Ohio Administrative Code

Rule 3745-535-810 Groundwater sampling and analysis procedures and background groundwater quality.

Effective: March 1, 2026

(A) The groundwater monitoring program shall include consistent sampling and analysis procedures and statistical methods that are protective of human health and the environment and that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells installed in accordance with rules 3745-535-800 to 3745-535-860 of the Administrative Code. The owner or operator shall ensure the following are included in the groundwater detection monitoring plan, groundwater quality assessment monitoring plan, compliance monitoring plan, and corrective measures plan, as applicable:

(1) A written sampling and analysis plan, documenting the sampling and analysis procedures that will be used in the groundwater monitoring program.

(2) The statistical method selected by the owner or operator in accordance with paragraphs (A) and (B) of rule 3745-535-815 of the Administrative Code.

(3) The statistical determination of a statistically significant increase over background for a monitoring parameter in accordance with paragraph (C) of rule 3745-535-815 of the Administrative Code.

(4) The number of samples collected in accordance with paragraph (F) of this rule.

(5) Submission of groundwater and statistical analysis in accordance with paragraph (G) of this rule.

(B) A sampling and analysis plan shall at a minimum include a detailed description of the equipment, procedures, and techniques to be used for the following:

(1) Measurement of groundwater elevations.

(2) Detection of immiscible layers.

(3) Collection of groundwater samples, including the following:

(a) Well evacuation.

(b) Sample withdrawal.

(c) Sample containers and handling.

(d) Sample preservation.

(4) Performance of field analysis, including the following:

(a) Procedures and forms for recording raw data and the exact location, time, and facility-specific conditions associated with the data acquisition.

(b) Calibration of field devices.

(5) Decontamination of equipment.

(6) Chain of custody control, including the following:

(a) Standardized field tracking reporting forms to record sample custody in the field prior to and during shipment.

(b) Sample labels containing all information necessary for effective sample tracking.

(7) Field and laboratory quality assurance and quality control, including the following:

(a) Collection of duplicate samples during each sampling event.

(b) Collection of field and equipment blanks if non-dedicated sampling equipment is used.

(c) Collection of trip blanks.

(d) The number of duplicate samples, field blanks, trip blanks, and equipment blanks to adequately demonstrate the accuracy of the analysis results.

(8) The identification of well maintenance problems encountered during routine sampling of the wells and the process to assure that necessary maintenance is performed.

(C) Groundwater elevations.

(1) The owner or operator shall ensure the measurement of groundwater elevations are as follows:

(a) Groundwater elevations are measured in all wells to be sampled that round of sampling prior to any purging and sampling.

(b) The total depth of the monitoring wells are measured in all wells at a minimum annually for those wells that do not have a dedicated pump installed and whenever maintenance allows and the dedicated pump is removed for service or replacement for wells with a dedicated pump.

(c) Groundwater elevations in all wells monitoring the same units or portion of units of a solid waste landfill are measured within a period of time short enough to avoid temporal variations in groundwater flow, which could preclude an accurate determination of groundwater flow rate and direction, but within a period of time not to exceed twenty-four hours.

(2) The owner or operator shall semiannually determine groundwater flow directions in the uppermost aquifer system and all significant zones of saturation monitored.

(3) Potentiometric maps shall be constructed using the collected groundwater elevation measurements.

(D) Except as specified in paragraph (E) of this rule, the owner or operator shall establish background groundwater quality by analyzing groundwater samples collected from hydraulically upgradient wells for each of the monitoring parameters or constituents contained in the groundwater

monitoring program.

(E) The owner or operator may base the background groundwater quality on sampling of wells that are not hydraulically upgradient if either of the following occur:

(1) Hydrogeologic conditions do not allow the owner or operator to determine which wells are upgradient.

(2) Sampling of other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by upgradient wells.

(F) Sample number. The owner or operator shall ensure the number of samples collected to establish background groundwater quality data is consistent with the appropriate statistical procedures determined pursuant to paragraphs (A) and (B) of rule 3745-535-815 of the Administrative Code.

(G) Submission of results. All groundwater elevation, sample analysis, and statistical analysis results generated in accordance with rules 3745-535-805 to 3745-535-860 of the Administrative Code shall consist of at a minimum the following and be submitted to Ohio EPA not later than seventy-five days after sampling the well:

(1) Lab data sheets.

(2) Field and laboratory quality assurance/quality control (QA/QC) data.

(3) Chain of custody and sample receipt forms including preservation methods.

(4) Data summary tables.

(5) Statistical analysis results and summary tables, including the results from any test for normality conducted on the semiannual sampling event data being submitted.

(6) The potentiometric maps specified in paragraph (C)(3) of this rule.

(7) A description of the analysis methods used, including method detection limits, and practical quantitation limits for the constituents analyzed.