

Engaging Agencies and the Public in Atmospheric Monitoring Observations Through Real-time Data Posting

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The influx of oil and natural gas development into densely-populated areas has raised citizens' concerns about air quality and resulting health impacts of emissions from these operations. This has prompted local governments to seek help in monitoring oil and gas pollutants for assessing citizens' exposures and associated risks. Sponsored by Boulder County Public Health, we developed and installed high time resolution monitoring of methane, volatile organic compounds (VOCs), and nitrogen oxides at the Boulder Reservoir. Automated chromatograms integration, calibration, and data processing routines were implemented, and data are posted in near real-time on a public website (http://instaar.colorado.edu/arl/boulder_reservoir.html), with additional educational information on the monitored gases and interpretation of results. Methane and light alkane VOC show a strong influence from oil and natural gas sources in the north to southeast of the site. Transport events with elevated levels of VOC, exceeding background levels by 20-100 times, are frequently observed. Mean annual concentrations for many VOCs exceed those of large U.S. urban areas. This monitoring and sharing of real-time results has been instrumental in raising the interest of citizens, and making this monitoring a viable source of information for use by agencies, citizen groups, and the media. This is further evidenced by the close to 10,000 visits to the public website during the first year of operation.

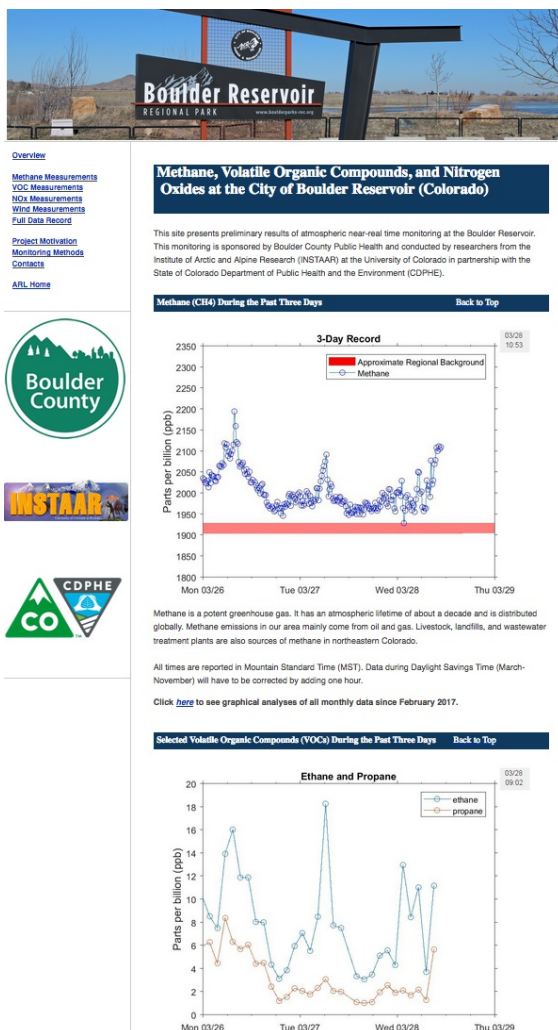


Figure 1. Data available in near real-time at http://instaar.colorado.edu/arl/boulder_reservoir.html.