# Technical Assistance Services *for* Communities
## DePue OU4 Proposed Plan Review Report

**Contract No.:** EP-W-13-015
**Task Order No.:** 18 OSRTI – Multi Regions
**Technical Directive No.:** R5 1.2 DePue

**Site Name:** DePue/New Jersey Zinc/Mobil Chemical Corp.
**Site Location:** DePue, Illinois

**Purpose**

In June 2016, the DePue Community Advisory Group (CAG) requested a review of the DePue/New Jersey Zinc/Mobil Chemical Corp. Superfund Site 2016 OU4 Proposed Plan by the U.S. Environmental Protection Agency's (EPA's) Technical Assistance Services for Communities (TASC) program. Independent technical and environmental consultants implement the TASC program. The report's contents do not necessarily reflect the policies, actions or positions of EPA. TASC is preparing this report for the DePue Superfund CAG.

**Site Background**

The Site is located along the north side of the Village of DePue. It includes about half of the village's land area. The site is a state enforcement-lead site, where Illinois EPA (IEPA) is the lead agency. To manage site investigations and cleanup, IEPA divided the Site into five operable units (OUs):

- OU1: South ditch contaminated sediments
- OU2: Phosphogypsum stack
- OU3: Former plant site area
- OU4: Off-site soils
- OU5: DePue Lake sediments and floodplain

**OU4-Related Concerns Identified by TASC**

TASC has provided technical comments on previous OU4 documents, including the 2014 Pilot Study and 2015 Scoping Document. Based on those prior reviews, discussions with the CAG and a full review of the 2016 Proposed Plan, TASC developed the following concerns and comments:

- Off-site disposal versus stockpiling at OU3
- Lead cleanup levels
- Arsenic cleanup levels

- Excavation depth
- Institutional controls
- Soil sampling

**Comments**

1. **Off-site disposal versus stockpiling at OU3:** The preferred alternative put forth in the Proposed Plan is Excavation and Management of Soils on the Former Plant Site Area (OU3). IEPA's reasons for selecting this alternative include that (1) it will allow for efficient remediation of OU3; (2) it is a lower cost than Alternative 3; and (3) it will pose less risk to the community and workers during remedy implementation.

   Under the Preferred Alternative, OU4 waste will be temporarily managed at the OU3 former plant site area and permanent management will be addressed as part of the final remedy for OU3. As the Proposed Plan states, "since a remedy for OU3, the former plant site, has not yet been determined, final disposition and/or use of the stockpiles has not yet been determined." Therefore, the presumption that the OU4 preferred alternative will allow for efficient remediation of OU3 appears to be unfounded. In addition, neither the impact of the additional waste added to OU3 nor the increased impact on groundwater and the OU1 South Ditch prior to OU3 remedy implementation are considered in the Proposed Plan. Furthermore, the costs associated with subsequent OU3 remediation of the additional OU4 waste are not considered in the OU4 cost assessment. TASC suggests that the CAG request a more thorough justification of the implied efficiencies and cost savings associated with the preferred alternative.

   The preferred alternative is also stated to present less short-term implementation risk because it does not include Alternative 3's additional handling and transportation of excavated contaminated materials. However, the management of the OU4 waste at OU3 will include its own additional handling under the OU3 remedy. In addition, the potential risk to the environment and communities outside of DePue is not specifically supported nor is it expected to be excessive given that "the excavated soil is expected to be non-hazardous." Furthermore, the potential for longer transport distances to increase the risk of vehicle accidents is not supported in the Proposed Plan. Although additional travel naturally increases the risk of accidents and spills, the implication in the Proposed Plan that off-site disposal is essentially not safe appears to be unfounded. TASC suggests the CAG request specific justification regarding the stated risks from off-site disposal in order for the short-term effectiveness to be appropriately assessed.

   The Proposed Plan notes that EPA will determine its support of the preferred alternative after the public comment period ends. TASC recommends that the CAG communicate its concerns directly to EPA for its consideration.

2. **Lead cleanup levels:** EPA's national health criterion specifies that no more than 5 percent of the population may exceed a blood lead level (BLL) of 10 micrograms per deciliter (µg/dL). This BLL is based on analyses by the Centers for Disease Control and Prevention (CDC) and EPA that associate BLLs of 10 µg/dL and higher with health effects in children. In January 2012, the CDC recommended a BLL of 5 µg/dL as the reference value to identify children

with elevated BLLs. CDC's recommendation is based on studies with a large number and diverse group of children with low BLLs and associated IQ deficits. EPA continues to use the BLL of 10 µg/dL as a basis for risk management decisions at Superfund sites. Therefore, the current EPA preliminary remedial goal (PRG) for lead in residential soils remains 400 milligrams per kilogram (mg/kg), based on the BLL of 10 µg/dL. TASC suggests that the CAG inquire about the responses that would occur should EPA modify its lead screening level prior to, during, or after remedy implementation.

3. **Arsenic cleanup levels:** For the DePue site, IEPA identified the applicable background concentration to be 11.6 mg/kg. However, for residential exposure, IEPA is proposing a cleanup goal of 21 mg/kg for arsenic in residential soil and garden soil.

   The arsenic PRG derivation is not described in the Proposed Plan. The 2015 Scoping Document states that the PRG derivation included exposure through direct contact with soil via incidental ingestion, dermal contact and inhalation of particulates, as well as through the consumption of vegetables and fruits grown in the potentially impacted soil. The reader is directed to Appendix G for the derivation of the 21 mg/kg arsenic soil PRG. However, Appendix G does not present detailed information about the derivation of the 21 mg/kg arsenic soil PRG. The appendix states the PRG was developed taking into account the aggregate exposures that may occur in OU4 and OU5. However, based on available information, TASC believes the following change in exposure assumption is contrary to the stated "aggregate exposure" approach. It is not likely to be an accurate representation of site-specific receptors:

   *"Therefore, residents' exposure to yard soil and house dust was assumed to occur only on days when exposure to soil and sediment in or around the Lake did not occur. Thus residential exposure frequency was assumed to be 350 days/year minus 56 days/year or 294 days/year."*

   The Proposed Plan states the "PRG is also protective of a child or adult resident in DePue that would not be exposed to Lake DePue." However, the Proposed Plan does not support this statement. TASC believes the residential arsenic soil PRG of 21 mg/kg based on aggregate exposures that may occur in OU4 and OU5 may be overestimated because it does not account for residents who may not use the lake for recreational purposes. TASC suggests the CAG request further explanation of the derivation of the 21 mg/kg arsenic soil PRG in the Scoping Document and the documentation necessary to evaluate the derivation.

   If the PRG is not based on EPA-approved risk assessment techniques, as is sometimes the case at Superfund sites, TASC suggests the CAG request the soil cleanup standard selection be fully explained in the Proposed Plan and administrative record. As reference, a proposed plan for residential cleanup was recently issued for a similar Superfund site nearby. The plan for the Matthiessen & Hegeler Zinc site in LaSalle, Illinois, clearly articulated why a value higher than background was selected and indicated where people could find further details on that decision.

4. **Excavation depth:** The Proposed Plan states institutional controls and a visual barrier *may be required* at some properties if "concentrations greater than PRGs or if potential

continuous SRM is left in place below the applicable excavation depth [18 inches]," implying that institutional controls might not be needed. However, it is already known that institutional controls will be a required component of the remedy. Although the Pilot Study data indicate that most OU4 contamination occurs within the upper 18 inches of soil, the Pilot Study did find site-related material at depths up to 72 inches below ground surface.

TASC suggests that the CAG request the rationale and justification for why the extent of institutional controls is not projected in the Proposed Plan and why a remedial alternative removing all waste is not considered. In addition, by leaving waste in place, five-year reviews will be required for OU4. TASC suggests that the CAG request an explanation for why the cost of the five-year reviews is not factored into the cost assessments.

5. **Institutional controls:** The institutional controls proposed for private properties consist of IEPA issuing a certification letter – including data and description of the institutional control – to the property owner. The letter would stipulate that the property owner notify the DePue Group if the marker barrier is encountered during excavation work, save the document in their records and show the letter to potential future owners of the property.

   TASC suggests that the CAG request further details regarding options for institutional controls and what the "description of the institutional control" would include. Examples of such a description might include specific delineations of a property and engineering maps of the locations of the marker barriers, or a more general statement that not all contamination was removed from the property.

   TASC recommends that the CAG ask how institutional controls would be developed for any properties where access is not granted, such that future buyers of the property would be informed of the potential contamination and how the property might be sampled in the future if requested by a new property owner.

6. **Soil sampling:** IEPA has approved the elimination of sampling the 0-to-1-inch and 1-to-6-inch soil intervals and has approved the 0-to-6-inch interval for future sampling. Combining the soil interval is a less conservative approach. As stated in prior TASC comments, while such an approach is allowable under EPA guidance, its appropriateness at smelter sites is questionable due to the aerial deposition of metals, primarily in the 0-to-1-inch horizon. TASC suggests that the CAG request clarification as to why the combined interval was considered at a smelter site, as well as a description of the appropriateness of the sample locations and their representativeness in making such a determination.

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