



April 4, 2025

To:

Town of Erie
645 Holbrook Street
Erie, CO 80516

Attn: David Frank

Year 2025-2026 Cost Proposal for Operation of a Dispersed Sampling Network and Weekly Summa Canister Air Sampling in Erie, Colorado

Dear Mr. Frank,

Thank you for your inquiry about a cost estimate for air monitoring in the Town of Erie. Please find below a cost proposal for a one-year contract spanning July 1, 2025, to June 30, 2026. The following work is included:

- A. Weekly integrated whole air sampling in Summa Canisters, followed by gas chromatography analysis of methane and volatile organic compounds with flame ionization and/or mass spectrometry detection. All methods will follow EPA and WMO-GAW calibration and quality control protocols. A minimum of the 35 most abundant VOCs will be quantified. The Summa canister whole air sampling will be conducted at four monitoring sites. In case the current contract with Boulder AIR for continuous air quality monitoring at the Erie Community Center (ECC) is renewed, then a fifth canister sampling would be operated at no cost to Erie in parallel to the real time methane and VOCs monitoring at ECC to provide comparison between the two methods and additional quality control of the canister-integrated air sampling.
- B. Operation of ten SGS SmartSense solar powered (with battery backup) air monitoring stations. <https://www.sgsgalson.com/smart-sense-home/>. Monitored variables will include wind speed, wind direction, air temperature, fine particulates (PM1, PM2.5, PM10) and total VOCs with photoionization detection (PID). Each station will be equipped with a sampling trigger mechanism and air sampling canister to collect whole air samples when elevated VOC signals are detected by the PID. In case the current contract for continuous air quality monitoring with Boulder AIR at ECC is renewed, then one additional station will be installed at ECC in parallel to the real time methane, VOCs, and PM2.5 monitoring at ECC to provide comparison between the two methods and additional quality control of the SmartSense air sampling at no cost to Erie.
- C. Analysis of 40 trigger canister samples collected by the SmartSense stations (B) for methane and VOCs, using the same instrumentation and quality assurance as under A. In the case that more than 40 trigger events (and samples) occur during the project year, additional trigger canister deployments and analyses will be charged at an additional \$400 per sample.

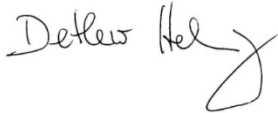
- D. Real-time reporting of the SmartSense data to the public SGS LiveView data portal (<https://www.sgsgalson.com/sgs-liveview/>).
- E. Quarterly progress reports, pollution event analyses and event reports.
- F. Boulder AIR commits to conduct all monitoring listed above at $\geq 95\%$ uptimes.

A cost breakup of these line items is provided below. The total 1-year contract cost for the above detailed activities A-F is: **\$305,800.**

An option with a scaled-down deployment, maintaining four weekly Summa canister sites, but reducing the dispersed sampling network from ten to five SmartSense stations, would be at an annual cost of **\$204,875.**

We appreciate this opportunity to provide air quality monitoring for the Town of Erie.

Thank you,

A handwritten signature in black ink, appearing to read "Detlev Helmig", with a stylized flourish at the end.

Detlev Helmig, PhD
Boulder A.I.R. LLC

Ten SGS Dispersed Air Monitoring Stations Option:

| Erie Weekly VOCs and <u>Ten</u> Meteorology/PID/VOCs Trigger Canister Sampling Stations; July 2025 through June 2026 Budget Proposal | | | | | | |
|--|---|---------------|-----------------|--------|-------------------------|-------------------------|
| Item | Variable | Cost per Unit | Number of Sites | Months | Total Number of Samples | 2025 - 2026 Rate (US\$) |
| 1 | Weekly integrated air sampling with Summa canister followed gas chromatography analysis of methane and and minimum of 30 volatile organic compounds (including ethane, ethene, acetylene, propane, propene, i-butane, n-butane, i-pentane, n-pentane, isoprene, n-hexane, benzene, toluene, o-xylene, ethylbenzene, o-xylene, m-xylene, p-xylene); custom-gas chromatograph with flame ionization detection (FID) | 400 | 4 | 12 | 192 | 76,800 |
| 2 | Installation and operation of SGS PID/trigger solar powered canister sampling stations with meteorology, PM1, PM2.5, PM10, total VOCs | 1150 | 10 | 12 | | 138,000 |
| 3 | Trigger canister analysis by gas chromatography for methane and minimum of 30 Volatile Organic Compounds (including ethane, ethene, acetylene, propane, propene, i-butane, n-butane, i-pentane, n-pentane, isoprene, n-hexane, benzene, toluene, o-xylene, ethylbenzene, o-xylene, m-xylene, p-xylene); custom-gas chromatograph with flame ionization detection (FID), 40 canisters per year | 400 | | | 40 | 16,000 |
| 4 | Sampler installation, weekly site visits, station maintenance | 425 | 10 | 12 | | 51,000 |
| 5 | Reporting, website maintenance, event analyses | 2000 | | 12 | | 24,000 |
| | Total | | | | | 305,800 |

Five SGS Dispersed Air Monitoring Stations Option:

| Erie Weekly VOCs and <u>Five</u> Meteorology/PID/VOCs Trigger Canister Sampling Stations; July 2025 through June 2026 Budget Proposal | | | | | | |
|---|---|---------------|-----------------|--------|-------------------------|-------------------------|
| Item | Variable | Cost per Unit | Number of Sites | Months | Total Number of Samples | 2025 - 2026 Rate (US\$) |
| 1 | Weekly integrated air sampling with Summa canister followed gas chromatography analysis of methane and and minimum of 30 volatile organic compounds (including ethane, ethene, acetylene, propane, propene, i-butane, n-butane, i-pentane, n-pentane, isoprene, n-hexane, benzene, toluene, o-xylene, ethylbenzene, o-xylene, m-xylene, p-xylene); custom-gas chromatograph with flame ionization detection (FID) | 400 | 4 | 12 | 192 | 76,800 |
| 2 | Installation and operation of SGS PID/trigger solar powered canister sampling stations with meteorology, PM1, PM2.5, PM10, total VOCs | 1150 | 5 | 12 | | 69,000 |
| 3 | Trigger canister analysis by gas chromatography for methane and minimum of 30 Volatile Organic Compounds (including ethane, ethene, acetylene, propane, propene, i-butane, n-butane, i-pentane, n-pentane, isoprene, n-hexane, benzene, toluene, o-xylene, ethylbenzene, o-xylene, m-xylene, p-xylene); custom-gas chromatograph with flame ionization detection (FID), 20 canisters per year | 400 | | | 20 | 8,000 |
| 4 | Sampler installation, weekly site visits, station maintenance | 425 | 5 | 12 | | 31,875 |
| 5 | Reporting, website maintenance, event analyses | 2000 | | 12 | | 19,200 |
| | Total | | | | | 204,875 |