

**Title 10 – DEPARTMENT OF NATURAL RESOURCES
Division 26 –Petroleum and Hazardous Substance Storage Tanks
Chapter 2 – Underground Storage Tanks – Technical Regulations**

PROPOSED RULE

10 CSR 26-2.079 Corrective Action Plan

PURPOSE: This rule explains when a corrective action plan is required and sets forth requirements regarding the information the plan must contain and how risk-based target levels are determined when corrective action is by excavation.

(1) Owners and operators shall develop a corrective action plan for a release from a storage tank if one or more of the following conditions apply on the site or on an off-site property on to which chemicals of concern from the storage tank release have migrated:

(A) The representative concentration, or, for surface soil in a residential setting, the maximum concentration of one or more chemicals of concern for one or more complete exposure pathways exceeds applicable target levels; or

(B) The risk level associated with one or more chemicals of concern exceeds acceptable risk levels specified at 10 CSR 26-2.078(3).

(2) Owners and operators shall submit the corrective action plan to the department for approval and shall be designed to ensure that:

(A) Corrective actions prevent or reduce exposure to chemicals of concern so that acceptable risk levels are not exceeded under current or reasonably anticipated future conditions;

(B) Concentrations of chemicals of concern in groundwater and the extent of groundwater contamination are not increasing;

(C) Assumptions made in the assessment of risk and development of applicable target levels are not violated in the future; and

(D) Free product is recovered in compliance with 10 CSR 26-2.074 and section (8) of this rule and is not present in soil or groundwater in volumes that will result in any of the following conditions:

1. Expansion of the area of free product in soil or groundwater;
2. An expanding groundwater solute plume;
3. An increase at any time in concentrations in one or more chemicals of concern in groundwater to concentrations above applicable target levels; or
4. Explosive, fire, or other acute hazards.

(3) The corrective action plan shall include, but need not necessarily be limited to, one or a combination of the following:

(A) Actions to:

1. Reduce concentrations of chemicals of concern to meet applicable target levels;
2. Prevent the transport of chemicals of concern from affected media to receptors;
3. Prevent receptor contact with affected media;
4. Preclude the presence of a receptor on the property where affected media exists; and/or
5. Restrict certain receptor activities to prevent exposures.

(B) The use of monitored natural attenuation to reduce concentrations of chemicals of concern and contain the groundwater solute plume;

(C) The installation of engineered controls to limit access to or migration of chemicals of concern in soil, groundwater, or soil vapor; and

(D) Activity and use limitations to eliminate certain exposure pathways, preclude the presence of specific receptors, or to ensure that exposure pathways remain incomplete under current and reasonably anticipated future uses and conditions.

(4) Owners and operators shall address each of the following elements in the corrective action plan, including providing a detailed explanation for each element, or an explanation of why such an element is not necessary to protect human health and the environment:

(A) Why the corrective action plan was prepared and the specific objectives of the plan;

(B) The findings, conclusions, and recommendations of the department-accepted risk assessment report;

(C) The technologies or approaches to be used to reduce mass, concentration, or mobility of chemicals of concern to meet the applicable target levels for the site;

(D) The specific engineered control, if any, to be used to mitigate excess risks; how the control will be constructed or installed; inspection, operation, and maintenance requirements; and a discussion of the long-term viability of the control;

(E) Monitoring to demonstrate plume stability and, if applicable, the effectiveness of monitored natural attenuation;

(F) Data to be collected, the purposes for which the data will be collected, and procedures for collection, documentation, analysis and reporting during the implementation of the corrective action plan;

(G) As applicable, the type of activity and use limitation to be used, its intended purpose, and how and when it will be executed; the long-term viability of the activity and use limitation and actions necessary to ensure long-term viability; and the documentation to be provided to demonstrate that the activity and use limitation is and will remain in effect;

(H) A schedule for implementation of the corrective action plan, including all major milestones and all deliverables to the department;

(I) The specific criteria to be measured or otherwise used to determine whether corrective actions are effective;

(J) Contingency plans to be implemented if the selected remedy fails to meet the overall objectives of the corrective action plan in a timely manner; and

(K) The public participation and notice requirements in 10 CSR 26-2.080 and an explanation of how applicable requirements have or will be met.

(5) The department will approve the corrective action plan in writing as submitted or provide written comments. Owners and operators shall address the department's comments and, upon receipt of approval, shall implement the corrective action plan.

(6) Owners and operators must monitor, evaluate, and, in accordance with section (13) of this rule, report the results of implementing the corrective action plan in accordance with a schedule and in a format established or approved by the department.

(7) Owners and operators may, in the interest of minimizing environmental contamination and controlling risk, begin corrective action before the department has approved the corrective action plan provided that owners and operators do the following:

(A) Notify the department of their intention to begin corrective action and provide a schedule of corrective action activities. In order to meet the public participation requirements of 10 CSR 26-2.080, owners and operators shall notify the department at least sixty (60) days before beginning corrective action activities. The department may waive the sixty (60) day prior notification requirement only if site conditions or circumstances warrant such waiver;

(B) Comply with any conditions imposed by the department, including halting corrective action activities or mitigating adverse consequences of corrective action activities; and

(C) Incorporate self-initiated corrective action activities into the corrective action plan that is submitted to the department for approval.

(8) Management of free product. Owners and operators shall initiate free product recovery pursuant to the requirements of 10 CSR 26-2.074. Free product removal initiated under 10 CSR 26-2.074 shall continue until:

(A) A work plan for free product recovery is approved by the department and implemented by the owner and/or operator: or

(B) Initial removal efforts meet the free product removal objectives at (8)(D) and (8)(D)2.A and B of this rule and 10 CSR 26-2.074(1)(A) and (B) within ninety (90) days of beginning such efforts.

1. If the removal objectives are met within ninety (90) days, in addition to the report required by 10 CSR 26-2.074(1)(D), owners and operators shall submit the report required at (8)(D)4 of this rule and document that the objectives of (8)(D) and (8)(D)2.A and B of this rule and 10 CSR 26-2.074(1)(A) and (B) have been met.

(C) Free product recovery work plan. Owners and operators shall develop a work plan for free product recovery based on the information developed in accordance with 10 CSR 26-2.076(18). Owners and operators shall obtain the department's approval of the work

plan prior to implementation and implement the work plan within forty five (45) days thereafter. The work plan shall:

1. Explain the free product recovery method that is most appropriate given site-specific conditions and how the method will be implemented;
2. Explain the extent to which recovery is believed to be practicable given the chosen method;
3. Explain the extent to which free product removal is believed to be warranted based on risks posed by the free product to human and ecological receptors;
4. Identify the metrics to be used to assess removal system effectiveness and explain the type and scope of monitoring that will be conducted to assess removal system effectiveness; and
5. Include a schedule for implementation and operation of the removal system and for monitoring system effectiveness.

(D) Free product recovery. Owners and operators shall recover free product to the maximum extent practicable, as determined by the department.

1. The department's determination of what constitutes recovery to the maximum extent practicable will be based on:

A. The technical feasibility of recovery in consideration of relevant site characteristics including factors such as transmissivity, spatial distribution of the free product, geological conditions, recovery rates, recovery methods employed, and the effect of free product recovery relative to the overall contaminant mass of the release; and

B. The actual and potential current and future risks posed by the free product and chemicals of concern in the free product to human and ecological receptors.

2. Once all acute risks related to the free product have been mitigated in accordance with 10 CSR 26-2.071, 10 CSR 26-2.072, and 10 CSR 26-2.074, owners and operators shall recover free product in accordance with subsection (8)(D) of this rule and to the extent that:

A. The free product and associated dissolved and vapor-phase plumes are stable or decreasing with respect to both area and concentrations of chemicals of concern; and

B. The free product and associated dissolved and vapor-phase plumes do not pose unacceptable risk to human or ecological receptors.

3. Free product recovery in accordance with the provisions of the approved free product recovery work plan shall continue until the goals of the work plan have been attained.

A. If a review of monitoring, recovery rate, or other information conducted by the owner or operator or the department demonstrates that the method employed will not achieve the goals of the work plan or will not do so in a timely or efficient manner, owners and operators shall propose an alternative recovery method in a work plan

submitted to the department. The alternate remedy shall not be implemented until approved by the department.

B. Owners and operators shall submit free product recovery status reports to the department on a quarterly basis or other schedule as approved by the department, beginning no more than three months after implementation of an approved free product recovery work plan.

4. When owners or operators have determined that free product recovery limits or goals have been reached, owners and operators shall submit a final free product removal report to the department for approval. The final report must include conclusions and recommendations regarding any remaining free product, including whether an activity and use limitation is warranted to control risk associated with the remaining product and, if so, the type that will be used.

A. If the department concurs that no further free product recovery is required, the department shall issue a letter to that effect.

B. If the department determines that additional free product recovery or other actions related to any remaining free product are required, a letter outlining the department's position, the actions required, and the basis for its conclusions shall be issued to the owner or operator.

5. Remaining free product and associated immobile light non-aqueous phase liquid shall be managed in accordance with the requirements of this rule and, as appropriate, 10 CSR 26-2.081.

(9) Application of target levels to excavated areas. At sites where contaminated soils are to be removed by excavation and replaced with dissimilar fill material, owners and operators shall evaluate the type of fill that will be used and determine the target levels that will apply to the floor of the excavation prior to initiating excavation activities.

(A) The target levels for the area to be excavated and the process and methods by which they were developed shall be explained in the corrective action plan submitted to the department for review and approval prior to beginning corrective action activities.

(B) Owners and operators shall determine applicable target levels for the floor of the excavated area by one of the following methods:

1. Apply the tier one risk-based target levels to the floor of the excavated area, unless the department determines that the properties of the fill to be placed in the excavated area are such that the provisions of subsection (9)(B)2 of this rule shall apply; or

2. Develop tier two site-specific target levels for the material to be used as fill and the floor of the excavated area based on analysis of specific soil properties for the material to be used as fill in accordance with 10 CSR 26-2.078(6).

3. The material used as fill shall be compacted upon placement and the moisture content managed to ensure that, upon placement, the properties of the material remain consistent with the corresponding soil properties determined by analysis.

(10) “Hot Spot” Remediation. Owners and operators shall determine if the concentration of any chemical of concern in any sample used in developing a representative concentration for a specific exposure pathway and domain is equal to or greater than ten (10) times the representative concentration of that chemical of concern and exceeds the applicable risk-based or site-specific target level. If so and the approved corrective action plan does not include corrective action at the location of that sample, the owner or operator shall evaluate corrective action of the area represented by that sample location;

(A) The evaluation shall:

1. Consider the extent to which the concentration of a chemical of concern in the sample is representative of a zone of higher chemical of concern concentration, relative to the exposure domain associated with the representative concentration, and the horizontal and vertical extent of that zone; and

2. Support a determination of whether the risk reduction that would be achieved through corrective action of the area represented by the sample is necessary to ensure adequate human health and environmental protection.

(B) If a corrective action plan is required, the evaluation at subsection (10)(A) of this rule shall be included in the corrective action plan. If a corrective action plan is not otherwise required, this evaluation shall be submitted to the department as part of the risk assessment or in a separate letter or report;

(C) If the department determines that corrective action of the zone of higher chemical of concern concentration is necessary to ensure adequate human health and environmental protection, the department may require the owner or operator to develop and submit a corrective action plan or incorporate such corrective action into the corrective action plan.

(11) Off-site properties. Where chemicals of concern have migrated off-site and pose unacceptable risk on one or more off-site properties as determined by the risk assessment, the corrective action plan required by this rule shall address each such property, unless access is denied;

(A) Owners and operators shall obtain approval from the owner of the off-site property for any corrective actions to be taken on the off-site property;

(B) If denied access by the owner of the off-site property, owners and operators shall:

1. Document efforts to obtain access and submit the documentation to the department;

2. Implement on-site corrective action to prevent further off-site migration of chemicals of concern at concentrations exceeding the target levels applicable to the off-site property, if determined by the owner or operator or the department to be necessary to address unacceptable risks to current and future receptors on the off-site property.

(12) Engineered controls and activity and use limitations. Where owners and operators use an engineered control or activity and use limitation as part of the corrective action plan to address unacceptable risk for one or more complete exposure pathways, owners and operators shall do so in accordance with 10 CSR 26-2.081.

(13) Completion of corrective action. Upon successful implementation and completion of the approved corrective action plan, owners and operators shall submit a corrective action completion report to the department for approval;

(A) The corrective action completion report shall include:

1. Documentation of completion of all elements of the corrective action plan listed in section (4) of this rule;
2. A conclusion as to whether the specified objectives were achieved and deviations from the corrective action plan were necessary. If owners and operators deviated from the approved corrective action plan, the report must provide a full explanation of the deviation, why it was necessary, and whether the deviation altered the outcome expected by the approved corrective action plan.
3. A conclusion as to whether any additional corrective action, monitoring, inspection, or reporting is needed;
4. If applicable, a request that the department make a finding of no further action required for the site; and
5. If applicable, a request to plug and abandon all nonessential monitoring wells related to the environmental activities at the site. Monitoring well closure shall be in accordance with 10 CSR 23-4.020.

(B) The department shall review the corrective action completion report and either concur with the findings and conclusions of the report or respond to the owner or operator with comments, questions, or directives for further action;

1. If the department determines that no further action is needed, as provided for in 10 CSR 26-2.082, the department shall issue a letter to that effect to the owner or operator;
2. If the department does not concur with one or more of the findings or conclusions of the report, the department shall issue a letter to that effect explaining its conclusions and, if applicable, directives regarding further actions.

(C) Storage tank owners and operators shall address the department's comments, questions, or directives for further action until such time as the department determines that no further action is required.

AUTHORITY: sections 319.109 and 319.137 RSMo Supp. 2007.