

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711



June 5, 2017

Mr. Mike Higgins
Mid-America Steel Drum Company
9750 South Chicago Road
Oak Creek, WI 53225

SUBJECT: Review of Site Investigation Work Plan,
Mid-America Steel Drum Company Inc/Kitzinger, 2529 E Norwich Avenue,
St. Francis, WI
WDNR FID #241063570; BRRTS # 02-41-560089

Dear Mr. Higgins:

On April 28, 2017, the Department of Natural Resources (DNR) received the 'Work Plan for Completion of Site Evaluation' for the site identified above. The fee specified by Wis. Admin. Code § NR 749 was paid to the DNR to provide a written review of the Work Plan. The Work Plan proposes collection of groundwater samples, installation of two additional groundwater monitoring wells, the collection of a soil sample at each of the two locations, and the installation of a piezometer. The work plan does not address the source area, groundwater contamination below the water table, offsite migration of contamination, and does not describe how the proposed sampling relates to the current investigation. As the proposed scope of work will not result in a complete site investigation the Work Plan cannot be approved. A revised work plan must be provided that will propose field investigation activities intended to complete the site investigation as defined by Wis. Admin. Code § NR 716. The plan must be based on an assessment of available sampling data and other pertinent information about the site. The following items must be considered when developing a work plan.

- 1) Describe how the relevant items listed under Wis. Admin. Code § NR 716.07 were evaluated to ensure that the scope and detail of the proposed field investigation are appropriate to the complexity of the site.
- 2) Wis. Admin. Code §§ NR 716.11(3)(a) to (d) defines the purpose of the field investigation which are described below. When preparing a revised work plan ensure that the proposed investigation will achieve these objectives.
 - a. Determine the nature, degree, and extent (both areal and vertical) of pollution.
 - i. Groundwater samples collected from SPM-4 indicates that significant groundwater contamination is present below the water table; the extent of this contamination is not defined. Additional sampling activities to define the extent of groundwater contamination (including the vertical extent as required by Wis. Admin. Code § NR 716.11(5)(f)) must be proposed. This will likely require the installation of additional piezometers.
 - ii. The soil sample collected at KGP-1 indicates that a surface release may have occurred in this area. Additional soil sampling will need to be conducted in the

vicinity of this boring to assess whether groundwater contamination can be attributed to a surface spill originating here, or if other sources need to be considered. The horizontal extent of soil contamination in this part of the property must be further investigated.

- iii. It appears that the extent of shallow groundwater at the subject property is estimated based on sampling data collected from KMW-1, KMW-2, KMW-3, and SMW-3 and their relative locations on the site. However, the DNR would not be able to assess the accuracy of this estimate until the source of the contamination has been identified and onsite groundwater flow is determined. Additional groundwater wells located between SMW-3 and the three perimeter wells will likely be required to accurately determine the extent of contamination.
 - iv. The need for offsite investigation must be determined by considering whether contamination on your property is migrating offsite. Wis. Admin. Code § NR 716.11(4) also requires that the extent of any off-site impacts be investigated. You should include available offsite sampling data, including data collected at the down gradient 'D F Inc' site at 2517 E Norwich Avenue, as part of your evaluation as to whether you must propose offsite investigation.
- b. Provide sufficient information to evaluate remedial options for addressing the contamination. The need for remediation has not been discussed, or how the information obtained by proposed site investigation activities will be useful for determining a remedial strategy.
 - c. Determine hydraulic conductivity.
 - d. Estimate the mass of contamination in the source area. It is not clear how the source area(s) has been identified or defined. Explain whether the current investigation has identified the source of contamination on this property and how will the proposed sampling activities help to define or identify known or potential source area(s). Per Wis. Admin. Code § NR 716.11(5)(e), the extent of contaminated soil, saturated material, and groundwater in the source area must be defined.
- 3) As required by Wis. Admin. Code § NR 716.09(2)(f)8, discuss how the proposed sampling activities will relate to the results of the previous investigation. Explain how the newly obtained sampling data will be used to define the degree and extent of contamination and choose a remedial action (which could include natural attenuation).
 - 4) Wis. Admin. Code § NR 716.09(2)(f)2 requires that when sample locations cannot be specified in advance within a work plan that a description of the strategy that will be used to determine these locations in the field be provided. The 'Work Plan for Completion of Site Evaluation' proposed the installation of a piezometer at a location based on groundwater sample analysis and an evaluation of site conditions. This does not sufficiently describe what data would be used to locate the piezometer, where it could potentially be installed, to what depth it would be advanced, or how the piezometer would aid in completing the investigation. More detailed information must be provided regarding how samples locations will be chosen before the DNR could approve a work plan that proposes sampling at unspecified locations.

- 5) The screening criteria listed in "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" (DNR Publication RR-800) should be considered when assessing the vapor intrusion risk posed by chlorinated volatile organic compounds. This may require you to consider whether buildings located off the source property have a potential risk of vapor intrusion that would need to be investigated in order to satisfy the requirement of Wis. Admin. Code § 716.11(5)(g).
- 6) The DNR cannot determine the adequacy of proposed field investigation activities if available data is not provided to the Department and if it is not clear how that data was assessed to develop the scope of work. In order to support the proposed work plan, and to comply with 716.15(4)(g), soil boring logs, abandonment forms, and monitoring well construction and development forms must be provided to document drilling activities conducted by Key Engineering Group, LTD., in 2013. It is also strongly recommended that cross sections and isoconcentration maps are included in the revised work plan to document known site conditions and to justify proposed sampling activities. These figures will be required as part of a site investigation report as outlined in Wis. Admin. Code § 716.15(4)(c) and 716.15(4)(d).
- 7) While developing a work plan consider that if natural attenuation is expected to address residual contamination eight consecutive quarterly groundwater sampling events are typically required to demonstrate an attenuating groundwater plume to satisfy closure requirements.

Please provide a revised work plan that proposes activities intended to define the degree and extent of contamination, investigate the source area, identify necessary remedial actions, and otherwise address the above comments within 45 days of this response. If you have any questions regarding any of the above items, please contact me at (608) 266-0941 or by email at paul.grittner@wisconsin.gov.

Sincerely,



Paul Grittner
Contaminated Material Management Specialist
Remediation & Redevelopment Program

cc: Kurt McClung, Key Engineering Group, LTD., 735 North Water Street, Suite 510, Milwaukee, WI 53202 (electronic)
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