

HELICOPTER METHANE SURVEY OF AN OPERATING OILFIELD

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In August 2007, a helicopter methane survey was flown over the Naval Petroleum Reserve No. 3, an operating oilfield to identify the location of atmospheric methane emissions. The survey was flown using parallel flight lines approximately 25-m apart and at a nominal altitude of 20 m. Methane concentrations were measured using an Apogee LDS detector for methane, carbon dioxide, and light hydrocarbon that had a sub-PPM detection limit for methane. The survey revealed distinct methane plumes that could be traced to venting wells and the gas plant. The location of point methane sources were found to coincide with active wells. Methane clouds of low concentration were observed in some areas and were probably kept from dispersing by terrain. This study provides a first holistic look at methane sources within an oilfield and will be used to more effectively model the effect of oil and gas operations on regional inventories of atmospheric contaminants.

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