

**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)**  
**Act 451 of 1994**

**324.20120e Response activity providing for venting groundwater; definitions.**

Sec. 20120e.

(1) Subject to other requirements of this section, a person may demonstrate compliance with requirements under this part for a response activity providing for venting groundwater by meeting any of the following, singly or in combination:

(a) Generic GSI criteria, which are the water quality standards for surface waters developed by the department pursuant to part 31. The use of surface water quality standards or variances shall be allowable in any of the cleanup categories provided for in section 20120a(1).

(b) A variance from the surface water quality standards as approved by the department under part 31. A variance shall be used only if the variance is requested by a person performing response activities with respect to venting groundwater.

(c) Mixing zone-based GSI criteria established under this part, which are consistent with part 31. The use of mixing zone-based GSI criteria shall be allowable in any of the categories provided for in section 20120a(1) and (2) and shall be allowable for criteria based on chronic-based or acute-based surface water quality criteria.

(d) Site-specific criteria established under section 20120b or this subdivision or a combination of both. The use of mixing zones established under this part may be applied to, or included as, site-specific criteria. Biological criteria may be used as site-specific criteria. If biological criteria are used, then sentinel wells shall be used for a period as needed to determine if the biological criteria may be exceeded due to future increased mass loading to the surface water from the venting plume. Numerical evaluations of analyses of the samples from the sentinel wells shall be performed in connection with this determination.

(e) An ecological demonstration under subsection (9).

(f) A modeling demonstration under subsection (10).

(2) Whole effluent toxicity testing shall not be required or be a criterion or be the basis for any criteria under subsection (1) for venting groundwater except for samples taken at the GSI.

(3) The pathway addressed by GSI criteria under subsection (1) shall be considered a relevant pathway when a remedial investigation or application of best professional judgment leads to the conclusion that a hazardous substance in groundwater is reasonably expected to vent to surface water in concentrations that exceed the generic GSI criteria. The factors to be considered in determining whether the pathway is relevant include all of the following:

(a) Whether there is a hydraulic connection between groundwater and the surface water in question.

(b) The proximity of surface water to source areas and areas of the groundwater contaminant plume that currently, or may in the future be expected to, exceed the generic GSI criteria.

(c) Subject to subsection (23)(g), whether the receiving surface water is a surface water of the state as that term is defined in part 31 and rules promulgated under that part.

(d) The direction of groundwater movement.

(e) The presence of artificial structures or natural features that would alter hydraulic pathways. This includes, but is not limited to, highly permeable zones, utility corridors, and seawalls.

(f) The mass of hazardous substances present at the facility that may affect groundwater.

(g) Documented facility-specific evidence of natural attenuation, if any.

(h) Whether or not a sewer that has an outfall to surface water has openings in the portion of the sewer where the sewer and the groundwater contaminant plume intersect that allows the groundwater contaminant plume to migrate into the sewer. If it can be demonstrated that the sewer is sufficiently tight to prevent inflow to the sewer where the groundwater contaminant plume intersects the sewer or if the sewer is otherwise impervious, based on accepted industry standards, to prevent inflow from groundwater into the sewer at that location, then the GSI pathway with respect to the sewer is not relevant and shall not apply.

(4) For purposes of determining the relevance of a pathway under subsection (3), both of the following apply:

(a) GSI monitoring wells are not required in order to make a determination if other information is sufficient to make a judgment that the pathway is not relevant.

(b) Fate and transport modeling may be used, if appropriate, to support a professional judgment.

(5) A person may proceed under section 20114a to undertake the following response activities involving venting groundwater:

(a) Evaluation activities associated with a response activity providing for venting groundwater using alternative monitoring points, an ecological demonstration, a modeling demonstration, or any combination of these. If a person who is liable under section 20126 decides not to take additional response activities to address the GSI pathway based on alternative monitoring points, an ecological demonstration, a modeling demonstration, or a determination

under subsection (14), or any combination of these, the person shall notify the department and request department approval. A notification and request for approval under this subdivision shall not be considered an admission of liability under section 20126.

(b) Response activities that rely on GSI monitoring wells to demonstrate compliance under subsection (1)(a).

(c) Except as provided in subdivision (a) and subsection (6), response activities that rely on monitoring from alternative monitoring points to demonstrate compliance with subsection (1)(a) if the person submits to the department a notice of alternative monitoring points at least 30 days prior to relying on those alternative monitoring points that contains substantiating evidence that the alternative monitoring points comply with this section.

(d) Response activities implemented by a person who is not liable under section 20126 that rely on a modeling demonstration, or rely on an ecological demonstration, or a combination of these, to demonstrate compliance with subsection (1)(a).

(6) A person shall proceed under section 20114b to undertake response activities that rely on monitoring from alternative monitoring points or rely on an ecological demonstration, a modeling demonstration, or a combination of these, to demonstrate compliance with subsection (1)(a) if 1 or more of the following conditions apply to the venting groundwater:

(a) An applicable criterion is based on acute toxicity endpoints.

(b) The venting groundwater contains a bioaccumulative chemical of concern as identified in the water quality standards for surface waters developed pursuant to part 31 and for which the person is liable under this part.

(c) The venting groundwater is entering a surface water body protected for coldwater fisheries identified in the following publications:

(i) "Coldwater Lakes of Michigan," as published in 1976 by the department of natural resources.

(ii) "Designated Trout Lakes and Regulations," issued September 10, 1998, by the director of the department of natural resources under the authority of part 411.

(iii) "Designated Trout Streams for the State of Michigan," as issued under order of the director of the department of natural resources, FO-210.08, on November 8, 2007.

(d) The venting groundwater is entering a surface water body designated as an outstanding state resource water or outstanding international resource water as identified in the water quality standards for surface waters developed pursuant to part 31.

(7) A person shall proceed under section 20114b to undertake response activities that rely on monitoring from alternative monitoring points, or rely on an ecological demonstration, or rely on a modeling demonstration or that use mixing zone-based GSI criteria, or any combination of these, as applicable, to demonstrate compliance with subsection (1)(b), (c), (d), (e), or (f).

(8) Alternative monitoring points may be used to demonstrate compliance with subsection (1) if the alternative monitoring points meet the following standards:

(a) The locations where venting groundwater enters surface water have been reasonably identified to allow monitoring for the evaluation of compliance with criteria. This identification shall include all of the following:

(i) Identification of the location of alternative monitoring points within areas of venting groundwater.

(ii) Documentation of the approximate boundaries of the areas where the groundwater plume vents to surface water. This documentation shall include information about the substrate character and geology in the areas where groundwater vents to surface water.

(iii) Documentation that the venting area identified and alternative monitoring points include points that are reasonably representative of the higher concentrations of hazardous substances present in the groundwater at the GSI.

(b) The alternative monitoring points allow for venting groundwater to be sampled at the GSI. Devices used for sampling at alternative monitoring points may be beyond the water's edge and on top of or into the sediments, at the GSI.

(c) Sentinel monitoring points are used in conjunction with the alternative monitoring points for a period as needed to assure that any potential exceedance of an applicable surface water quality standard can be identified with sufficient notice to allow additional response activity, if needed, to be implemented that will address the exceedance. Sentinel monitoring points shall include, at a minimum, monitoring points upland of the surface water body.

(9) An ecological demonstration may be used to demonstrate compliance with subsection (1) if the ecological demonstration meets the following:

(a) The boundaries of the area where the groundwater plume vents to surface water are documented as provided in subsection (8)(a)(ii).

(b) Sampling data for the area described in subdivision (a), when compared to other reasonably proximate areas of that surface water body, do not show an impairment of existing or designated uses for that surface water body caused by, or contributed to by, the venting plume, or do not show that the venting plume will cause or contribute to impairment of existing or designated uses of that surface water body in a situation where the area of the surface water immediately outside the venting area of the venting plume shows an impairment of existing or designated uses.

(c) Sampling data for the area described in subdivision (a) do not show exceedances of applicable criteria under subsection (1) in the surface water body caused by, or contributed to by, the venting plume.

(d) The sampling data in subdivisions (b) and (c) may be data on benthic organisms, fish, and the water column of the surface water, which data may be in the form of an in situ bioassay or a biological community assessment.

(e) Sentinel monitoring in on-land wells is performed for a period as needed to show that the groundwater plume is not likely to migrate to the surface water body and vent in the future in a mass amount and rate that would impair the existing or designated uses for that surface water body, or cause or contribute to exceedances of surface water quality standards in the surface water body.

(10) A modeling demonstration may be used to demonstrate compliance with subsection (1) if the modeling demonstration meets all of the following:

(a) The modeling methodology is generally recognized as a means to model venting groundwater plumes or is an innovative method that is scientifically justifiable.

(b) The results of the modeling show that the venting plume at the GSI complies with the applicable criteria under subsection (1) or supports the ecological demonstration, as applicable.

(c) The model is supported by site-specific information and appropriate field measurements.

(11) If alternative monitoring points or an ecological demonstration or a modeling demonstration or a combination of these is used for the response activity and sentinel wells are installed, a contingency plan for potential additional response activity may be required.

(12) If a person intends to utilize mixing zone-based GSI criteria under subsection (1)(c) or site-specific criteria under subsection (1)(d) in conjunction with alternative monitoring points, an ecological demonstration, or a modeling demonstration, or a combination of these, the person shall submit to the department a response activity plan that includes the following:

(a) A demonstration of compliance with the standards in subsection (6), (7), or (8), as applicable.

(b) If compliance with a mixing zone-based groundwater-surface water interface criterion under subsection (1) (c) is to be determined with data from the alternative monitoring points, documentation that it is possible to reasonably estimate the volume and rate of venting groundwater.

(c) A site-specific monitoring plan that takes into account the basis for the site-specific criterion or mixing zone criterion.

(13) If there is an exceedance of an applicable GSI criterion based on acute toxicity at a compliance monitoring point applicable at a particular facility, then action shall be taken as follows:

(a) A person that is implementing the response activity at that facility and that determines that there is an exceedance shall notify the department of that condition within 7 days of obtaining knowledge that the exceedance is occurring.

(b) If the person described in subdivision (a) is a person liable under section 20126, then that person shall, within 30 days of the date on which notice is required under subdivision (a), do 1 or more of the following:

(i) Commence response activity to address the exceedance at the applicable compliance monitoring point and submit a schedule to the department for the response activity.

(ii) Submit a notice of intent to the department to propose an alternative monitoring point or perform an ecological demonstration or perform a modeling demonstration or a combination of these. The notice shall include a schedule for submission of the proposal.

(iii) Submit a notice of intent to the department to propose a site-specific criterion or a mixing zone criterion under sections 20120a and 20120b. The notice shall include a schedule for submission of the proposal.

(c) The department may approve a schedule as submitted under subdivision (b) or direct reasonable modifications in the schedule. The department may grant extensions of time for actions required under subdivision (b) and for activities in an approved or department-modified schedule if the person is acting in good faith and site conditions inhibit progress or completion of the activity. The department's decision to grant an extension or impose a schedule modification shall consider the practical problems associated with carrying out the response activity and the nature and extent of the exceedances of applicable GSI criteria.

(14) Response activity beyond evaluations shall not be required if venting groundwater has no effect or only a de minimis effect on a surface water body. A determination under this subsection may be based on mass flow and rate of groundwater movement calculations. A person evaluating a venting plume that determines that the plume has no effect or only a de minimis effect on a surface water body shall notify the department of the determination. The department may, within 90 days after receipt of the determination, disapprove the determination. If the department does not notify the person that it disapproves the determination within the 90-day period, then the person's determination shall be final.

(15) If a person has controlled the source of groundwater contamination and has demonstrated that compliance with GSI criteria developed under this part is unachievable, that person may file a technical impracticability waiver request with the department. The technical impracticability waiver shall document the reasons why compliance is unachievable. The department shall respond to the waiver within 180 days with an approval, request for additional information, or denial that provides a detailed description of the reasons for denial.

(16) Natural attenuation of hazardous substances in venting groundwater upgradient of the GSI is an acceptable form of remediation and may be relied upon in lieu of any active remediation of the groundwater. Natural attenuation may be occurring by way of dispersion, diffusion, sorption, degradation, transformative reactions, and other methods.

(17) A permit shall not be required under part 31 for any venting groundwater contamination plume that is addressed under this section.

(18) Wetlands shall be protected for the groundwater surface water pathway to the extent that particular designated uses, as defined by part 31, which are specific to that wetland would otherwise be impaired by a groundwater contamination plume venting to surface water in the wetland.

(19) If a groundwater contamination plume is entering a sewer that discharges to surface water, and the GSI pathway is relevant, all of the following apply:

(a) If the groundwater enters a storm sewer that is owned or operated by an entity that is subject to federal municipal separate storm sewer system regulations and a part 31 permit for the discharges from the system, the contaminated groundwater entering the sewer is subject to regulation by the entity's ordinance regarding illicit discharges, but the regulation of the contaminated groundwater shall not prevent the use of subdivision (b) or other provisions of this section to determine the need for response activity under this part.

(b) All of the following apply:

(i) The compliance monitoring point may be a groundwater monitoring well, if proposed by the person performing the response action, or that person may choose another point for measuring compliance under this subparagraph.

(ii) A mixing zone may be applied that accounts for the mixing which occurs in the receiving surface water into which the sewer system discharges.

(iii) Attenuation that occurs in the sewer system prior to the sewer system outfall to surface water shall be considered.

(iv) The compliance point is at the sewer system outfall to surface water, which shall account for any applicable mixing zone for the sewer system outfall.

(v) Monitoring to determine compliance may be performed at a location where the contaminated groundwater enters the sewer or downstream from that location but upstream of the sewer outfall at the surface water, if practicable and representative. Appropriate back calculation from the compliance point to the monitoring point may be applied to account for mixing and other attenuation that occurs in the sewer system before the compliance point. As appropriate, such a monitoring point may require another monitoring point in the sewer system upstream from the area where the contaminated groundwater enters the sewer. Upstream sampling in the sewer may be performed to determine source contribution.

(vi) The contaminant mass flow, and the rate and amount of groundwater flow, into the sewer may be considered and may result in a determination that the migration into the sewer is de minimis and does not require any response activity in addition to the evaluation that leads to such determination.

(c) Factors in subdivision (b) may be considered and applied to determine if an illicit discharge is occurring and how to regulate the discharge.

(20) If the department denies a response activity plan containing a proposal for alternative monitoring points, an ecological demonstration, or a modeling demonstration, or a combination of these, the department shall state the reasons for denial, including the scientific and technical basis for the denial. A person may appeal a decision of the department in a response activity plan or no further action report regarding venting groundwater as a scientific or technical dispute under section 20114e.

(21) This section is intended to allow a person to demonstrate compliance with requirements under this part for a response activity involving venting groundwater, and, for this purpose, this section shall be given retroactive application and shall be available for use by such person. A person performing response activity involving venting groundwater under any judgment, consent judgment, order, consent order, or agreement that was entered prior to the effective date of the 2012 amendatory act that amended this section may pursue, alter, or terminate such response activity based on any provision of this section subject to any necessary entry or approval by the court in a case of a judgment, consent judgment, or court order or any necessary amendment procedure to amend an agreement. The department shall not oppose use of any provision of this section as grounds to amend an agreement or for a court to modify or terminate response activity obligations involving venting groundwater under a judgment, consent judgment, or court order. A person performing response activity involving venting groundwater under any remedial action plan, interim response plan designed to meet criteria, interim response action plan, or response activity plan that was approved by the department prior to the effective date of the 2012 amendatory act that amended this section may submit an amended plan to the department for approval that pursues, alters, or terminates response activity based on any provision of this section. The department shall not oppose use of any provision of this section in approving an amended plan.

(22) A person that undertakes response activity under subsection (4) or that takes action under subsection (13) (b) shall not be considered to be making an admission of liability by undertaking such response activities or taking such action.

(23) As used in this section:

(a) "Alternative monitoring points" means alternative monitoring points authorized under subsection (8).

(b) "Ecological demonstration" means an ecological demonstration authorized under subsection (1)(e).

(c) "GSI" means groundwater-surface water interface, which is the location at which groundwater enters surface water.

(d) "GSI monitoring well" means a vertical well installed in the saturated zone as close as practicable to surface water with a screened interval or intervals that are representative of the groundwater venting to the surface water.

(e) "Mixing zone-based GSI criteria" means mixing zone-based GSI criteria authorized under subsection (1)(c).

(f) "Modeling demonstration" means a modeling demonstration authorized under subsection (1)(f).

(g) "Surface water" does not include any of the following:

(i) Groundwater.

(ii) Hyporheic zone water.

(iii) Water in enclosed sewers.

(iv) Water in drainage ways and ponds used solely for wastewater or storm water conveyance, treatment, or control.

(v) Water in subgrade utility runs and utility lines and permeable fill in and around them.

**History:** Add. 2010, Act 228, Imd. Eff. Dec. 14, 2010 ;-- Am. 2012, Act 190, Imd. Eff. June 20, 2012

**Compiler's Notes:** Former MCL 324.20120e, which pertained to recalculation of cleanup criteria, was repealed by Act 603 of 2006, Eff. Jan. 3, 2008. Enacting section 1 of Act 190 of 2012 provides: "Enacting section 1. R 299.5716 of the Michigan administrative code is rescinded."

**Popular Name:** Act 451

**Popular Name:** Environmental Remediation

**Popular Name:** Environmental Response Act

**Popular Name:** NREPA