Protecting Source Water

During Oil and Gas Development

Paul Hempel
Source Water Program Manager
Colorado Rural Water Association
CRWA:
36 Years of Water & Wastewater Operator Training and Certification

COLORADO WATER AND WASTEWATER FACILITY OPERATORS CERTIFICATION BOARD
Operator Certification Program Office
2170 S Parker Rd Ste 200
Denver, Colorado 80231

APPLICATION FOR WATER, WASTEWATER, INDUSTRIAL WASTEWATER COLLECTION, AND DISTRIBUTION CERTIFICATION EXAMS

Please read instructions carefully before completing application. An incomplete application may result in disqualification.

1. Enter Level as noted on instructions. Only one selection per application.
   - Water Treatment Level
   - Wastewater Treatment Level
   - Industrial Wastewater Treatment Level
   - Water Distribution Level
   - Wastewater Collection Level
   - Small System

2. Exam Date
   - Location

3. General Information
   - Check here if this is a change of information

   NAME:
   - First
   - Middle
   - Last

   MAILING ADDRESS:
   - Street
   - City
   - State
   - Zip

   HOME PHONE:
   - WORK PHONE:
   - FAX:

   CELL PHONE:
   - E-MAIL:

   FACILITY NAME:
   - OPERATOR ID:
   - FACILITY PERMIT:

Information: (303) 304-8904
Fax: (303) 396-3486

Programs/Services

• Trainings

• Circuit Riders
  – Water
  – Wastewater

• Annual Conference

• Energy Efficiency Assessment

• Source Water Protection
Colorado Rural Water Association’s Source Water Assessment and Protection Program
1996 Safe Drinking Water Act Amendments
What is Source Water Assessment and Protection?

Multi-step, two-phased process designed to assist public water supply systems in preventing accidental contamination of their untreated drinking water supply through the development and implementation of source water protection plans.
Colorado’s SWAP Program

- Voluntary/Non-Regulatory
- Main focus – stakeholder involvement, public education
- Two-phase Program
  - Assessment Phase
  - Protection Phase
Stakeholders Work Together to Develop and Implement the Source Water Protection Plan
Potential Contaminant Sources → Drinking Water Supply
Residential Practices

- Landscape wastes
- Winter salt
- Chemical storage
- Oil and gas drips
- Soaps and detergents
- Downspout to pavement
- Runoff to lakes and streams
- Pet wastes
- Exposed soil

Over-watering lawns and gardens
Failing Septic Systems
Questionable Agricultural Practices
Wildfires
Oil and Gas Development
This resource guide was a collaborative effort:

PROTECTING SOURCE WATER IN COLORADO
DURING OIL AND GAS DEVELOPMENT
A Guidance Document for Water Providers and Their Communities

- Review of Oil and Gas Development and Potential Risks to Source Water
- Regulatory and Non-Regulatory Approaches to Protecting Source Waters
- Assessing and Mitigating Potential Risks to Source Water
Risks to Water Quality from Oil and Gas Development
SPILLS

From 2013-2016, there was an average of 1.8 spills per day, with an average size of 171 gallons of oil & 1265 gallons of produced water per spill.
METHANE IN WELL WATER


Addressing Potential Risks To Source Water From Oil and Gas Development

• Location: The Most Important Protection of Source Water

• Mitigation:
  - Require Proper Casing and Well Construction
  - Use Pits to Store Water and Other Fluids
  - Provide extra protection around stream crossings
  - Conduct Baseline Water Quality Monitoring

* Water Wells and Intakes in Close-Proximity to Oil and Gas Wells Should Have Additional Protections
Regulatory and Non-regulatory Approaches to Source Water Protection

*available to water providers and local governments*

- Working through state permitting process
- Private party contracts
  - Oil and gas leases
  - Surface use agreements
- Watershed District Ordinances
- Memorandums of Understanding
- Collaborative planning approaches
- Recognition of Source Water Protection Areas
City of Brighton COGCC Order

- Created an “Exception Zone” around the Brighton City water supply - does not allow oil and gas facilities within 500’ of its water wells or 300’ from rivers and streams.

- Created a “Ground Water Sampling Zone” from ½ mile from the City’s water supply as well as 500’ from rivers, lakes, and streams Brighton relies on for its water supply.

- Created a “Buffer Zone” that is within ½ mile of all water facilities where best management practices will be utilized to protect water quality.
Current Oil and Gas Development
Case Studies:

Water providers and their communities working with the oil and gas industry during development of Source Water Protection Plans
Colorado’s Oil and Gas Basins
The Town of Collbran is a small rural town located 40 miles east of Grand Junction, CO. The source waters for the Town of Collbran originate from springs in the Buzzard Creek watershed.
Town of Colbran Source Water Protection Areas

Legend:

- Zone 1
- Zone 2
- Zone 3
- Oil/Gas Facility
- Storage Tanks
- Mining
- Hazardous Waste Facility
Oil & Gas Management Approach

TOWN OF COLLBRAN, COLORADO
ORDINANCE NO. 8
SERIES OF 2010

A AN ORDINANCE OF THE TOWN OF COLLBRAN, COLORADO ADOPTING A NEW
CHAPTER 9.15, “WATERSHED PROTECTION” TO TITLE 9 OF THE COLLBRAN
MUNICIPAL CODE

WHEREAS, the Town of Collbran operates its water and sewer facilities using water rights
derived in part from and collected by the Town in Buzzard Creek, Plateau Creek and Grove Creek; and

WHEREAS, the Town adopted the Plateau Valley Source Water Protection Plan dated March
2008 prepared by the Colorado Rural Water Association, which was prepared following numerous
stakeholder meetings and identified the various impacts of activities to the Town’s water resources
including agricultural practices, oil and gas development, storage tanks, septic tanks, transportation on
roads, land uses, public lands, private wells, and residential practices; and

Stipulations Included:
• A hydrologic study concerning the source of the aquifer feeding the springs,
• Full disclosure of all chemicals used in the operations,
• Improvements to the pipes that deliver water from the springs under the road,
• Provide the town with potable water in case the springs become contaminated,
• Produced water stored on site to reduce the number of trucks crossing over the spring’s,
• Posting of a $100,000.00 bond to the Town
Source Water Protection for the Colorado River Partnership

Source Water Protection Plan

Garfield County, CO
January 2013

Written by: Morgan Hill, Environmental Health Specialist
Garfield County Public Health

Coordinated by: Dylan Elks, Source Water Specialist
Colorado Rural Water Association

For the community water providers:
Town of New Castle ID: CO0122938
Talbott Enterprises ID: CO01123710
Town of Silt ID: CO0123710
City of Rifle ID: CO0124470
Town of Parachute ID: CO0125022

Town of New Castle
Town of Silt
City of Rifle
Town of Parachute
Talbott Enterprises
The Steering Committee recognized that extensive regulations for the oil and gas industry were already in place.

The focus was on opening the channels of communication between the energy industry field workers and the water operators.
Oak Meadows Service Company provides water to a small rural subdivision located in Garfield County in western Colorado south of the City of Glenwood Springs.
Oak Meadows Water Association
Source Water Protection Areas
Oil and Gas Lease 600 Feet From Wells in the Thompson Divide Area of the Piceance Basin
Oil & Gas Management Approach

- OMSCO sent a letter to the BLM, the USFS District Ranger and the WRNF Supervisor outlying their concerns.

- OMSCO provided copies of the final SWPP to the COGCC, SG Interests and Garfield and Pitkin Counties.

- Due to increased public involvement, US Senator Michael Bennet introduced the Thompson Divide Withdrawal and Protection Act in the United States Senate. The bill offers a middle-ground solution to the ongoing conversation about the Thompson Divide’s future. If passed, the legislation would, among other things, withdraw unleased public minerals in the area.

- The USFS final EIS for the White River National Forest included a ban on any future oil and gas leases in the Thompson Divide area.

- The Bureau of Land Management has formally proposed to cancel 25 leases in the Thompson Divide including lease #066688. A final record of decision is expected to come at any time.
Morgan County Quality Water is a “Special District” water provider that supplies drinking water to residents in rural Morgan County, Colorado. The main source of their water is from 9 groundwater wells located within 3 different well fields.
Morgan County Quality Water Source Water Protection Areas
In Review...
Protecting Source Waters During Oil and Gas Development

• Develop a Source Water Protection Plan
• Define your source water protection areas
• Know the decision-makers
• Track oil and gas development
• Understand and mitigate risks
• Get involved in the process
  – Private contracts
  – Local, state and federal government processes
    • Legal and Collaborative
Thank-you!

Paul Hempel – Colorado Rural Water Association

paul.hempel@hotmail.com

719-565-8007