**Cold Regions Research and Engineering Laboratory**

**Restoration Advisory Board (RAB) Meeting Minutes**

**May 15, 2024, 1600 HRS**

Hybrid Meeting: Held In-Person at the Richmond Middle School Library and Virtually, via Microsoft Teams

**Attending:**

Chris Kane (USACE-NAE)

Dan Groher (USACE-NAE) (virtual)

Amy Rosenstein (USACE-NAE) (virtual)

Scott Calkin (WSP)

Jack Besse (WSP)

Amy Quintin (WSP)

Wolfgang Calicchio (WSP)

Bryan Connolly (WSP)

Terry Harwood (CRREL)

Andrew Hoffman (NHDES)

Rene Nahlik (NHDES)

Kristine McDevitt (Community Member)

Bree Carlson (Dartmouth)

Annette Chisholm (Dartmouth)

James M. Wieck (GZA)

Seoyeon Jang (WSP) (virtual)

Laurie Haines-Eklund (USAEC) (virtual)

Richard Spiese (VTDEC) (virtual)

Roberto Rivera (USAEC) (virtual)

Presentation file: 2024\_05\_15 CRREL\_RAB\_Meeting\_Final.pdf

Mr. Kane of the United States Army Corps of Engineers-New England District (USACE-NAE) called the meeting to order at 1559 hours on May 15th. He welcomed everyone to the RAB for the Cold Regions Research and Engineering Laboratory (CRREL) Remedial Investigation/Feasibility Study project. Mr. Kane introduced supporting staff and invited meeting participants to introduce themselves and state their role on the RAB. All participants gave introductions.

Mr. Kane motioned to approve the January 17th, 2024, RAB meeting minutes, the motion was seconded and approved unanimously.

Mr. Kane stated that the focus of meeting to review data related to the groundwater (GW) event in March 2024, the indoor air data to date, documents added to the admin record, and review upcoming work for this year.

Mr. Kane then turned over the meeting presentation to Jack Besse from WSP.

Mr. Besse first discussed onsite investigations, he stated that the onsite Feasibility Study (FS) was mostly final with a couple outstanding Applicable or Relevant and Appropriate (ARAR) items under NHDES review, possible additional follow up pending outcome of review. Mr. Besse also stated that once the FS is final, WSP and USACE-NAE are prepared to move into the proposed plan which has been preliminarily developed internally. The preliminary proposed plan will go out to the RAB once that process is underway. There will also be a public meeting, beyond the RAB, as part of the CERCLA decision process.

Mr. Besse stated that the groundwater treatment plant (GWTP) design (60%) going forward has been tabled to keep in line with the formal remedial design process. There is a longer-term pilot study that the team is seeking to move forward with to get a better understanding of how the aquifer will behave under pumping conditions. Installing additional wells and pumping on them will give us a more refined view of what is going be required for the treatment process to support the new treatment plant design.

Mr. Besse stated that the Connecticut (CT) River draft final Remedial Investigation (RI) was approved by the VTDEC but the NHDES is currently reviewing USACE responses to NHDES comments. USACE will schedule a technical meeting with NHDES and CRREL to resolve once NHDES has completed their backcheck review. Once completed, the Final CT RI Report will be submitted to USACE for their review and finalization.

Mr. Besse then stated that more recent GW sampling had been performed in March of 2024 and that results showed no detections above AGQS at the boundary wells. The project team has been tracking closely since 2022 due to exceedances at two boundary wells. Still do not understand why the exceedances occurred at the boundary wells but results are currently below AGQS and will continue to be monitored.

Mr. Besse stated that the work plan design document for the pilot test to move water from additional extraction wells to the GWTP has not been finalized. The document is anticipated to be final by the end of 2024 and then tentatively implemented next year.

Mr. Besse then discussed the history of Trichloroethylene (TCE) use at CRREL and reviewed the TCE use history/background slide.

Mr. Besse then stated that the WSP support technician, Bryan, is onsite everyday monitoring with the HAPSITE® to monitor TCE in indoor air. WSP is working with CRREL, the USACE, and NHDES to optimize the effectiveness of the daily monitoring program.

Mr. Besse then reviewed the primary areas of concern (AOC) and discussed the TCE issues at AOC 2 (underground storage tank) and AOC 9 (ice well and nearby above ground storage tank deflagration).

Mr. Besse discussed the conceptual site model (CSM) and how the soil gas plume generates the GW plume. The TCE that was released to the ground was sorbed into the lacustrine deposits and is the source of the soil vapor which diffused downward to impact the GW table. Soil vapor in excess at 10 million µg/m3, under the conditions of Henry’s Law, and migrates from the vapor phase into groundwater at the capillary fringe. During soil vapor extraction (SVE) pilot testing, the project team was able to move the TCE out of the soil vapor and removed approximately 7,900 pounds of TCE from the soil vapor, reducing the contribution of TCE impacting the GW and thus reducing the GW concentrations. The SVE pilot provided a dramatic drop in TCE concentrations.

Mr. Besse displayed the animation of the CRREL CSM for the RAB. The visualization shows monitoring points around the facility and the elevations for the Site. Mr. Besse pointed out the tighter and coarser soils and the esker that comprises the geological features of the Site. Mr. Besse then narrated the visualization of the TCE in soil gas up above then diffusing out through the coarser grained materials creating the GW plume from east to west across the site. Mr. Besse then stated that in 2015 the data indicated a large, concentrated plume and after the SVE Pilot, subsequent testing indicated a reduction in the vapor plume and GW plume. Later testing shows the results of the mass removed through 2021. Rebound was observed in 2023 without the active SVE. The TCE concentrations have been significantly reduced compared to the TCE concentrations at start-up of the SVE pilot in 2015. Mr. Besse stated that there is still rebound occurring and there is a statistical increasing trend but not at every point. The project team will be using this data to inform a future remedy for the site. Mr. Besse stated that a tentative plan is in place to start up another SVE pilot and the project team will let the RAB know when that goes forward. Mr. Besse then stated that there may be subsequent rounds of soil vapor sampling for a technical need.

Mr. Besse stated the Healthmate® (HM) were filters replaced this spring and are the project team is expecting a good impact this summer. The air purifying units (APUs) are in place and have been off for the winter. The project team anticipates they will be turned on once we see increases in TCE in the Plenum. All of the sub slab depressurization systems (SSDS) are operational.

Mr. Besse stated that the administrative record was recently updated with two documents associated with the recent March GW sampling. The admin record documents are available to the public on flash drives at the Howe Library.

Mr. Besse stated that the project team is hoping to install a VaporSafe® monitoring station at the Site later this year, which is stationary and will be installed at designated sample locations. The project team is also planning a plenum study to understand conditions better going forward.

Mr. Besse then presented upcoming work. Another GW sampling is tentatively scheduled for June 2024. The report on the 2023 soil gas sampling completed is expected to be final soon and will be a part of the administrative record. Also, a compilation report of all the SVE testing from 2015 through 2021 and is being written and will be available later the year as well and includes all the pilot testing. Mr. Besse stated that the project team will continue to work on the CERCLA document for onsite and the CT River. The next significant report is the CT River feasibility study and the onsite proposed plan which should be available for the next RAB. Mr. Besse completed the technical portion of the meeting presentation and returned the presentation to Mr. Kane.

Mr. Kane asked if there were any questions following conclusions of the presentation. No additional questions were introduced by attendees. As a result, Mr. Kane stated that additional questions that come up later can be forwarded to USACE.

Mr. Kane stated that the project team will get minutes drafted and sent out for review.

Mr. Kane indicated that the next RAB meeting will be in September 2024. No additional comments/questions.

Mr. Kane adjourned the meeting at 1630 hours.