An Independent Scientific Assessment of Well Stimulation in California

Volume III

Case Studies of Hydraulic Fracturing and Acid Stimulations in Select Regions: Offshore, Monterey Formation, Los Angeles Basin and San Joaquin Basin

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<td>American Lung Association</td>
</tr>
<tr>
<td>APCHH</td>
<td>American Petrofina Central Core Hole</td>
</tr>
<tr>
<td>API</td>
<td>American Petroleum Institute</td>
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<td>ASTM</td>
<td>American Society for Testing and Materials</td>
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<tr>
<td>ATSDR</td>
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<td>Billion Barrels of Oil</td>
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<td>BCT</td>
<td>Best Conventional Pollutant Control Technology</td>
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<td>BOE</td>
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<td>BOEM</td>
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<td>BSEE</td>
<td>Bureau of Safety and Environmental Enforcement</td>
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<tr>
<td>BTEX</td>
<td>Benzene, Toluene, Ethylbenzene, and Xylene</td>
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<td>GAMA</td>
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<td>Greenhouse Gases</td>
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<td>GHS</td>
<td>Globally Harmonized System</td>
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### Acronyms and Abbreviations

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<th>Acronym</th>
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<td>Geographic Information Systems</td>
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<td>California Health Care Facility Dataset</td>
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<td>High-Rate Gravel Packs</td>
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<tr>
<td>ICIS/PCS</td>
<td>Integrated Compliance Information System and Permit Compliance System (database)</td>
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<td>Intake Fraction</td>
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<tr>
<td>IRIS</td>
<td>Integrated Risk Information System</td>
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<tr>
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<tr>
<td>m³</td>
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<td>m³e</td>
<td>Cubic Meter of Oil Equivalent Energy</td>
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<td>MMS</td>
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<td>Office of Environmental Health Hazard Assessment</td>
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<tr>
<td>OOIP</td>
<td>Original Oil In Place</td>
</tr>
<tr>
<td>OR</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>OSPAR</td>
<td>Oslo and Paris Convention</td>
</tr>
<tr>
<td>PAH</td>
<td>Polycyclic Aromatic Hydrocarbons</td>
</tr>
<tr>
<td>PLSS</td>
<td>Public Land Survey System</td>
</tr>
<tr>
<td>PM</td>
<td>Particulate Matter</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>Particulates Smaller than 10 Microns</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>Particulates Smaller than 2.5 Microns</td>
</tr>
<tr>
<td>PPB</td>
<td>Parts Per Billion</td>
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<tr>
<td>PPM</td>
<td>Parts Per Million</td>
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<tr>
<td>PR</td>
<td>Pico-Repetto</td>
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<tr>
<td>REL</td>
<td>Reference Exposure Levels</td>
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<tr>
<td>RFC</td>
<td>Reference Concentrations</td>
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<tr>
<td>Rfd</td>
<td>Reference Doses</td>
</tr>
<tr>
<td>RMT-SAV</td>
<td>Rincon-Monterey-Topanga-Sespe-Alegria-Vaqueros</td>
</tr>
<tr>
<td>RO</td>
<td>Reverse Osmosis</td>
</tr>
<tr>
<td>ROG</td>
<td>Reactive Organic Gases</td>
</tr>
<tr>
<td>SB 1281</td>
<td>Senate Bill 1281</td>
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Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>SB 4</td>
<td>Senate Bill 4</td>
</tr>
<tr>
<td>SCAQMD</td>
<td>South Coast Air Quality Management District</td>
</tr>
<tr>
<td>SCEDC</td>
<td>Southern California Earthquake Data Center</td>
</tr>
<tr>
<td>SIC</td>
<td>Standard Industry Classification code</td>
</tr>
<tr>
<td>SJVAB</td>
<td>San Joaquin Valley Air Basin</td>
</tr>
<tr>
<td>SJVUAPCD</td>
<td>San Joaquin Valley Unified Air Pollution Control District</td>
</tr>
<tr>
<td>SoCAB</td>
<td>South Coast Air Basin</td>
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<tr>
<td>SOₓ</td>
<td>Sulfur Oxides</td>
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<tr>
<td>SWRCB</td>
<td>(California) State Water Resources Control Board</td>
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<tr>
<td>TAC</td>
<td>Toxic Air Contaminant</td>
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<tr>
<td>TCW</td>
<td>Treatment, Completion, and Workover</td>
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<tr>
<td>TDS</td>
<td>Total Dissolved Solids</td>
</tr>
<tr>
<td>THUMS</td>
<td>Texaco, Humble, Union, Mobil, and Shell (a set of artificial islands)</td>
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<tr>
<td>TOC</td>
<td>Total Organic Carbon</td>
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<tr>
<td>TOG</td>
<td>Total Organic Gases</td>
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<td>TR</td>
<td>Transformation Ratio</td>
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<td>TRRC</td>
<td>Texas Railroad Commission</td>
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<tr>
<td>TVD</td>
<td>True Vertical Depth</td>
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<tr>
<td>U.S. EIA</td>
<td>U.S. Energy Information Administration</td>
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<td>U.S. EPA</td>
<td>U.S. Environmental Protection Agency</td>
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<tr>
<td>UIC</td>
<td>Underground Injection Control</td>
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<tr>
<td>USC</td>
<td>United States Code</td>
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<tr>
<td>USDW</td>
<td>Underground Source of Drinking Water</td>
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<tr>
<td>USGS</td>
<td>United States Geological Survey</td>
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<td>USQFF</td>
<td>U.S. Quaternary Fault and Fold Database</td>
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<td>VCAPCD</td>
<td>Ventura County Air Pollution Control District</td>
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<tr>
<td>VOC</td>
<td>Volatile Organic Compound</td>
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<tr>
<td>WDR</td>
<td>Waste Discharge Requirements</td>
</tr>
<tr>
<td>WET</td>
<td>Whole Effluent Toxicity</td>
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<tr>
<td>µg/m³</td>
<td>Micrograms per Cubic Meter</td>
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