions of carbon and strong base.
  - b. We request that EPA and CDPHE clarify or define their criteria of success for the *in situ* treatment pilot test being conducted at the Big Five Tunnel (e.g., levels of metals removed, the ability to forecast removal into the future).
2. We request that CDPHE and EPA expediently move forward with the *ex situ* treatment outlined in the ROD, based on anticipation that the *in situ* mine pool treatment will be an inadequate long-term solution and ultimately result in another phase of design and implementation. Immediate progress toward the *ex situ* treatment will minimize the time during subsequent design and implementation when mine water is not treated and reduce the overall time to achieve adequate and sustainable treatment.
3. We request that CDPHE and EPA re-affirm that the point of compliance (upstream of the confluence with Puzzler Gulch) specified in the ROD is and will continue to be the point of compliance used to assess achievement of remedial action objectives for the Site.

These key points are supported by participating entities and individuals on the Watershed Center Board. Our organization values CDPHE and EPA's remediation work and looks forward to continuing our partnership on this important project. Thank you for your consideration, and we look forward to your responses.

Sincerely,

Jessie and Chris Signature

<b>CAPTAIN JACK MILL SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM</b>	
<b>Site Name:</b> Captain Jack Mill	
<b>EPA ID:</b> COD981551427	
<b>Interviewer name:</b>	<b>Interviewer affiliation:</b>
<b>Subject name:</b> Left Hand Watershed Center Board of Directors	<b>Subject affiliation:</b> Left Hand Watershed Center
<b>Subject contact information:</b> dhummel@watershed.center	
<b>Interview date:</b>	<b>Interview time:</b>
<b>Interview location:</b>	
<b>Interview format (circle one):</b> In Person      Phone      Mail <b>Email</b> Other:	
<b>Interview category:</b> Local Government/ Organization	

1. Are you aware of the former environmental issues at the Site and the cleanup activities that have taken place to date?

Yes.

2. Do you feel well-informed regarding the Site's activities and remedial progress? If not, how might EPA convey site-related information in the future?

The Left Hand Watershed Center has been in direct communication with the EPA throughout the remedial process and has been adequately informed about activities at the site with the exception of the Five-Year Review process. Despite being in close contact, the Watershed Center was not notified directly about the Five-Year Review. We would prefer direct communication about community engagement opportunities to make sure we can reach the intended audience and provide timely responses.

3. Have there been any problems with unusual or unexpected activities at the Site, such as vandalism or trespassing or other concerning activities?

We have not been aware of unusual or unexpected activities at the Site.

4. Are you aware of any changes to state laws or local regulations that might affect the protectiveness of the Site's remedy?

No.

5. Are you aware of any changes in projected land use(s) at the Site?

No.

6. Has EPA kept involved parties and surrounding neighbors informed of activities at the Site? How can EPA best provide site-related information in the future?

Board members that live in communities surrounding the Captain Jack Mill Site have provided and received feedback from their neighbors that they do not feel well informed about activities through EPA outreach. EPA can best provide site-related information by disseminating updates through the Watershed Center, hosting community meetings or issuing direct mailings to local residents.

7. Do you have any comments, suggestions or recommendations regarding the project?

**First**, we request that CDPHE and EPA provide clarification about their criteria for success of the *in situ* treatment pilot test being conducted in the Big Five Tunnel at the Site. What levels of metals removal will be considered successful? What ability to forecast removal into the future will be required to be considered successful?

Monitoring of the water released from the Big Five Tunnel has shown substantial, but unsteady, decreases in zinc and copper concentrations, but not much change in the iron concentration, and the oxidation-reduction potential and pH criteria set by the contractor, MineWater LLC, have not consistently been met. These results suggest that the carbon and strong base additions made over the past 18 months are only marginally achieving the desired results of removal of metals by precipitation of metal sulfide minerals – enough sulfide is being generated to remove copper and most of the zinc, but there is no extra sulfide as a backup to increases in metal concentrations coming into the mine pool. For example, we know that climate warming will increase pyrite weathering and metal release (an increase in 2°C will accelerate pyrite oxidation by 16%).

Of greater concern to us is the piecemeal approach to this *in situ* treatment pilot test taken by MineWater LLC, alternately adding more carbon and strong base, trying to prevent inflows, and testing changes in the mine pool elevation. Based on MineWater's monthly reports, there have been no attempts to relate carbon and strong base additions to changes in oxidation-reduction potential, pH, and metal removal. To properly forecast the future performance of the *in situ* treatment system and to design a system for additions of carbon and strong base, MineWater needs a quantitative model of the mine pool geochemistry and hydrology.

As of now, the marginal success for metal removal and the lack of some means to predict the future performance of the *in situ* mine pool treatment suggest that the treatment pilot test has not achieved its goal.

**Second**, we request that CDPHE and EPA expediently move forward with the *ex situ* mine water treatment outlined in the Record of Decision. We base this request on anticipation that the *in situ* mine pool treatment will be an inadequate long-term solution and ultimately result in another phase of design and implementation. Immediate progress toward the *ex situ* treatment will minimize the time during subsequent design and implementation when the Big Five Tunnel drainage is not treated and reduce the overall time to achieve adequate and sustainable treatment of the Big Five Tunnel drainage.

In the Record of Decision for the Captain Jack Superfund Site issued in September 2008, CDPHE and EPA specified that "water from behind the bulkhead valve will be routed out of the Big Five adit and into a biochemical reactor(s)" if the first step, the *in situ* mine pool treatment described above, did not solve the problem of acid mine drainage from the Big Five Tunnel "after two years." Solving the problem of acid mine drainage is based on achievement of the remedial action objectives (RAOs) for Left Hand Creek. The Record of Decision referred to this backup plan as "*ex situ* mine-water

treatment” and it speculated that this treatment would be a biochemical reactor built below grade or in a “greenhouse-type’ building” to maintain temperatures favorable for treatment.

If the current *in situ* mine pool treatment is deemed to be insufficient to reliably remove metals from the Big Five Tunnel drainage, then CDPHE and EPA expect to move forward with the *ex situ* mine water treatment, based on discussion in a March 2, 2022, meeting with Mary Boardman (CDPHE) and Joy Jenkins (EPA). Moving forward would require time and funding for design and construction of the *ex situ* mine water treatment system, and it seems that this will result in a gap in treatment of the Big Five Tunnel drainage. To avoid, or at least minimize, this treatment gap, we request that CDPHE and EPA immediately initiate design of the *ex situ* treatment system.

**Third**, we request that CDPHE and EPA re-affirm that the point of compliance specified in the Record of Decision is and will continue be the point of compliance used to assess achievement of the remedial action objectives for the Site. In the Record of Decision, the point of compliance was specified as “Left Hand Creek at a point upstream of the confluence with Puzzler Gulch,” which is located near the eastern (downstream) end of the Captain Jack Superfund site.

In the past, CPDHE had referred to an interim point of compliance for the Superfund site – where Licksillet Road crosses Left Hand Creek— during the treatability study pilot. In response to a request for clarification of the point of compliance in the March 2, 2022, meeting, Mary Boardman (CDPHE) and Joy Jenkins (EPA) confirmed that the point of compliance is Left Hand Creek at a point upstream of Puzzler Gulch. It is at this point that we want water quality and aquatic life habitat protected as described in the remedial action objectives.

8. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

Yes.