

LCB File No. R189-08

**PROPOSED REGULATION OF THE
STATE ENVIRONMENTAL COMMISSION**

SEC File No. P2008-19

EXPLANATION – Matter in *italics* is new; matter in brackets ~~[omitted material]~~ is material to be omitted

AUTHORITY: §§1-12, NRS 445A.425

A REGULATION relating to clarifications and additions to corrective action requirements for soil and groundwater after the release of a hazardous substance, hazardous waste, or regulated substance.

Section 1. Chapter 445A of NAC is hereby amended by adding thereto the provisions set forth as sections 2, 3, and 4 of this regulation.

Sec 2. *The Division may require a facility owner or operator to submit and undertake a plan and schedule for additional site characterization to collect information not submitted as part of the assessment of site conditions under Section 5 of this regulation if the information is necessary to:*

- 1. Evaluate the efficacy of any proposed corrective action;*
- 2. Establish appropriate soil or groundwater action levels; or*
- 3. Support the issuance of an exemption, waiver, or determination that corrective action is not necessary under Sections 7 and 10 of this regulation.*

Sec 3. *In determining whether to accept soil action levels under Section 9 of this regulation that are based on land use assumptions other than a standard residential exposure scenario, to approve an exemption from soil corrective action under subsection 2 of Section 7 of this regulation, or to approve an exemption to groundwater corrective action under Section 10 of this regulation that is based on the controlled use of groundwater, the Director may consider activity and use limitations created by the facility owner or operator through an environmental covenant, acceptable to the Division, under Nevada Revised Statute 445D.*

Sec 4. *Soil and groundwater that is contaminated with any amount of a hazardous substance, hazardous waste, or regulated substance and which is removed through a*

corrective action or an assessment of site conditions under Sections 2 and 5 of this proposed regulation must be managed in a manner approved by the Division.

Sec 5. 445A.2269 is hereby amended to read as follows:

445A.2269 1. Except as otherwise provided in this section, if the owner or operator of a facility, or his designated agent, is required to give notice of a release pursuant to NAC 445A.345 to 445A.348, inclusive, the Division shall require the owner or operator to conduct an assessment of the conditions at the site of the facility, including an assessment of the condition of the soil or water, or both, to determine the extent and magnitude of the contamination.

~~[(3-)]~~ **2.** An assessment conducted pursuant to subsection 1 must:

(a) ~~[(Identify)]~~ *Characterize* the relevant pathways specifically related to the site that affect public health and the environment, *to include information on all release sources, migration pathways and rates for the released substances, and potential receptors;* ~~[(and)]~~

(b) Rely on field sampling methods and laboratory analytical methods, if utilized, that are acceptable to the Division; and

~~[(b)]~~ (c) Be approved by the Division.

~~[(2-)]~~ **3.** The Division shall not require an owner or operator to conduct an assessment ~~[(of the soil required by)]~~ *pursuant to* subsection 1 if *documentation is submitted and approved by the Division or follow-up reporting is sufficient to demonstrate:*

(a) ~~[(H)]~~ *The level of contamination of the soil does not exceed the action level established for that soil pursuant to NAC 445A.2272 because of the actions taken by the owner or operator of the facility pursuant to NAC 445A.22695;*

(b) The release does not meet the reportable quantities contained in NAC 445A.345 to 445A.348, inclusive, as originally reported;

(c) The release has not impacted environmental media that is subject to corrective action in accordance with NAC 445A.226 to 445A.22755, and the release has been controlled to prevent its migration to these environmental media in the future; or

(d) The notification was required as a result of a confirmed release from an underground storage tank and the conditions indicating a confirmed release have not resulted in the contamination of soil in excess of 3 cubic yards by a regulated substance and that appropriate actions have been taken to prevent the continuation of any release.

4. The Division may at such times as are reasonably required to determine whether an assessment of site conditions shall be required pursuant to subsection 1:

(a) Question the owner or operator about any matter relating to the release, or

(b) Require the owner or operator to provide, in writing, any information or records relating to the release or damage caused by the release.

Sec 6. 445A.22695 is hereby amended to read as follows:

445A.22695 *1.* An owner or operator shall immediately take any action necessary to mitigate and abate imminent and substantial hazards to public health or safety created by the release of a hazardous substance, hazardous waste, or a regulated substance, *including, but not limited to:*

(a) Removal of as much of the hazardous substance, hazardous waste, or regulated substance from a leaking container as is necessary to prevent further release to the environment;

(b) A visual inspection of any aboveground releases or exposed belowground releases and prevention of further migration of the released substance into surrounding soils and groundwater;

(c) Reduce or eliminate hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation or site investigation; and

(d) Initiation of free product removal as soon as practicable and in consultation with the Division.

2. The Director may waive any provisions of NAC 445A.226 to 445A.22755, except those that establish action levels for soil, groundwater or surface water, and require an owner or operator to take immediate action after the release of a hazardous substance, hazardous waste or a regulated substance or upon discovery of contaminated media if the release or contamination:

(a) Has an actual or imminent impact on groundwater; or

(b) Is hazardous to public health and safety.

Sec 7. NAC 445A.227 is hereby amended to read as follows:

NAC 445A.227 *1.* Except as otherwise provided in ~~[NAC 445A.22715]~~ *subsection 2 of this section*, the Director ~~[may]~~ *shall* require an owner or operator to take corrective action if the release of a hazardous substance, hazardous waste or a regulated substance contaminates soil and

the level of contamination exceeds the action level established for the soil pursuant to NAC 445A.2272.

2. In determining whether corrective action is required *or may be terminated once corrective action has been undertaken*, the Director ~~[shall]~~ *may* consider *an evaluation of site conditions showing that contamination remaining in place does not pose a current or potential threat to human health and the environment. The evaluation must rely on acceptable methodologies and calculations to include consideration of the following factors, without limitation:*

- (a) The depth of any groundwater;
- (b) The distance to irrigation wells or wells for drinking water;
- (c) The type of soil that is contaminated;
- (d) The annual precipitation;
- (e) The type of waste or substance that was released;
- (f) The extent of the contamination;
- (g) The present and potential use for the land;
- (h) The preferred routes of migration;
- (i) The location of structures or impediments;
- (j) The potential for a hazard related to fire, vapor or an explosion; and
- (k) Any other information specifically related to the site which the director determines is appropriate.

Sec 8. NAC 445A.2271 is hereby amended to read as follows:

NAC 445A.2271 An owner or operator who is required to take corrective action pursuant to NAC 445A.227 shall submit to the Division a plan and schedule for completing the corrective action. Except as otherwise provided in ~~[NAC 445A.22715]~~ *section 6 of this proposed regulation*, the owner or operator shall not take any corrective action until the plan and schedule are approved by the Division.

Sec 9. NAC 445A.2272 is hereby amended to read as follows:

NAC 445A.2272 1. For the purposes of NAC *445A.22695 to 445A.2271* ~~[445A.227 to 445A.22715]~~, inclusive, the action level for soil must be established at the following levels:

(a) The background concentration or volume of a hazardous substance, hazardous waste or regulated substance set forth in the permit issued to the owner or operator by the Division *or in a study approved by the Division*.

~~(b) [The presence of petroleum substance in soil in excess of 100 milligrams per kilogram. The level of concentration must be measured using Analytical Method 8015, adopted by the Environmental Protection Agency and modified for petroleum hydrocarbons, as it exists on October 3, 1996, or an equivalent method approved by the Division.~~

~~(c) If the potential for human exposure or damage to the environment from contaminated surface water or groundwater is the primary pathway of concern, the presence of a hazardous substance, hazardous waste or a regulated substance in soil at the level of concentration for that substance or waste listed in the Toxicity Characteristics Leaching Rule, 40 C.F.R. Part 261.24, as it existed on October 3, 1996. The level of concentration must be measured using Analytical Method 1311, adopted by the Environmental Protection Agency, as it existed on October 3, 1996, or an equivalent method approved by the Division.~~

~~(d) If inhalation, ingestion or dermal exposure is the primary pathway of concern or an applicable level of concentration is not listed in the Toxicity Characteristics Leaching Rule,]~~ The presence of a hazardous substance, hazardous waste or a regulated substance in the soil at an appropriate level of concentration that is based on the protection of *waters of the state*, public health and safety *for all identified routes of potential exposure*, and the environment. The appropriate level of concentration must be determined by the Division using the Integrated Risk Information System, adopted by the Environmental Protection Agency, as it existed on October 3, 1996, or any *other* equivalent method *or peer-reviewed source of information* chosen by the Division.

2. Except as otherwise provided by this subsection, if more than one action level for soil may be established using the criteria set forth in subsection 1, the most restrictive action level must be used. In no case may the action level be more restrictive than the background concentration of the hazardous substance, hazardous waste or regulated substance.

3. The State Environmental Commission hereby adopts by reference:

~~[(a) Analytical Method 8015, adopted by the Environmental Protection Agency, as it existed on October 3, 1996. A copy of the method may be obtained from the Environmental Protection Agency, at a cost of \$5.~~

~~(b) The Toxicity Characteristics Leaching Rule, 40 C.F.R. Part 261.24, as it existed on October 3, 1996. A copy of the rule may be obtained from the United States Government Printing Office, Washington, D.C. 20402, at a cost of \$28.~~

~~(c) Analytical Method 1311, adopted by the Environmental Protection Agency, as it existed on October 3, 1996. A copy of the method may be obtained from the Environmental Protection Agency, at a cost of \$5.~~

~~(d)~~ The Integrated Risk Information System, adopted by the Environmental Protection Agency, as it existed on October 3, 1996. A copy of the system is available on-line through the Internet and may be obtained from an Integrated Risk Information System Representative at (301) 496-6531, free of charge.

Sec 10. NAC 445A.22725 is hereby amended to read as follows:

NAC 445A.22725 1. Except as otherwise provided in this section, the Director may require an owner or operator to take corrective action if the release of a hazardous substance, hazardous waste or a regulated substance contaminates groundwater and the level of contamination exceeds the action level established for the groundwater pursuant to NAC 445A.22735.

2. An owner or operator may submit a written request to the Director for an exemption from the provisions of subsection 1, *either prior to the initiation of corrective action or subsequent to the termination of remediation in accordance with NAC 445A.22745 (Section 11 of this proposed regulation)*. The request must be accompanied by such supporting information as the Director may require. The Director may grant the request if:

(a) *The following conditions have been satisfied:*

(1) The sources of groundwater contamination have been identified and controlled, or there is shown to be no remaining source based on the age and nature of the release;

(2) The magnitude and extent of groundwater contamination is known; and

(3) Data are available from at least three years of quarterly monitoring, or another timeframe approved by the Division based on the magnitude of contamination, and do not show a trend of increasing concentrations in the body of the contaminant plume;

(b) A demonstration is made that natural attenuation will be sufficient either to reduce contaminant concentrations below action levels or to prevent migration of contaminants to

receptors or another point of demonstration as established by the Division at concentrations above action levels. The demonstration:

(1) Must rely on analytical or numerical models of diffusion and dispersion or other calculations of physical or chemical processes of retardation or degradation acceptable to the Division; and

(2) May rely on:

(a) Known mechanisms of biological degradation and evidence gathered from the site of metabolic activity and the presence of the appropriate redox potential supportive of biological degradation of the contaminant;

(b) Arguments of degradation based on the presence of daughter products; or

(c) Any other factors appropriate for risk based decision making; and

c) The groundwater contaminated by the release is not a source of drinking water and is not likely to be a source of drinking water *in the future* because:

1) It is economically or technologically impractical to *recover the water for drinking because of the depth or location of the water or to render the water fit for human consumption; or*

2) *Legal or institutional controls or restrictions are in place on the use of the groundwater based on its depth, the presence of a municipal system, or the use of an environmental covenant.* ~~[-~~

~~—(1) Recover the water for drinking because of the depth or location of the water; or~~

~~—(2) Render the water fit for human consumption; or~~

~~(b) The total concentration of dissolved solids in the groundwater is more than 10,000 milligrams per liter and the groundwater is not reasonably expected to be a source of drinking water.]~~

3. The Director shall not require an owner or operator to take corrective action pursuant to subsection 1 to achieve the remediation standard required by the Division if the owner or operator files with the Division a study which is acceptable to the Division and which demonstrates that, based on a review of available technology and the prohibitive cost of the corrective action, it is not feasible to achieve the required remediation standard.

Sec 11. NAC 445A.22745 is hereby amended to read as follows:

NAC 445A.22745 1. ~~{After any corrective action required by NAC 445A.22725 is begun, the owner or operator shall ensure that the contaminated groundwater is monitored for not less than 1 year to determine the level of contamination in the water. The Division shall determine the frequency of the monitoring, but in no case may the Division require monitoring more frequently than once each month.}~~

~~2.}~~ After any corrective action required by NAC 445A.22725 *involving groundwater treatment* is ~~{completed}~~ *begun*, the owner or operator may terminate remediation of the release *after submitting written documentation and receiving written concurrence from the Division*, if:

(a) An assessment of the contaminated groundwater is conducted and indicates that the level of contamination is consistently below the action level for that water established pursuant to NAC 445A.22735; ~~{or}~~

(b) After the groundwater is treated for not less than 1 year *and remedial system design and operation have been shown to be optimal and in accordance with best engineering and environmental practice or satisfies performance criteria approved by the Division*, the concentration of dissolved constituents in the water, measured monthly, fits a curve that is substantially linear and approaches zero slope at the final portion of the curve. The curve must be established using the following equation:

$$C = C_f + C_o e^{-kt}$$

Where: “C” means the concentration of the contaminant at “t” in micrograms per liter.

“C_f” means the final concentration of the contaminant in micrograms per liter which the curve approaches asymptotically.

“C_o” means the difference between the final concentration of the contaminant and the concentration of the contaminant at time zero in micrograms per liter.

“e” means the base of the natural log or 2.718.

“t” means the time measured in days.

“k” means the decay constant; *or*

(c) A test of asymptotic concentrations detailed in subsection (b) is not appropriate, as determined by the Division based on the nature of the treatment being employed or on site conditions which limit the effectiveness of available treatment, and the owner or operator

satisfies termination conditions set forth in an approved corrective action plan or an approved amendment to a corrective action plan.

2. After any remediation is terminated in accordance with subsection 1 of this section, the owner or operator shall ensure that the contaminated groundwater is monitored for not less than 1 year to determine the level of contamination in the water. The Division shall determine the frequency of the monitoring, but in no case may the Division require monitoring more frequently than once each month.

Sec 12. NAC 445A.22715 is hereby repealed.

~~[NAC 445A.22715 The Director may waive the provisions of NAC 445A.227, 445A.22705, and 445A.2271 and require an owner or operator to take corrective action immediately after the release of a hazardous substance, hazardous waste or a regulated substance that contaminates soil if the release:~~

- ~~1. Has an actual or imminent impact on groundwater; or~~
- ~~2. Is hazardous to public health and safety.]~~