

## **Attachment D**

# **Soil Sampling Protocol and Consent To Enter Private Property**

## **MDEQ Draft Protocol for Soil Sampling in the Tittabawassee River Flood Plain**

Soil samples are to be collected from residential properties located downstream of Midland. The purpose of the sampling is to better determine the extent of dioxin/furan contamination in the soil and to support the activities of the Michigan Department of Community Health (MDCH). The sample locations were selected in collaboration with staff from the MDCH. The number of sample locations at each residential property generally varies between three to four sample locations. Initially, one sample location is chosen from each of the following portions of the residential property:

- The portion located outside of the floodplain.
- The portion that is the slope or gradient leading down to the river shoreline.
- The portion that is located in the frequently flooded portion of the property.

The following factors may increase or decrease the numbers of samples collected from a residential property:

- The size of the residential property and/or the relative size of the specific portion of the residential property as discussed above.
- The presence of any unique topographic or other physical features on the property.
- Any specific property use that would result in additional risk of dioxin exposure.
- Undisturbed and non-forested areas are preferred. Any areas where fill is known to have come from outside the floodplain onto the property will not be sampled.

As site conditions allow, soil samples are collected from each of four soil layers at each sample location, these being 0-1", 0-3", 3-6", and 12-15". Soil samples are manually collected using a hand auger. Multiple auger holes are necessary at each location to provide a sufficient quantity of soil to fill sample jars for analysis. At each soil layer, soil from the multiple auger holes will be composited and homogenized in a disposable metal pan prior to transfer to the sample containers. Vegetative cover will be removed prior to sample collection. Any soil remaining after all sample jars are filled is placed back into the auger holes at the end of sample collection activities. Auger holes are brought back to grade using available soil and supplemented as necessary with commercially purchased potting soil. The hand auger is decontaminated prior to sampling the next soil layer or soil sample location, and sample pans, spoons, and gloves are disposed. The soil type, unusual characteristics of the sample location and time of collection are recorded as field notes. Soil samples are packed in ice for transport to Triangle Laboratories for analysis of dioxin and furan compounds (USEPA Method 1613). This procedure is repeated for each sample depth at all sample locations.

Global positioning system coordinates are established for each sample location for mapping purposes and to re-locate sample sites, if necessary. Based on the information that has been collected to date, the position of a sample location within the estimated floodplain appears to be an important factor to consider when determining the likelihood that a property, or portion of a property, is contaminated with dioxin.

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