

## Assessment, Remediation and Management of Contaminated Land

### Core Knowledge Areas and Knowledge Requirements for Professional Practice in the Practice Area.

To qualify for the *Assessment, Remediation, and Management of Contaminated Land* (ARMCL) practice area, all Core Knowledge Areas for at least two practice area activities must be met (AIA CC Policy #21-001). Each knowledge requirement must consist of at least 3-credit equivalent of learning. A regulated member's scope of practice is restricted to those practice area activities for which the member qualifies.

#### Activity 1: Understanding Drivers and Planning

Core Knowledge Area	Required Subject Matter Areas (Knowledge Requirements)
<b>Contaminants</b>	<ul style="list-style-type: none"> <li>• Inorganic Chemistry</li> <li>• Organic Chemistry</li> </ul>
<b>Soils and Landforms</b>	<ul style="list-style-type: none"> <li>• Soil Science OR Quaternary Geology</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Hydrology OR Hydrogeology</li> </ul>
<b>Ecology</b>	<ul style="list-style-type: none"> <li>• Ecology</li> </ul>
<b>Socioeconomics and Policy</b>	At least <b>one</b> of the following: <ul style="list-style-type: none"> <li>• Environmental Policy</li> <li>• Environmental Planning</li> <li>• Environmental Impact and Mitigation</li> <li>• Environmental Law</li> <li>• Land Use Planning</li> </ul>

#### Activity 2: Phase I ESAs

Core Knowledge Area	Required Subject Matter Areas (Knowledge Requirements)
<b>Contaminants</b>	<ul style="list-style-type: none"> <li>• Inorganic Chemistry</li> <li>• Organic Chemistry</li> </ul>

### Activity 3: Phase II ESAs

<b>Core Knowledge Area</b>	<b>Required Subject Matter Areas (Knowledge Requirements)</b>
<b>Contaminants</b>	<ul style="list-style-type: none"><li>• Inorganic Chemistry</li><li>• Organic Chemistry</li></ul>
<b>Soils and Landforms</b>	<ul style="list-style-type: none"><li>• Soil Science</li><li>• Soil Classification</li></ul>
<b>Water</b>	<ul style="list-style-type: none"><li>• Hydrology OR Hydrogeology</li></ul>
<b>Vegetation</b>	<ul style="list-style-type: none"><li>• Plant Science</li><li>• Vegetation Identification</li></ul>

### Activity 4: Remediation

<b>Core Knowledge Area</b>	<b>Required Subject Matter Areas (Knowledge Requirements)</b>
<b>Contaminants</b>	<ul style="list-style-type: none"><li>• Inorganic Chemistry</li><li>• Organic Chemistry</li><li>• Remediation Strategies</li></ul>
<b>Soils and Landforms</b>	<ul style="list-style-type: none"><li>• Soil Science</li><li>• Soil Classification</li><li>• Soil Chemistry</li></ul>
<b>Water</b>	<ul style="list-style-type: none"><li>• Hydrology OR Hydrogeology</li></ul>

### Activity 5: Risk Assessment

<b>Core Knowledge Area</b>	<b>Required Subject Matter Areas (Knowledge Requirements)</b>
<b>Contaminants</b>	<ul style="list-style-type: none"><li>• Inorganic Chemistry</li><li>• Organic Chemistry</li><li>• Contaminant Behavior</li><li>• Ecological and Human Health Risk Assessment</li><li>• Toxicology</li><li>• Statistical Analysis</li></ul>
<b>Soils and Landforms</b>	<ul style="list-style-type: none"><li>• Soil Science OR Quaternary Geology</li><li>• Soil Chemistry</li></ul>
<b>Water</b>	<ul style="list-style-type: none"><li>• Hydrology</li><li>• Hydrogeology</li></ul>
<b>Vegetation</b>	<ul style="list-style-type: none"><li>• Plant Science</li></ul>

	<ul style="list-style-type: none"> <li>• Plant Nutrition</li> <li>• Plant Physiology</li> </ul>
<b>Ecology</b>	<ul style="list-style-type: none"> <li>• Ecology</li> </ul>
<b>Animals</b>	<ul style="list-style-type: none"> <li>• Animal Nutrition</li> <li>• Animal Physiology</li> </ul>
<b>Socioeconomics and Policy</b>	<ul style="list-style-type: none"> <li>• Environmental Policy</li> <li>• Environmental Planning</li> <li>• Environmental Impact and Mitigation</li> <li>• Land Use Planning</li> </ul>

### Activity 6: Exposure Control

<b>Core Knowledge Area</b>	<b>Required Subject Matter Areas (Knowledge Requirements)</b>
<b>Contaminants</b>	<ul style="list-style-type: none"> <li>• Inorganic Chemistry</li> <li>• Organic Chemistry</li> <li>• Environmental Sampling Design</li> <li>• Statistics</li> </ul>
<b>Soils and Landforms</b>	<ul style="list-style-type: none"> <li>• Soil Science OR Quaternary Geology</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Hydrology</li> <li>• Hydrogeology</li> </ul>

### Activity 7: Validation and Closure

<b>Core Knowledge Area</b>	<b>Required Subject Matter Areas (Knowledge Requirements)</b>
<b>Contaminants</b>	<ul style="list-style-type: none"> <li>• Inorganic Chemistry</li> <li>• Organic Chemistry</li> <li>• Contaminant Behavior</li> </ul>
<b>Soils and Landforms</b>	<ul style="list-style-type: none"> <li>• Soil Science</li> <li>• Soil Classification</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Hydrology</li> <li>• Hydrogeology</li> </ul>
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>• Plant Science</li> </ul>
<b>Ecology</b>	<ul style="list-style-type: none"> <li>• Ecology</li> </ul>
<b>Socioeconomics and Policy</b>	<p>At least one of the following:</p> <ul style="list-style-type: none"> <li>• Environmental Policy</li> <li>• Environmental Planning</li> </ul>

	<ul style="list-style-type: none"><li>• Environmental Law</li><li>• Land Use Planning</li></ul>
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