July 12, 2011

Senator Sue Rezin
103 Fifth Street
P.O. Box 260
Peru, Illinois 61354

Refer to: 0110300003 – Bureau County
New Jersey Zinc/Mobil Chemical
Superfund/Technical Reports

Dear Senator Rezin:

During the June 23rd tour of the New Jersey Zinc Superfund site in DePue, you requested periodic updates on progress made at the site. This letter serves as update #1, describing the current status of work at the site and near-term anticipated future work.

Also included is a list of the questions asked during the tour with answers that are more complete than what Illinois EPA was able to offer during the tour itself. If anyone has additional questions, they should feel free to contact Illinois EPA and we will provide an answer.

**Current Status:**

**Operable Unit 1 – South Ditch:** Future work at the South Ditch will be conducted as part of Operable Unit 5, DePue Lake, and no more work will be done under Operable Unit 1. Because of the proximity of the South Ditch to the lake and the need to coordinate final action at the South Ditch with the lake work, we decided to incorporate this work into Operable Unit 5.

**Operable Unit 2 – Phosphogypsum Stack:** Additional groundwater wells are needed in order to determine the extent of contamination in groundwater migrating from the stack area. Some of these wells are planned for south of the lake, between the lake and Illinois River. Ongoing high water conditions are delaying completion of this work.

**Operable Unit 3 – Former Plant Site Area:** Minor additional field work, including the digging of test pits in the municipal dump, will occur this summer. A Phase 2 remedial investigation report is anticipated to be submitted before the end of 2011.

**Operable Unit 4 – Off-Site Soils:** We anticipate receiving a work plan within the next eight weeks. This work plan is anticipated to encompass investigation and remediation proposals for potentially contaminated soils found in residential areas and public parks.

**Operable Unit 5 – DePue Lake:** The human health and ecological risk assessments are under review, including comments provided by Northwestern University through the Village. Illinois EPA anticipates responding to the Village before the middle of August.

**Interim Consent Order:** Illinois EPA anticipates receiving a proposal for an amendment to the order from the Office of the Illinois Attorney General within a month.

Illinois EPA anticipates providing the next update to you during the second week of October. Attendees of the June 23rd tour will be sent a copy of this and subsequent updates. Please feel free to contact Illinois EPA at any time with any questions or concerns you may have. You may reach me at 217-785-2891 or at Charlene.Falco@illinois.gov.

Sincerely,

Charlene Falco
Project Manager
Federal Site Remediation Section

cc: OJ Stoutner
Todd Koehn
Rep. Frank Mautino
Mike Zolnierowicz
Kayleen Carson
Lance Trover
JT Mackey
Reed Wilson
Eric Bryant
Nancy Loeb
Jeff Groy
Mark Travers
Joe Abel
Andy Knapp
Gail Lobin
Colleen Moynihan
Elizabeth Wallace

**New Jersey Zinc / Mobil Chemical NPL Site**
**Questions and Answers from June 23, 2011 Site Tour**

During the site tour for elected officials and their staff on June 23, a number of questions were raised. The table below contains a list of these questions and a response from Illinois EPA.

| Question | Response |
|---|---|
| Is the water discharge from the phosphogypsum stack subject to a National Pollutant Discharge Elimination System (NPDES) Permit? | CERCLA Section 121(e) provides an exemption to obtaining permits for activities that are conducted entirely on-site. However, the responsible parties must meet the substantive requirements of the permit, even though no actual permit is issued. At the phosphogypsum stack, NPDES permit IL0032182 had been assigned to ExxonMobil, but was discontinued after the New Jersey Zinc site was listed on the National Priorities List (Superfund). ExxonMobil continues to monitor the former permit's outfalls in the same manner as when the permit was in effect. A monthly report is submitted to Illinois EPA providing analytical results of the samples taken. In the rare case when exceedances have been detected, ExxonMobil has reported them, taken action to determine the cause, and corrected the situation. |
| Has an aquatic life study been done in the Clearwater Pond and treatment wetlands? | The Clearwater Pond and treatment wetlands have not been studied to evaluate the presence of aquatic life. Both features function as major components of the water control and treatment system for the phosphogypsum stack. There are no regulations that require such features to be monitored for their ability to sustain aquatic life. |
| How are the groundwater seeps sampled? Are there analytical data? | Water and sediment samples from the seeps were collected and analyzed in the laboratory for concentrations of chemicals of concern. The results can be found in the DePue Lake Remedial Investigation Report (Arcadis, July 2009). Additional water samples have been collected over the last |

| | |
|---|---|
| | year as part of the groundwater study for the former plant area. Analytical data have been included in the remedial investigation report for the lake and will be included in the investigation report for the plant area. Some data are available through the information repository at the Selby Township Library. |
| How much metal contamination does the water treatment plant remove each month? | The amount of metal contamination removed from treated water varies with the volume of groundwater and surface water that are treated each month. In May 2011, 19,913 pounds of zinc, 952 pounds of manganese, and 924 pounds of copper were removed from the water. |
| How much sludge is produced by the water treatment plant each month? | As with the volume of treated water, the amount of sludge produced will vary each month. In May 2011, 224,520 pounds of sludge was produced by the treatment process. |
| How does the amount of metals removed from the water at DePue compare with similar sites in Illinois? | The New Jersey Zinc site is the only metals smelter site in Illinois where water treatment is currently being conducted, so Illinois EPA has no basis for comparison. |
| What are the status of the risk assessments? | Risk assessments have been conducted only for operable unit 5, DePue Lake, so far. The human health risk assessment has been through two rounds of comment/response and responses to Illinois EPA's initial comments are under review by the Agency. Illinois EPA has received comments from Northwestern University on behalf of the Village and is reviewing them for possible submittal to the DePue Group. |
| Is the IDNR dredge disposal area leaching into the lake? | According to a study completed by the Illinois State Water Survey and Illinois State Geological Survey (Wehrmann, et. al. 2007), metals present in the dredged soil have leached into the groundwater; however, contaminated groundwater has not yet moved off-site. As the report concludes, "There has been sufficient time since dredging (~20 years) for the metals to have migrated to the wells just outside the [Dredged Soil Disposal Area], a distance of |

| | |
|---|---|
| | less than 50 feet, if they had been even partially mobilized." The report cautions that off-site migration could occur, due to observed downward movement and unusual geochemical conditions (e.g., frequent flooding), given enough time. |
| What is the impact of flooding on the migration of contamination? | Flooding brings in large volumes of water that can dilute existing contamination or add new contaminants to the receiving water body. Flooding also brings in sediment from other sources that eventually settle on top of existing sediment. |
| From what depth were the sediment samples collected? | Sediment samples were collected from throughout the lake and to depths up to 16 feet. The sediment samples used for risk assessment were from 0-2 feet because this is the depth interval to which people are exposed. The deeper sediment samples will be used to help with decision making later in the remedial process. |
| What contaminants were present in the deeper sediment samples? | The same metals found in the surface sediments were found in deeper sediments. Some metals exhibited concentrations that did not vary much from the surface while others showed increases in concentrations with increasing depth to about 6 to 10 feet, and then decreased with depth below 10 feet. The depth of increases in concentration (considered to be above background) generally corresponds to the lake bottom as it occurred in 1904, at the beginning of plant operations. Many sediment samples exhibited their highest concentrations at the 2-4 foot depth interval, particularly those taken closer to shore. |
| Was it reasonable to use Goose Lake as a comparison for the risk assessments? Goose Lake is downstream of DePue Lake and therefore receiving contaminants from the New Jersey Zinc / Mobil Chemical site. | Illinois EPA recognizes that Goose Lake was not the ideal reference location. The DePue Group was denied access to another lake that would have better served as a reference location. Illinois EPA does not concur that Goose Lake is receiving contaminants from the site. Detailed information about this will be provided in responses to Village comments about the lake assessments. |

| | |
|---|---|
| Was swimming considered in the human health risk assessment? | Superfund risk assessments require current and anticipated future uses to be evaluated. The decision to not evaluate swimming was due primarily to the shallow nature of the lake not being conducive to full immersion swimming, and observations of site use by the Illinois EPA project manager and Illinois Department of Natural Resources wildlife area manager. The risk assessment did evaluate wading for children and adults. |
| Would you recommend swimming in DePue Lake? | Illinois EPA would not make a recommendation to prevent swimming unless there was a significant health risk posed by environmental contamination. In DePue Lake, the contaminants of concern associated with the plant are metals. Dermal contact with sediment and surface water is not a significant exposure pathway since absorption of metals through the skin is unlikely. In addition, large quantities of sediment and surface water would have to be ingested during swimming activities to present an unacceptable risk. Inasmuch as the lake is quite shallow, connected to the Illinois River, is teeming with a variety of wildlife both small and large, and that the Village of DePue's wastewater treatment plant discharges to the lake near the park, DePue Lake may not be the most inviting lake for swimming, but those factors are not connected to the metals contamination. |
| If funding was found for dredging, how could it be tied into the environmental dredging of the lake? | This question would need to be explored during the remedial design stage of the lake remediation. If additional funding were found for dredging of lake sediments that would not need to be removed as part of the Superfund cleanup, mobilization costs could be saved by conducting this dredging immediately after the environmental dredging. The problem of sediment disposal would remain, because the Illinois River deposits 28.6 acre-feet of sediment (a one-acre stack of sediment, piled 28.6 feet high) into DePue Lake each year (Cahill & Bogner 2002). |

| | |
|---|---|
| Could dredging of the entire lake be required in a revised consent order? | Only if the DePue Group (the responsible parties) agreed. A revised consent order pertaining to the Superfund cleanup would address only those actions necessary to protect human health and the environment from contaminants associated with site operations. Under Superfund law, neither the State nor USEPA can compel the PRPs to take any action beyond what is necessary to eliminate unacceptable risk. |

References:

An Assessment of Metals Distribution and Transport in Groundwater Beneath the Diked Sediment Disposal Area, DePue Wildlife Management Area, Illinois / RR-110
Wehrmann, H. Allen; Kelley, Walton R.; Holm, Thomas R.; Carr, Keith. -- Champaign, IL: Illinois Waste Management and Research Center, 2007.

Cahill, R.A., Bogner, W.C. 2002. Investigation of Metal Distributions and Sedimentation Patterns in Lake DePue and Turner Lake. Waste Management and Research Center Research Report Series, No. 98. Champaign, IL)

ARCADIS 2009. DePue Lake Remedial Investigation Report, Volume I of II, Chicago, Illinois. July.