

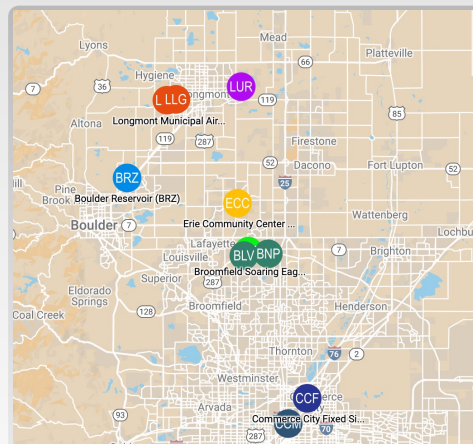
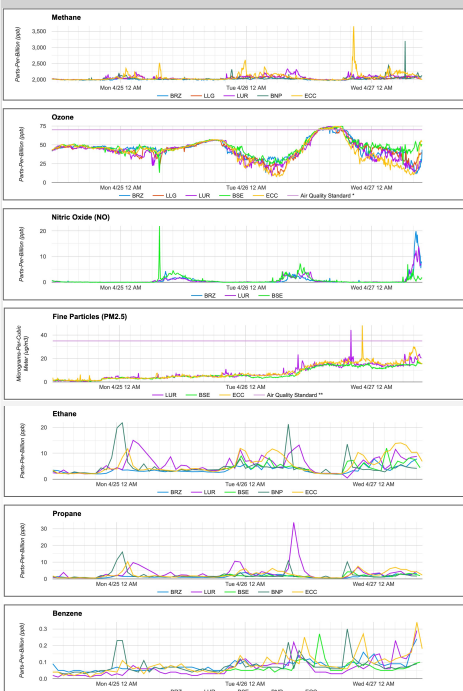
Boulder A.I.R. Network: Continuous Air Pollution Monitoring in the Northern Colorado Front Range

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Boulder A.I.R. currently operates a network with eight air quality measurement stations in the Northern Colorado Front Range conducting automated, continuous air measurements with real-time reporting of monitoring results to the public via program-specific web portals. Atmospheric analyses of trace gases and pollutants, including ozone, methane, nitrogen oxides, volatile organic compounds, and particulates, follow regulatory monitoring requirements for instruments and methods.

Recent data example



Components measured

| Boulder Reservoir (BRZ) | Longmont Lykins Gulch (LLG) | Longmont Union Reservoir (LUR) | Broomfield Soaring Eagle (BSE) | Broomfield North Pecos (BNP) | Erie Community Center (ECC) | Commerce City Fixed (CCF) | Commerce City Mobile (CCM) |
|-------------------------|-----------------------------|--------------------------------|--------------------------------|------------------------------|-----------------------------|---------------------------|----------------------------|
| Meteorology | Meteorology | Meteorology | Meteorology | Meteorology | Meteorology | Meteorology | Meteorology |
| Methane | Methane | Methane | Ozone | Methane | Methane | Methane | Methane |
| Ozone | CO ₂ | CO ₂ | Nitrogen oxides | CO ₂ | CO ₂ | CO ₂ | CO ₂ |
| Nitrogen oxides | Ozone | Ozone | Hydrogen sulfide | VOCs | Ozone | Carbon monoxide | VOCs |
| VOCs | | Nitrogen oxides | VOCs | | VOCs | Ozone | |
| | | VOCs | PM2.5, PM10 | | PM2.5, PM10 | Nitrogen oxides | |
| | | PM2.5, PM10 | | | | Hydrogen sulfide | |
| | | | | | | Hydrogen cyanide | |
| | | | | | | Sulfur dioxides | |
| | | | | | | VOCs | |
| | | | | | | PM2.5, PM10 | |
| | | | | | | Radioactivity | |

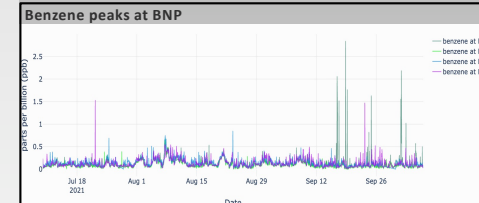
Public, near real-time data website: www.bouldair.com



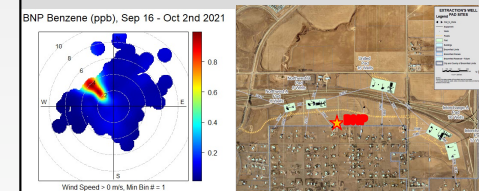
Near real-time atmospheric data site for each monitoring station
Interactive site map
Interactive Data Analysis Tool (IDAT)
Air Live combined data plots



Data analysis examples

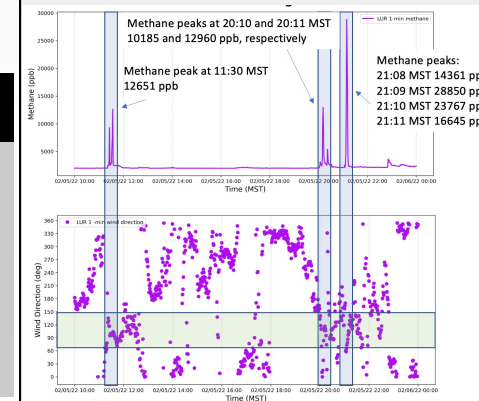


Benzene comparison at multiple sites July – October 2021. This time series graph shows benzene elevations at BNP coinciding with the start of new drilling at the Northwest B pad on September 14.



Bivariate wind direction – wind speed analysis results show that occurrences of elevated benzene can be traced to the upwind direction of Northwest B pad.

Methane peaks at LUR >10000 ppb



Before each methane peak (or cluster of peaks) there was a wind shift to easterly winds with wind directions ranging from NE to SE.