

Neighborhood Update

Madison Kipp Corporation Investigation & Cleanup
Wisconsin Department of Natural Resources (DNR)



Date: 03/07/2014

To keep the neighborhood well advised of progress in the investigation and cleanup at the Madison Kipp Corporation Property, DNR will release updates directly to neighbors through the DNR's website (dnr.wi.gov, search: "Kipp") and through this e-newsletter system. DNR will make efforts to notify property owners and tenants, in advance, when specific data is released that references their property or an adjacent location.

Upcoming availability session

An availability session will be held at the Goodman Community Center on March 19 from 6:00 to 8:00 p.m., where representatives from Madison-Kipp Corporation (MKC), Arcadis (MKC's environmental consultant), Wisconsin Department of Health Services (DHS) and Public Health Madison & Dane County (PHMDC) and the DNR will be available to answer questions in an open house format following a presentation by MKC.

Update on polynuclear aromatic hydrocarbon (PAH) background sampling

In 2012, the soil in the backyards of residences that share a property boundary with the MKC property were sampled for the presence of PAHs. As a result of that sampling, exceedances of the DNR's non-industrial direct contact residual contaminant levels (RCLs) were detected. MKC's environmental consultant, Arcadis, evaluated the data and determined the PAHs found in the backyards represented background concentrations. This evaluation is summarized in a document entitled, *Polynuclear Aromatic Hydrocarbons (PAHs) Evaluation* and dated January 21, 2013.

[Click here](#) to view the report summarizing Arcadis' findings.

The DNR, in consultation with both state and City health representatives determined that background soil sampling for PAHs would be necessary.

[Click here](#) to review the letter requiring the background sampling.

As mentioned in the neighborhood update from December 20, 2013, the DNR approved an amended [PAH sampling work plan](#) submitted by Arcadis on August 1, 2013. The purpose of the work was to determine the presence, concentration and chemical profile of PAHs in Madison residential areas to determine if PAHs found near the MKC facility were background and therefore typical of soil found in Madison.

The proposal included sampling soil from 24 borings for PAHs on city of Madison or right-of-way property, with the exception of two borings, which were located on the Lowell Elementary School property. The sampling was completed the week of December 16th.

The results from the sampling show that each of the soil samples contained one or more PAHs above the DNR's non-industrial direct contact residual contaminant level (RCL). Nine of the 24 samples (23, plus one duplicate) contained one or more PAH above the DNR's industrial direct contact RCL.

To evaluate the data, the report, [Polynuclear Aromatic Hydrocarbons \(PAHs\) Background Study](#), February 7, 2014, compares the background samples collected around Madison to previous residential soil samples analyzed for PAHs that were collected as part of the original site investigation in 2012; these residential soil samples were previously evaluated by Arcadis in, [Polynuclear Aromatic Hydrocarbons \(PAHs\) Evaluation](#), January 21, 2013.

The report compares 60 of the 341 residential PAH samples, collected in 2012 and analyzed in the 1/21/13 report, to the background samples that were just collected in concentration and chemical profile. The 60 residential samples, designated RES in the report, were collected from approximately 120 to 500 feet away from the approximate center of the MKC site, with an average distance of 290 feet.

A comparison of RES and background (BG) data shows the PAH concentration of both samples to be similar. A variety of statistical assessments are used in the report to support this. For example, the geometric mean for the total PAH concentration for the BG and RES data sets are 1.61 and 1.39 milligrams per kilogram (mg/kg), respectively. Rank-ordering the PAH concentration also shows overlap.

In regards to the chemical profile of the PAHs, the BG data was found to be consistent with coal and or cinder sources (coal combustion) based on the relative proportions of the various discrete PAH compounds analyzed. The RES profile matches very closely with the BG profile, indicating that they were derived from a similar source. In depth information regarding the chemical profiling of the RES data can be found in the January 21, 2013 PAH evaluation report, [Polynuclear Aromatic Hydrocarbons \(PAHs\) Evaluation](#).

Finally, the RES and BG data was tested for a trend (visual or statistical) regarding total PAH concentration versus distance from the MKC site. A Log-Log linear relationship was tested (to minimize high influence for physically distant or high concentration data point). A regression line for both was generated and the coefficient of determination (R^2) was calculated for each, and neither was close to being statistically significant. This shows that, for the data collected, no

statistically meaningful relationship was found between the concentration of PAHs and the distance to the MKC facility.

[Click here](#) to view the new report.

The DNR, along with state and local health officials, agree that the contamination is background and will not require additional remediation; click [here](#) to see the DNR's review of the new report.

The city of Madison has also released the following statement regarding the issue; it can be found [here](#).

Update on office air sampling

As mentioned in the [neighborhood update from January 15, 2014](#), MKC's consultant, Arcadis, has completed indoor air sampling in non-manufacturing areas of the MKC facility. Samples were collected from the following areas: five locations within the first floor office area; two samples in crawlspace entrances; and an ambient air sample collected outside the east side of the office building.

The samples were tested for five volatile organic compounds (VOCs): tetrachloroethene (PCE), trichloroethene (TCE), cis-1, 2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride.

The analytical results of the indoor air samples were compared to Wisconsin's non-residential indoor air action levels. The results of the crawlspace samples were compared to Wisconsin's sub-slab vapor action levels for large commercial/industrial buildings. Results for all five samples were below the non-residential indoor air action levels, with the exception of indoor air sample IA-5.

Sample IA-5, located in the northeast corner of the office building, contained a non-residential indoor air exceedence for trichloroethene (TCE). The location was re-sampled and the results were below the action levels for all five VOCs. The location will be tested again in 6 months to confirm the air quality in that area.

The DNR is currently reviewing the results to determine if further action is necessary.

[Click here](#) to view the report.

Update on groundwater remediation

The [neighborhood update from January 15, 2014](#) stated that the bedrock extraction well pump test would be conducted the week of January 20th. However, due to the low temperatures the test had to be delayed; water was freezing up the tubing used during the test. When sufficiently high temperatures are experienced, the pump test will be conducted.

The In-Situ Chemical Oxidation (ISCO) injections, also mentioned in the update from 01/15/14, will be taking place sometime in April. The DNR has granted Arcadis permission to perform the work, the letter can be found [here](#).

We would also like to share the following responses the DNR gave to questions received from the Schenk-Atwood-Starkweather-Yahara (SASY) Neighborhood Association regarding the pump test and groundwater extraction and treatment system.

1. Groundwater extraction: At what depth is the water being pumped?

Groundwater will be extracted from a single on-site well between 60-175 feet below ground surface.

2. How much will be pumped, when will it start, and for how long? What pollutants are in water, at what concentrations?

The step tests are completed and the 24 hour pump test will begin Friday noon and go to Saturday noon. Recovery water levels will be collected until Monday morning. The pump test will operate from 40-50 gallons per minute. The pollutants are volatile organics including tetrachloroethene (also known as tetrachloroethylene or PCE or PERC). The water pumped thus far has not been tested – acceptance of the water by the MMSD was based upon the data (contaminant concentrations) collected from the monitoring wells in the area of pumping well influence – this essentially represents a worst-case scenario. Once pumping starts, it is likely less contaminated, and possibly uncontaminated, groundwater will be drawn into the pumping well, thereby reducing the concentrations of contaminants that are being discharged to the treatment plant.

3. Treatment: How are the pollutants being treated before release? What levels will be allowed in the released water?

The pollutants in groundwater have not been treated before being sent to the MMSD. There will be routine testing of the water being delivered to the MMSD to determine “real” concentrations of contaminants being delivered to the treatment plant once the preliminary pump testing is completed. However, the answer to #5

demonstrates there are several options being considered for how the pumped groundwater might be handled once the system is in “full operation” mode.

4. Disposition: It appears from the Update that the pump test water is going (or has gone already) into the MMSD sanitary sewer system. Was this water treated?

The pump test water is being sent untreated to MMSD.

5. Will the post-treatment water also enter the sanitary sewage system? Will it also be routed via hose into the sewer on the bike path? Why can't it be pumped into the sanitary sewer right on MKC property?

The step test water also went to untreated to MMSD. Several options are being considered for the long term recovery water. The water could be treated and sent to surface water, the water could be re-used as noncontact cooling water or sent untreated to MMSD. No final decision has been made at this time.

6. General: What geographic area (horizontal and vertical) of on-and-off-site groundwater is this system expected to remove and treat? How will effectiveness and an end-point be determined for this process? Are other approaches to treating the groundwater being considered?

The long term recovery pumping will draw water from onsite as far as well MW17 and off site as far as well nests MP15 and MP16. The final groundwater extraction system will operate until groundwater enforcement standards are met and maintained at the following locations: MP14, MP15, MP16 and MW17.

In addition to the groundwater pumping, In situ chemical oxidation (ISCO) will be applied to the contaminated groundwater lying within the unconsolidated material on site, primarily in the area of the north parking lot. This will be done prior to the long term pumping.

Additional Resources

Where Can I Find More Information?

- Website:** dnr.wi.gov: Search “Kipp”
- Public Document Repository:** Hawthorne Public Library Information Desk
For hours and contact information visit
www.madisonpubliclibrary.org/hawthorne, 608-246-4548

Whom Can I Contact to Ask a Question or Make a Comment?

- DNR Soil/Groundwater Cleanup & General Community Concerns:** Linda Hanefeld, WDNR Team Supervisor
608.275.3310, linda.hanefeld@wisconsin.gov
- Health Effects of Contamination:** John Hausbeck, Public Health – Madison & Dane Co.
608.243.0331, jhausbeck@publichealthmdc.com