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August 15, 2017

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**SUBJECT:           Comments on USEPA Proposed Remedial Action Plan  
                          Wisconsin Public Service Corporation  
                          CERCLA Docket No. V-W-06-C-847  
                          Spill Site ID – B5BT**

Dear Ms. Gielniewski and Ms. Pastor:

In response to USEPA's Proposed Remedial Action Plan (PRAP) for the Wisconsin Public Service Corporation's (WPS) former manufactured gas plant site in Marinette, WI issued July 17, 2017 and USEPA's letter to WPS received on August 3, 2017, WPS hereby respectfully submits the following comments for your consideration and for incorporation into the public docket for this case.

In general, WPS has significant concerns with USEPA's conclusion that invasive excavation, soil removal and oxidant injection activities are warranted on the City of Marinette wastewater treatment plant (WWTP) property in order to adequately protect human health and the environment. As noted in the approved Feasibility Study Report, Revision 3 (FS) and related correspondence, the significant short term risks to (1) ongoing plant operations, (2) the structural integrity of above ground structures, and (3) of damage to critical below ground infrastructure associated with such activity in no way justify the small reduction in hypothetical human health risk or threats to groundwater quality that might be achieved. USEPA's own assessment shows the human health risks represented by current baseline conditions for soils on the WWTP property fall well within the acceptable risk management range, particularly for a secure, limited access facility such as the WWTP for which the default "reasonable maximum" exposure assumptions inherent in the derivation of PRGs for soils under an "industrial" scenario do not apply. Finally, as documented in the approved FS, the use and implementation of institutional controls in the form of materials handling and cover maintenance plans will be fully adequate in attaining the health and environmental quality related remedial action objectives (RAO) for the WWTP property in a far more efficient and cost effective manner.

Our specific comments concerning internal inconsistencies between the PRAP and the FS and other related USEPA documentation for the site, factual or technical errors and misrepresentations in the PRAP and Fact Sheet, and other substantive and technical concerns of note are presented below.

### **INCONSISTENCIES BETWEEN THE FACT SHEET/SOLICITATION FOR PUBLIC COMMENT AND PRAP**

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- Fact Sheet Page 2 (Proposed Cleanup Options) - Alternative 2 does not reference installation of a horizontal barrier on the WWTP property, as is stated on Page 18 of the PRAP.
- Fact Sheet Page 2 (Proposed Cleanup Options) - Alternative 2 identifies Alternative 2 as partially meeting Compliance with Applicable or Relevant and Appropriate Requirements (ARARs). Conversely, page 27 of the PRAP states that Both Alternative 2 and 3 would meet all potential ARARs.
- Fact Sheet Page 3 (Past Cleanup Actions) - States that nearly 15,000 tons of contaminated river sediment was removed from the site. Page 5 of the Proposed Plan states that 14,799 cubic yards was removed, which is consistent with the FS Rev 3.

### **INTERNAL INCONSISTENCIES BETWEEN THE PROPOSED PLAN AND FEASIBILITY STUDY (REVISION 3) REPORT**

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It is unclear to us as to why USEPA chose to exclude what had been referred to as Alternative 2 in the FS from the PRAP. The stated rationale for this decision was provided in a USEPA letter received, via email, by WPS on August 3, 2017. Unfortunately, the rationale as outlined in that letter is inaccurate not supported by other documentation developed during the FS process, as detailed further below. This omission deprives external stakeholders valuable information regarding what is documented in the approved FS as the most cost effective and least risky approach to meeting the RAOs for the site.

Further, there are internal inconsistencies and differences between the PRAP and the approved FS for the two active remedial alternatives retained in the PRAP. These inconsistencies make it very difficult for interested parties or stakeholders to cross-reference alternative discussions between the PRAP and the FS. In an attempt to clarify comparisons between the alternatives presented in the two documents, alternatives as presented in the PRAP will be noted as Alternative X (USEPA), while Alternatives as presented in the approved FS will be noted as Alternative X (FS). Alternative 1 in both documents (i.e., No Action) is comparable, while Alternative 2 (USEPA) is generally similar to Alternative 3 (FS) and Alternative 3 (USEPA) is generally similar to Alternative 4 (FS). As noted above, no USEPA alternative that is directly comparable to Alternative 2 (FS) was presented in the PRAP. The following inconsistencies with the PRAP are noted below:

- Page 2, Paragraph 1 indicates that Alternative 3 (USEPA) includes injection of treatment reagents in the excavated areas. Whereas the detailed description of Alternative 3 (USEPA) on page 24 indicates that groundwater treatment will "...involve [a] one-time placement of...reagent...within the excavation," which comports with section 4.1.4.2 of the FS which describes groundwater treatment under Alternative 4 (FS).
- Page 7, Paragraph 3 erroneously states: "Any areas in the Menominee River over 50 mg/kg Total PAHs and that Near-shore areas above 50 mg/kg received a 10 inch sand cover." In fact, as stated in FS Section 1.2.9.3, "...a minimum thickness of ten inches of sand was placed over areas of the river where post-dredge confirmation samples indicated residual total (13) PAH exceeded the RAL (22.8 mg/kg)."
- Page 14 – RAO-3, Proposed Plan states: "Restore groundwater to PRGs for MGP-related contaminants within a reasonable timeframe," whereas FS Section 2.4 states "...restore groundwater **beyond the point of compliance** to PRGs for MGP-related contaminants within a reasonable timeframe."
- Page 15, Table 1 – The listed soil remediation goal for Benzo[a]pyrene of 2.1 mg/kg is inconsistent with the FS PRG of 2.11 mg/kg and with the current (March, 2017) WDNR RCL of 2.11 mg/kg.
- Page 16, No Action Alternative Description – PRAP erroneously states that "No cost is associated with this Alternative." The unlabeled table on Page 29 of the Proposed Plan then identifies the Total Present Worth Cost of No Action at \$50,000, which is consistent with Table 6 in the FS.
- Page 16, Alternative 2 (USEPA) Description – This description is not consistent with FS Rev 3 Alternative 2 (FS). Rather, this alternative seems to be generally consistent with Alternative 3 (FS). Alternative 2 (FS) appears to have been entirely excluded from the USEPA Proposed Plan.
- Page 16, Last Paragraph – The "time to reach protective levels and compliance with PRGs" under Alternative 2 (USEPA) is purported to be between 35-115 years after ROD issuance. This is inconsistent with the technical documentation provided to support Alternative 3 (FS) which indicates that RAOs could be achieved in as little as 5 - 10 years post ROD.
- Page 20, Bullet 4 – Proposed Plan references approximately 100 injection points for Alternative 2 (USEPA), whereas FS Section 4.1.3.2 assumed 50 injection points as the basis for analysis of Alternative 3 (FS) and related cost estimates.
- Page 20, Bullet 5 – Proposed Plan references approximately 25 vapor extraction wells for Alternative 2 (USEPA), whereas FS Section 4.1.3.2 assumed 15 vapor extraction wells as the basis for analysis of Alternative 3 (FS) and related cost estimates.

- Page 22, Bullet 4 – GIS restrictions and requirements for sediment described in the PRAP are generally consistent with an earlier and *unapproved* revision to the FS (Revision 2). Additional elements regarding the residual sediment impacts above the RAL located under the residual sand cover described in the approved FS (Revision 3) are not included.
- Page 22, Third Paragraph – USEPA indicates that the time to reach protective levels and compliance with PRGs for Alternative 3 (USEPA) is 35-110 years after ROD issuance. Table 7 of FS estimates 10 years post ROD for Alternative 4 (FS) to achieve RAOs.
- Page 25, First Paragraph Following Bullet List – PRAP indicates monitoring will continue for approximately 30 years to reduce COCs to PRGS. Section 4.1.4.2 of the FS estimates approximately 10 years to reduce COCs to the selected PRGs. Once monitoring data confirm dissolved phase impacts to be below PRGs there is no value to continued data collection and ongoing monitoring will be curtailed.
- Page 28, Short Term Effectiveness – The analysis in the Proposed Plan fails to include fundamental and critical elements concerning short term effectiveness presented in the approved FS. Specifically, these include risks to construction workers, operational and structural integrity of the WWTP and potential damage to surrounding infrastructure related to subsurface injection of corrosive oxidants and deep excavation. Refer to Sections 4.2.3.5 and 4.2.4.5 of the FS.
- Page 29 Paragraph 1 – Proposed Plan indicates that Alternative 2 (USEPA) and Alternative 3 (USEPA) are “readily implementable” without any discussion or support for how such a determination was arrived at. This is at odds with the approved FS which provides support that numerous physical, administrative, contractual and transportation-related constraints would exist for Alternative 3 (FS) concerning the Boom Landing Source Material Excavation (FS Section 4.2.3.6). Likewise, the FS describes in detail the many short term physical and health risks and technical, administrative and legal challenges associated with implementing Alternative 4 (FS), particularly related to excavation and other intrusive work on the WWTP Property (FS Section 4.2.4.6).
- Page 29, Unlabeled Table – The Timeframe to Completion is inconsistent with and understates the realistic implementation schedule as presented in the approved FS, as previously noted.
- Page 30, Summary of Rational for the Preferred Alternative – USEPA indicates that Alternative 3 (USEPA) will be “...straight forward in its implementation.” This statement misrepresents the discussion in the FS (Section 4.2.4.6) which clearly highlights the numerous implementation challenges associated with Alternative 4 (FS).

- Page 30, Summary of Rational for the Preferred Alternative – USEPA indicates that Alternative 3 will remove 18,000 cubic yards of soil related to the installation the horizontal barrier. Section 4.2.4.4 of approved FS indicates that 9,000 cubic yards would be removed. This volume (and the related cost estimate) was updated from the previous revision to the FS, based on the March 2017 RCL update from WDNR.
- Page 30, Summary of Rational for the Preferred Alternative – USEPA states “Alternative 3 is readily implementable and within the same cost range as Alternative 2”, the other alternative with treatment that meets ARARs and RAOs.” This statement is inconsistent with the analysis presented throughout Sections 4 and 5 of the approved FS.
- Table 5 – Alternative 2 (USEPA) indicates that removal of 85,700 cubic yards of material and installation of a barrier covering 242,000 square feet will be part of the proposed remedy. Alternative 3 (USEPA) indicate that removal of 290,100 cubic yards of material and installation of a barrier of over 242,000 square feet would occur. It is unclear as to how USEPA arrived at these estimates, as Tables K and N in the approved FS indicate that a barrier is required over approximately 316,800 square feet for Alternative 3 (FS) and Alternative 4 (FS). Furthermore, Section 4.2.3.4 of the FS indicates that approximately 16,000 CY of material would be removed under Alternative 3 (FS) and approximately 18,500 CY for Alternative 4 (FS). These estimates were in turn the basis for the cost estimates for these alternatives provided in the FS.
- Table 5 – Years to Reach PRGs is in conflict with FS, as previously noted.
- Table 5 – Alternatives 2 and 3 (USEPA) are characterized as being “Readily Implementable.” As noted, this statement is inconsistent with the analysis presented Sections 4 and 5 of the FS.

#### **OTHER ERRORS IN THE PROPOSED PLAN**

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- Page 14, Paragraph 4 – Text references Section 3 and Section 4. These references are not correct.
- Page 18, Paragraph 2 – Text is describing Alternative 2 (USEPA) and references Figure 8. Figure 8 presents Alternative 3 (USEPA), rather than Alternative 2 (USEPA).
- Page 18, Paragraph 2, Page 21, Paragraph 5, Page 22, Paragraph 4 and Page 23 Paragraph 1 – Text references residential PRGs. Residential PRGs are not relevant for the site. There is only one set of remedial goals established in the Proposed Plan, those are, correctly, for Industrial PRGs.

## **OTHER ITEMS OF NOTE IN THE PROPOSED PLAN**

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- Page 2, Paragraph 2 – Text states: “The proposed measures to remediate the contaminated soil and groundwater at the WPS Marinette MGP site would be protective of human health and the environment, would meet applicable or relevant and appropriate requirements (ARARs), would be cost-effective, and would be effective in the long term.” This implies that Alternative 3 (USEPA) is the sole means to “cost effectively” achieve these objectives. WPS strongly disagrees with this given that Alternatives 2 (FS) and 3 (FS) provide similar degrees of protection with far fewer short term risks and impediments and at less cost to implement.
- Page 7, last paragraph - USEPA states it has identified NAPL in the subsurface soil as the principal threat waste at the WPS Marinette MGP site. This appears to be the primary justification for source removal at the WWTP, thereby justifying selection of Alternative 4 (FS). As noted in the FS, the nature of the source material present in the proposed removal areas, particularly those on the WWTP property is such that it is highly weathered, immobile and exhibits relatively low solubility. In addition, much of this material appears not to be derived from MGP residual. Long term trends in groundwater quality in on site wells, while still above PRGs in some locations, suggest that removal of this material in its current form would not appreciably affect these trends.
- Page 8, first paragraph – USEPA states that PAHs at the site are considered to be low-level threat waste because they are not highly mobile.
- Page 9, First Paragraph – USEPA states that “EPA’s acceptable risk range is defined as a cancer risk range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$  and an HI < 1. Generally, remedial action at a site is warranted if cancer risks exceed  $1 \times 10^{-4}$  and/or if non-cancer hazards exceed an HI of 1.” Given that the approved BLRA concluded that risks associated with surface soils are well “within thi[is] [acceptable] risk management range” (and in fact are likely far below  $1 \times 10^{-6}$  when taking into account the actual day-to-day work practices of the WWTP operators) this statement directly contradicts USEPA’s justification for requiring the removal as the sole acceptable remedy for surficial soil in the WWTP (see discussion in the *WPS Concerns with Implementing USEPA-Preferred Remedy* below).
- Page 9, last paragraph – USEPA states that surface soils in Boom Landing and WWTP and surrounding properties were associated with estimated cancer risks above the risk management range under a residential scenario, but within the risk management range for an industrial or recreational scenario. As noted above, a residential exposure scenario or residential PRGs are not applicable to this site and in no way should factor into decision making for remedial action. As such given that EPA acknowledges that the surface soil in the WWTP is within the risk management range for an industrial scenario, we question the basis and rationale for USEPA requiring such invasive and disruptive action.

- Page 16, Last Paragraph – The PRAP states that “...the long-term monitoring program for recovery would be robust to confirm stability of PAHS (sic) deposits and to measure and track recovery of PAH-impacted media in soil and groundwater.” No such “long-term monitoring” is described nor contemplated in Alternative 3 (FS) and it is unclear what may be anticipated or contemplated by USEPA with regard to such monitoring.

### **COMMENTS ON USEPA LETTER RECEIVED ON AUGUST 3, 2017**

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As noted above, USEPA provided justification excluding Alternative 2 (FS) from the Proposed Plan in a letter to WPS received on August 3, 2017. Prior to receipt of this correspondence, throughout the 2-year process of developing 4 revisions to the FS and preparing responses to many comments on various drafts of the document, USEPA has *never* raised any concerns regarding Alternative 2 (FS) being non-compliant with ARARs or RAOs. It is unclear as to how USEPA could have retroactively reached such a determination *after* the approval of the FS. The primary reasons cited by USEPA included that Alternative 2 (FS) would not achieve RAO-1 “prevent human exposure to...subsurface soils containing MGP-related contaminants greater than PRGs” and that Alternative 2 (FS) would not meet chemical-specific ARARs.

Regarding Achievement of RAO-1, Section 4.2.2.1 of the USEPA-approved FS states the following with respect to Alternative 2 (FS): “The combination of these soil remedial measures [including institutional controls] will fully address RAO-1 for each of the three soil PRGs evaluated in this FS.” As such, USEPA’s assertion in this letter stating Alternative 2 (FS) does not achieve RAO-1 is in direct conflict with a USEPA-approved document in the Administrative Record. WPS stands by the conclusions in the approved FS and strongly disagrees with EPA’s new interpretation of this alternative.

Regarding not being compliant with chemical-specific ARARs, the basis of this USEPA position is likely Section 4.2.2.2 of the FS, which states: “WDNR NR 720 requires engineering controls to manage surficial soil exceedances. WDNR NR 720 defines the controls included in Alternative 2 as administrative in nature. Therefore, Alternative 2 is only partially compliant with chemical-specific ARARs for  $10^{-5}$  and  $10^{-6}$  PRGs.” This statement needs to be considered within the following context:

- 1) The “surficial soil exceedance” on the WWTP property is based on samples collected from areas known or suspected to contain historic fill soils and, even being intentionally biased high, still exceeds the PRG by less than 2 ppm, on average, and therefore are just slightly above the *lowest* extreme of the acceptable risk management range of  $1 \times 10^{-6}$ .
- 2) The PRG was developed using default assumptions that represent soil exposure conditions that would never occur for WWTP plant operators. In fact, landscaping, excavation or other activities that might entail any prolonged potential for direct contact are typically contracted to qualified external vendors.
- 3) In the first paragraph of the Proposed Plan, page 8, USEPA states: “PAHs at the site are considered to be low-level threat waste due to their lack of mobility [in the environment].”

- 4) Institutional controls, while not an “engineered barrier” have been repeatedly proven to be effective in mitigating or eliminating exposure to residual impacts, particularly for such secured facilities where access and on site activities are strictly controlled and can be conducted in conformance with specified materials handling and management protocol.
- 5) Removal and replacement of surface soils over a 111,000 ft<sup>2</sup> area would be highly disruptive and entail significant potential health and safety risks for the plant. The fact that little, if any, reduction in true human health risk would be achieved by such measures does not justify the short term consequences and very high costs.

Given USEPA has formally acknowledged that the PAHs in soil are a low-threat waste, that surface soil at the WWTP is within the risk management range for which active remediation is not necessarily warranted, and that institutional controls can be an effective means of mitigating or preventing human health risk, we believe the exclusion of Alternative 2 (FS) from the Proposed Plan is not warranted nor justified.

#### **WPS CONCERNS WITH IMPLEMENTING USEPA-PROPOSED REMEDY**

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**Safety** – The USEPA-preferred alternative involves excavating a minimum 9-foot deep hole directly abutting the entire eastern side of the WWTP’s Aeration Basin. The load of the Aeration Basin will significantly complicate the excavation and necessitate design and construction of a very complicated and extensive shoring system. Installation of shoring near the Aeration Basin risks potential structural and foundational damage to this structure. Such potential for damage would be further exacerbated by the need for dewatering the excavation area to an elevation well below the design depth, thereby creating a cone of depression that would affect all surrounding structures. Any substantial damage to the Aeration Basin will compromise the operational viability of the City’s WWTP and would likely result in the plant being off line for an extended period, realignment of infrastructure, sewage treatment bypasses and related astronomical repair costs. Likewise, the injection of corrosive reagents at the volumes needed to oxidize the residual adsorbed mass in specific locations on the WWTP may lead to significant damage to the existing underground infrastructure to the point where the WWTP may need to temporarily cease operations to allow for repair. If chemical oxidants were to infiltrate the WWTP process piping it could also have a detrimental effect on the operation of the plant.

Secondary safety concerns with the USEPA-preferred alternative relate to excavation in or adjacent to gas, underground electric, storm water, and sanitary sewer utility lines. Excavation around, or temporary relocation of, these utilities represents significant risk to the construction workers and risks damage to the utility, causing service disruptions for the City of Marinette.

Finally, we believe that the traffic safety issues, odor, noise and potential road damage associated with hauling well over 1,300 additional loads of material through downtown Marinette that would be required with the USEPA-preferred Alternative 3 (USEPA) should have been given more serious consideration in the remedial action decision.



**Relative Benefit to Human Health** – On page 9 of the USEPA Proposed Plan, the USEPA concludes that surface soils at the WWTP were associated with estimated cancer risks within the acceptable risk management range (i.e.,  $10^{-4}$  to  $10^{-6}$  lifetime incremental cancer risk) for the current and anticipated future industrial scenario (i.e., continued operation of the WWTP). Moreover, on page 10 of the USEPA Proposed Plan, the USEPA concludes that subsurface soils in the WWTP do not currently pose a risk to human receptors, because they are not accessible for direct contact. Given these conclusions, it is difficult to understand how USEPA believes the substantial operational disruptions, worker safety risks, risks of structural/infrastructure damage and exorbitant costs can be justified given that implementing this remedy would achieve little, if any, added net benefit in the form of reduced human health risks at the site.

Despite USEPA's conclusions regarding the lack of significant health risk noted above, Table 1 of the PRAP (Soil Remediation Goals) misleadingly presents a single numerical PRG concentrations for benzo(a)pyrene corresponding to a lifetime incremental cancer risk (again, calculated using exposure assumptions that are wholly inapplicable to WWTP operators) at only the *lowest* end of the risk management range allowed by EPA ( $1 \times 10^{-6}$ ). This value is 100 fold lower than upper end of the risk range that is considered acceptable (i.e.,  $1 \times 10^{-4}$ ). The proposed plan should evaluate a range of numerical values spanning the risk range for benzo(a)pyrene which would be 2.1 mg/kg to 210 mg/kg. There are no surface soil samples on the WWTP property above this concentration range for benzo(a)pyrene, and very few subsurface soils above this concentration range.

As alluded to above, the default exposure assumptions for a *composite worker* inherent in the soil PRG values for benzo(a)pyrene (i.e., the one COC that overwhelmingly drives the "risk" at the site) are not only vastly over conservative but are inapplicable to the WWTP operations personnel that are employed at the plant.

As specified in USEPA's risk calculator user guide, the following conditions are assumed for a composite worker:

*"This is a long-term receptor exposed during the work day who is a full-time employee working on-site and spends most of the workday conducting maintenance activities outdoors. The activities for this receptor (e.g., moderate digging, landscaping) typically involve on-site exposure to surface soils. The composite worker is expected to have an elevated soil ingestion rate (100 mg per day) and is assumed to be exposed to contaminants via the following pathways: incidental ingestion of soil, dermal contact with soil, inhalation of volatiles and fugitive dust. The composite worker combines the most protective exposure assumptions of the outdoor and indoor workers. The only difference between the outdoor worker and the composite worker is that the composite worker uses the more protective exposure frequency of 250 days/year from the indoor worker scenario."*

This description does not accurately characterize WWTP workers' day-to-day duties. In fact, if digging, landscaping or excavation activities are undertaken they are typically carried out by outside contractors (who, with the existence of a materials handling plan for the site, would be properly trained and be taking the appropriate health and safety precautions in the event they may encounter soils having residual MGP impacts during such work). The table below presents examples

of just 3 exposure factors that, if properly adjusted for site specific conditions, would result in calculated benzo(a)pyrene PRGs that would be far higher than the generic values cited as ARARs for the site.

Exposure Factor	USEPA Default Assumption	Why Assumption is Inapplicable at Marinette WWTP
Exposure Frequency and Exposure Duration	Soil exposure occurs at a frequency of 250 days per year for a duration of 25 years	Due to structures/grass, limited intrusive activities, winter/snow cover, average length of employment of a worker, this frequency and duration of exposure for a WWTP employee is not realistic.
Quantity of Ingested Soil	100 milligrams per day of exposure	Would not be applicable unless plant operator were to be routinely digging or disturbing soil without any PPE and then had hand to mouth contact prior to washing their hands. WWTP workers do not typically even work outdoors on a frequent basis, let alone engage in activities where contact with soils may take place. Such activities would typically be carried out by qualified outside contractors.
Surface Area of Skin in Contact with Soil	Soil is adhered to the exposed skin surface of a worker, such as, forearms and hands (3,527 sq cm skin/day is the value assumed by EPA)	This is simply unrealistic due to the nature of WWTP workers' responsibilities and the fact that it presumes large skin surface areas would be exposed throughout the entire work year in Marinette, WI where the average temperature is below freezing for approximately 4 months of the year.

To realistically address conditions at the WWTP and to present PRGs that are more representative of actual risk, we believe EPA should consider the application of less extreme but still conservative exposure assumptions. For example, modifying just one of the above exposure factors to represent conditions at the WWTP would change the basis for requiring active remediation completely. If a more realistic exposure frequency of 25 days of exposure per year were assumed, this would equate to a soil remediation goal for benzo(a)pyrene that would be 10 fold higher than the generic value, or of 21 mg/kg at the  $1 \times 10^{-6}$  cancer risk level and 2,100 mg/kg at the  $1 \times 10^{-4}$  cancer risk level. This is still conservatively protective of potential for surface soil exposure WWTP workers. There are no benzo(a)pyrene concentrations above the 2100 mg/kg in any soils in the WWTP.

Overall, it is not warranted to subject WWTP workers and City of Marinette infrastructure to the inherent risks associated with construction activities on the WWTP property (e.g., risk of injury to a WWTP workers or construction worker, or failure of important WWTP plant equipment associated

with a potential construction accident) associated with the soil disturbance needed to perform the source removal, construct the engineered barrier or undertake dewatering on the WWTP property. As described above and in the Proposed Plan, surface soil impacts are within the acceptable risk management range and subsurface soil impacts do not present a risk to human receptors. A more prudent, cost effective and equally protective method of addressing surface and subsurface soil risks would be to rely upon existing access and site security controls, to ensure the current and future property owners and operators are aware of the nature and location of residual impacts, and to ensure that any future intrusive activities (i.e., excavation, construction, landscaping, etc.) are performed in accordance with site-specific soil management and materials handling and cover maintenance plans.

**Cost** – Alternative 3 (USEPA) will cost an estimated \$7.63 million, making it the most costly alternative evaluated in the FS Report. This alternative is \$4.01 million more than Alternative 2 (FS). This increased cost is primarily related to deep excavation of source areas in the WWTP and horizontal barrier construction on the WWTP. As noted above, numerous unforeseen issues related to shoring, structural stability, avoidance of underground infrastructure, worker health and safety and other factors may combine to inflate this cost estimate substantially when and if remedial construction design is initiated for this alternative. In addition, should an injection/vapor recovery approach be mandated for in situ groundwater treatment, these costs would substantially escalate further. Also as noted above, the differential cost of the USEPA-preferred alternative provides limited, if any, added benefit in terms of human health risk reduction. In their Proposed Plan, USEPA states that surface soil impacts in the WWTP *in their current condition* are within the acceptable risk management range for an industrial worker and subsurface soils in the WWTP do not currently pose a significant risk to human receptors. As such, a similar assessment following implementation of USEPA-preferred alternative would yield similar conclusions. Spending a minimum of an additional \$4.01 million to address soil that USEPA states is either not a risk or within the industrial risk management range is neither an efficient nor effective approach to managing human health and the environment risks.

## **SUMMARY OF THE WPS-PREFERRED REMEDY (ALTERNATIVE 2 [FS])**

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The FS Report Revision 3 includes a detailed assessment of four potential remedial alternatives. Of those four alternatives, Alternative 2 (FS) is described as the approach with the least invasive and therefore prone to the least short term risk, the greatest degree of implementability, and the most cost-effective and efficient means of achieving the stated RAOs. As noted above, USEPA chose to *entirely exclude this alternative from consideration* in the Proposed Plan. This alternative includes the following elements:

### **Boom Landing Zone Remedial Activities**

**Deep Excavation of Accessible Source Material** – Similar to the preferred USEPA alternative, Alternative 2 (FS) involves excavation of accessible soil intermixed with MGP residuals identified during investigations at between 6 and 12 feet bgs within the Boom Landing Zone. Trucks will haul

excavated soil offsite and excavation will be backfilled to grade with clean soil. The area will be restored to pre-excitation grade and ground surface condition.

It must be noted however, that Alternative 2 (FS) focuses on intrusive deep excavation of source material only in the Boom Landing Zone, the area of the site with the highest concentration of dissolved-phase MGP constituents in groundwater. Removal of residual source material from this area will be the most cost effective means to improve long term groundwater quality by eliminating the material that is the most significant source of the impacts to groundwater. Subsurface utilities and above ground structures may complicate excavation in Boom Landing. However, the absence of large adjacent structures and process units makes excavation in Boom Landing significantly safer than similar excavations on the WWTP property. In the course of completing the remedial design for the excavation portion of this alternative all efforts will be made to minimize the potential for impacts to (or the need to remove and replace) the existing fish cleaning shack and restrooms at Boom Landing.

**Horizontal Barrier Area** – Similar to the preferred USEPA alternative, Alternative 2 (FS) involves installation of a soil barrier over a small section of the Boom Landing that has not been previously excavated or covered in a parking lot. Installation of a soil barrier in this portion of Boom Landing is prudent, as there is no perimeter fencing or access limitations to restrict potential exposure to this surface soil.

To install this soil barrier, it is assumed that the top two feet of soil in unpaved areas would be excavated and replaced with clean soil. Excavation will not be required under parking lots or sidewalks, as these features already serve as a direct contact barrier. Alternative horizontal barrier approaches will be considered during the design process. Trucks will haul excavated soil offsite and excavation will be backfilled to grade with clean soil. Areas will be restored to pre-excitation grade and ground surface condition.

### **WWTP Zone Remedial Activities**

The WPS-recommend Alternative does not involve any intrusive excavation, construction or capping work on the WWTP property. The WWTP is fully secured by perimeter fencing and access to the WWTP is strictly limited to qualified City personnel and contractors. Remedial Investigation data indicate that residual MGP source material present on the WWTP property is no shallower than 5.5 feet bgs. This material represents no potential for direct contact (and therefore no risk) to WWTP employees, construction workers or others unless an excavation deeper than 5.5 feet were to occur. There are select locations of surface soil that exceed the preliminary remediation goals (PRGs) for surface soil established in the Proposed Plan. However, these exceedances are in areas of well-maintained and landscaped vegetation and would not readily be accessible to WWTP workers. Under Alternative 2 (FS), these areas would clearly be identified on a base map and written protocol would be established for all future intrusive work at the WWTP to be performed in accordance with a soils management/materials handling plan. This approach is fully consistent with and satisfies the USEPA's Remedial Action Objective (RAO) for soil (Proposed Plan, page 14) of preventing human exposure (dermal, as well as incidental ingestion of particulates and vapor) to soil containing MGP-

related contaminants greater than PRGs. As noted, it is the position of WPS that existing access restrictions, institutional controls and adoption of a comprehensive site-specific soils management/materials handling/cover maintenance plan will more than adequately mitigate human health and environmental risk in the most cost-effective manner.

## SUMMARY

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In summary, WPS believes that the remedial alternative being proposed for the site in USEPA's Proposed Plan entails unnecessarily intrusive, risky and costly activities on the WWTP property that will not accomplish significant reduction in risk to human health or the environment relative to current conditions. In contrast, Alternative 2 (FS) focusses activities and resources on the one source area in the Boom Landing Zone that is the most significant contributor to the groundwater plume and involves surface soil barrier construction only in areas of the site where other controls, access restrictions or other measures to prevent direct contact are not or will not be in place. This alternative does not involve any unnecessary intrusive action on the WWTP or other City of Marinette property. Most importantly, Alternative 2 (FS) remedy fully complies with federal and state requirements and does so at substantially less risk to plant operators and construction workers, less risk to the infrastructure of the City of Marinette WWTP, less disruption to the road network surrounding the WWTP, and for over \$4 million less than the USEPA-preferred alternative.

WPS would be pleased to discuss our position on the Proposed Plan and the concerns we have expressed above with you directly. Please do not hesitate to contact us at your convenience if there are any questions or if further information may be needed.

Sincerely,



Robert A. Greco, P.E.  
Director – Land Quality  
Environmental Dept.  
WEC Energy Group - Business Services

cc: Mayor Steve Genisot, City of Marinette (hardcopy and email)  
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