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|---|---|
| **From:** | Saari, Christopher A - DNR |
| **To:** | MALLY, DIANA; Sager, John E - DNR; Graham, Joseph R - DNR; Cieniawski, Scott; Paul Powell; Patarcity, Jane (Pittsburgh) USA (Jane.Patarcity@TRMI.Biz); Klatt, David/CHC; Seaman, Jennifer/CHC; Fassbender, Judy L - DNR |
| **Subject:** | RE: Draft Agenda for 5/4 Crawford Creek Conference Call |
| **Date:** | Friday, May 1, 2020 5:21:27 PM |
| **Attachments:** | Koppers Off-Site CA 01_12 Comments.pdf<br>20121009162737004.pdf<br>Draft Response to Focused Corrective Measures Study for the Off-Property Area at the Former Koppers Inc. Facility Superior Wisconsin.msg<br>Dioxin_Locations_Beazer&GLNPOCombined.pdf |

Diana,

DNR is responding to your inquiry about other comments we might have regarding the data gap investigation (DGI) work plan. Our apologies for how long it's taken for us to get back to you. We realize the level of effort that has gone into this project to date, and it is not our intent to slow progress on this project. Please know that DNR is committed to working through the FFS process, so long as the project remains within the sideboards of Wisconsin's legal requirements. Our comments below are more global than specific to the DGI work plan.

Attached to this message are three letters from DNR to Beazer (from January and October 2012 and November 2014) that summarize our ongoing concerns over the level of investigation that has been completed to date. We send these not to create discord with the FFS process, but rather to show that we have been raising these same concerns for several years without adequate resolution. In fact, our inability to resolve these concerns with Beazer is what prompted DNR to engage GLNPO about a possible GLLA project with Beazer in the first place. Our hope was that involving a neutral third party might be a way for DNR and Beazer to come to a consensus on what truly are the outstanding investigative and corrective action needs for this site, while also being compliant with Wisconsin statutory and administrative code requirements.

As you can gather from the attached correspondence, the DNR is concerned that the degree and extent of contamination has not yet been defined, which is required under Wis. Admin. Code ch. NR 716. The DNR believes that in and of itself, the proposed DGI work plan will not accomplish this task. The DGI work plan continues Beazer's previous focus on analysis of surficial or very shallow samples, with limited evaluation of the vertical extent of contamination.

As an illustration of our concern, please see the attached "*Dioxin_Locations_Beazer&GLNPOCombined"* map showing dioxin sampling across the site. The map, created by DNR staff, shows an example of this lack of definition. A limited number of laboratory analyses are available to bound the vertical and horizontal extent of the contamination for most subareas. Beazer has not provided a detailed geospatial analysis of analytical results to show the extent of contamination, and DNR does not have staff availability or resources to perform this analysis on a project-scale basis. It will be difficult for the DNR to make determinations about investigation completeness or the adequacy of remedial options without this type of information.

To illustrate this in a different way: If you were to pick a random location in the Crawford Creek floodplain, you would be hard pressed to say with any degree of certainty what the concentrations of COCs would be greater than 6" below the surface at that location. This leads to the question of

how any necessary property use restrictions could be explained to property owners adequately enough to convince those property owners to accept said restrictions. As we have pointed out in the past, DNR has limited legal authority to restrict peoples' use of their property. To meet Wisconsin statutory and administrative code requirements, use restrictions will need to be agreed to by, rather than imposed upon, the property owners.

In the interest of advancing the FFS, we suggest that the project team continue with the DGI as scheduled. We suggest that additional analytical sampling at depth from the planned DGI soil borings and sediment cores be considered to provide necessary data for vertical COC definition. Predesign sampling can also be used to better understand the extent of contamination. However, completing an investigation during design carries the risk of needing to modify the remedy later in the process, or planning a remedy that is not protective of human health or the environment.

We would be happy to further explain or expand on these comments on the Monday call.



Chris Saari
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Christopher.Saari@Wisconsin.gov

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**From:** MALLY, DIANA <Mally.Diana@epa.gov>
**Sent:** Thursday, April 30, 2020 3:07 PM
**To:** Saari, Christopher A - DNR <Christopher.Saari@wisconsin.gov>; Sager, John E - DNR <John.Sager@wisconsin.gov>; Graham, Joseph R - DNR <Joseph.Graham@wisconsin.gov>; Cieniawski, Scott <cieniawski.scott@epa.gov>; Paul Powell <Paul.A.Powell@usace.army.mil>; Patarcity, Jane (Pittsburgh) USA (Jane.Patarcity@TRMI.Biz) <Jane.Patarcity@TRMI.Biz>; Klatt, David/CHC <David.Klatt@jacobs.com>; Seaman, Jennifer/CHC <jennifer.seaman@jacobs.com>
**Subject:** Draft Agenda for 5/4 Crawford Creek Conference Call

Hi,

Per my earlier email, I would like to postpone discussions on site specific exposure assumptions and concentrate instead on discussions needed prior to commencing field work and on broad FFS comments/issues. Below is a draft agenda for our 5/4 call.

Regarding Agenda Item 1, it was our understanding (per prior emails from WDNR circulated earlier this week) that WDNR had no further comments on the DGI Work Plan or QAPP. However, Comment #22 from WDNR's April 3, 2020 FFS comment memo implies that WDNR may not agree with the outcome of the data gap evaluation process, which was the basis for the final scope of work identified in the DGI Work Plan. Before initiating the DGI field work, we would like to receive concurrence from WDNR that they are in agreement with the identified data gaps for the FFS, and the investigation scope of work/procedures outlined in the DGI Work Plan/QAPP. If WDNR has

remaining concerns regarding the data gap evaluation or DGI Work Plan/QAPP, please provide them to the project team in advance of Monday's call so we can be prepared to discuss and attempt to resolve them during the call.

Regarding Agenda Items 2 and 3, we would like WDNR to provide an update on the status of an access agreement with Mr. Laurvick. For cost and efficiency reasons, it would make the most sense to conduct the field work all at once, rather than doing part of the work now and having to come back out at a later date to complete work on Laurvick's property. If Mr. Laurvick has not signed the access agreement, we would like to collectively decide on Monday's call if we should proceed now as planned (i.e., start in May), or delay the field event to allow WDNR more time to coordinate with Mr. Laurvick.

Agenda

1. Data Gaps Work Plan and Field Investigation
   - WDNR to identify any outstanding issues
   - Discuss resolution

2. Status of WDNR access to Laurvick property

3. Field investigation schedule – tentative start week of May 11 (pending resolution of Agenda Items 1 and 2)

4. General approach moving forward to make joint (EPA, Beazer, WDNR) decisions
   - EPA generated issues and decision/resolution table?

5. Begin discussion of WDNR FFS comments
   - Discussions per topic (will include table of comments and responses on each topic)
   - Topic #1: Regulatory drivers for GLLA FFS (PA, NCP, Wisconsin code NR 722, NR 700, NR 754 , etc.) and collaboration - see attached table of comments and responses
   - Discussion of other comment topics on future calls

6. FFS Sections 4 and 5 schedule

7. Schedule for upcoming calls

Let me know if you have any comments or additions to the agenda.

Thanks.

*Diana Mally*
*USEPA GLNPO*
*77 W. Jackson Blvd, mail code G-9J*
*Chicago, IL 60604*

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November 13, 2014

MS JANE PATARCITY
THREE RIVERS MANAGEMENT INC
MANOR OAK ONE SUITE 200
1910 COCHRAN RD
PITTSBURGH PA 15220

Subject: Off-Property Focused Corrective Measures Study for the Former Koppers Inc. Facility, Superior, Wisconsin
WDNR BRRTS #02-16-000484

Dear Ms. Patarcity:

The Department of Natural Resources' (DNR) Remediation and Redevelopment program has received the *Off-Property Focused Corrective Measures Study*, prepared for the above named site by ARCADIS US, Inc. and dated August 22, 2014. This submittal was accompanied by the appropriate review fee per the requirements of s. NR 749.04, Wis. Adm. Code. Based upon our review, we have determined that we cannot approve this report in its present form.

As part of our review and response to this submittal, staff from the DNR and Wisconsin Department of Health Services participated in a conference call with you and your consultants on October 20, 2014. Some of the following comments were relayed to you on that call, but as we stated during the call, this letter will provide more detailed comments that will hopefully better explain our position.

As we indicated on our October 20th call, we were disappointed in the content and direction of this submittal. By way of background, Beazer submitted your *Recommended Corrective Actions for Off-Property Areas* proposal on December 7, 2011. In our January 12, 2012 letter response to that proposal, we provided substantial comments on the concerns we had over the degree and extent of contamination, regulatory permits and approvals, access issues, protectiveness, and long-term care and maintenance of the remedy. Subsequent to that exchange of correspondence, we have met numerous times in person and over the telephone to further discuss some of these issues. We acknowledge that progress has been made to address some of these issues (e.g., data gap sampling).

In that December 2011 submittal, Beazer refers to technical reports and other documents that were reportedly used to evaluate remedial alternatives in preparation of that submittal. In our January 2012 response, we requested that Beazer/ARCADIS provide us with these referenced technical reports and documents, so that we can use them in our remedial alternatives evaluation as well. To date, we have not received the requested reports and documents. We note that the FCMS submittal apparently relies on similar information and, "Beazer's 20-plus years of experience at evaluating and implementing corrective action alternatives at numerous sites impacted by wood-treating operations across the country." While the FCMS' Table 1 Technology Screening Summary does list various potential corrective action technologies, many of those technologies were ruled out for further evaluation based again, in part, on,

"Beazer's experience at numerous other similar sites". Unfortunately, with the regulatory responsibilities placed upon the Department, we are not in a position to rely on vague references to technical reports and Beazer's past cleanup experiences without a discussion of the rationale for utilizing or not utilizing the referenced technologies.

We were also disappointed in the fact that the report evaluates only the extreme removal alternatives (e.g., up to 24 feet in depth and 55 feet from the bank in Area A, up to 15 feet in depth and 250 feet from the bank in Area B), despite the fact that we have repeatedly stated that the Department has ruled out response actions of that type as impracticable and unnecessary. Section NR 722.07(1), Wis. Adm. Code, requires that, "responsible parties shall identify and evaluate an ***appropriate*** range of remedial action options" (emphasis added). We expected the report to include evaluation of more reasonable removal alternatives. Your consultants have pointed out that, since the DNR has not suggested a "line in the sand" in terms of an excavation depth, they proceeded to evaluate the alternatives in the report on essentially a worst-case scenario. We would counter that we have offered general suggestions for possible removal depths (e.g., the base of the culvert under the railroad embankment) as a basis for remedial design purposes. Nonetheless, this is something that we certainly would be willing to discuss with you further.

It should be pointed out as well that your selected corrective action approach for Area A (Alternative A2: Channel and Bank Cover, with DNAPL Collection Provisions) appears to address many of the comments that DNR staff provided at our February 2012 meeting. The report section-specific comments provided below relate more to the evaluation and discussion of Areas B and C.

- Executive Summary, Area C discussion – It appears that you intend to implement that remedial action only in the channel of Crawford Creek and not the floodplain in this area. Only Alternative C4 includes some remedial activity outside of the creek channel, other than the incidental excavation/filling that would occur under the proposed channel relocation in Alternatives C1 and C2. This design is apparently tied to the findings of the January 2009 *Human Health and Ecological Risk Assessment* (HHERA).
- Section 4.1, second bullet, page 8 – The report claims, "The frequency of sheen presence has diminished with time." Does ARCADIS have any documentation that supports this statement? If yes, can you share that documentation with us?
- Section 4.2 – We were surprised to find that the conclusions from the HHERA are used to justify the evaluation and selection of certain remedial options. In 2012 the Department raised concerns over the adequacy of the investigation which resulted in the development of a work plan to fill in the data gaps. In addition, we communicated DNR's inability to provide a full evaluation of the HHERA because of staff vacancies, and we offered an alternative to the long cycle of comments and responses that often accompany risk assessment evaluations and approvals. The Department hoped that we could move beyond the HHERA and reach an agreement on a better-defined, numerically based corrective action proposal that fully addresses all of the potential exposure pathways that the Department believes are present in the off-property area.

  As you are likely aware, the preliminary observations and results from the US EPA Great Lakes National Program Office (GLNPO) sampling work downstream of the railroad embankment indicate impacts on a similar scale to what exists on the upstream side of the embankment. These observations would seem to contradict your previous portrayal of impacts in this area. This would suggest a need to revise your conceptual site model, and in turn suggests that the conclusions of the HHERA itself might need to be revised. The GLNPO report will be shared with you as soon as it is complete, which we have been told should be soon. We look forward to discussing the results of that work with you when we have all had an opportunity to review it.

- Section 6.2 – It would be helpful to know (beyond the cursory level provided in Table 1 Technology Screening Summary), which remedial technologies were ruled out. Having this information available leads to the logical next question, which is why were these particular technologies ruled out?
- Section 6.3.2.1 – It appears that this alternative involves raising the elevation of the floodplain by 12 inches. We have previously expressed our concerns with raising the floodplain elevation and potentially isolating the floodplain from the creek in our January 10, 2012 comment letter and our February 2012 meeting in Madison. These concerns are based both on stream stability and legality/ability to approve a permit for this activity.
- Section 6.4 – The DNR will provide a specific response to Beazer's February 10, 2014 letter regarding grandfathering of the 2000 CAMU application in a separate letter to Mr. Paul Kline.
- Section 7.2 – It appears that ARCADIS is misinterpreting the meaning of Restoration Time Frame. Per s. NR 700.03 (52), Wis. Adm. Code, "Restore" or "restoration" means those actions necessary to return the environment to its original condition before the hazardous substance discharge or environmental pollution occurred. Such actions may include, but are not limited to, the replacement or removal of injured plant and animal life and treatment of contaminated soils." ARCADIS seems to be interpreting this to mean returning the remedial action area(s) to pre-remedial action conditions.
- Section 7.3.1 – The statements referenced below are repeated in the discussion of Areas A, B and C, but will be made here under this subsection:
    - In terms of mitigating potential exposure on a long-term basis, how is placing a cover over contamination equivalent to removing that contamination from the environment?
    - How did ARCADIS come up with the 1% contaminated /99% "clean" ratio? Labeling visually un-impacted material as "clean" is misleading. As DNR has stated repeatedly over the past couple years, we do not believe that visually un-impacted soil is the same thing as "clean".
- Section 7.4.1, top of page 58 – We disagree with the premise that toxicity reductions associated with each alternative would essentially be the same. If you remove contaminants from the environment, they are no longer available to impact the environment in that location. Placing the removed contaminants in a CAMU that is designed to contain those contaminants would appear to be a far more effective option than if those same contaminants were allowed to remain in the environment under a cover, subject to re-mobilization through the erosive forces of nature.
- Section 7.4.2 – These comments would also apply to our evaluation of Areas B and C, but will be made here under this subsection. Given how the extreme removal option is skewed towards being infeasible, the resulting evaluation score is predictably lower than the other evaluated alternatives. Regardless, it would be an interesting choice to pose to the landowners: Would you be willing to put up with a longer duration of cleanup activities in exchange for removal of more contaminants from your property (and possibly a less restrictive endpoint)?
- Section 7.4.6 – As we tried to point out to you and your consultant in January 2012, regulatory requirements might preclude permit approval to raise the floodplain elevation by one foot as proposed in Alternative B1. Taking that into consideration, this option might score much lower than the other two in the evaluation framework.
- Section 7.5.2 – It is interesting to note how the amount of clearing required in the Area C alternatives seems to carry less weight in the evaluation scoring than it did for Areas A and B. Alternatives C1 and C2 include a 67% increase in land clearing compared with C4, and an 81% increase over C3.
- We believe that the FCMS should include alternative-specific visual depictions of the extent of contamination, in order for us to evaluate how (or if) different remedial alternatives address the off-property impacts.

- The report references wetland boundaries, but to our knowledge, no wetland delineation report has been provided to the DNR for the off-property area. This information will have to be submitted to us at some point in order for us to make determinations on the need for permits, and would be helpful in the remedial option evaluation process to help us determine the relative feasibility of different alternatives.

As we indicated during our October 20th conference call, we are concerned about the pace of activities on this project. We are facing increasing pressures, both internally and from EPA, to demonstrate site progress and to ensure that adequate financial assurances are in place. As such, we will be seeking a clearly defined and agreed-upon schedule for moving this site towards corrective actions and, eventually, closure.

If you have any questions concerning this letter or the project in general, please do not hesitate to write or call me at 715-685-2920. I can also be reached by e-mail at Christopher.Saari@Wisconsin.gov.

Sincerely,

Christopher A. Saari
Hydrogeologist

cc: Dave Bessingpas – ARCADIS
Jeff Holden – ARCADIS
Stu Messur – Anchor QEA
John Robinson – DNR Wausau
Steve Galarneau – DNR Madison OGL/3
Judy Fassbender – DNR Madison RR/5
Joe Graham – DNR Spooner
Bill Fitzpatrick – DNR Madison OGL/3
Jim Killian – DNR Madison OGL/3
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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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October 9, 2012

MS JANE PATARCITY
BEAZER EAST INC
ONE OXFORD CENTRE
SUITE 3000
PITTSBURGH PA 15219-6401

Subject: Off-Property Contamination at the Koppers Inc. Facility
3185 South County Highway A, Superior, Wisconsin
WDNR BRRTS #02-16-000484

Dear Ms. Patarcity:

As you will recall, staff from the Wisconsin Department of Natural Resources (WDNR) met with you, your attorney and consultants on September 28th in Madison to discuss contamination in the off-property area, and specifically where previous investigations of that portion of the site have been deficient. At that meeting, WDNR agreed to provide you with this more comprehensive list of data gaps and deficiencies that we have identified in our review. By accepted definition, the off-property portion of the site includes the unnamed tributary, Crawford Creek, and the Crawford Creek floodplain downstream of the Koppers property boundary.

**General Comments**

- The section of Crawford Creek downstream of the railroad embankment was not included in ARCADIS' December 2011 remedial proposal or in subsequent discussions. At this time, the WDNR is working with the Great Lakes National Program Office of the U.S. Environmental Protection Agency to secure Great Lakes Legacy Act assessment funding to conduct additional investigative work downstream of the embankment to the Nemadji River. We will keep you apprised of our progress in that regard.
- From a conceptual site model point of view, WDNR believes that the direct contact, surface water/sediment, and groundwater pathways are of concern in the off-property area. The direct contact pathway would apply to the floodplain, stream bank and bottom environments, as well as sheens. The surface water/sediment pathway includes potential human health and ecological impacts from contaminated sediments and sheens under existing conditions as well as potential future impacts from the movement of contaminated floodplain soil and the release of non-aqueous phase liquid (NAPL) within fractures if/when the tributary and/or creek change course and cut new channels. The groundwater pathway will be discussed separately during our meeting on October 10th.
- While the visual and olfactory observations are useful in defining conditions in the off-property portion of the site, there is essentially no laboratory analytical data for sediments and floodplain soil at depths greater than two feet below grade. Laboratory analytical data from depths below two feet is needed to achieve an acceptable definition of degree and extent, and for consideration of allowing contamination to be left in place following a remedy.

- The section of the unnamed tributary between the Koppers property line and the north side of Hammond Ave. has not been addressed in previous investigative and remedial discussions. This area will need to be investigated as part of future field efforts.
- During our September 28th meeting, you made a general statement that any visibly impacted soil/sediment is "bad", and I believe that WDNR would concur with that concept. However, what was not discussed at our last meeting is the condition of visibly unimpacted soil and sediments. Based on our analysis of the limited available laboratory data, WDNR does not believe that visibly unimpacted would equate to uncontaminated above health-based concentrations.
- As we have previously stated, WDNR does not believe that it is feasible or necessary for Beazer to delineate every NAPL-filled fracture in order to completely define the extent of contamination beneath the streams and floodplain. That being said, we believe that a bulk estimation of contaminated vs. uncontaminated material throughout this area can be made with the collection of appropriate analytical samples representative of the fractures and the soil matrices between them.

  As an aside, the incremental sampling methodology (ISM) might be an appropriate and cost-effective tool to use for the floodplain investigation. The sample collection and laboratory preparation methodologies of ISM should be compatible with semi-volatile organic compounds and dioxins/furans. Further information on ISM can be found here:
  - http://www.clu-in.org/conf/itrc/ISM/
  - http://www.hnd.usace.army.mil/oew/policy/IntGuidRegs/IGD%209-02v2.pdf
- The overall lateral extent of contamination upstream of the railroad embankment is problematic due to the extreme flooding that occurs in this area. If flood waters have risen above the tree line in the past, it stands to reason that contaminants could have been deposited at elevations matching the higher flood elevations. Therefore, existing data should be re-evaluated to determine where the lateral extent of investigation needs to be expanded to delineate potential direct contact and contaminated soil transport issues.

**Area Specific Comments**

- As evidenced by the 1973 aerial photograph that we shared with your consultants at our February 21st meeting in Madison, the confluence of the tributary and Crawford Creek has changed locations at least once in the previous 40 years. The confluence at that time was located approximately 600 feet to the north of its current location. The combination of the migrating tributary channel, the significant impacts observed in floodplain transects in ARCADIS' Area B, and the relative lack of sampling and probing points in the vicinity of the 1973 tributary channel suggests that further characterization is needed in this area.
- The so-called Crawford Creek pond (or ponds) was located on the west side of Crawford Creek, downstream towards the railroad embankment. The pond area has been raised by WDNR staff on a number of occasions as an area in need of additional investigation. Although a 2005 soil sampling transect was located through the pond area, as we pointed out at the September 28th meeting, those samples were collected from 0 – 6 inches below ground surface. Further sampling is needed at depth in this area to determine the significance of previous observations, and also to determine if this area actually extends further upstream as a series of remnant depositional features.

We agreed at the September 28th meeting to set up a teleconference between a small group of WDNR and ARCADIS technical staff to discuss these data gaps in order to clarify what we are looking for prior to preparation of a work plan. Feel free to contact me once your technical team has had a chance to review and discuss this list so that we can set up the teleconference.

If you have any questions concerning this letter or the project in general, please do not hesitate to write or call me at 715-685-2920. I can also be reached by e-mail at Christopher.Saari@Wisconsin.gov.

Sincerely,

Christopher A. Saari
Hydrogeologist

cc: Mark Thimke – Foley & Lardner LLP
Dave Bessingpas – Arcadis
John Robinson – DNR Wausau
Steve Galarneau – DNR Madison WT/3
Joe Graham – DNR Ashland
Scott Inman – DNR Madison WT/3
Bill Fitzpatrick – DNR Madison WT/3

**State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES**

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January 10, 2012

MR MARK THIMKE
FOLEY & LARDNER LLP
777 E WISCONSIN AVE
MILWAUKEE WI 53202-5306

Subject: WDNR Comments on the Recommended Corrective Actions for Off-Property Areas, Koppers Inc. Facility, 3185 South County Highway A, Superior, Wisconsin
WDNR BRRTS #02-16-000484

Dear Mr. Thimke:

The Wisconsin Department of Natural Resources (WDNR) has received correspondence from Beazer East, Inc. (Beazer) dated December 7, 2011, including the document entitled *Recommended Corrective Actions for Off-Property Area.* As was stated at our meeting on December 21, 2011, the WDNR appreciates that Beazer has provided this document as a starting point for our discussions to address the off-site contamination associated with this site.

As we indicated at the meeting, several WDNR staff members from our Waters and Remediation and Redevelopment programs have taken time to conduct a preliminary review of the document and provide their thoughts and comments regarding the recommended corrective actions. Please consider these comments as a means to provide a framework and identify regulatory sideboards for further discussions as we move towards a comprehensive and mutually-acceptable cleanup plan. As we stated at the meeting, we are not seeking a point-by-point response to these comments. We are simply providing them so that you have a better understanding of our concerns on various issues that will come up as we work collaboratively on corrective actions for this site. I have attempted to group the comments into related categories as best I could. Hopefully you will find them helpful.

During our December meeting, Jane Patarcity indicated that Beazer has previously evaluated many of the issues associated with the scoping of corrective actions in the off-site areas, and that technical reports and other documents have been prepared to support these evaluations. We would appreciate being given the opportunity to review any pertinent documents prior to our February meeting so that we might gain a better understanding of your proposal and perhaps move us further towards consensus.

Mr. Mark Thimke – January 10, 2012

Thank you again for your willingness to discuss a common approach to addressing the off-site contamination associated with the Koppers facility. We look forward to meeting with you in February to work toward a mutually agreeable technical solution. If you have any questions concerning this letter or the project in general, please do not hesitate to write or call me at 715-685-2920. I can also be reached by e-mail at Christopher.Saari@Wisconsin.gov.

Sincerely,

Christopher A. Saari
Hydrogeologist

attach. WDNR Comments on the Recommended Corrective Actions for Off-Property Areas, Koppers Inc. Facility – Superior, Wisconsin, January 10, 2012

cc: Jane Patarcity – Beazer East, Inc.
Jeff Holden – Arcadis
John Robinson – DNR Wausau
Mark Giesfeldt – DNR Madison
Steve Galarneau – DNR Madison
Nancy Larson – DNR Ashland
Joe Graham – DNR Ashland
Jim Killian – DNR Madison
Bill Fitzpatrick – DNR Madison
Steve LaValley – DNR Superior
Xiaochun Zhang – DNR Madison

## 1. Degree and Extent of Contamination

- This proposal contains no discussion of contamination downstream of the railroad embankment (beyond Area C). The Department feels that, based on observations of contamination (e.g., sheens and odors) and elevated dioxin levels (at or above the probable effect concentration in WDNR's Consensus-Based Sediment Quality Guidelines) below the embankment, this area will need to be further evaluated for corrective actions as well.
- Creosote has infiltrated clay fractures up to 24 feet bgs up to 300 feet from the channel. This is probably worst case. The areal extent to this depth is unknown and may be limited (to Area A?). The degree and extent of contamination is not completely known since some borings were not advanced to depth or laterally into clean material.
- Previous investigations indicated significant contamination present in the so-called Ponded Area of Crawford Creek, just upstream of the railroad embankment. As this is also very near the location where the proposed new Area C stream channel would re-join the existing channel, further delineation of contaminants should be completed.
- The Department is concerned that groundwater quality in the off-site areas has never been evaluated, and this proposal does not address those concerns. The presence of creosote product within the floodplain and sediment matrix suggests that groundwater impacts are likely. Are dissolved-phase contaminants discharging to the stream system? Is the stream gaining or losing, and does this change over time?

## 2. Regulatory Approvals and Permits

- A proposal to alter a navigable stream must be found to be in the public interest in order for it to be permitted under Wisconsin Statutes. Ultimately the Wisconsin constitution provides that the public has access and rights to navigable waterways.
- Waterway and wetland permit approvals for this proposal would be extremely difficult. Wetland mitigation might be necessary for the disturbance. The US Army Corps of Engineers could also require mitigation for the proposed alternative of capping and moving the stream thread as part of their separate permit approval process.
- Based on the source of contaminants in the off-site areas, Beazer would need to make a hazardous waste determination before actively managing (e.g., excavating or dredging) any material in the floodplain or stream. If the material is determined to be a hazardous waste, it is extremely unlikely that an approval could be granted for the material to be placed back on the floodplain (Area B) or used as fill material in the old channel (Area C).
- The actions described in this proposal would be considered a Type 2 activity under ch. NR 150, Wis. Adm. Code, and might require that Beazer conduct an Environmental Assessment as part of the Department's approval process.
- Will the change of course of Crawford Creek trigger additional analyses required by the Federal Emergency Management Agency (FEMA)?

## 3. Access Issues

- The proposal states that difficult access conditions and the depth of the contamination in the floodplain soil make excavation too difficult and costly. There are similar concerns spelled out that wetland soils are soft and restrict access to work areas, resulting in the need to construct substantial access roads. However, the proposal recommends bringing in heavy equipment and hauling in fill material, reactive mats and heavy gabions to perform filling and capping activities, all of which would be subject to the same access difficulties. If access is too challenging for excavation and removal of material, then how will the site be accessed for capping and relocating the stream? Consider use of timber mats, temporary fill roads, ice roads, etc.
- The proposal states that the floodplain is susceptible to flooding and represents risk for inundation of equipment and work areas. The risks of working in floodplains can be mitigated by working in winter, adequate pumps and backups, staging/phasing work in smaller areas, coffer dams, sheet piles, etc. The Department contracted work on Newton Creek and the City of Superior has completed rehabilitation work on Central Park Creek in this same general area, so with adequate planning, work on and around flashy clay streams is feasible.
- The proposal states that depth of contamination up to 24 feet (worst case – limited areas) would necessitate "extensive engineering controls" and management of water. The use of trench boxes, sheet piling, and stream dewatering practices are common practices at construction sites, especially those near waterways (e.g. culverts, bridge, and utility projects). These are hardly extensive engineering controls.
- The proposal states that private property owners are concerned about disturbance. If owners deny access for the remedy then the Department could consider those property owners responsible for the contamination on their property. In light of this it seems unlikely that owners would accept liability for contamination simply because they don't want the property disturbed. There are three property owners along the course of contamination addressed in the proposal. Based on an interpretation of Douglas County's on-line property records in October 2011, Beazer East, Inc. owns the first segment of Area A from Hammond Avenue to the railroad embankment. Private owners (Kolanczyk) own the remainder of the tributary (Area A), all of Area B, and the first part of Area C. The remainder of Area C (i.e. Crawford Creek to the railroad embankment) is owned by Douglas County. The Department partners with Douglas County on projects within the St. Louis River Area of Concern (AOC), and this site is a high priority for the AOC. It would seem likely that Douglas County would agree with disturbance for improved conditions in the AOC.
- Site access for Areas B and C and portions of Area A below the railroad embankment may be attainable from Hammond Avenue across the floodplain (Kolanczyk). The first segment of Area A above the railroad embankment to Hammond Avenue could be accessed from Beazer East's property (i.e. the pink house on Hammond Avenue). Site access along the floodplain may require working with one additional land owner if access can't be obtained from the Kolanczyk property.

## 4. Protectiveness

- The proposal seems to work under an unstated assumption that only the "creosote-like product" is a concern. Other contaminants are present in the sediments and floodplain that are not associated with the creosote (i.e., dioxins, pentachlorophenol). The site falls within the St. Louis River AOC. One of the goals of the AOC and the international Lake Superior agreements is to eliminate persistent bioaccumulation chemicals such as dioxins.

- This proposed design would degrade the habitat and functions (especially flood attenuation) of the wetland, leave considerable ecological risk behind and require significant on-going maintenance and long-term monitoring.
- Restoration should consider imported clean materials and softer stream bed and bank restoration techniques. Dredge materials from the Duluth-Superior harbor should be investigated as a source of clean material. To restore wetland functions and help provide a native seed bank the use of marsh excavation from DOT or other projects may also need to be considered.
- Area A – The design recommends a reactive mat covered with up to 3 feet of fill. Raising the creek bed 3 feet may introduce instability to the stream and encourage the stream to seek another alignment which would be outside of the design channel and promote erosion. If the creek can successfully be contained in the design channel the stream environment will be permanently altered and will be isolated from the natural bed and bank and function in a manner like a stone lined drainage ditch. This is not a desirable condition.
- Excavation in the ditch (Area A) will expose some of the heaviest contamination. An improper design of the ditch also has a significant risk of causing failure of the railroad grade.
- Footnote 1 on the bottom of page 4 says, *"The portion of the tributary between Koppers property and Hammond Avenue would be addressed in a similar manner as the completed on-property remedy: removal of up to 2 feet of affected bottom and bank materials, installation of an engineered liner system, including Reactive Core Mat (RCM)."* Why can't removal of affected bottom and bank material in the tributary continue beyond Hammond Avenue into Areas A & B? Especially the first part of Area A from Hammond to the railroad embankment which is owned by Beazer?
- Area B – The proposal calls for 3 to 4 feet of excavation of the stream bed and banks and backfilling with a foot of riprap. The excavated material would be side cast onto the floodplain. This design will also raise the bed of the creek by 2 feet creating the potential for instability in the stream and potentially encourage the creek to leave the design channel and excavate a new channel in the floodplain at a lower elevation. The design will leave the creek bordered by levees constructed out of the side-casted excavated materials that isolate the creek from the floodplain. The design would leave the creek as a riprap lined drainage channel. This eliminates habitat and values of the natural stream and is not supported by the Wisconsin public trust doctrine.
- Area C – The design would relocate the channel and reduce stream length by 60% to 70%, eliminate meander loops, and produce a replacement channel nearly twice the width of the existing channel. The channel shortening and armoring of the banks is contrary to modern stream restoration designs and is likely to induce instability that would encourage the creek to attempt to erode the bank and bed to recreate the existing meandering pattern. The proposed channel would also degrade the available stream habitat and may function as a drainage ditch. This is not a desirable condition for a wetland stream.
- Does this proposal really address the ecological pathway? The design will require considerable excavating and importing of fill and other construction materials at a level of effort that is on par with dredging alternatives that could do significantly more to remove the contamination from the wetland and result in less armoring of the stream bed and bank materials.

**5. Long-Term Care and Maintenance of the Remedy**

- Perpetual care or maintenance of the site: The proposal calls for an armored cap over geotextile mat. The capping would occur in high energy areas and a floodplain which present substantial long-term risk for failure. Who would be responsible for perpetual maintenance of the cap and what assurances would be made for inspections and for taking corrective actions?

- Post-construction monitoring of 1-3 years for establishment of vegetation and function of restored conditions is inadequate to ensure continued functioning of the project. The current proposal leaves contamination in place and would require perpetual monitoring of the structures and sufficient funding for continued repair of the stream structures. Projected maintenance cost should also include the need for maintaining access agreements with the property owners.
- Monitoring for establishment of invasive species with plan for control is needed for at least 5 years and possibly longer.
- We are interested in working with you toward a redesign that includes more excavation and removal of contaminants from the wetland. The recommendation could include a mix of dredging to remove as much as practicable followed by capping where appropriate to reduce the exposure and transport of the contaminants. A successful design should minimize the need for future maintenance and monitoring.
- The corrective action design should evaluate what happens if the railroad embankment is modified or removed in the future. What affects could this have on flow in Crawford Creek? How would this then affect the remedy, especially capped areas in the floodplain?
- How long will the reactive core mat last? In other words, once the activated carbon in that mat has been spent, does it serve any remediation purpose?
- The company should investigate the potential to landfill excavated material at the "on-site" property – Koppers site through a Corrective Action Management Unit (CAMU).