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VIA EMAIL: lr.regulatorypubliccomment@usace.army.mil

Mr. George DeLancey, CELRL-RD-MCE
US Army Corp of Engineers
Louisville District
6855 State Road 66
Newburgh, IN 47630

RE: Public Notice ID No. LRL-2021-00750-gjd

Dear Mr. DeLancey:

This letter is in response to Public Notice ID No. LRL-2021-00750-GJD notifying the public that Meuth Construction Supply, Inc. ("Meuth") has submitted a request to the Department of the Army (DA) for a permit to (a) construct a dry commodities transloading facility to dredge in the Ohio River at mile mark 791; and (b) commercially dredge approximately 300,000 tons of sand annually between mile mark 789 and 789.7 on the Ohio River.

Based on input provided by Brenna Caudill, the Laboratory Technician for the Evansville Water and Sewer Utility ("EWSU"), from Rick Glover EWSU's Production Manager, and Chris Cottom, EWSU's Assistant Production Manager, the EWSU is opposed to the Meuth request and the issuance of a permit by the ACOE.

A dredging operation of the capacity proposed by Meuth would have detrimental impacts on the water quality for the citizens of Evansville, Indiana because the proximity of the operation will be 0.5 nautical miles upstream from the water intake structure for EWSU (mm 791.5) which serves as the sole water intake facility to supply water for the citizens of Evansville and Vanderburgh County, Indiana. The turbidity produced from such an operation can result in the ineffectiveness of water quality control chemicals leading to higher chemical demands and possible breakthrough of harmful bacteria in the effluent water. Numerous

contaminants settled in the benthic layer of the River can reemerge during the dredging process and present at high volumes in the water column leading to increased health advisories for the citizens of Evansville.

The chemicals used by the EWSU Water Treatment facility are subject to approval by the Indiana Department of Water Quality and require the intake water to meet certain parameters in order to be effective. Changes in turbidity, alkalinity, pH, and organics can affect coagulants used by the plant and cause increased dosages. Water that has been dredged can lead to higher suspended, colloidal, and dissolved solids and can increase the zeta potentials of the source water. The physical changes to the Ohio River water prior to intake will lead to chemical changes within EWSU's water treatment plant, creating higher demands on the water system serving Evansville and surrounding communities. Higher chemical demands can lead to potential lapses in chemical productivity resulting in decreased conventional treatment process effectiveness and higher probability of bacterial breakthrough events within the system.

With the increase in solids handling from turbid, dredged waters, disease causing bacteria such as *Cryptosporidium* and *E. Coli* can be harbored from disinfection by sediments not being removed from suspension resulting in health risks to the public (IADC, 2015). Increased turbidity alone can wreak havoc for the drinking water plant but the increase in fecal coliform bacteria during dredging processes increases the probability of enteric bacteria break through into finished drinking water. Fecal Coliforms are particularly dangerous in drinking water because they can lead to gastrointestinal illness, and no amount of fecal coliform is acceptable in drinking water (EPA, 2009). Fecal bacteria can persist in the benthic sediments of water bodies and dredging processes have shown to increase counts in the water column (Grimes, 1975).

The benthic layer of the Ohio River is a settling ground for organic and inorganic substances that can be dangerous to the public. Concentrations of barium, cadmium, chromium, copper, iron, lead, manganese, nickel, and zinc have been reported to collect in the sediments of the Ohio River and are considered to have bioaccumulated through the years (Younger and Mitsch, 1989). Elevated concentrations of these substances can easily exceed National Primary and Secondary Drinking Water Regulations when reintroduced into the water column during dredging and could cause health effects in the forms of cancers, gastrointestinal distress, inhibition of fetal development, kidney and liver disease, as well as cardiovascular problems (EPA, 2009).

Other metals such as Mercury have been found to settle into river water ways and can be dangerous to the public in methylated forms (Garbarino et al., 1995). Mercury contamination, can lead to kidney damage and is already a topic of concern in regards to sludge created within the water treatment process at the EWSU water

treatment plant. If settled mercury were to be remixed into the waterway, there is a strong likelihood that it could present itself within finished drinking water.

EWSU processes Atrazine samples from the Ohio River during the growing season on a yearly basis and has found that Atrazine can be highly prevalent in the source water at specific times during the year requiring remediation with granular activated carbon. Atrazine is not highly soluble in water and can move freely in sediment with a short half-life when introduced to natural light exposure (Hanson et al., 2020). Natural degradation of atrazine from the water ways due to light exposure can be impacted with highly turbid waters during dredging processes as light exposure becomes hindered, leading to higher risks of contamination into the water system. Atrazine contamination can damage the cardiovascular system and create reproductive problems (EPA, 2009).

The Ohio River Valley Water Sanitation Commission (ORSANCO) performed a sediments study of the Ohio River and found dioxins and polychlorinated biphenyls (PCBs) to be present in samples taken 5 nautical miles upstream and downstream of Evansville's sole water intake structure at levels exceeding the maximum contaminant levels set by the EPA (ORSANCO, 2004). Dioxins and PCBs are carcinogenic and exposure can also result in immune deficiencies (EPA, 2009). There is reason to believe that these contaminants would reenter the waterways during the dredging process and would present in effluent drinking water.

In addition to the contaminants already discussed, the research of per- and poly- fluoroalkyl substances (PFAs) is still new and ongoing but it has been found that this carcinogenic chemical has a long half-life and can settle out of suspension into benthic areas. As the Environmental Protection Agency builds upon its framework to regulate PFAs in drinking water, there needs to be added vigilance for this particular chemical that could be introduced into our system at higher concentration during a dredging operation. Routine tests from the utility already indicate the presence of perfluorooctanoic acid (PFOA) in the Ohio River which is a grave concern.

Due to the potential for safe drinking water standards not being met for the City of Evansville, there is cause for opposition against the proposed permit for Meuth by the EWSU. Meuth's proposed operation so close to the sole water treatment intake facility for the City of Evansville creates an unnecessary risk for increase in turbidity, disease causing bacteria such as *Cryptosporidium* and *E. Coli*, barium, cadmium, chromium, copper, iron, lead, manganese, nickel, zinc, mercury, atrazine, dioxins, PCBs, and PFAs. There is additionally room for concern for contaminants unforeseen in the construction of this document but still may pose risks to the utility.

For all of the foregoing reasons, EWSU opposes the issuance of a permit to Meuth by the ACOE and requests that a public hearing be held in Evansville, Indiana before any further consideration of the Permit by ACOE.

Very truly yours,

EVANSVILLE WATER AND SEWER UTILITY



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