State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
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August 12, 2020

ERIC CHRISTIANSEN
CM CHRISTIANSEN CO INC
PO BOX 100
PHELPS WI 54523
[sent electronically]

RE: Site Investigation/Remedial Action Options Report Review
CM Christiansen #1 – Pole Dip BRRTS #02-64-000068
County Road E, Phelps WI 54554

Dear Mr. Christiansen,
On October 26, 2018, on your behalf, O'Brien Gere (OBG), submitted a combined Site Investigation Report and Remedial Action Options Report (2018 SIR/RAOR), to the Department of Natural Resources (DNR) for the above referenced site (Site). The 2018 SIR/RAOR is a revision of a previously submitted combined Site Investigation Report and Remedial Action Options Report dated August 4, 2017. Both the 2017 and the 2018 SIR/RAORs are associated with contaminated sediments at the Site.

On July 16, 2020 the following had a conference call to discuss the Site status:
Eric Christiansen – CM Christiansen Co. (CMC)
Laurie Parsons – OBG
Dusty Tazelaar – OBG
Judy Fassbender – DNR
Bill Fitzpatrick – DNR
John Hunt – DNR
Chris Saari – DNR

The purpose of this correspondence is to provide review comments of the 2018 SIR/RAOR and the topics discussed in the July 16, 2020 conference call. This correspondence addresses comments to the SIR and RAOR separately. This correspondence also provides recommendations for future actions at the Site.

It should also be noted that ownership of the Site property (Vilas County Parcel Number 018-1391) has been transferred to the Town of Phelps. The change of ownership is also included as a topic of discussion in this correspondence.

SIR Review Comments

The following are general comments regarding the SI portion of the 2018 SIR/RAOR:

- The investigative efforts have shown that sediments in Military Creek and the shore of North Twin Lake have been contaminated by the activities at the former CMC pole dipping operation.
- The ordinary high-water mark of Military Creek has not been defined to date. This is necessary as it will have a bearing on standards application, per statutory requirements regarding soil versus sediment.
- There is only 1 figure included in the 2018 SIR/RAOR, a sample location map. Wis. Admin. Code § NR 716.15 contains a specific list of required visual aids, including contaminant isoconcentration maps, cross-sections and other figure to depict findings.
- A total of 14 locations where collection of sediment samples has been performed to date. The investigation area consists of over 1500 linear feet of Military Creek and shoreline of North Twin Lake near the mouth of Military Creek. The full horizontal and vertical definition of the degree and extent of contamination to sediments is required by Wis. Admin. Code § NR 716.11(3)(a) and an estimate of the contaminant mass is required by Wis. Admin. Code § NR 716.11(3)(d). The DNR does not concur that the information provided by 14 sample locations in the large investigation area can fulfill these code requirements.
- There have been no samples collected in the floodplain of Military Creek downstream of the source area (the pole dipping operation). Due to the relative lack of data, the full horizontal and vertical definition of the degree and extent of contamination to sediments cannot be considered complete as required by Wis. Admin. Code § NR 716.11(3)(a).
- Impacts to North Twin Lake sediments have not been evaluated sufficiently. Potentially contaminated sediment transported via Military Creek could likely have discharged into North Twin Lake. This is evident by TEQ (WHO-TEF) @ 1% TOC elevated laboratory result of sediment sample SED-108 which is located 100 feet south of the mouth of Military Creek on North Twin Lake shore. Due to the relative lack of data and the SED-108 result, the full horizontal and vertical definition of the degree and extent of contamination to sediments in North Twin Lake cannot be considered complete as required by Wis. Admin. Code § NR 716.11(3)(a).
- As stated above the site investigation efforts did not define the degree and extent of contamination to sediments as required by Wis. Admin. Code ch. NR 716. Additionally, it is not stated within the text of the 2018 SIR/RAOR that the degree and extent of contamination to sediments has been defined.

Additionally, as previously noted, a SIR/RAOR dated August 4, 2017 was submitted to the Department by OBG. The 2017 SIR/RAOR was reviewed by Chris Saari and Bill Fitzpatrick, who summarized the DNR's comments in a memo to CMC/OBG dated October 13, 2017. The subsequent 2018 SIR/RAOR did not address the majority of the DNR's comments included in the October 13, 2017 memo. These comments are still applicable to the 2018 SIR/RAOR.

The following comments are specific to sediment screening levels that were included in the 2018 SIR/RAOR:

- TOC normalization for the dioxin/furan sediment sample should not be used as carbon normalization is limited to dissolved phase contamination in a steady state. This ignores

other pathways such as ingestion by the benthic organisms that live in the sediment that can be a significant pathway. By their nature, sediments are generally not in a steady state, and the stream sediments adjacent to the site are most likely not in a steady-state condition. The sediment particles in the stream will be affected by sediment processes such as sediment bed load as well as through continual scour and deposition. The range of TOC concentrations in site sediments illustrate that TOC is highly variable across the site, also varies at depth at each location, which also renders the TOC normalization less meaningful. The laboratory results should be compared directly to the Consensus Based Sediment DGQ with an assumed sample of 1% TOC.

- Sediment concentrations for dioxins/furans should be expressed as DF TEQ using 1998 WHO TEF values for fish, to assess potential effects to fish, and should also be expressed as DF TEQ using 2005 WHO TEF values to assess potential human health impacts.
- Sediment DF TEQ concentrations should be compared to the CBSQG values for dioxins/furans as a screening level approach to identify sediments potentially requiring remedial action based on potential ecological impacts.
    - Use two scenarios to develop the remedial footprint based on ecological risk, and to conduct area and volume calculations for remedial options:
        1. Use the MEC (11.2 ng TEQ/kg)
        2. 10x MEC.
- More information is needed to assess whether potential human health risk exists from exposure to contaminated sediments at the Site. If there is a completed exposure pathway, via fish consumption, swimming, wading (activities where humans would be in contact with or ingesting contaminated sediments) then further evaluation of the exposure pathway in relation to potential remedial options is necessary.
- Proposing of sediment screening levels are appropriate after a Wis. Admin. Code ch. NR 716 compliant SIR is submitted to and approved by the DNR.

In summary, the SIR portion of the 2018 SIR/RAOR does not comply with the requirements of a site investigation under Wis. Admin. Code ch. NR 716 and is not approvable by the DNR as submitted. A SIR that fully defines the degree and extent of contamination to Military Creek and North Twin Lake that complies with Wis. Admin. Code ch. NR 716 is required.

ROAR Review

The Following are comments to the RAOR portion of the 2018 SIR/RAOR.

In Section 6.1, *Site Specific Objectives*, three objectives of remedial actions specific to the Site are stated as follows:

1. Prevent human exposure through direct contact with contaminated sediments.
2. Reduce potential wildlife exposure through ingestion of contaminated sediments.
3. Reduce potential transportation of contaminated sediments in Military Creek through sediment transportation mechanisms.

The 2018 SIR/RAOR reviews 3 remedial options including:

1. No Action

2. Institutional Controls
3. Targeted sediment removal with cover placement.

The 2018 SIR/RAOR chose Option 2, Institutional Controls, as the appropriate remedial action at the site. Based on DNR review, Option 2 will not comply with Wis. Admin. Code § NR 722.09(2) in that the selection will not "achieve restoration of the environment to the extent practicable, minimize the harmful effects from the contamination on the air, land and waters of the state". Additionally, based on DNR review Remedial Option 3 would be the only option that would meet the Site-Specific Objectives as stated in the 2018 SIR/RAOR.

Specific comments regarding the Option 3 are as follows:

- No information was provided on how the volume of sediments to be removed (305 cubic yards) was calculated or was a figure provided that displays where the sediments targeted for removal are located.
- Estimated cost for implementation of Option 3 are included in Appendix B of the Oct. 26, 2017 SIR/RAOR. The estimated costs are for sediment removal, transportation, disposal, restoration, documentation and oversight. The estimated costs are well over $1000 per cubic yard of sediment. Based on the DNR's experience, the estimated cost per cubic yard proposed in the RAOR exceeds costs reported for other contaminated sediment remediation projects.

In summary the RAOR portion of the 2018 SIR/RAOR is not in compliance with the requirements of Wis. Admin. Code ch. NR 722 and is not approvable by the DNR as submitted. Additionally, Wis. Admin. Code § NR 722.05(4)(a) indicates submittal of a RAOR to the DNR is not appropriate until a SIR is completed in accordance to Wis. Admin Code ch. NR 716.

Town of Phelps Ownership

As previously stated, the Town of Phelps is now the owner of the Site property. On December 19, 2018, prior to Site property ownership transfer, the Town of Phelps requested clarification of local governmental unit liability exemption from the DNR. The DNR issued a general liability clarification letter (GLCL) dated January 19, 2019. The GLCL indicates the Town of Phelps has environmental and solid waste liability exemptions with some conditions and limitations.

The Town of Phelps has discussed the reuse of the property as a snowmobile and bicycle trailhead. The Great Headwater Trails Foundation Inc. is working with the Town of Phelps on the trailhead proposal. Possible development of part of the Site property includes improvement of the access road, construction of a parking lot and restroom.

Prior site investigation and a remedial action have been performed by CMC on the upland portion of the Site. A 1999 remedial action included the removal of highly contaminated soil and capping of 5 areas of residual contaminated soil remaining at the Site. The remedial actions were performed utilizing Wis. Admin. Code ch. NR 720 Industrial Direct Contact Residual Contaminant Level (Ind-DC RCL) assumptions for design of the 5 residual soil caps. The preliminary discussions with the Town of Phelps indicate future development of the Site would not be in the area of capped residual

soil contamination, however the Site will be open to the public. A determination on future actions regarding the change in land use, from private/industrial to public, and how the contamination impacts proposed land use changes should be considered.

Recommendations

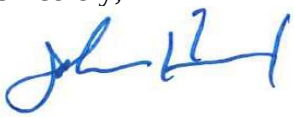
The DNR is not approving the 2018 SIR/RAOR. The following are recommendations to put the Site on track toward potential closure:

- Submit a SIWP to the DNR that proposes actions to fully define the degree and extent of contamination to sediment in Military Creek, it's floodplain and North Twin Lake in accordance with Wis. Admin. Code ch. NR 716. Additionally, the comments included in the 2017 memo should be incorporated into future work activities at the Site.
- The SIWP should also contain a proposal to determine and map the ordinary high watermark of Military Creek in the area of the Site.
- Upon completion of investigative efforts, a SIR in compliance with Wis. Admin. Code ch. NR 716 should be submitted to the DNR.
- Once a SIR has been approved by the DNR, submit a RAOR in accordance with Wis. Admin. Code ch. NR 722. The RAOR should include a review of remedial options that will fulfill the current Site-Specific Objectives as stated by OBG in the 2018 SIR/RAOR. A RAOR should also propose an acceptable sediment clean up level.
- CMC should provide input regarding their participation in the Site property changing from privately held industrial property to publicly held property and the land-use/zoning change(s).
- The DNR will contact the Wisconsin Economic Development Corporation (WEDC) to determine if there are any funding mechanism for improvement of the capped areas of residual soil remaining at the Site.

In closing it should be noted the DNR requires fees for technical assistance, review of submittals and liability clarification. For future submittals in which reviews are sought, please include a completed DNR form 4400-237 (link https://dnr.wi.gov/files/PDF/forms/4400/4400-237.pdf) and appropriate fee as indicated on the form.

Your cooperation in this matter is appreciated. If you have any questions regarding the content of this letter, please feel free to contact me at (715) 701-9383 or by email at johnt.hunt@wisconsin.gov.

Sincerely,



John T. Hunt P.G.
Hydrogeologist
Remediation & Redevelopment Program

cc: Dusty Tazelaar, OBG, (Dusty.Tazelaar@ramboll.com)

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