



Weld County Air Quality Program

Dani Serna, RS/REHS

Senior Environmental Health Specialist

Weld County Department of Public Health and Environment



Quick facts about Weld County...

- 2nd largest county in CO
- Population- 328,981 residents (steady increase)
- leads the state in several industries:
 - Oil and Gas- 86% of CO crude oil; 44% of CO NG (2020)
 - Agriculture- Gross \$2.05 billion, Net \$400 million (USDA, 2017)
 - Green Energy- abundant wind and solar; approved Land Use Rules (2021)





**working towards improvements
in regional air quality**



- Air Monitoring
- Regulatory Compliance
- Complaint Investigations
- Burn Permit Issuance
- Education & Outreach
- Resources/ Referrals
 - Indoor Air Quality
 - Radon
 - Mold



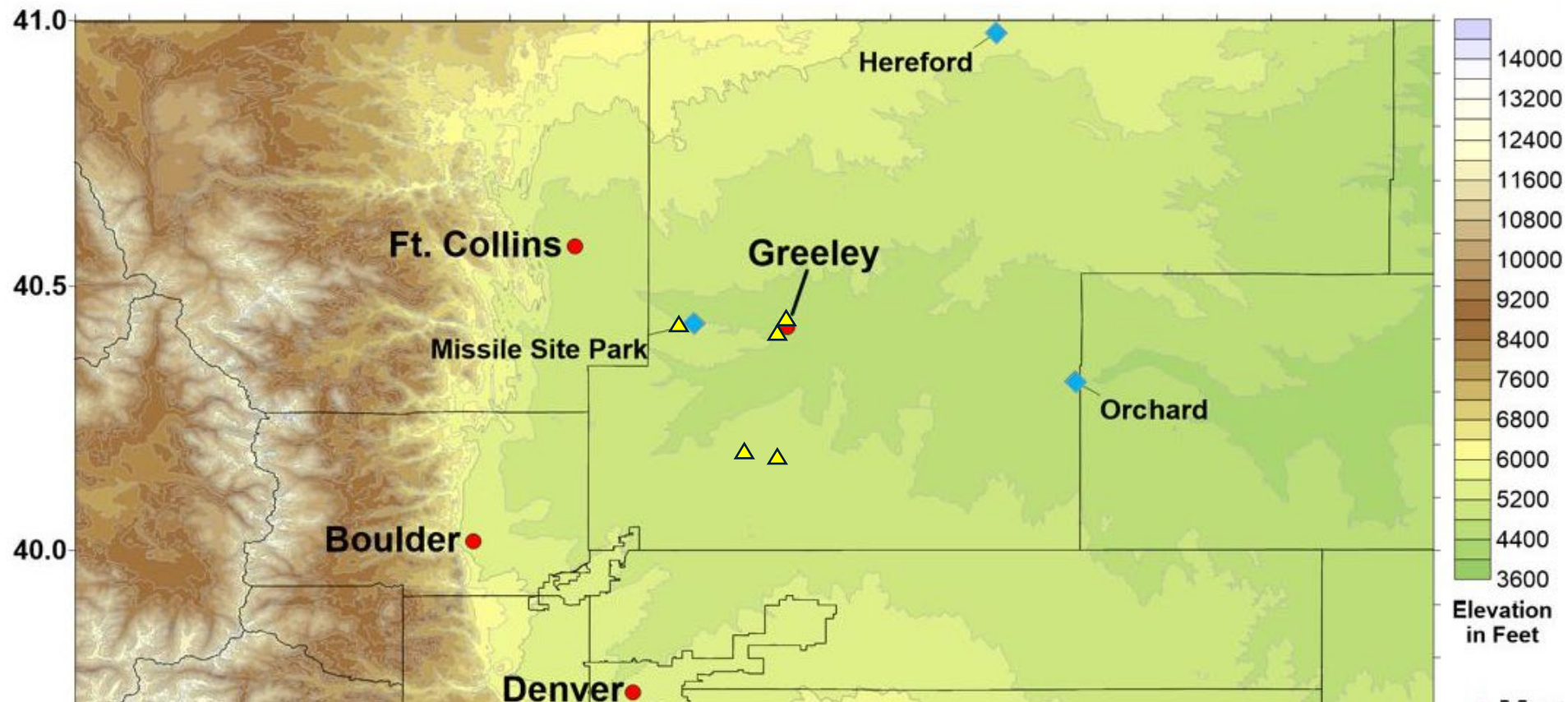
**Providing relevant,
innovative, and cost-
effective services**



Air Monitoring

Reliable and comprehensive





▲ State Sites

◆ County Sites

Weld County Sites

The 3 monitoring stations in Weld County came online in early 2021.

EH Staff conduct routine sampling at two sites for the National Atm. Deposition Program and light routine maintenance at all 3 sites.

Ramboll US Consulting, Inc. oversee installation, maintenance, standardization, QA, data analysis, and reporting.

Station	Location	Met.	NOx	Ozone	Nitrogen Dep* (NTN)	Ammonia (AMON)
Missile Site Park (MSP)	I-25 and 34	x	x	x	x	x
Orchard	Southwest Weld County	x		x	x	x
Hereford	North central Weld County	x		x		

*NTN analysis includes other inorganic analytes such as acids, nutrients, etc.

State Sites

Weld County staff are contracted with Air Pollution Control Division to conduct regular sampling and light maintenance at the Platteville MS and MSP locations.

Station	Location	Met.	PM 2.5	PM 10	CO	NOx	Ozone	VOC
Platteville Atm. Obs. (PAO)	East of 85	x				x	x	
Platteville MS	West of 85		X (speciation)					
Greeley-Hospital	DT Greeley		x	x				
Greeley-County Tower	South Greeley/ Evans	x			x		x	
*Missile Site Park (MSP)	I-25 and 34	(x)				(x)	(x)	x

*MSP included in APCDs 2021 AAMNP comments section and will be included in future AAMNP's.

(x) Weld County monitoring

https://www.colorado.gov/airquality/tech_doc_repository.aspx?action=open&file=2021AnnualNetworkPlan.pdf

Weld County Sites- Missile Site Park

- West of Greeley, south of Windsor; I-25 and the HWY 34 area
- Measures:
 - Ozone
 - NO, NO₂, NO_x
 - Nitrogen Deposition
 - Ammonia
 - Meteorology (30-foot tower)



Weld County Sites- Orchard

- Southeast Weld County, along HWY 34
- Measures:
 - Ozone
 - Nitrogen Deposition
 - Ammonia
 - Meteorology (30-foot tower)



Weld County Sites- Hereford

- Weld County- Wyoming border
- Measures:
 - Ozone
 - Meteorology (30-foot tower)



Weld County Sites: MSP and Orchard

National Atmospheric Deposition Program (NADP)

Cooperative effort between many different groups nationwide

- National Trends Network (NTN)- Precipitation chemistry across the US
 - free acidity (H^+ as pH), conductance, calcium (Ca^{2+}), magnesium (Mg^{2+}), sodium (Na^+), potassium (K^+), sulfate (SO_4^{2-}), nitrate (NO_3^-), chloride (Cl^-), and ammonium (NH_4^+)
- Ammonia Monitoring Network (AMoN)- consistent, long-term record of ammonia gas concentrations across the US
- Analysis conducted by Central Analytical Laboratory (CAL) at the Wisconsin State State Laboratory of Hygiene (WSLH).
- <https://nadp.slh.wisc.edu/>
- Rocky Mountain National Park Early Warning System (<http://www.rmwarningsystem.com/EarlyWarnings.aspx>)



Weld County Meteorological Dashboard



<https://weldgov.maps.arcgis.com/apps/dashboards/15dbeaa327a84c44a403abfb7e996e80>

Weld County Air Monitoring Webpage

- Updated regularly and reviewed quarterly
- <https://www.weldgov.com/Government/Departments/Health-and-Environment/Environmental-Health/Air-Quality/Air-Monitoring>

Air Monitoring

In order to observe and assess the status of air quality within Weld County, the Board of County Commissioners approved and successfully contracted the installation of three local air monitoring stations in December 2020. The monitoring stations, located at the Missile Site Park (west of Greeley), in Hereford (near the Wyoming border), and in Orchard (at the Weld and Morgan County border), began recording data in early 2021.

Each monitoring site continuously collects ozone and meteorological data. The Missile Site Park also collects data on ozone precursors, specifically nitrogen oxides (NOx), and currently hosts a volatile organic compounds (VOC) monitor for the Colorado Department of Public Health and Environment's Air Pollution Control Division.

Additionally, the Missile Site Park and Orchard sites serve as monitoring sites for the [National Atmospheric Deposition Program \(NADP\)](#), which partners with local stakeholders to collect field samples of nitrogen deposition (NTN program) and ammonia (AMoN) in order to track and observe trends across the country.

Weld County Environmental Health Specialists visit the Missile Site Park and Orchard sites weekly and the Hereford site bi-weekly, to collect samples and perform site and equipment maintenance.

The Weld County Air Monitoring page posts the current [meteorological dashboard](#) for all three sites and the quarterly reports for the air contaminant data collected at each site.

Weld County Monitoring Information



State Monitoring Information



Federal Monitoring Information



Weld County Meteorological Dashboard

Local meteorological data from the Missile Site Park, Hereford, and Orchard air monitoring sites is collected every 15 minutes and available on the [Weld County Meteorological Dashboard](#).





Regulatory Compliance

Achieving Compliance Assurance

Weld County Department of Public Health and Environment



Routine Inspections

- Sources are inspected based on prioritization annually
 - Type of facility
 - Inspection frequency
 - Inspection history
- Inspection schedule is dictated by:
 - geographical location
 - weather
 - **File review**

Effects almost all aspects of the inspection:

- Scheduling, announced vs. unannounced
- Inspector approach and discretion
- Reflected in report (i.e., non-compliances)

Basic plant/facility information

- Specific location
- **Contact**
- Operational hours
- Scope of operations
- Safety/Security



File Review

- Compliance information
 - Plant/Points Summary
 - Permits/Conditions (Regs 3, CPs)
 - **APENs**
 - **NOS/Self-certifications**
 - **Performance testing**
 - **O&M Plans**
 - **Malfunctions/ upsets**
 - **State/fed reporting**
- C/E History (public and internal)
 - **Enforcement cases**
 - **Previous reports**
 - **Complaints**



File Review

- Offsite observations
- Introductions
- High Priority concerns (if any)-
expedited approach
- Go over permits
 - (**PMEC**) processes, materials, equipment,
and Controls
 - Overview of **conditions**
- Walk through operation
 - Regulated and relevant **PMEC**
 - Required and relevant **O & M details**



Onsite Evaluation

AIM

- Acknowledge
The issue- imminent health concern?
Cite rule/regulations
Compliance
- Implement controls/corrections
Action taken- observable or proven
- Mitigate
Present proof of correction and/or corrective action plan to prevent future NCs
- Operating outside of compliant parameters regardless of what is planned may lead to a violation
- Malfunction reporting will follow AQCC Common Provisions
If it is happening at the time, it will be handled like an NC and affirmative defense will have to be considered during the enforcement process with APCD



Non-Compliances (NCs)

- Onsite Review
 - **Non-Compliances:**
 - High Priority
 - Review AIM
 - Timelines and deadlines
 - Non-HP (i.e., administrative)
 - Issue
 - Means of correction
 - Deadline
 - **Compliances**
 - What's working
 - **Pending records request**
 - Any additional docs from inspection
 - Permit Conditions



Onsite Evaluation

- State standard- **10 business days**
 - From time of inspection or when request is submitted, which ever is later
 - Templated letter
- Consider presenting large logs onsite
- Pay attention to Compliance Period
- If NC identified:
 - **Correspond** with inspector
 - Workout means of compliance and deadlines
 - Meet deadlines/timelines
 - Request extensions **prior to** deadlines

DO NOT IGNORE/AVOID INSPECTOR



Records Request

Comprehensive Document

- Source information
 - Onsite observations and statements
 - Correspondence
 - Permit conditions/ requirements
 - Applicable Records
 - Determinations
-
- Written for common reader and professional
-
- NC reports recommended for enforcement are submitted to state only
 - NC's and next steps summarized to source
 - APCD reviews and processes



Reporting



**Compliance
Assurance is the
goal**



Complaint Investigations

Responsive and Thorough

Weld County Department of Public Health and Environment



- Initiated by:
 - Citizen complaint
 - Field observation
 - APCD/ outside agency referral
 - Public concern
- Typically, observable high priority/env harmful concern:
 - AQCC Regulations
 - Primacy over air, except noise

Weld County Code:
Noise
Nuisance dust, Odor, smoke



Complaint Investigations

Non-O&G Noise

<i>Land Use</i>	<i>Maximum Noise (dB(A)) 7:00 a.m. — 9:00 p.m.</i>	<i>Maximum Noise (dB(A)) 9:00 p.m. — 7:00 a.m.</i>
Residential Property or Commercial Area	55 dB(A)	50 dB(A)
Industrial Area or Construction Activities	80 dB(A)	75 dB(A)
Nonspecified Areas	55 dB(A)	50 dB(A)

- Local standard: From complainant location
- State standard: 25 feet from the source of the noise.
- Numerous exemptions such as
 - Emergency vehicles, safety alarms, agriculture, ops covered by other jurisdictions, etc.

Taylor Robinson,
Oil and Gas, Senior Environmental Health Specialist

trobinson@weldgov.com
970-400-2212 (office), 970-702-1464 (cell)

Weld County Department of Public Health & Environment
1555 N. 17th Ave.
Greeley, CO 80631

- Separate code requirements
- Weld County O&G Workgroup
 - O&G companies operating in Weld County
 - Next meeting:
1/20/22, 1:00-4:00 PM



O&G Noise

Sec. 21-5-435

All Oil and Gas Operations will comply with the following maximum permissible noise levels:

Table 435 A.1: Noise Levels

	7:00 a.m. to next 7:00 p.m.	7:00 p.m. to next 7:00 a.m.
<u>A-scale</u>		
NL-1	50 db(A)	55 db(A)
NL-2	55 db(A)	60 db(A)
NL-3	60 db(A)	65 db(A)
NL-4	65 db(A)	70 db(A)
<u>C-scale</u> (All Areas)	65 db(C)	65 db(C)



OG noise: Weld County Code

Sec. 21-5-435.A - Noise.

1. During the Construction Phase or during operations involving Pipeline or Gas Facility installation or maintenance, use of a Workover rig, or stimulation, Operators must comply with the following noise levels:

- a. For Oil and Gas Locations within the Ag-Rural Planning Area, as depicted on the map in Appendix 21-B, Operators shall comply with the maximum permissible noise level for the **NL-4 standard.**
- b. For Oil and Gas Locations within the Near-Urban Planning Area, as depicted on the map in Appendix 21-B, Operators shall comply with the maximum permissible noise level for the **NL-3 standard.**
- c. The OGED Director may require Operators to comply with a lower maximum permissible noise level in consultation with the Colorado Department of Public Health and Environment, or Colorado Parks and Wildlife.

2. During the Production Phase, Operators with Oil and Gas Locations in both the Ag-Rural and Near-Urban Planning Areas shall comply with the maximum permissible noise level for the **NL-1 standard.**



O&G Noise: Weld County Code (2022)

- Respond
- Observe
- Record
- Contact operator
 - If NC identified, follow same process as an identified NC on an inspection.
- Correspond complainant and operator
- Follow up with complainant and operator
- Report



Complaint Investigations

- Leak Detection
 - Exploring leak detection response
 - Handheld benzene and 4 gas detectors
 - Currently no regulatory pathway for leaks per se:
 - **Tiered Complaint Response**
Includes communication plan (i.e., fire protection, operators, and local/state agencies)
 - **May initiate Compliance Evaluation (Partial or Full)**
 - if related NCs discovered will proceed with inspection/reporting process.



Complaint Investigations

Future

- Exploring monitoring projects
- Collaborative studies on air emission sources and atmospheric data
- Involved in rulemakings
- Evaluating local policies
- Procuring resources
- Listening to public and stakeholders to facilitate reasonable actions to improve air quality

Dani Serna, RS/ REHS

Senior Environmental Health Specialist,
Air Quality Program

dserna@weldgov.com

970-400-2239 (office), 970-518-2626 (cell)

Weld County Department of Public Health & Environment
1555 N. 17th Ave.
Greeley, CO 80631



A scenic landscape featuring a calm lake in the foreground, reflecting the surrounding environment. The middle ground is filled with trees in various stages of autumn, with leaves in shades of yellow, orange, and green. A prominent, large tree with bright yellow foliage stands on the right side of the lake. In the background, a range of mountains is visible, with several peaks covered in snow under a clear blue sky with light, wispy clouds. The overall atmosphere is peaceful and serene.

Thank you!