

Comparison of MTCA and SMS Remedy Selection Requirements with Proposed Rule Revisions

MTCA Remedy Selection Requirements	Sediment Remedy Selection Requirements	Proposed Sediment Remedy Selection Requirements
<p>Protect human health and the environment;</p> <p>Overall protectiveness of human health and the environment, including the degree to which existing risks are reduced, time required to reduce risk at the facility and attain cleanup standards, on-site and off-site risks resulting from implementing the alternative, and improvement of the overall environmental quality.</p>	<p>Overall protection of human health and the environment,</p> <p>... and on-site and offsite environmental impacts and risks to human health resulting from implementing the cleanup alternatives;</p> <p>Achieve a degree of cleanup that is protective of human health and the environment;</p>	<p>(3) Minimum requirements for sediment cleanup actions. These requirements and requirements for consideration of the cleanup standard under WAC 173-204-570 shall be considered concurrently.</p> <p>All cleanup actions conducted under this chapter shall meet the following requirements:</p> <p>(a) Protect human health and the environment;</p> <p>[Under factors to consider]</p> <p>(4)(a) Overall protection of human health and the environment, including the degree to which existing risks and adverse effects are reduced by the alternative, risks and adverse effects of cleanup construction and disposal activities, residual risk and adverse effects after cleanup, restoration of current and potential future uses of the site, and improvement of the overall environmental quality.</p>
<p>Comply with cleanup standards</p>	<p>Attainment of the cleanup standard(s)...</p> <p>Achieve compliance with site cleanup standards;</p>	<p>[Under minimum requirements]</p> <p>(3)(b) Comply with the sediment cleanup standards specified in WAC 173-204-570 through 574;</p> <p>[Under factors to consider]</p> <p>(4)(b) Whether the alternative will achieve the sediment cleanup standards;</p>
<p>Comply with applicable state and federal laws</p>	<p>... and compliance with applicable federal, state, and local laws;</p> <p>... and must meet all legally applicable federal, state, and local requirements.</p> <p>Achieve compliance with applicable state, federal, and local laws;</p>	<p>[Under minimum requirements]</p> <p>(3)(c) Comply with all applicable state, federal, and local laws;</p> <p>[Under factors to consider]</p> <p>(4)(c) Whether the alternative complies with applicable federal, state, and local laws;</p>

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<p>Use permanent solutions to the maximum extent practicable.</p> <p>When selecting a cleanup action, preference shall be given to permanent solutions to the maximum extent practicable.</p> <p>Disproportionate cost analysis. Costs are disproportionate to benefits if the incremental costs of the alternative over that of a lower cost alternative exceed the incremental degree of benefits achieved by the alternative over that of the other lower cost alternative.</p> <p>Permanent cleanup action defined. A permanent cleanup action or permanent solution is defined in WAC 173-340-200.</p> <p>The degree to which the alternative permanently reduces the toxicity, mobility or volume of hazardous substances, including the adequacy of the alternative in destroying the hazardous substances, the reduction or elimination of hazardous substance releases and sources of releases, the degree of irreversibility of waste treatment process, and the characteristics and quantity of treatment residuals generated.</p> <p>A disproportionate cost analysis shall not be required if the department and the potentially liable persons agree to a permanent cleanup action...</p> <p>The comparison of benefits and costs may be quantitative, but will often be qualitative and require the use of best professional judgment. In particular, the department has the discretion to favor or disfavor qualitative benefits and use that information in selecting a cleanup action. Where two or more alternatives are equal in benefits, the department shall select the less costly alternative provided the requirements of subsection (2) of this section are met.</p>	<p>In evaluating cleanup action alternatives, the department shall consider:</p> <p style="padding-left: 40px;">(a) The net environmental effects of the alternatives, including consideration of residual effects, recovery rates, and any adverse effects of cleanup construction or disposal activities;</p> <p style="padding-left: 40px;">(b) The relative cost-effectiveness of the alternatives in achieving the approved site cleanup standards; and</p> <p style="padding-left: 40px;">(c) The technical effectiveness and reliability of the alternatives.</p> <p>... In all cases, the cleanup standards shall be defined in consideration of the net environmental effects (including the potential for natural recovery of the sediments over time),</p> <p>[See also cost (below)]</p>	<p>[Under minimum requirements]</p> <p>(3)(d) Be permanent to the maximum extent practicable;</p> <p>[Under factors to consider]</p> <p>(4)(d) Permanence. The degree to which the alternative permanently reduces the toxicity, mobility or volume of contaminants;</p> <p>(4)(e) Net environmental effects, including positive and adverse impacts on natural resources and habitat resulting from implementation of the cleanup action;</p> <p>(4)(f) The relative cost-effectiveness of the alternatives in achieving the approved site cleanup standards.</p> <p>Costs shall include consideration of present and future direct and indirect capital, operation, and maintenance costs, agency oversight costs and other foreseeable costs.</p> <p>The comparison of costs and benefits may be quantitative, but will often be qualitative and require the use of best professional judgment. In particular, the department has the discretion to favor or disfavor qualitative benefits and use that information in selecting a cleanup action;</p>

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<p>Provide for a reasonable restoration time frame</p> <p>Factors. To determine whether a cleanup action provides for a reasonable restoration time frame, the factors to be considered include the following:</p> <ul style="list-style-type: none"> (i) Potential risks posed by the site to human health and the environment; (ii) Practicability of achieving a shorter restoration time frame; (iii) Current use of the site, surrounding areas, and associated resources that are, or may be, affected by releases from the site; (iv) Potential future use of the site, surrounding areas, and associated resources that are, or may be, affected by releases from the site; (v) Availability of alternative water supplies; (vi) Likely effectiveness and reliability of institutional controls; (vii) Ability to control and monitor migration of hazardous substances from the site; (viii) Toxicity of the hazardous substances at the site; and (ix) Natural processes that reduce concentrations of hazardous substances and have been documented to occur at the site or under similar site conditions. <p>A longer period of time may be used for the restoration time frame for a site to achieve cleanup levels at the point of compliance if the cleanup action selected has a greater degree of long-term effectiveness than on-site or off-site disposal, isolation, or containment options.</p> <p>Extending the restoration time frame shall not be used as a substitute for active remedial measures, when such actions are practicable.</p>	<p>... time required to attain the cleanup standard(s)</p> <p>Cleanup time frame.</p> <ul style="list-style-type: none"> (a) The cleanup action selected shall provide for a reasonable time frame for completion of the cleanup action, based on consideration of the following factors: [(3)(e)] <ul style="list-style-type: none"> (i) Potential risks posed by the site to biological resources and human health; [(4)(a)] (ii) Practicability of achieving the site cleanup standards in less than a ten-year period; [(3)(e)] (iii) Current use of the site, surrounding areas, and associated resources that are, or may be, affected by the site contamination; [(4)(a)] (iv) Potential future use of the site, surrounding areas, and associated resources that are, or may be, affected by the site contamination; [(4)(a)] (v) Likely effectiveness and reliability of institutional controls; [(4)(o)] (vi) Degree of, and ability to control and monitor, migration of contamination from the site; and [(4)(j)] (vii) Natural recovery processes which are expected to occur at the site that will reduce concentrations of contaminants. [(4)(n)] (b) The department may authorize cleanup time frames that exceed the ten-year period used in deriving the site cleanup standards of WAC 173-204-570(4) where cleanup actions are not practicable to accomplish within a ten-year period. [(3)(e)] 	<p>[Under minimum requirements] (3)(e) Provide for a reasonable restoration timeframe.</p> <p>Unless otherwise determined by the department, cleanup actions that achieve compliance with the sediment cleanup standards as soon as practicable and within 10 years or sooner from the start of the cleanup action shall be presumed to have a reasonable restoration timeframe;</p> <p>[Under factors to consider] (4)(g) The time required to achieve the sediment cleanup standards, with preference for alternatives that restore the site sooner;</p>

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<p>Cleanup actions shall prevent or minimize present and future releases and migration of hazardous substances in the environment.</p>	<p>Achieve compliance with sediment source control requirements pursuant to WAC 173-204-400 through 173-204-420, if necessary;</p> <p>The degree to which recycling, reuse, and waste minimization are employed;</p>	<p>[Under minimum requirements] (3)(f) If source control is part of the cleanup action, comply with WAC 173-204-400 through 173-204-420;</p> <p>[Under factors to consider] (4)(h) The effectiveness of source control measures to prevent recontamination of the site.</p>
	<p>The proposed site cleanup alternatives may include establishment of a sediment recovery zone as authorized under WAC 173-204-590, ...</p> <p>[Requirements moved to Section 590]</p>	<p>[Under minimum requirements] (3)(g) If a sediment recovery zone is part of the cleanup action, meet the requirements in WAC 173-204-590;</p>
<p>Consider public concerns</p> <p>Whether the community has concerns regarding the alternative and, if so, the extent to which the alternative addresses those concerns. This process includes concerns from individuals, community groups, local governments, tribes, federal and state agencies, or any other organization that may have an interest in or knowledge of the site.</p>	<p>The degree to which community concerns are addressed;</p> <p>Provide for landowner review of the cleanup study plan and report, and consider public concerns raised during review of the draft cleanup report;</p> <p>Public participation. The department shall provide opportunity for public review and comment on all cleanup action study plans, reports, and decisions reviewed and approved by the department, for cleanup actions conducted under this chapter.</p>	<p>[Under minimum requirements] (3)(h) Provide an opportunity for review and comment by affected landowners and the general public, and consider concerns identified in these comments;</p> <p>[Under factors to consider] (4)(i) The degree to which community concerns are addressed in implementation of the alternative.</p>

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Provide for compliance monitoring	Provide adequate monitoring to ensure the effectiveness of the cleanup action.	<p>[Under minimum requirements] (3)(i) Provide adequate monitoring to ensure the effectiveness of the cleanup action.</p> <p>[Under factors to consider] (4)(j) The ability to monitor the effectiveness of the cleanup and any migration of contamination left behind after cleanup;</p>
The cost to implement the alternative, including the cost of construction, the net present value of any long-term costs, and agency oversight costs that are cost recoverable. Long-term costs include operation and maintenance costs, monitoring costs, equipment replacement costs, and the cost of maintaining institutional controls. Cost estimates for treatment technologies shall describe pretreatment, analytical, labor, and waste management costs. The design life of the cleanup action shall be estimated and the cost of replacement or repair of major elements shall be included in the cost estimate.	<p>Cost, including consideration of present and future direct and indirect capital, operation, and maintenance costs and other foreseeable costs;</p> <p>... cost and engineering feasibility of different cleanup alternatives, ...</p>	<p>[Incorporated into cost-effectiveness, above.]</p>
<p>Management of short-term risks. The risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks.</p>	Short-term effectiveness, including protection of human health and the environment during construction and implementation of the alternative;	<p>[Under factors to consider] (4)(k) Short-term effectiveness of the alternative, including protection of human health and the environment during construction and implementation of the alternative;</p>

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<p>Effectiveness over the long term. Long-term effectiveness includes the degree of certainty that the alternative will be successful, the reliability of the alternative during the period of time hazardous substances are expected to remain on-site at concentrations that exceed cleanup levels, the magnitude of residual risk with the alternative in place, and the effectiveness of controls required to manage treatment residues or remaining wastes. The following types of cleanup action components may be used as a guide, in descending order, when assessing the relative degree of long-term effectiveness:</p> <ul style="list-style-type: none"> • Reuse or recycling; • destruction or detoxification; • immobilization or solidification; • on-site or off-site disposal in an engineered, lined and monitored facility; • on-site isolation or containment with attendant engineering controls; and • institutional controls and monitoring. 	<p>Long-term effectiveness, including degree of certainty that the alternative will be successful, long-term reliability, magnitude of residual, biological and human health risk, and effectiveness of controls for ongoing discharges and/or controls required to manage treatment residues or remaining wastes cleanup and/or disposal site risks;</p>	<p>[Under factors to consider] (4)(l) Long-term effectiveness of the alternative, including degree of certainty that the alternative will be successful, long-term reliability, and effectiveness of controls for ongoing discharges. The following types of cleanup actions may be used as a guide, in descending order, when assessing the relative degree of long-term effectiveness:</p> <ul style="list-style-type: none"> • Source controls in combination with other cleanup technologies; • Destruction or detoxification of contaminants; • Dredging and disposal in an engineered facility that minimizes subsequent releases and exposures to contaminants; • Containment of contaminated sediments in-place with an engineered cap; • Enhanced natural recovery; • Natural recovery; and • Institutional controls and monitoring.
<p>Ability to be implemented including consideration of whether the alternative is technically possible, availability of necessary off-site facilities, services and materials, administrative and regulatory requirements, scheduling, size, complexity, monitoring requirements, access for construction operations and monitoring, and integration with existing facility operations and other current or potential remedial actions.</p>	<p>Ability to be implemented including the potential for landowner cooperation, consideration of technical feasibility, availability of needed offsite facilities, services and materials, administrative and regulatory requirements, scheduling, monitoring requirements, access for construction, operations and monitoring, and integration with existing facility operations and other current or potential cleanup actions;</p>	<p>[Under factors to consider] (4)(m) The ability to implement the alternative, including the potential for landowner cooperation, technical feasibility, availability of a disposal or treatment facility, services and materials, administrative and regulatory requirements; ability to acquire access for construction, operations and monitoring, and integration with existing facility operations and other current or potential cleanup actions;</p>

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<p>(7) The department expects that natural attenuation of hazardous substances may be appropriate at sites where:</p> <p>(a) Source control (including removal and/or treatment of hazardous substances) has been conducted to the maximum extent practicable;</p> <p>(b) Leaving contaminants on-site during the restoration time frame does not pose an unacceptable threat to human health or the environment;</p> <p>(c) There is evidence that natural biodegradation or chemical degradation is occurring and will continue to occur at a reasonable rate at the site; and</p> <p>(d) Appropriate monitoring requirements are conducted to ensure that the natural attenuation process is taking place and that human health and the environment are protected.</p>	<p>Natural recovery processes which are expected to occur at the site that will reduce concentrations of contaminants.</p>	<p>[Under factors to consider]</p> <p>(4)(n) Natural recovery processes which are expected to occur at the site that will reduce concentrations of contaminants.</p>
<p>Institutional controls. ... Institutional controls should demonstrably reduce risks to ensure a protective remedy. This demonstration should be based on a quantitative scientific analysis where appropriate. ... cleanup actions shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a more permanent cleanup action for all or a portion of the site.</p>	<p>The need for institutional controls or other site use restrictions to reduce site contamination risks to human health.</p> <p>Likely effectiveness and reliability of institutional controls;</p>	<p>[Under factors to consider]</p> <p>(4)(o) Likely effectiveness and reliability of institutional controls to minimize exposures to contaminated sediments and consumption of potentially impacted aquatic resources;</p>