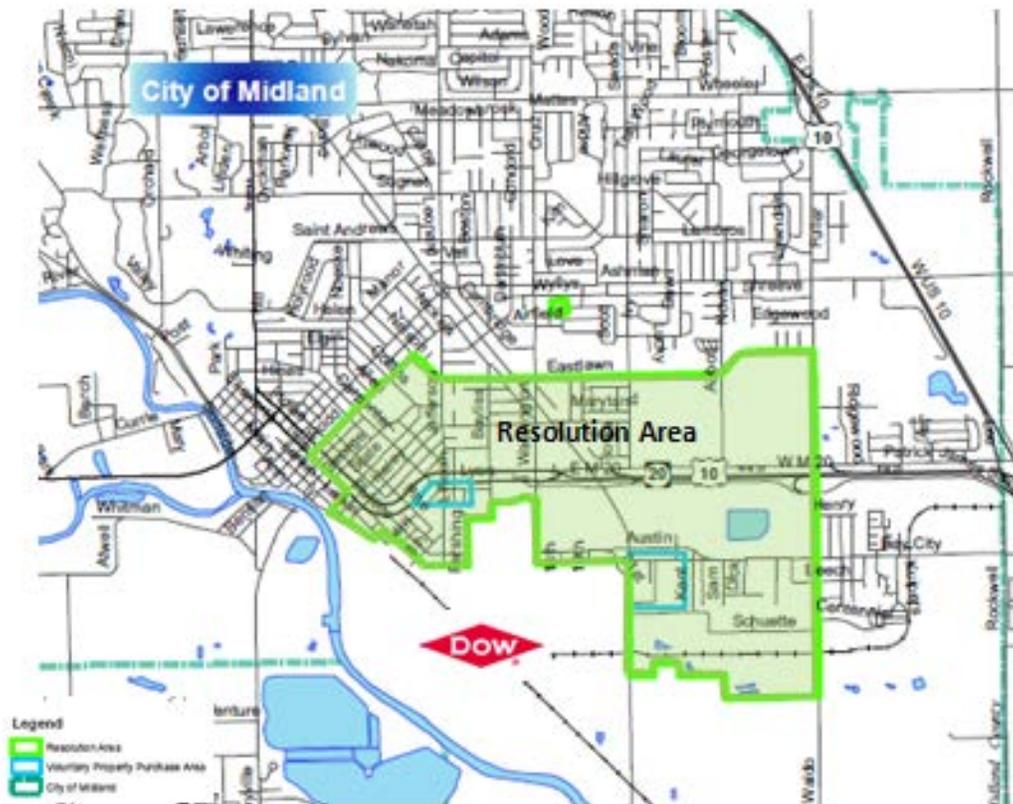




**FACT SHEET**  
**Cleanup of Midland Area Soils**  
**Updated March 17, 2014**

- **Background:**
  - Dioxins are a family of chemicals comprising 75 different types of dioxin compounds and 135 related compounds called furans. They are unintended by-products of certain industrial processes and also occur due to activities such as backyard burning of household trash.
  - Dioxin contamination in the city of Midland is the result of airborne emissions from historic waste management practices at The Dow Chemical Company Michigan Operations (Dow). Emissions released into the air from incinerators and Dow's manufacturing operations contained dioxins, which ended up in the soil downwind of the plant. Dioxin emissions from Dow have decreased dramatically over the years as processes were modernized. Dow's rotary kiln incinerator now enables 99.999 percent efficiency in eliminating chemical emissions.
  - Soil samples collected in the city of Midland indicate that, in some locations, there is dioxin contamination above the State's generic residential cleanup level and above the site-specific Action Level of 250 parts per trillion (ppt) for properties in the city of Midland.
- Dow is implementing cleanup in the city of Midland in accordance with a Midland Area Soils Work Plan (Work Plan) approved by the Michigan Department of Environmental Quality (DEQ) in accordance with Dow's Hazardous Waste Management Facility Operating License to address historic releases of dioxin and other chemicals to Midland soils in defined residential areas. Figure 1 shows the Initial Boundary of Resolution Area. The final boundary of the Resolution Area will be based on the results of the remediation design sampling program.
- The Work Plan has three main components:
  - **A Midland site-specific dioxin Action Level of 250 ppt.** This Midland-specific soil cleanup level is used as the Action Level for determining whether residential or residential-like property will need a cleanup. Local data was used to determine this Action Level.
  - **A soil sampling approach.** The soil sampling methodology is described in the Work Plan and will be used to determine which properties in identified neighborhoods require cleanup.
  - **A remediation approach.** The cleanup will consist of the removal of 12 inches of soil and replacement with clean soil including a new lawn and landscaping. Specific details, including preservation of trees and shrubs, will be worked out with each property owner.
- **Additional Information:**
  - Property with 250 ppt or less is not considered contaminated under Michigan law with respect to releases from Dow.
  - Properties outside the final Resolution Area are presumed to be below 250 ppt.
  - The remediation schedule for properties in the Resolution Area will be designed to minimize the time between sampling of a property and the completion of a cleanup for a property that has data above the Action Level.
  - Click [timeline](#) to see details of the schedule and work for the Midland Area Soils Corrective Action.

**Figure 1 – Overview and Initial Boundary of Resolution Area**



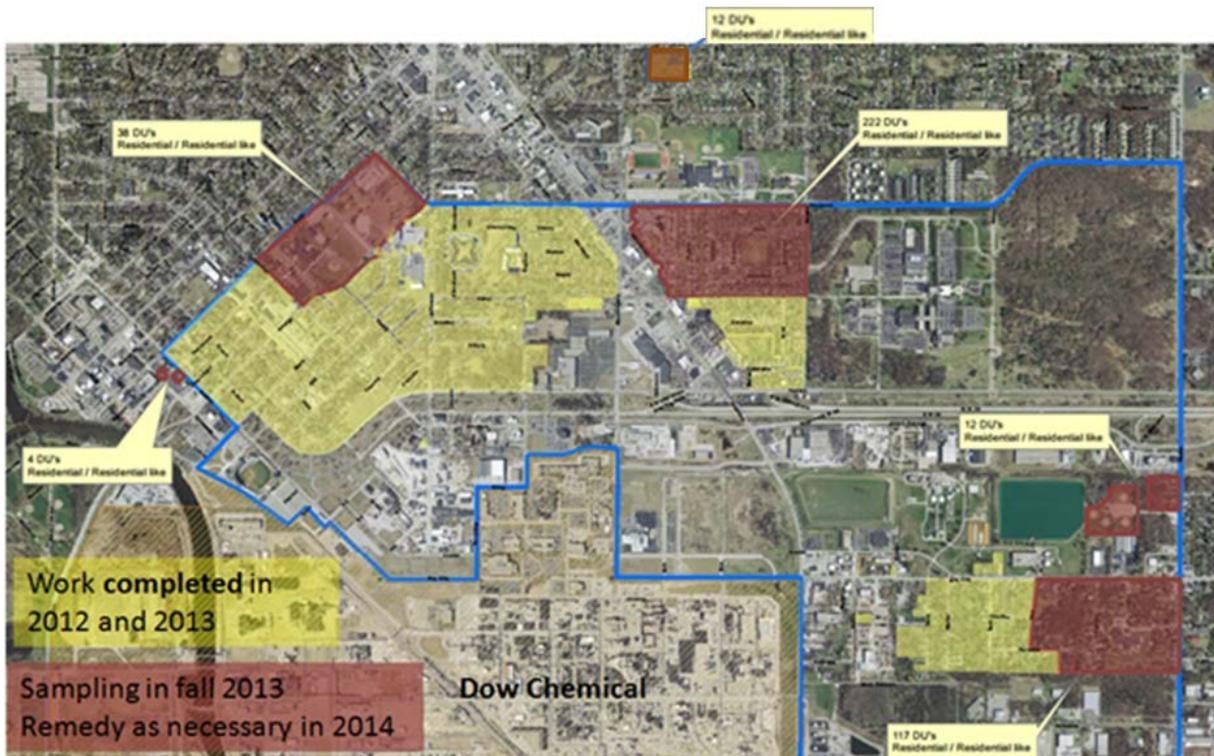
**Update from 2012 and 2013 Sampling Results:**

- Since the spring of 2012, Dow has been systematically conducting sampling and remediation, as necessary, of residential and residential-like properties in the Resolution Area. This work has been going well and Dow is significantly ahead of schedule.
- To date, Dow has requested access to sample 1424 residential or residential-like properties. Dow has received permission from property owners to sample 1374 of these properties (about 96% of the properties where Dow has requested property access). About 50 property owners have declined to have sampling conducted at their properties or have not responded to requests for access. Dow will retain the obligation to sample and, if necessary, remediate these properties.
- During the first two years of work, Dow has sampled 1345 properties. Table 1 summarizes this work. To date, 116 of these properties have been determined to exceed the 250 ppt Action Level and 98 of these properties were cleaned up during the 2012 and 2013 field seasons. Remaining properties that exceed the Action Level will be cleaned up in 2014. Once the properties have been cleaned up, the property owners receive letters from the DEQ and Dow documenting the completion of cleanup activities. The DEQ and Dow also provide confirmation letters to owners of properties that were sampled but do not require remediation.
- Two properties in residential or residential-like use that are located in close proximity to the Dow plant site have been cleaned up without sampling.
- Areas where work has been completed to date are shown in yellow on Figure 2 below.

- In the fall and winter of 2013, Dow requested access for sampling at an additional 397 residential and residential-like properties (Phase 6). These 2014 “Early Kickoff” sampling areas are shown on Figure 2 with dark shading and a label. These areas represent the remaining residential and residential-like properties in the initially defined Resolution Area. Samples have been analyzed over the winter to determine which properties exceed the 250 ppt Action Level. The owners of properties that exceed the Action Level will be offered cleanup that will begin in the spring of 2014.
- The evaluation of the initial boundary of the Resolution Area is expected to be completed in 2014.
- The DEQ and Dow are discussing the possibility of extending sampling to some commercial properties in the Resolution Area.

<b>Table 1 - Summary of Progress to Date (2/15/2014)</b>	
<b>Access Agreements</b>	<b>96%</b> (1374 out of the initial 1424 residential/residential-like properties in the Resolution Area)
<b>Sampling Progress</b>	<b>98%</b> (1345 out of 1374 properties with access agreements)
<b>Properties Above Action Level</b>	<b>9%</b> (116 out of 1345 properties sampled)
<b>Remedy Action Progress to Date</b>	<b>84%</b> (98 out of 116 properties that tested over the action level of 250 ppt TEQ)

**Figure 2 – Map of Progress to Date**



DU is “Decision Unit”