San Jacinto River Waste Pits Q&A

I. Sampling and Monitoring

a. What is the timeline for the newly required additional environmental sampling?

During the week of 4/4/2016, the EPA Dive Team will be placing pore water passive samplers at 14 locations in the cap. The samplers will remain for about two months to reach equilibrium. The EPA Dive Team will also be completing a full underwater inspection of the cap the same week. Also during the same week, the Potentially Responsible Parties will be installing 4 new monitoring wells in the northern waste pit area under EPA oversight. The wells will be completed in the shallow water zone beneath the pits. Other work planned for April includes surface water sampling (week of April18) at 7 locations both upstream and downstream of the site, and sediment sampling (week of April 25) at 28 locations around the cap perimeter. The surface water sampling will be repeated three times at one week intervals to allow for variability in river conditions. The sampling work will be performed by the PRPs under EPA oversight.

b. Who will review the 24/7 surveillance material?

The EPA Remedial Project Manager will review the surveillance material. The Potentially Responsible Parties will also review the material and report any events to EPA. The final details of the system's operation will be set in the final approved workplan.

c. How often will this surveillance material be reviewed?

The surveillance material will be monitored 24 hours per day and 7 days per week by the Potentially Responsible Parties. The material will also be provided to EPA within 24 hours for review on a daily basis.

d. From speaking with others who have more experience with Superfund Sites, I am told that it is typical for EPA to require the PRPs to test all groundwater wells within a 1-mile radius of the Superfund Site. I understand that Harris County is using settlement funds to test groundwater wells in specific communities but not in Highlands/McNair/Channelview.

The nearest groundwater wells in Highlands are just east of the Site on S. Main Street. A well sampled in private testing has shown detectable levels of the following dioxin congeners:

1,2,3,6, 7,8-HxCDD. 1,2,3, 7,8,9-HxCDD. 1,2,3,4,6, 7,8-HpCDD. OCDD. 1,2,3,4, 7,8-

HxCDF. 1,2,3,6, 7,8-HxCDF. 1,2,3,6, 7,8-HxCDF. 1,2,3, 7,8,9-HxCDF. 2,3,4,6, 7,8-

HxCDF. ,2,3,4,6,7,8-HpCDF. 1,2,3,4,7,8,9-HpCDF. OCDF Many of these congeners are listed in the U.S. EPA Region 6 CERCLA Docket No. 06-12-10 Administrative Settlement Agreement and Order on Consent between the U.S. EPA and International Paper Company and McGinnis Industrial Maintenance Corporation. This is a true and serious matter and we need the EPA to require the PRPs to hire an independent third party to conduct additional groundwater testing. I may not be able to share all of the data at this point but that doesn't change the fact that we are finding dioxin in many wells north, south, east, and west of the Site. The Waste Pits are in a highly residential area and our communities need the EPA to require additional testing in order to gain a conclusive idea of what's out there and what measures need to be made to protect human health and our environment. We need your help.

The ground water sampling program for any given site varies based on the conditions for that site. For example, the ground water flow direction, results of previous sampling, etc., would be considered in planning a sampling program for a site. Prior ground water sample data at the San Jacinto waste pits show that dioxin/furan is either not detectable or present at very low levels.

To confirm that this is still the case, additional ground water sampling at the site is being planned. The Potentially Responsible Parties will perform this sampling with EPA oversight. Should dioxin levels of concern be found in any of these new ground water samples, EPA will follow-up by directing additional sampling to determine the nature and extent of any ground water plumes as appropriate.

Sampling data from several wells in the community was provided to EPA. These wells did contain low levels of dioxin that were well below health based levels. An analysis of the dioxin/furan congeners in those wells showed that the type of dioxin present there was similar to the background types of dioxin, and different from the dioxin from the paper mill waste in the pits. I am attaching a summary of that "fingerprint" analysis for your information.

The ground water sampling program that Harris County is planning should provide a significant amount of new information on the ground water conditions in the area.

II. Inspection Requirements

a. What methods will the new underwater inspection requirements include? Probing? Dive Teams?

The method to be used in the next underwater inspection for the remaining 86% of the underwater cap that was not covered by the EPA Dive Team will either be manual probing or tactile (by hand) as was done during the EPA Dive Team inspection. This inspection will be done by the Potentially Responsible Parties with EPA Dive Team oversight. For inspections after that, EPA is tasking the Army Corps of Engineers to provide recommendations for additional investigation measures to be applied at the site. The Potentially Responsible Parties will then be directed to perform the appropriate inspection methods going forward, with EPA oversight.

b. When will a dive team complete an underwater inspection of the cap in entirety? Given that a 25' by 22' deficiency was discovered when only 14% of the cap was inspected by a dive team, it is extremely concerning what else could be lurking under the River's surface.

The EPA Dive Team will complete the underwater inspection of the entire cap the week of 4/4/2016.

III. December 2015 Cap Repair

a. What was different in the December 2015 cap repair than in the 2011 TCRA that allowed placement of geotextile on the northwest portion of the cap?

Geotextile was placed over most of the cap to separate the armor cap rock from the underlying paper mill waste and prevent the waste from migrating through the rock material. The geotextile was not used for the steeper sloping area on the northwest part of the cap because of concerns that the armor rock would too easily slide done the sloping geotextile. The damaged area occurred in the relatively narrow, shallow (less than 2 feet) flat sloping strip between the end of the geotextile and the start of the steeper sloping area. So, geotextile could be used in the repair area because the slope was gradual and there were no concerns about the armor rock sliding down. One final point, a mixture of gravel and finer material was mixed with the armor rock to fill the interstices between the rocks and prevent the migration of the paper mill waste through the cap, or the same function as the geotextile.

IV. Request for U.S. Army Corps of Engineers' Cap Deficiency Investigation

a. We respectfully request that the Corps investigate what risk are associated with the deficiency discovered in December of 2015. More specifically, what occurs when water enters the site and migrates/percolates through the Pits?

EPA does not believe a review of risks by the Corps is warranted at this time. Risk assessments were performed for the entire site given conditions before the placement of the cap, and those have been reviewed. Because of the size of the deficient area relative to the site (0.05% of the total cap area) any risk associated with the damaged area would be a tiny fraction of site-wide risks if exposures were to have occurred. It is believed that exposure did not occur at or near the damaged area.

Water does migrate through the geotextile and cap. However, dioxin has very low water solubility and tends to sorb onto the solid particles. The dioxin is not expected to migrate through the cap at any concentration of concern because of the geotextile and filter gravel preventing the movement of the

solid particles. Cap pore water sampling done in 2012 showed the dioxin was being contained. Having said that, the purposes of the sampling to be down in the near future is all targeted at confirming that the dioxin is being successfully contained. For example, pore water samples to check for migration through the cap, sediment samples to check for migration around the cap edge, ground water samples to check for migration out of the waste pits, and multiple surface water samples upstream and downstream to check for river impacts.

One final point, the current cap is a temporary measure to isolate the paper mill waste from the river and direct contact with persons who were formerly using the area. And regardless of what the final remedial action will be, it will take years from now to complete the final remedial action. This is because an enforceable instrument has to be created to implement the final remedial action, the design of the remedy has to be completed, construction completed, etc. This sampling and other actions will ensure that the temporary armor cap is an effective barrier to protect human health and the environment until the final remedial action is completed.

V. Community Meeting Frequency

a. Quarterly community meetings were discussed by Sam Coleman. Seeing that the new requirements for underwater inspections are quarterly, perhaps the community meetings could follow the inspections to report findings and updates to local residents.

Holding meetings following the quarterly site inspections or other significant events is appropriate and will be implemented for scheduling future community meetings and/or informal availability sessions with the communities.

EPA has held a number of community engagement meetings including Community Advisory Committee meetings since work started on the site, as well as provide Fact Sheets and Updates on site developments. Working with our many local and State partner agencies will continue to keep the public informed.

VI. Fish Tissue Testing

a. We request that the U.S. EPA require the PRPs hire a third party to conduct additional fish tissue sampling for dioxin and PCBs. We request testing of the following fish and shellfish: Blue Crab, Sheepshead, Spotted Seatrout, Sand Trout, Blue Catfish, Flathead Catfish, Hardhead Catfish, Red Drum, Striped Bass, Flounder, Black Drum, and Oyster.

The EPA is considering an aquatic tissue sampling program to check if there have been any significant changes in the tissue concentrations since the previous round of sampling that was done for the Remedial Investigation at the site. The previous fish and shellfish species sampled were selected to represent site conditions as closely as possible and were collected as they were available. A future tissue sampling event would select samples to allow identification of any trends. For your information, the species sampled previously were hardhead catfish, killifish, blue crabs, and clams.

Some of the fish requested may contain dioxins and PCBs, however, it would be impossible to link such contamination directly to the site. Fingerprinting techniques used for sediments are not reliable for tissues. Organisms metabolize dioxins and PCBs to some degree, and each species would do this differently and yield a different fingerprint. In addition, many of these fish are highly mobile with wide ranges and may have only come into contact with site-related sediments briefly as compared to others portions of the watershed.

b. If you look at Superfund Sites across the United States that are similar to the Waste Pits, the EPA has required removal of the highest concentrations of waste. There are 7 similar sites in terms of toxicity, geologic/hydrologic setting (tidally influenced waterway), fish consumption advisory, and contaminants of concern/contaminated mediums. Following remediation at some of these sites, fish consumption advisories were lifted. Texas Department of State Health services has stated that they do not have the resources to conduct fish tissue sampling.

Removal of contaminated sediment has been a remedy component at many Superfund sites. For the San Jacinto River Waste Pits Site, the final remedy must be selected based on consideration of the nine Superfund remedy selection criteria applied to the conditions at San Jacinto. Removal alternatives are included in the range of alternatives under consider-

ation.

Completion of the final remedial action for San Jacinto may result in a reduction of contamination in fish and shellfish in the San Jacinto River. However according to the information we have from the Texas Department of State Health Services and from the Total Maximum Daily Load study, the fish advisories in place for the San Jacinto River are based on dioxin and PCBs from multiple sources and the advisories may still be required even after remediation of the San Jacinto River Waste Pits is completed.

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