



Evaluation of Ground Water Quality at Licensed Construction & Demolition Debris (C&DD) Landfills

This Fact Sheet provides a general description of the process Ohio EPA will be using to determine whether C&DD landfills may be affecting ground water quality.

Background

The purpose of monitoring ground water near landfills is to detect any negative impacts to water quality and to evaluate potential impacts to human health, safety and the environment. Ohio Revised Code (ORC) 3714.071 provides a board of health or the director, as applicable, the opportunity to conduct ground water monitoring at C&DD facilities. Any wells which may be added, or additional ground water monitoring done under this program, would supplement the ground water monitoring that the facility operator is otherwise required to do by rule. Depending on site specific situations, some C&DD facilities are not required to conduct any ground water monitoring, so any wells added or ground water monitoring done under this program also is intended to identify whether those facilities may be impacting ground water. This initiative by Ohio EPA to provide analysis of the condition of ground water near C&DD facilities is important because, under the current rule, facilities operators are not required to determine the concentration of possible contaminants, and their extent and rate of migration within the ground water, unless ordered to do so by the Director of Ohio EPA.

The Process

1. Initial Evaluation to Determine Ohio EPA's Schedule

Ohio EPA has completed an initial evaluation for each C&DD landfill using "priority criteria" and available data in order to rank the priority for Ohio EPA's evaluation of each facility. Ohio EPA used these priority criteria scores in order to establish a schedule for completion of preliminary hydrogeologic investigation (pHGI) reports, which is described in more detail below. The priority criteria are a numerical system based on the following six site-specific criteria:

- a. Public health – the proximity of the landfill to existing public or private drinking water supplies;
- b. Critical drinking water resources – whether the landfill is over a Sole Source Aquifer;
- c. Aquifers susceptible to contamination – whether the landfill is over an unconsolidated aquifers capable of sustaining a yield of 100 gallons per minute over a 24-hour period, karst limestone areas, sand and gravel quarries, or limestone or sandstone quarries;
- d. Conditions conducive to ground water contamination – whether there is limited separation distance between the waste and the top of the underlying aquifer/zone of saturation;
- e. Engineering controls – whether the landfill has a liner and leachate collection system; and
- f. Indications of ground water contamination – whether ground water contamination is indicated in existing ground water monitoring data and whether potential C&DD-derived constituents (or contaminants) in ground water are hazardous or non-hazardous.

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The initial evaluation may be updated periodically as new information became available. Many of the criteria are based on site-specific conditions that cannot be changed, but new information on the presence or absence of nearby water supply wells or changes to information about the liner or leachate collection system are examples of changes that may affect the score and scheduling. Generally, those facilities with a higher score will be scheduled first. Scores range from 0 to 260, with 310 as the highest possible score. Almost 50% of the C&DD landfills have scores of 100 or greater.

2. [Developing the preliminary Hydrogeologic Investigation \(pHGI\) Report](#)

The next step is for Ohio EPA to develop a pHGI report for each landfill. The pHGI is simply a review of existing information regarding the hydrogeology, ground water monitoring system, site history and related engineering at the facility. The draft pHGI considers the following:

- The location of the facility;
- Engineering controls at the facility;
- The facility's history of compliance;
- Water quality reports from documented leachate releases;
- A description of the existing ground water monitoring network;
- Whether the ground water monitoring system at the facility meets the rule requirements;
- Whether there is an adequate ground water monitoring network at the facility;
- Whether the sampling is adequate to determine whether the landfill may be affecting ground water quality;
- Ground water quality reports and existing data, and an analysis of that data;
- All available existing data on the quality of the ground water at or surrounding the facility.
- Whether there is an indication of a release to ground water;
- Whether the landfill may be affecting ground water quality.

3. [Scheduling \(pHGI\) Report Development](#)

The Agency has already completed pHGI reports where the priority scores were greater than 200 and has shared the information with the specific facility operators. For the remaining facilities, Ohio EPA has the following process:

- a. Initial contact - Beginning in April of 2016, Ohio EPA will let each owner/operator know when the pHGI work for their specific facility is scheduled to start approximately two weeks prior to commencing work.
- b. Site visit - After initial contact, an Agency representative will contact the owner/operator and the licensing authority when beginning work on the pHGI and schedule a site visit to do a walkover of the facility. Agency staff will also research site information at the local health department regarding ground water quality and leachate quality, and gather additional publically available information. The Agency would like to receive the owner/operator's input on the pHGI, so if an owner/operator has relevant information to share, it should be submitted to Ohio EPA as soon as possible following the site visit.
- c. Draft pHGI - Ohio EPA will share the draft of the pHGI with the owner/operator and the licensing authority to solicit comments on its content. After addressing any relevant comments, Ohio EPA

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will contact the owner/operator and the licensing authority and discuss the appropriate next steps as discussed below.

4. [Discussion of Next Steps with Operator](#)

Based on the information gathered while completing the pHGI report, including information shared by the licensing authority and the owner/operator, Ohio EPA will discuss with the owner/operator and the licensing authority the following potential next steps:

- ***Potential Outcome 1: No indication of a release to ground water—owner/operator continues ground water monitoring***

In instances where Ohio EPA does not find an indication of a release to ground water, the owner/operator will be notified in writing and the operator will then continue ground water monitoring in accordance with OAC Rule 3745-400-10 and other applicable law.

- ***Potential Outcome 2: Ground water monitoring network does not meet rule requirements, and either additional sampling, or wells required under the rule.***

In instances where Ohio EPA determines the network does not meet the requirements of OAC Rule 3745-400-10, the owner/operator will be notified in writing and will be required to upgrade the ground water monitoring system in order to comply with the rule.

- ***Potential Outcome 3: Additional work needed to determine whether there are impacts - Ohio EPA or the owner/operator conducts ground water monitoring***

In instances where there is an existing ground water monitoring system that meets the rule requirements, but additional ground water data is needed or appropriate to determine whether the facility may be affecting ground water quality, Ohio EPA may conduct the ground water monitoring in accordance with ORC 3714.071.

The statute specifically allows the board or director to pay for the installation of ground water monitoring wells, ground water sampling, and the laboratory analysis of the ground water samples at a C&DD landfill that are in addition to minimum requirements specified in rule. However, neither the board of health or the director are allowed to pay any costs for the installation of ground water monitoring wells, ground water sampling, or the laboratory analysis of ground water samples that is required by the C&DD rules.

It is also possible that in certain situations, an operator could be reimbursed if it installs wells and samples them in lieu of Ohio EPA. That overall process is described in a fact sheet on DMWM's website entitled, "[Reimbursement Process to C&DD Facility Operators Using Funds Collected in Accordance with ORC 3714.071.](#)" Ohio EPA will contact the owner/operator and the health district to discuss the Agency's plans for completing ground water activities at the landfill.

- ***Potential Outcome 4: Landfill may be affecting ground water quality - owner/operator conducts ground water assessment***

In instances where Ohio EPA determines that the facility may be affecting ground water quality, Ohio EPA will request the owner/operator to submit an assessment plan for conducting a ground water assessment in accordance with OAC Rule 3745-400-10. Once a plan is submitted, Ohio EPA may request additional information or schedule a meeting to discuss the details of the plan. Once the owner/operator finalizes an acceptable assessment plan meeting the requirements of the rule, Ohio EPA will approve the plan as an "order" in the form of a director's letter requiring the owner/operator to implement the assessment plan. If Ohio EPA and the owner/operator cannot

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reach an agreement on an acceptable assessment plan, Ohio EPA will issue Director's Final Findings and Orders requiring the owner/operator to implement an assessment plan for conducting a ground water assessment in accordance with OAC Rule 3745-400-10 and other applicable law.

Opportunity for Continued Dialog

The Agency views this C&DD landfill ground water initiative as an opportunity for open discussion and continuous dialog with landfill operators, their ground water consultants, as well as local approved health districts.

For more information regarding ground water quality at C&DD Landfills please visit the "Ground Water" tab on the Ohio EPA C&DD Webpage at epa.ohio.gov/dmwm/Home/CDD.aspx

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