

# WORKING TO PROTECT OUR WATER

## INNOVATION ACTIVITIES AND SKILLS FOR SUSTAINABLE STRATEGIES AND TECHNOLOGY DEVELOPMENT



KEY ACTIVITIES	<p style="text-align: center;"><b>WATER SOURCING AND MANAGEMENT</b></p> <p style="text-align: center;"><i>Management systems to reduce fresh water use and watershed impacts</i></p> <ul style="list-style-type: none"> <li>• Technology development/ use to improve performance and GHG impacts</li> <li>• Water and watershed management to monitor water levels, usage, and quality and adhere to regulatory limits</li> <li>• Preliminary water treatment to separate minerals from water sources</li> <li>• Evaluate water balance for operations including water sources, use, reuse and remediation</li> <li>• Analyze biological impacts of water sourcing and disposal</li> <li>• Design and build water diversion systems</li> <li>• Respond to spills impacting waterways, waterbodies, and land to contain, recover and remediate</li> <li>• Work with regulations to ensure adherence to source and dispose of water and to report on water use and additives</li> </ul>	<p style="text-align: center;"><b>WATER AND WASTEWATER TREATMENT</b></p> <p style="text-align: center;"><i>Manage, develop, commercialize, and deliver water treatment technologies and solutions</i></p> <ul style="list-style-type: none"> <li>• Technology development/ use to improve performance and GHG impacts</li> <li>• Plan and design water and wastewater treatment projects</li> <li>• Chemical analysis to ensure regulatory, safety, and environmental requirements and guidelines are met</li> <li>• Treat and test water and wastewater to address input water quality and to produce sufficiently clean feedwater for steam generation, hydraulic fracturing and injection for enhanced oil recovery while preventing and mitigating the impacts of fouling/scaling</li> <li>• Operation, optimization and maintenance of plants and equipment</li> <li>• Chemical mixing, handling and storage</li> <li>• Business development and sales of water technologies, equipment and supplies</li> </ul>	<p style="text-align: center;"><b>INDUSTRIAL USE, REUSE, DISPOSAL AND REMEDIATION OF WATER</b></p> <p style="text-align: center;"><i>Apply technologies to production processes to reduce GHG intensity and water use</i></p> <ul style="list-style-type: none"> <li>• Technology development/ use to improve performance and GHG impacts</li> <li>• Create operational solutions for economic industrial reuse and management of emissions in produced water</li> <li>• Chemical analysis to ensure regulatory, safety, and environmental requirements and guidelines are met</li> <li>• Chemical mixing, handling and storage</li> <li>• Regulatory reporting of water- use and additives</li> </ul> <p><b>Conventional and Unconventional Oil and Gas</b></p> <ul style="list-style-type: none"> <li>• Water management for drilling, completions, fracturing, flowback and production</li> <li>• Treatment, recycling, and disposal of produced water from hydraulic fracturing</li> <li>• Transportation of freshwater supplies and wastewater requiring disposal</li> <li>• Treatment and management of surface discharge</li> </ul> <p><b>Oil Sands</b></p> <ul style="list-style-type: none"> <li>• Management of surface and groundwater for mining and in-situ operations</li> <li>• Management and treatment of tailings water</li> <li>• Apply steam generation technologies using recycled and alternative feedwaters</li> <li>• Convert saline wastewater into desalinated water and value-added chemicals</li> </ul>
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The Cleantech and Transitioning Careers in Oil and Gas Series is the result of a 2021 project funded by the Province of Alberta working in partnership with the Government of Canada, and research conducted by consultants Cheryl Knight and Pat Hufnagel-Smith.

For more information please contact: [info@cleanresourceinnovation.com](mailto:info@cleanresourceinnovation.com) and to view or download documents in the series, visit [www.cleanresourceinnovation.com](http://www.cleanresourceinnovation.com)