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3745-510-235

Gas sources and gas migration pathways.

The report on the hydrogeologic investigation identified in rule 3745-510-100 of the Administrative Code shall include clearly labeled and tabbed pages for the section titled "Gas Sources and Gas Migration Pathways," and shall include the following:

(A) A report of the following:

- (1) A description of naturally occurring gas sources and potential gas migration pathways at the facility, including the following:
  - (a) All naturally occurring sources of explosive gas.
  - (b) All naturally occurring sources of hydrogen sulfide.
  - (c) All naturally occurring potential pathways at the facility for gas migration and interconnections between pathways. This description shall be in both narrative and map form.
- (2) A description, based on publicly available information and any encounters during the site investigation, of gas sources and potential gas migration pathways built by humans within one thousand feet of the facility, including the following:
  - (a) Oil wells, gas wells, and landfills.
  - (b) Roads, railroads, underground utilities, mines, field tiles, storm sewers, water lines, electric cables, and pipelines.
- (3) A description of the site investigation activities, including field testing and laboratory testing, directly related to identifying, locating, and characterizing the naturally occurring gas sources and potential gas migration pathways.
- (4) Summary logs and drawings appropriate for the subsurface investigatory method used to identify, locate, and characterize the naturally occurring gas sources and potential gas migration pathways.
- (5) Cross sections that clearly show the identification, extent, and characteristics of the following:
  - (a) Consolidated stratigraphic units.
  - (b) Unconsolidated stratigraphic units.
  - (c) The phreatic surface.

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(6) A cross section of the property boundary identifying the potential gas migration pathways that are naturally occurring and the potential gas migration pathways that are built by humans.

(7) Summary of results from field tests and laboratory tests used to identify, locate, and characterize the naturally occurring gas sources and potential gas migration pathways. If a field or laboratory test result was not used, include reasoning for excluding the result from consideration.

(B) Results from the site investigation including the following:

(1) A brief description of each field test method and each laboratory test method used to characterize the geologic and hydrogeologic properties for the purpose of investigating the naturally occurring gas sources and potential gas migration pathways.

(2) Information and results from each field test that was conducted, including completed, failed, or incomplete results. An explanation shall be provided for any test result that was not used. The results shall include the following information:

(a) Quality assurance and quality control testing conducted by the laboratory to verify the accuracy and precision of testing methods and equipment.

(b) The results of data validation.

(c) The characterization of each specimen used in each test.

(d) Intermediate data produced during testing.

(e) The final results of each test.

(3) All figures, drawings, or references used and marked to show how they relate to the characterization of the geologic and hydrogeologic properties.

(4) Logs, including field notes and other pertinent information, from each subsurface investigatory site used to obtain information, data, or samples utilized to identify, locate, and characterize the naturally occurring gas sources and potential gas migration pathways. As appropriate for the method, logs shall include the following:

(a) A description of where information, data, or samples were obtained, including, as appropriate, the following:

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- (i) The location of each site with northings and eastings referenced to the facility grid system or referenced to the following if a facility grid system was not established:
  - (a) Horizontally to the "1927 North American Datum," "1983 North American Datum," or "State Plane Coordinate System."
  - (b) Vertically to the "1929 or 1988 North American Vertical Sea Level Datum" as identified on the USGS 7.5 minute (topographic) map.
- (ii) The surface elevation of each site to the nearest tenth of a foot.
- (iii) The depth interval of all samples collected including those submitted for laboratory testing.
- (b) Information related to the subsurface investigatory method, including, as appropriate, the following:
  - (i) The diameter, or width and length at the surface, of the boring.
  - (ii) The total depth of the boring.
  - (iii) The total depth of the well.
  - (iv) The top-of-casing elevation used for water level measurement reference surveyed to the nearest hundredth of a foot.
  - (v) The screened interval depth and elevation.
  - (vi) A description of all construction materials and the elevations at which all construction materials were placed including at a minimum the following:
    - (a) Sand pack.
    - (b) Grout.
    - (c) Well seal.
- (c) The top and bottom elevations for each consolidated and unconsolidated stratigraphic unit.
- (d) Information or data on the characteristics, composition, and features for each consolidated and unconsolidated stratigraphic unit including the following:

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- (i) For unconsolidated stratigraphic units, the textural classification using the Unified Soil Classification System (USCS), as described in ASTM D2487 as described in rule 3745-500-03 of the Administrative Code.
  - (ii) For consolidated stratigraphic units, the rock type (such as limestone, dolomite, coal, shale, siltstone, or sandstone).
  - (iii) Color.
  - (iv) Moisture content.
  - (v) Stratigraphic features (such as layering, interbedding, and weathering).
  - (vi) Fracturing, jointing, and other types of secondary porosity, and any visible accessory minerals (such as pyrite, calcite, or gypsum).
  - (vii) Lateral extent.
  - (viii) The depth to saturation.
  - (ix) The depth to the static water level in the boring.
- (e) A notation if any gas or odors were encountered.