

COLORADO OIL AND GAS CONSERVATION COMMISSION

2014 ANNUAL REPORT

to the

WATER QUALITY CONTROL COMMISSION (WQCC)

and

WATER QUALITY CONTROL DIVISION (WQCD)

of

THE COLORADO DEPARTMENT OF

PUBLIC HEALTH AND ENVIRONMENT



COLORADO

**Oil & Gas Conservation
Commission**

Department of Natural Resources

IN ACCORDANCE

with

THE AUGUST 28, 1990 MEMORANDUM OF AGREEMENT

and

THE IMPLEMENTING PROVISIONS OF SENATE BILL 181

December 31, 2014

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1.0 INTRODUCTION

The Colorado Oil and Gas Conservation Commission (COGCC) is an implementing agency for water quality standards and classifications adopted by the Water Quality Control Commission (WQCC) for ground water protection. This authority was provided by SB 89-181, and is restated and clarified by a Memorandum of Agreement (MOA) that was adopted by the agencies on August 8, 1990.

Section 5.1 of the MOA specifies that the COGCC must report annually to the WQCC and the WQCD about how its programs assure compliance with WQCC water quality standards and classifications for the activities that are subject to the jurisdiction of the COGCC.

This 23rd annual report provides an overview of COGCC functions and a summary of calendar year 2014 activities, with a focus on groundwater protection programs. Major issues concerning the implementation of water quality standards and classifications are also reported.

2.0 WQCC/WQCD and COGCC COORDINATION AND PUBLIC OUTREACH

2.1 Inter-agency Coordination

In 2014 the COGCC, WQCC, and WQCD worked closely on several issues. COGCC and the CDPHE Office of Emergency Preparedness and Response staff communicated frequently through email and telephone calls regarding spills at oil and gas facilities when there was some question as to whether a spill was exploration and production (E&P) waste or not. COGCC took the lead for all E&P waste spills.

COGCC and WQCD staff worked closely together in 2014 collecting samples and evaluating data regarding tert-butyl alcohol (TBA). COGCC staff continued groundwater sampling in 2014. A summary report will discuss possible sources of TBA present in some Las Animas county groundwaters and will be available soon.

The COGCC Director and/or Environmental Manager met with WQCD/WQCC on March 4, 2014 to discuss program issues.

From March through July 2014, COGCC and WQCD staff worked together with the City of Brighton and oil and gas industry representatives to develop an Order by the COGCC providing explicit protection for the City of Brighton's Public Water System

(PWS). Collaboratively, the stakeholders found a unique set of circumstances associated with the Brighton PWS, including: a high percentage of Brighton's PWS is obtained from shallow groundwater wells; the groundwater wells are or may be under the direct influence of certain surface water; and the Lakes and specified River, Stream, and Ditch Segments are essential to Brighton's PWS. Based on these unique circumstances, stakeholders determined certain requirements and BMPs are warranted for New Oil and Gas Locations proximate to the Brighton PWS to eliminate, minimize, or mitigate potential significant adverse impacts associated with Oil and Gas Operations. The Commission approved the Order at the July 2014 hearing in Greeley, establishing buffer zones around Brighton's PWS wells, and surface waters that are associated with the PWS system.

2.2 Public Outreach

The COGCC employed the following strategies for effective communication with the public and the regulated industry:

Staff reports were prepared prior to each hearing for the COGCC Commissioners. Ongoing staff activities such as compliance and enforcement actions, environmental and landowner issues, and other topics relevant to the mission of the COGCC were summarized in these reports. The 2014 reports were distributed widely to interested parties and they are posted on the COGCC website www.cogcc.state.co.us.

A toll free telephone number (888-235-1101) to the Denver office has been established as a complaint hotline for citizen use. Beginning in late 2014, COGCC staff has begun a LEAN process to improve the efficiency and efficacy of its complaint intake, response and resolution processes to better serve the public.

In 2014, the COGCC held three of its regular nine hearings outside of Denver: one in Rifle, Garfield County, one in Greeley, Weld County, and one in Durango, La Plata County.

Regularly scheduled meetings are conducted in parts of the State with active oil and gas activity. The Gas and Oil Regulatory Team (GORT) meets in Durango on a quarterly basis and focuses on oil and gas operations in the San Juan basin in southwestern Colorado. GORT provides a forum for meaningful dialogue between operators, citizens, county and local governments, the Southern Ute Indian Tribe, the Bureau of Land Management (BLM), the US Forest Service (USFS), and the COGCC. The Northwest Colorado Oil and Gas Forum (NWCOGF) usually meets in Rifle or Grand

Junction, also quarterly and focuses on the Piceance basin and other operations in the northwestern part of the state. The NWCOGF participants include the COGCC, other State, Federal, and local government agencies, the oil and gas industry, and concerned landowners and citizens. COGCC staff and the Director regularly attend these meetings and give presentations on emerging issues, hot topics, as well as routine updates on operations in the respective geographic areas.

COGCC continues to solicit participation on all levels from stakeholders, including the oil and gas industry, local governments, citizens, other regulatory agencies, agriculture interests, and the environmental community. During 2014, COGCC staff participated in over 150 meetings at the request of municipal, county, and other local governments, EPA, BLM, trade organizations, and special interest groups. Of the total 150 meetings, 93 or about 62 percent were for the Local Government Liaison (LGL) Program.

The LGL Program is part of the Local Government Designee (LGD) process created by the COGCC in 1992 to provide a conduit of information between local governments and the COGCC. The LGLs facilitate participation in the LGD program through training, answering questions and providing information, data, and presentations about specific aspects of oil & gas operations, COGCC rules, and the COGCCs role as a regulatory agency within the Department of Natural Resources. In total, 168 entities (56 counties, 104 municipalities, and eight special districts) currently participate in the LGD program.

The COGCC continued to use the website to make announcements and distribute information/data. COGCC information and data systems are described in Section 3.3.

3.0 COGCC ORGANIZATION

3.1 COGCC Commissioners

The Colorado Oil and Gas Conservation Act specifies the number and composition of the Commission. The Act requires nine Commissioners, seven of whom are appointed by the Governor with the consent of the Senate, and two ex officio voting members who are the Executive Directors of the Department of Natural Resources and the Department of Public Health and the Environment. At least two members are appointed from west of the continental divide and the other members are appointed taking into account the need for geographical representation of other areas of the state with high levels of oil and gas activity or employment. Of the seven, three members are to have substantial experience in the oil and gas industry and at least two of these must have college degrees in petroleum geology or petroleum engineering; one member must be a local

government official; one member must have formal training or substantial experience in environmental or wildlife protection; one member must have formal training or substantial experience in soil conservation or reclamation; and one member must be actively engaged in agricultural production and also be a royalty owner. A chart showing the makeup of the COGCC Commission is included in Appendix 1.

3.2 COGCC Staff

The COGCC has 97 FTE positions located in the Denver office and throughout the State in field offices. The Staff are made up of engineers, environmental protection specialists (EPSs), field inspectors, permitting technicians, hearings specialists, and a variety of administrative professionals. Information Technology (IT) support is provided by four employees of the Office of Information Technology (OIT). Table 3-1 summarizes each group and their primary functions. The current organizational chart and a series of maps showing regional areas of responsibility are included as Appendix 2.

Table 3-1

Group	Number of FTE	Primary Functions
Environmental	18	Complaints, Spills, Remediations & Pit Closures, Environmental projects, Oil and Gas Location Assessments & Pit Permitting, Environmental database.
Engineering	13	Permitting downhole wellbore plans, UIC Permitting, Oil/Gas Facility oversight, Plugging orphan wells.
Field Inspection	28	Complaints, Inspection of Oil/Gas wells, facilities, and locations.
Permitting	21	Permitting oil and gas wells, Bonding, Production reporting, GIS.
Hearings	9	Hearings, Rulemaking, Enforcement, Local Government Liaisons.
Financial	4	Budget Management, Procurement, Purchasing.
IT (OIT)	4	Computer support, eForm development, Website development/support.

Staff functions that directly relate to water resource protection and compliance with groundwater and surface water standards include the following:

Permitting- Well permits are reviewed to ensure compliance with all rules related to aquifer protection, such as surface casing and cementing requirements. The permit technicians and engineering staff perform this function.

Location Assessments- Under the Form 2A process, Operators are required to provide site specific environmental information about surface locations. Consultation by the Colorado Department of Public Health and Environment (CDPHE) and Colorado Division of Parks and Wildlife (CPW) with the surface owner and operator is required in some circumstances. Oil and Gas Assessment Location (OGLA) specialists in the environmental group review and evaluate Form 2A applications, as well as publicly available information, to determine whether the proposed oil and gas operations have the potential to negatively impact water resources; public health, safety and welfare; the environment; and/or wildlife resources. Site-specific conditions of approval (COAs) may be placed on permits to prevent or mitigate potential impacts.

Underground Injection Control (UIC) Permitting- COGCC staff continues to work with WQCD and EPA staff to ensure that operators of Class II injection wells in Colorado are in compliance with ground water standards and classifications. In the past, the Colorado Geologic Survey was consulted on site specific matters, such as the occurrence of faults and potential seismic issues. However, this function is now being handled by our in house geologic experts. Injection operations in the Raton Basin and in Weld County are being actively managed by the COGCC in conjunction with the U.S. Geological Survey Earthquake Notification Service, through the installation and continuous monitoring of several local seismometers to evaluate if injection of produced water has some relationship to local seismicity. COGCC Staff approved 29 Class II UIC well permits during 2014.

Pit Permitting- Operators construct pits at oil and gas locations for a variety of purposes; most commonly to contain drill cuttings, produced water and flow back, and reuse and recycling of produced water. COGCC is responsible for permitting pits (Form 15), inspecting their operation and overseeing their closure. The OGLA staff review pit permits for construction and operational details, and evaluate the environmental setting to ensure that the pit can be used without causing adverse environmental impacts. The Director may apply conditions of approval with additional provisions to protect waters of the state, public health or the environment. In 2014, approximately 47 new pits were permitted. Applications for new pits are down significantly over previous years (192 permits in 2011, 84 permits in 2012, and 106 permits in 2013) reflecting both a decrease in new O&G activity in areas that traditionally have used pits for produced water disposal and widespread industry use

of “pit-less” drilling and completion activities.

Centralized E&P Waste Management Facility Permitting- Non-commercial centralized exploration and production (E&P) waste management facilities are permitted by COGCC under Rule 908. Generally these facilities are larger than a typical tank battery that might handle wastes from only one or a few wells. These larger facilities handle wastes from many wells and often from more than one field or lease. These facilities may include lined pits, land farms, drill cuttings solidification facilities, and tank batteries. A permit is required for these facilities and, as part of the approval process, staff evaluates the proposed site, operation, financial assurance, environmental impacts and preliminary closure plans. These facilities are currently required to have financial assurance in an amount equal to the estimated cost for proper closure, abandonment, and reclamation. During 2014, the COGCC permitted five new centralized E&P waste management facilities and closed one. There are 30 active permitted centralized E&P waste management facilities in the state.

Disposal of Produced Water Oversight- Approximately 50% of the water co-produced with oil and gas is disposed of or used for enhanced recovery by underground injection. Most produced water that is not injected is disposed in evaporation and percolation pits or discharged under Colorado Discharge Permit System (CDPS) permit. A small amount of produced water is used for dust suppression on oil and gas lease roads. In addition, to minimize waste and the use of fresh water many operators are reusing and recycling produced water and other fluids for drilling and well completion activities including hydraulic fracturing treatment operations. COGCC staff review UIC permits, pit permits, centralized E&P waste management permits, and other proposals, including water reuse and recycling plans, to ensure that produced water is handled appropriately.

Complaint Response- COGCC responds diligently to complaints received from individuals and other agencies. Complaints are tracked in the COGCC’s database and can be accessed via the COGCC website. In 2014, COGCC received approximately 42 complaints related to groundwater or surface water issues. The environmental staff follows up, where appropriate, and collects samples for laboratory analysis. A letter report is provided to the complainant explaining the analytical results, regardless of whether an oil/gas impact is indicated. When oil/gas impacts are detected, Operators are required to perform additional investigation, remediation, and mitigation, as needed, to bring sites into compliance with soil and groundwater standards.

Spill/Release Response and Remediation Oversight- Spill response by the environmental staff includes onsite inspections, sample collection, remediation

oversight, and review of reports, remediation plans, analytical data, and operating practices, to ensure protection of surface and ground water, in accordance with COGCC rules and WQCC standards and classifications. Spills are tracked in COGCC's Master Records Database (MRDB) and can be accessed via the COGCC website. In 2014, in response to numerous public and media inquiries, COGCC prepared and updated a table summarizing annual spills reported since 1999.

Plugging Orphan Wells- COGCC engineering staff used appropriated funds and claimed financial assurance to plug and abandon and to reclaim orphaned oil and gas sites in Mesa, Garfield, Larimer, Moffat and Logan Counties. Nine wells were plugged and four well sites were remediated and/or reclaimed during FYE2014. In FY-2015 the engineering staff plans on plugging, abandoning and reclaiming up to 19 orphaned oil and gas wells and/or well sites in Rio Blanco, Baca, La Plata, Fremont, Larimer, Mesa, and Washington Counties

3.3 COGCC Information/Data Systems

Each year the data management systems and geographic information systems (GIS) are improved as time and resources permit. Highlights of the 2014 improvements are provided below. Primary data systems that experienced improvements included:

eForms – eForm system was enhanced; and
Environmental Database – Database improvements.

A brief description of the changes for each system is provided below:

3.3.1 eForms

The eForm application allows Operators to submit forms electronically. eForms currently in use or pending completion (*) are:

Form 2 – Application for Permit to Drill
Form 2A – Oil and Gas Location Assessment
Form 4 – Sundry Notice
Form 5 – Drilling Completion Report
Form 5A – Completed Interval Report
Form 6 – Well Abandonment Report
Form 7 – Monthly Operations Report*
Form 10 – Certificate of Clearance/Change of Operator
Form 14 – Monthly Report of Non-Produced Water Injected*

- Form 14A – Authorization of Source of Class II Waste for Disposal*
- Form 15 – Earthen Pit Report/Permit
- Form 17 – Bradenhead Test Report
- Form 19 – Spill/Release Report
- Form 21 – Mechanical Integrity Test (MIT) Report*
- Form 26 – Source of Produced Water for Disposal*
- Form 31 – Underground Injection Formation Permit Application*
- Form 33 – Injection Well (UIC) Permit Application*
- Form 41 – Trade Secret Claim of Entitlement
- Form 42 – Notice of Notification (Notice of Hydraulic Fracturing)

With eForms, COGCC staff is able to review the forms and attachments electronically. Each staff member involved in the process then approves their portion of the form (i.e. permitting, engineering, etc.) online. Paper files are not generated for these new permits. Multiple approvals are typically required on each form. As a form is working its way through the COGCC review process, the public is able to track the status of the form through the use of the public user interface.

As a result of the December 2013 amendments to Rules 337 and 906, the Form 19 (Spill/Release Report) has been revised to align with the amended rules. The revisions provide for transition to eForms and the phasing out of “paper submittals” of the Form 19. The eForm 19 was released on April 24, 2014. The COGCC conducted several two-hour training sessions for operators on the use of the eForm 19 which included a presentation by COGCC staff, followed by time for questions and answers. Three training sessions took place at the in March 2014 and were attended by approximately 100 industry representatives. Additional, less formal, training sessions with individual operators have also been conducted

3.3.2 Environmental Database

The Ground Water Protection Council (GWPC) in conjunction with the COGCC has developed a publicly-available, searchable database of groundwater, surface water, and soil sample analytical results from throughout the state. This database is referred to as the COENV database. The COENV database has been active since September 2012. The database has sampling data dating back as far as 1941. The environmental database currently contains over 13,497 sample locations and 34,186 individual samples.

In 2014, 1,489 samples from 590 separate locations were added to the database. Since the statewide rules for groundwater sampling went into effect (May 1, 2013), COGCC has received a total of 1,925 samples from 1,028 separate locations.

The data can be accessed through the GIS Online map. Sample locations with available water and natural gas data appear as blue triangles when the "Sites with Lab Data" layer is turned on. The user can double click on a sample site and gain access to the analytical data for that site. An example analytical report is included as Appendix 3.

The database allows for electronic data deliverables to be used for input. New samples from COGCC staff sampling efforts, current COGCC baseline sampling rules (rules 317B, 318AE4, 608, and 609), and the COGA Voluntary Baseline Sampling Program are available.

In April 2014, the COENV database was made available for download in an Access database format for those who wish to query large datasets. Access to the download is under the HELP section of the COGCC webpage under DOWNLOADS. It is anticipated that the database download will be used by a number of entities such as scientific organizations, local governments, and others to better understand background water quality in their area of interest.

3.3.3 GIS- Geographic Information Systems

The GIS Online map continues to be a critical application that staff, industry, other agencies, and the general public depend on to process permits, create reports and to view information that can assist in exploration programs, or address environmental concerns. Additionally, certain COGCC rules require industry to view the online map to determine if a proposed location falls within a CDPHE 317B Buffer Zone, a Sensitive Wildlife Habitat (SWH), and/or a Wildlife Restricted Surface Occupancy (RSO) Area.

The GIS Online map contains over 150 map layers including oil and gas wells, permits, spacing orders, field boundaries, and a number of base layers such as cities, rivers, roads, sections, land ownership, etc. Aerial photos, topographic quads, and geologic maps are displayed as images in the map. The new version allows a user to zoom to a street address, has improved printing functionality, and includes a live connection to the environmental database sample sites. To aid operators and other interested parties in maintaining their own GIS maps, the COGCC website also provides shapefiles for well, permit and pending permit surface locations as well as pit locations.

3.3.4 Online Environmental Reports

Written reports for COGCC managed baseline sampling projects and other special environmental studies, such as the Water Quality Trend and Data Analysis for the San

Juan Basin, Status reports for Monitoring Project Rulison, Methane Seep studies in Las Animas/Huerfano Counties, and the Naturally Occurring Radioactive Materials (NORM) Study are posted on the website under the “Library” tab where they are primarily organized by basin. Many of these reports are in PDF format and can be downloaded. Several new reports were added to the Library this year.

A fact sheet, *Methane in Colorado Groundwater* was developed by COGCC staff and posted in the online Library. The methane in Colorado Groundwater fact sheet provides information regarding the occurrence of methane in groundwater. The fact sheet explains the differences between thermogenic and biogenic methane and also briefly covers how the COGCC determines if the source of methane in a water well is biogenic or thermogenic.

Although not new, the brochure, *How Well Do You Know Your Water Well* continues to be very popular. The brochure has been updated and revised to include information about mitigating methane in water wells, current contact information for various agencies, and water well maintenance and record keeping. COGCC provides this useful brochure to water well owners when water samples are collected from their wells by COGCC, operators, or third party contractors. The update project was initiated by the Colorado Oil and Gas Association (COGA) with support from the COGCC and cooperation of CDPHE and DWR. An electronic version of the brochure is available in the Library section of the COGCC website.

3.4 COGCC Program Funding

The COGCC receives an annual appropriation of \$312,033 that is used primarily by the environmental staff to respond to and investigate complaints alleging environmental impacts from oil and gas operations. An additional \$325,000 appropriation can be used to conduct special environmental projects. Typical projects involve baseline ground water testing, gas seep investigations, and regional investigations of potential impacts from oil and gas operations. The FY 2014-15 special environmental projects are described in more detail in Section 8.

Because of the COGCC’s potential need to respond to emergency situations related to oil and gas operations, the COGCC receives an annual appropriation of \$1,000,000 for emergency response activities. In addition, the COGCC continues to receive an annual appropriation of \$445,000 for plugging, abandoning, and reclaiming orphaned wells.

4.0 NEW COGCC REGULATIONS AND POLICIES

House Bill 14-1077

To address the OGCC's excess cash fund balance starting in FY 2014-15, the Department supported House Bill 14-1077, which increased the cap on the uncommitted reserve balance in the Oil and Gas Conservation and Environmental Response Fund from \$4 million to \$6 million, effective July 1, 2014. The Department will discuss additional steps with the Governor and General Assembly to ensure compliance with the new cap by the end of FY 2014-15.

House Bill 14-1356

House Bill 14-1356 amended the Conservation Act in order to deter violations and encourage operators to promptly correct violations. The amendments eliminate the \$10,000 penalty cap for a violation, increase the daily maximum penalty amount from \$1,000 to \$15,000 for each violation, and call for the Commission to assess a penalty for each day that evidence demonstrates a violation occurred.

Stakeholder meetings were held throughout the summer and fall and rulemaking was initiated at the regularly scheduled COGCC hearing on December 14 and 15, 2014.

5.0 OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITY

Data used in the following discussion is current as of December 2, 2014 as reported in the December 15, 2014 Staff Report.

One metric used to measure exploration and development activity levels is approved permits. A total of 3,760 permits to drill were issued in 2014 slightly below than 2103's total of 4,028. Most of the permits were issued in Weld County (2,019 permits) in response to the active Niobrara Play. Of the 2,019 Weld County permits, 1,942 were for horizontal wells (approximate 96 percent). The second most active County for permits was Garfield County with 972 permits issued, however only 16 were for horizontal wells. Coal Bed Methane (CBM) development remains lower than historical levels as indicated by lower permit counts in Las Animas and La Plata Counties. Historic details of permit activity by County since 1997 are provided in Appendix 5.

Another metric to gage activity level is well starts. This number approximately represents the actual number of wells drilled. As of November 24, 2014, there were a total of 1,928 well starts, as compared to 1,948 well starts in 2013. More than 1,300 or approximately 68 percent of the wells starts in 2014 were for horizontal wells. Clearly, horizontal drilling associated with the Niobrara and Mancos development dominated

the drilling activity in 2014.

As of December 1, 2014, there were 52,906 active wells in the State. Figure 5-1 shows the approximate number of active wells by County. Weld and Garfield Counties have the most active wells, with more than 21,000 and 10,000 wells, respectively.

Oil and gas production reports for 2014 are not yet complete and therefore final production figures for 2014 are not available. COGCC expects production reporting to be finalized by April 15, 2015. With that caveat, we estimate that approximately 1.52 trillion cubic feet of natural gas will be produced in Colorado during 2014. Of that, 317 billion cubic feet (BCF) will be produced from coal bed methane operations. We estimate that statewide oil production for 2014 will exceed 73 million barrels (BBLs), an approximately 14 percent increase over 2013's 64.7 million BBLs.

failure, such as leaks in process piping or pipelines, valve failures, tank leaks, and/or water vault leaks. Some spills were attributed to human error.

Once a spill has occurred, the Operator is required to remediate environmental impacts. The environmental staff review and approve remediation plans, evaluate analytical data, monitor the progress of the remediation, and ensure cleanup standards and other remediation requirements are met through verification sampling, data review, and other measures.

Where groundwater has been impacted, operators are required to: eliminate any continued release; investigate the extent of contamination; remove the source of contamination (such as the impacted soils in contact with ground water or free hydrocarbon product); remediate; establish points of compliance; and monitor contaminant levels. In accordance with the MOA for Response to Spills/Releases to Surface Water, the COGCC notifies the CDPHE of releases impacting waters of the state. In 2014 seven releases to surface waters of the State were reported to CDPHE WQCD.

Remediation projects are tracked in the COGCC's database and can be accessed on the COGCC website. During 2014, COGCC received approximately 523 new remediation plans, and closed approximately 485 remediation projects.

6.2 September 2013 Flood Event Spills

During the second and third weeks of September 2013, record rainfall along the northern Front Range resulted in widespread severe flooding along Boulder Creek, St. Vrain Creek, Coal Creek, Little Thompson Creek, Big Thompson River, and the South Platte River. There were an estimated 1,614 oil and gas wells and associated production facilities in the flood impact zone near drainages, tributaries, rivers and flood plains during the September 2013 flood. Many of the oil and gas operators were prepared and shut in their wells prior to the flooding; others shut in wells as the extent of the flood became apparent. A total of 2,637 wells were shut-in in advance of and as a result of the flood. Although many oil and gas facilities received significant damage, there were no instances of uncontrolled or long term releases from wells. Most of the releases resulted from the loss of produced fluids in displaced production tanks, produced water tanks and spill containment buckets at load-out valves.

A total of 50 releases exceeded the COGCC spill reporting requirements during the flood. Most of the released fluids were carried away in the flood waters with some residual impacts remaining on surficial soils and vegetation after the flood water

receded. Over 97 percent of the damaged facilities have been rebuilt and the wells returned to production. The remaining facility and wells are being evaluated for removal and or, in the case of wells, plugging and abandonment. Oil & gas operators have implemented best management practices such as upstream well head barriers, tank anchoring and upgraded secondary containment to help prevent damage in future flood events. In order to better prepare for future emergencies, COGCC has implemented nine policies and practices that were presented in a March 14, 2014 report entitled, "*A Staff Report to the Commissioners "Lessons Learned" in the Front Range Flood of September 2013.*" These policies and practices will be the basis for 2015 rulemaking for new well locations in flood plain areas.

7.0 ENFORCEMENT

In fall 2014 COGCC implemented a LEAN process to improve the enforcement program. The process was undertaken to develop an enforcement procedure to help expedite enforcement matters, formalize penalty calculations and provide better tracking methods for enforcement matters. During 2014 the Legislature also passed House Bill 14-1356, which increased the COGCC penalty authority from \$1,000/day to \$15,000/day. COGCC is currently in a rulemaking to implement the new penalty structure.

As of December 2, 2014, the COGCC issued a total of 46 enforcement orders, 42 through Administrative Orders by Consent and four through Orders Finding Violation. This is the most enforcement orders ever issued by the Commission. These 46 orders settled a total of 120 Notices of Alleged Violations and imposed \$1,410,000 in penalties.

8.0 SPECIAL ENVIRONMENTAL PROJECTS

COGCC is currently working on the following projects using the FY 2014-2015 Special Environmental Projects budget line:

3M4M Project, La Plata and Archuleta Counties – Monitoring gas pressure in monitoring wells along the Fruitland Outcrop and operation gas mitigation recovery systems at two sites.

Project Rulison and Rio Blanco Nuclear Test Sites, Garfield County – Review of monitoring data and new Sampling and Analysis Plan.

CSU Real-Time Ground Water Monitoring Network – The Center for Energy Water Sustainability (CEWS) at Colorado State University in Fort Collins along with assistance of the COGCC, has designed Colorado Water Watch (CWW), a real-time groundwater quality monitoring pilot program for the Laramie-Fox Hills Aquifer. The monitoring system is comprised of a network of four Weld County groundwater wells near oil and gas operations with sensors installed that are capable of detecting changes in groundwater quality due to natural or anthropogenic changes in water level or water quality.

Tert-Buytl-Alcohol (TBA) Study, Las Animas County – Collect and analyze samples from several domestic water wells and produced water from oil and gas wells to identify distribution and potential sources of TBA. A summary report is being prepared for posting on the COGCC website in early 2015.

NORM Project - Development of Sampling and Analysis Plan for testing various E&P wastes for naturally occurring radioactive materials (NORM) and collection of representative samples from drill cuttings, Weld County. A summary report has been posted on the COGCC webpage.

San Juan Basin Water Quality Study - The objective of this study is to assess potential long-term trends in general groundwater quality in the San Juan Basin based on data available in the COGCC database. In FY 2015, trend and data analysis for more than 2,000 water wells in the San Juan Basin from a period of more than 15 years will be updated. The analysis will include groundwater data collected from baseline and post-completion samples, for analytes including cations, anions, TDS, iron, manganese, dissolved nutrients and methane throughout the San Juan Basin in La Plata and Archuleta Counties. The analysis will include mapping, time-concentration plots, and Mann-Kendall trend analysis as a means to filter a large amount of data to allow staff to identify and focus on potential areas of concern. Past evaluations did not delineate any clusters of significant upward trends in methane or major cation/anion concentrations within the San Juan Basin. However, as a result of Commission Orders 112-156 and 112-157 and statewide sampling requirements, the dataset is constantly being increased and requires periodic evaluation.

APPENDIX 1

COGCC Commissioners

Colorado Oil & Gas Conservation Commission Statutory Requirements

*Please note that information within parentheses is additional background information and not a statutory requirement

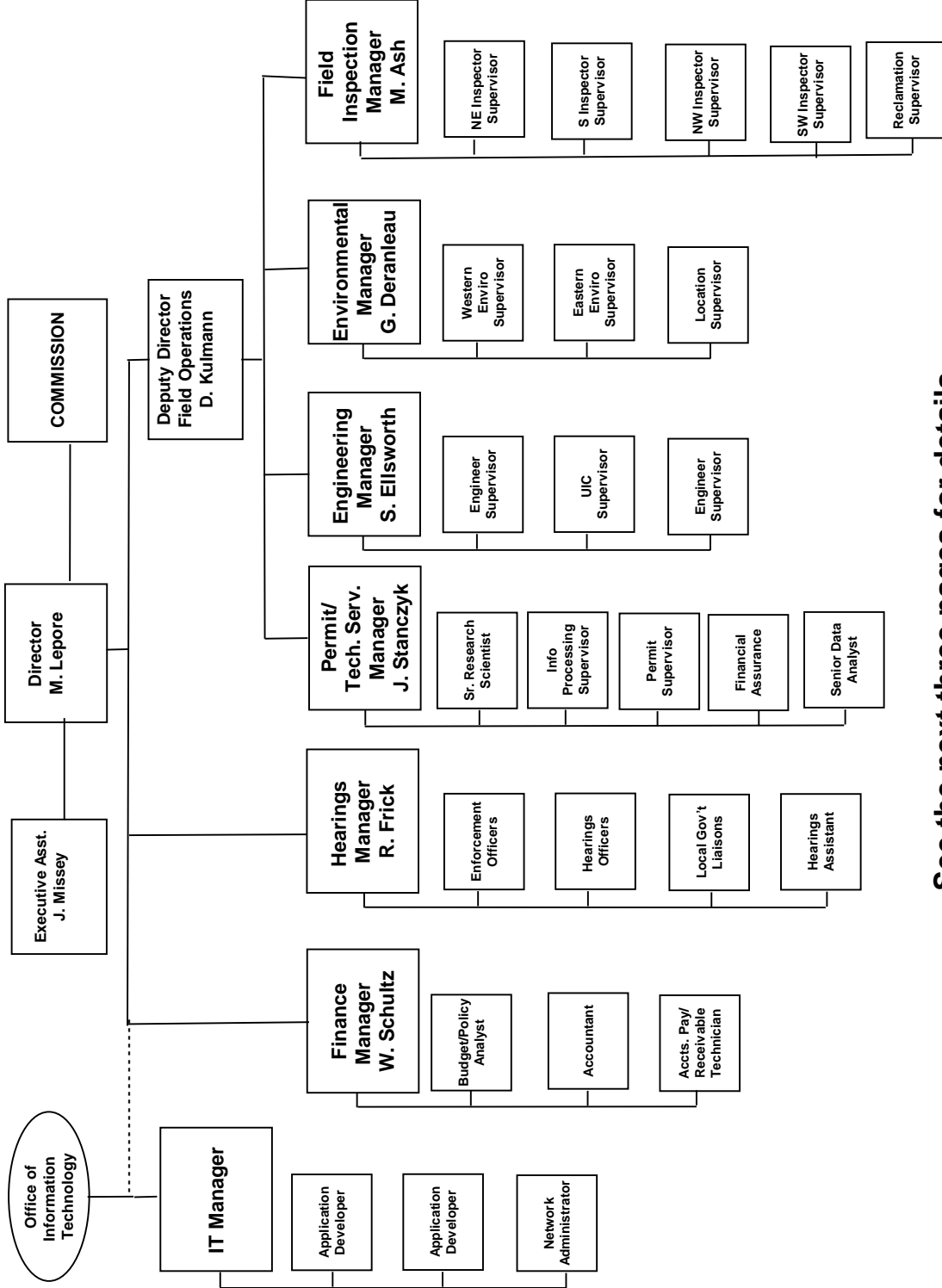
Commissioner (Officer)	2 Executive Directors (ex-officio voting members) (Current Employment)	2 West of Continental Divide (Resident County)	3 with Substantial Oil & Gas Experience (Employed by Oil & Gas Industry) (Current Employment)	2 Out of 3 Must Have a College Degree in Petroleum Geology or Petroleum Engineering	1 Local Government Official (Current Employment)	1 with Substantial Environmental or Wildlife Protection Experience (Current Employment)	1 with Substantial Soil Conservation or Reclamation Experience (Current Employment)	1 engaged in Agricultural Production and a Royalty Owner (Current Employment)	Maximum of 4 from Same Political Party (excluding Executive Directors)	Current Term Expires
Richard Alward		X (Mesa)					X (Ecologist)		D	7/1/2015
Tom Compton Chairman		X (La Plata)						X (Rancher)	R	7/1/2015
Tommy Holton		(Fort Lupton)			X				R	7/1/2015
John Benton		(Littleton)	X	X					R	7/1/2015
James W. Hawkins		(Jefferson)	X	X					D	7/1/2015
DeAnn Craig		(Denver)	X	X					R	7/1/2016
Andrew Spielman		(Denver)				X			D	7/1/2015
Mike King	X (Department of Natural Resources)	(Denver)								
Larry Wolk	X (Department of Public Health and Environment)	(Denver)								

Commissioner requirements are set by statute in the Oil and Gas Conservation Act at §34-60-104 (2) (a)(1), C.R.S. (Current as of July 11, 2014)

APPENDIX 2

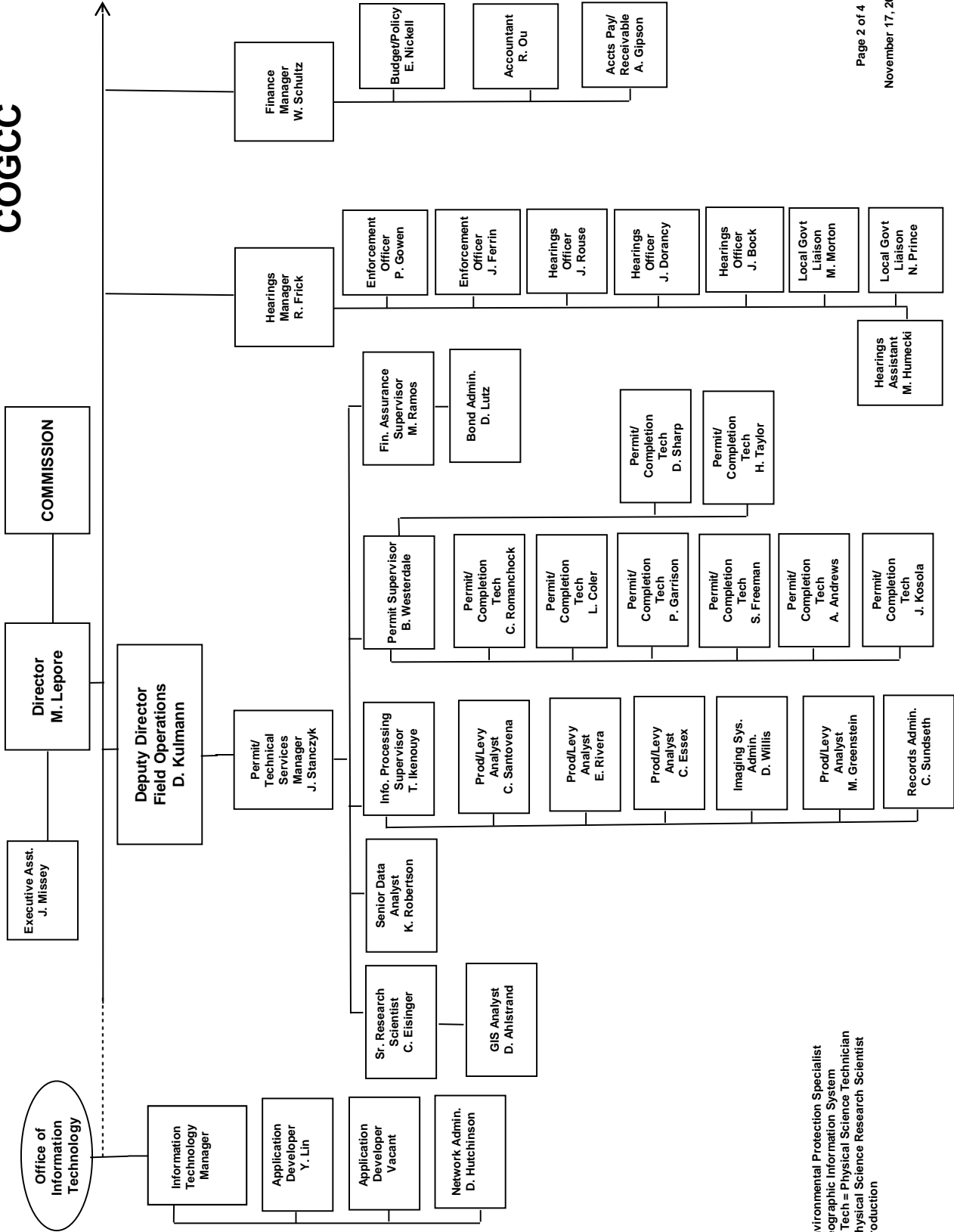
COGCC Organizational Chart

COLORADO OIL & GAS CONSERVATION COMMISSION



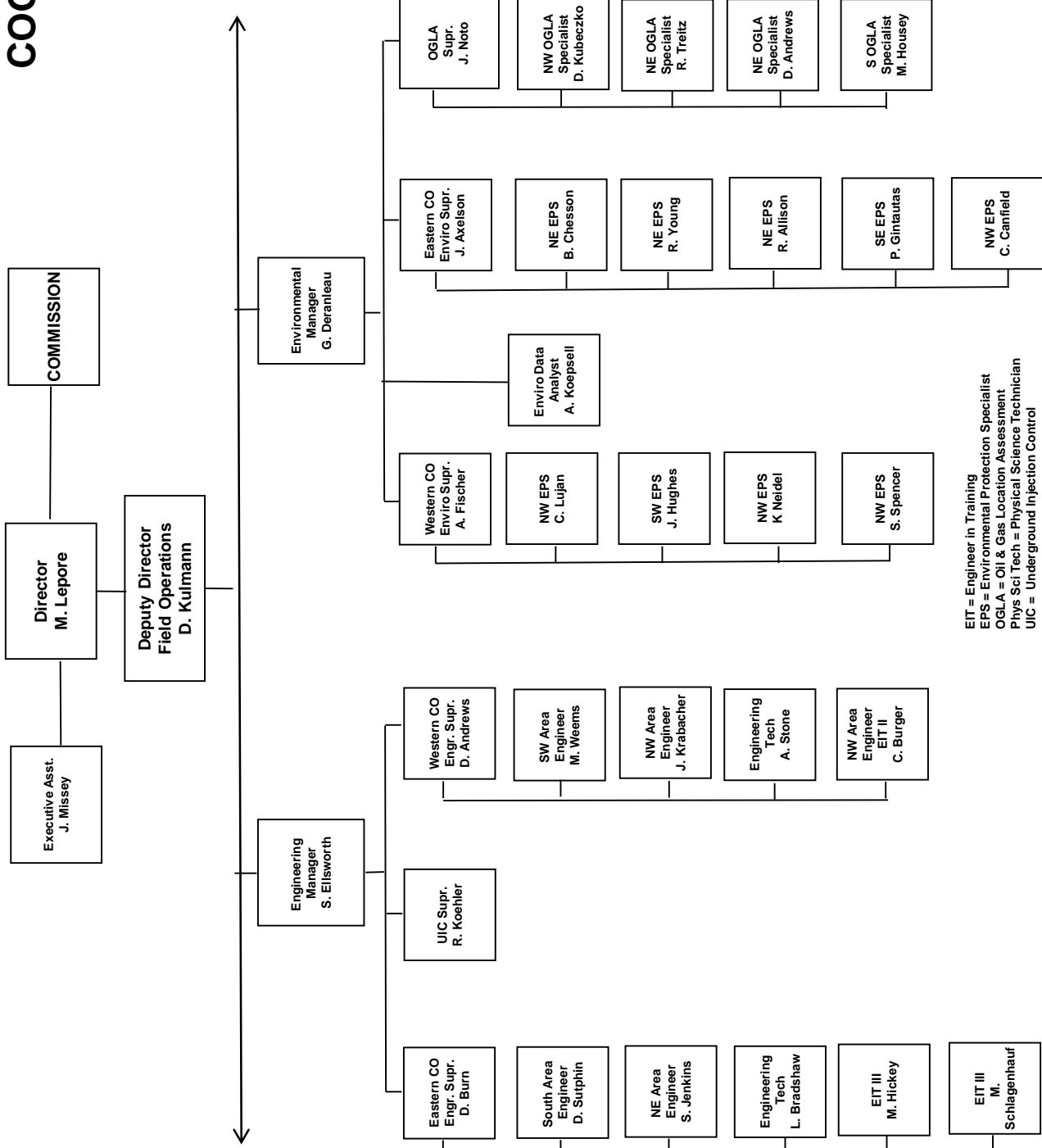
See the next three pages for details

COGCC



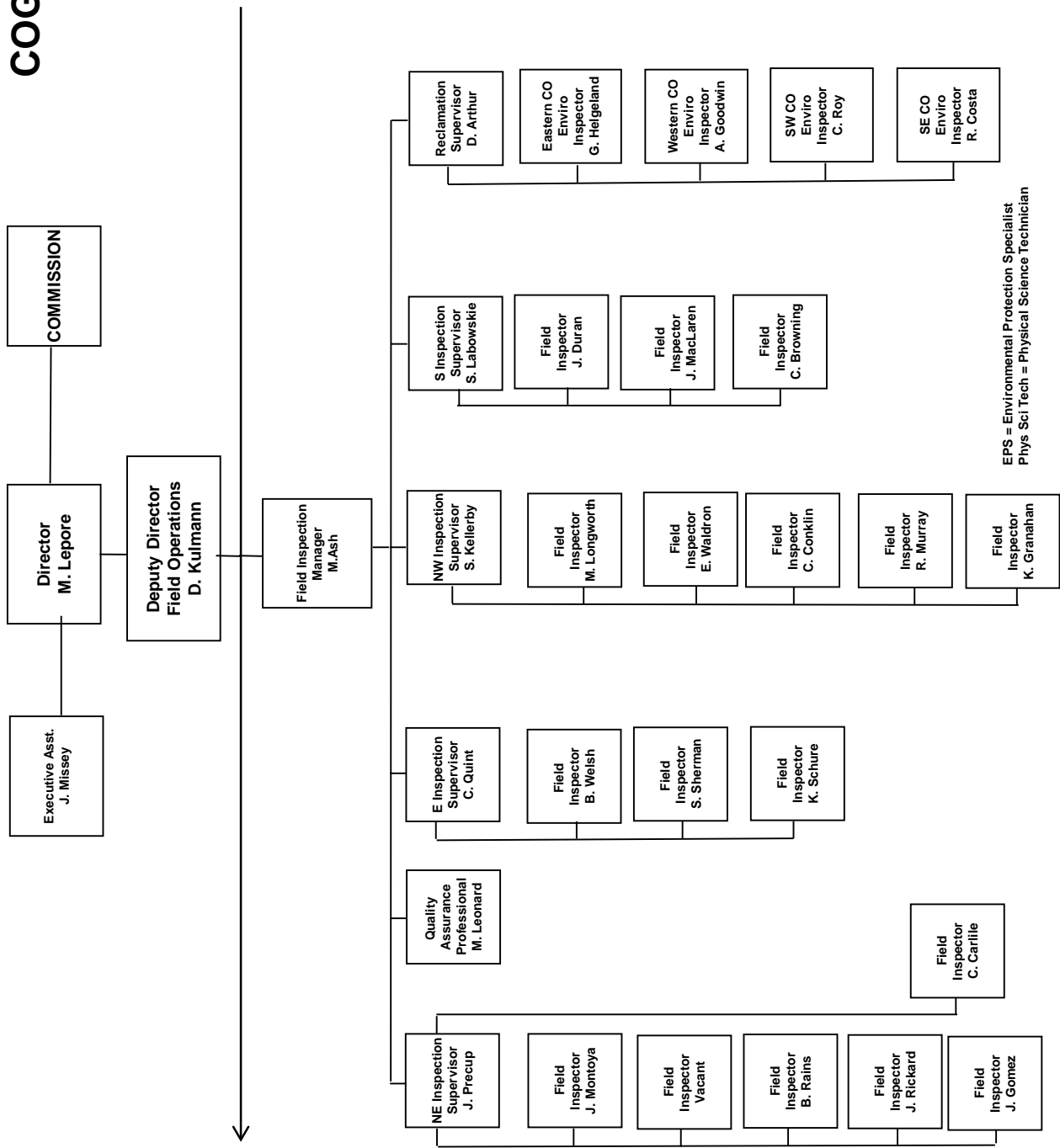
EPS = Environmental Protection Specialist
 GIS = Geographic Information System
 Phys/Sci Tech = Physical Science Technician
 PSRS = Physical Science Research Scientist
 Prod = Production

COGCC



EIT = Engineer in Training
 EPS = Environmental Protection Specialist
 OGLA = Oil & Gas Location Assessment
 Phys Sci Tech = Physical Science Technician
 UIC = Underground Injection Control

COGCC

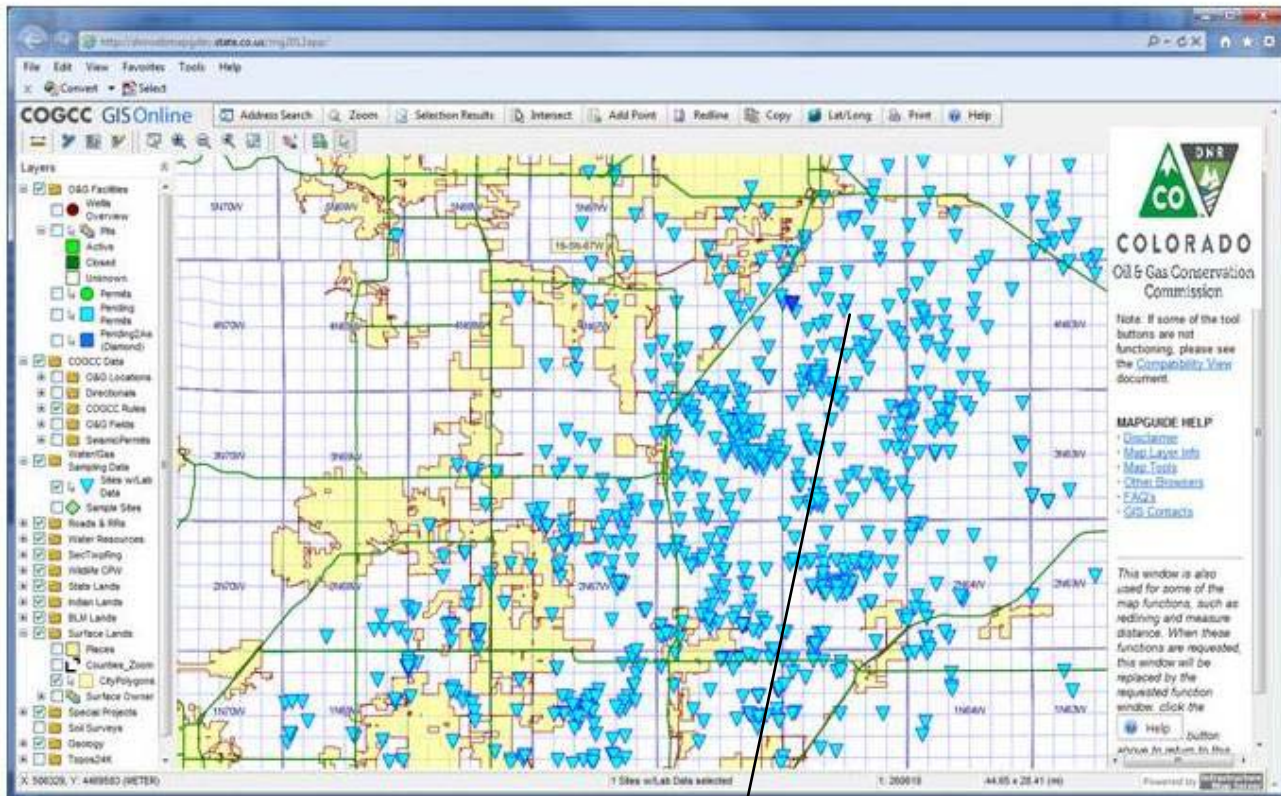


EPS = Environmental Protection Specialist
 Phys Sci Tech = Physical Science Technician

APPENDIX 3

Groundwater Sampling Report Example

GIS Online Sampling Report Example



Sample(s)

All

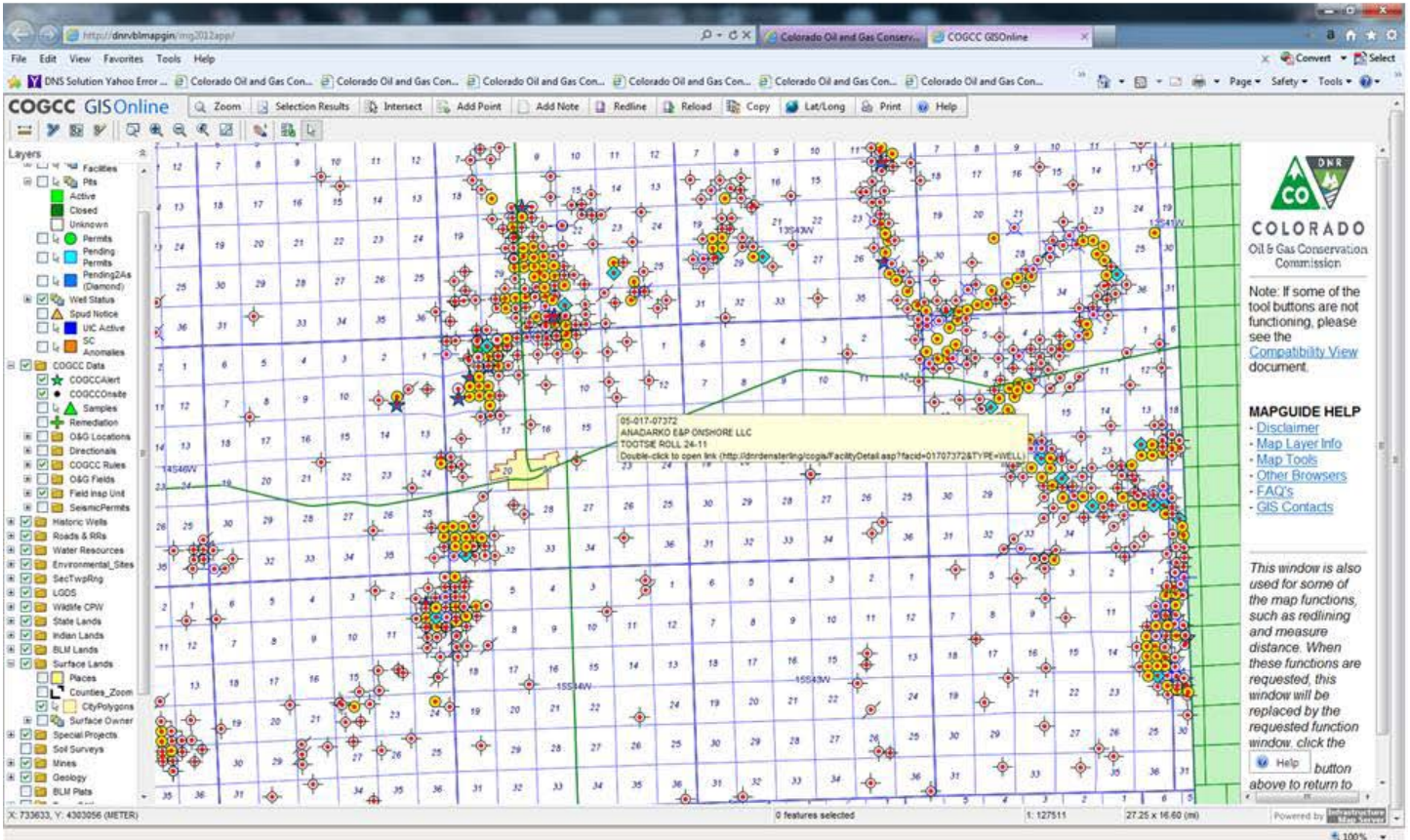
Sample ID: **473812** Sample Date: **8/23/2006** Matrix: **WATER** Lab: **Evergreen Analytical, Inc**

Sample Results for Sample # 473812 Evergreen Analytical, Inc. ID: 06-5788 - Minimize					
Methodcode	ParamDescription	ResultValue	Units	DetectionLimit	Qualifier
UnSpec	AMMONIA	ND	mg/L	0.8	U
UnSpec	BACTERIA, IRON RELATED		cfu/ml		PRES
UnSpec	BACTERIA, SLIME FORMING		cfu/ml		PRES
UnSpec	BACTERIA, SULFATE REDUCING		cfu/ml		PRES
UnSpec	BENZENE	ND	ug/L	2	U
UnSpec	BICARBONATE ALKALINITY as CaCO3	301	mg/L		
UnSpec	BROMIDE	0.2	mg/L		
UnSpec	CALCIUM	71.8	mg/L		
UnSpec	CARBONATE ALKALINITY AS CaCO3	ND	mg/L	5	U
UnSpec	CHLORIDE	30.8	mg/L		
UnSpec	DISSOLVED OXYGEN, FIELD	1.69	mg/L		
UnSpec	ETHYLBENZENE	ND	ug/L	2	U
UnSpec	FLUORIDE	1.2	mg/L		
UnSpec	HYDROGEN SULFIDE	ND	mg/L	0.5	U
UnSpec	IRON	0.175	mg/L	0.07	
UnSpec	MAGNESIUM	44.4	mg/L		
UnSpec	MANGANESE	0.109	mg/L	0.005	
UnSpec	METHANE	ND	mg/L	0.0008	U
UnSpec	METHYL-tert-BUTYL-ETHER (MTBE)	ND	ug/L	2	U
UnSpec	NITRATE	1.72	mg/L		
UnSpec	NITRITE	ND	mg/L	0.5	U
UnSpec	pH, FIELD	6.82	su		

APPENDIX 4

COGCC GIS Online Map

COGCC GISOnline Map



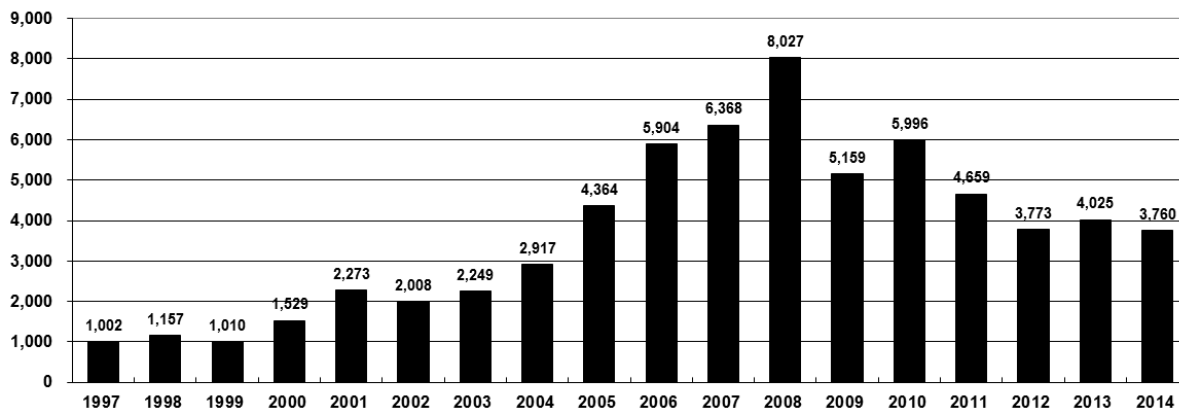
APPENDIX 5

2014 Permit Statistics

Colorado Oil and Gas Conservation Commission
Annual Drilling Permits by County as of November 24, 2014

COUNTY	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
ADAMS	33	24	19	38	28	9	26	39	34	37	89	51	35	21	8	40	40	50
ARAPAHOE	9	1	2	0	2	1	2	5	7	11	10	10	10	8	23	35	23	28
ARCHULETA	3		1	7	9	6	10	8	13	14	26	47	11	18	12	5	4	3
BACA	7	13	15	22	6	2	3	7	8	2	11	13	3	4	5	3	1	1
BENT	5	3	5	2				5	3	8	1	1		5		2	1	
BOULDER	2	5		1	5	6	7	17	13	21	37	32	35	24	30	22		
BROOMFIELD						2	7		1	1		2	33	28	11	36		31
CHEYENNE	31	41	7	3	3	3	3	3	10	21	15	33	12	13	16	31	50	23
COSTILLA			1															
CROWLEY																		2
DELTA						7	4	5	10	9	2			4	3	6	1	2
DENVER	5	3	3		3					19	25	24						
DOLORES							1	1	1	6	10	12	21	8	8	13	12	3
EAGLE																		1
ELBERT	11	1		2						4			1		1	2	2	4
EL PASO													2	3	3	18	1	2
FREMONT	1							1	3	2	4	14	13	22	14	11	2	8
GARFIELD	141	95	130	213	353	362	567	796	1,509	1,845	2,550	2,888	1,981	2,037	1,323	1,046	870	972
GRAND																		
GUNNISON						5	10	1	9	19	7	10	12	4	3	11	9	20
HUERFANO	3	40	26	41	27	27		8	2			7		2	1	9	1	13
JACKSON	6	3		34	18	21	9	14	6	8	5	27	19	9	18	5	12	17
JEFFERSON		1	2	1						1	3	2						1
KIOWA	17	10	2	11	18	2	4	2	1	11	9	26	7	16	17	17	12	5
KIT CARSON	6	9	5				1	3	5	4	4	13	7	3	2	6	1	2
LA PLATA	40	82	107	127	156	104	162	102	115	235	251	328	298	191	99	71	32	74
LARIMER	3	1		2		1			1		5	46	12	41	8	13	2	4
LAS ANIMAS	136	195	195	268	400	259	180	332	413	500	362	303	88	92	85	11	2	1
LINCOLN	2			2	2	1	6	3	4	1	2	58	44	48	31	36	87	124
LOGAN	12	7		4	7	3	3	6	13	17	14	5	9	17	8	27	4	5
MESA	10	2	6	13	27	30	27	54	136	265	293	501	427	306	127	150	105	74
MOFFAT	28	21	15	35	52	62	63	63	60	120	68	57	51	53	93	88	44	53
MONTEZUMA	5	4	1	4		5	8	8	11	5	12	22	39	19	27	29	14	23
MONTROSE	1			1	3	2	4	2		1	3	3		1	1			
MORGAN	11	10	12	9	9	2	7	9	7	3	6	2	1	6	13	5	16	6
OTERO																		
PARK			1										3	4	1			
PHILLIPS				1	2		7	13	17	12	69	82	45	64	112	56		9
PITKIN								1			1							
PROWERS	3	9	3	2	5	4		7	5	7	5	8	1	3	1			1
RIO BLANCO	40	51	95	89	187	105	179	154	161	360	321	477	348	441	109	117	167	102
RIO GRANDE				1	1		1						1	1		2		1
ROUTT	1	1	4	20	13	1		4	6	9	8	4	2	3	10	4	12	4
SAGUACHE				2		2						2	1	2				
SAN MIGUEL	1	4	2	11	13	27	18	42	45	35	23	20	13	10	2	1		2
SEDGWICK	2						1	5	2	7	2	1	19	11	12	2		7
WASHINGTON	26	18	3	23	17	27	34	128	50	69	45	11	1	6	12	6	19	12
WELD	285	392	288	509	702	760	757	832	901	1,418	1,527	2,340	1,448	2,152	2,262	1,826	2,468	2,019
YUMA	116	111	60	31	205	160	138	237	782	797	541	545	105	299	148	11	9	53
TOTAL	1,002	1,157	1,010	1,529	2,273	2,008	2,249	2,917	4,364	5,904	6,368	8,027	5,159	5,996	4,659	3,773	4,025	3,760

ALL COUNTIES



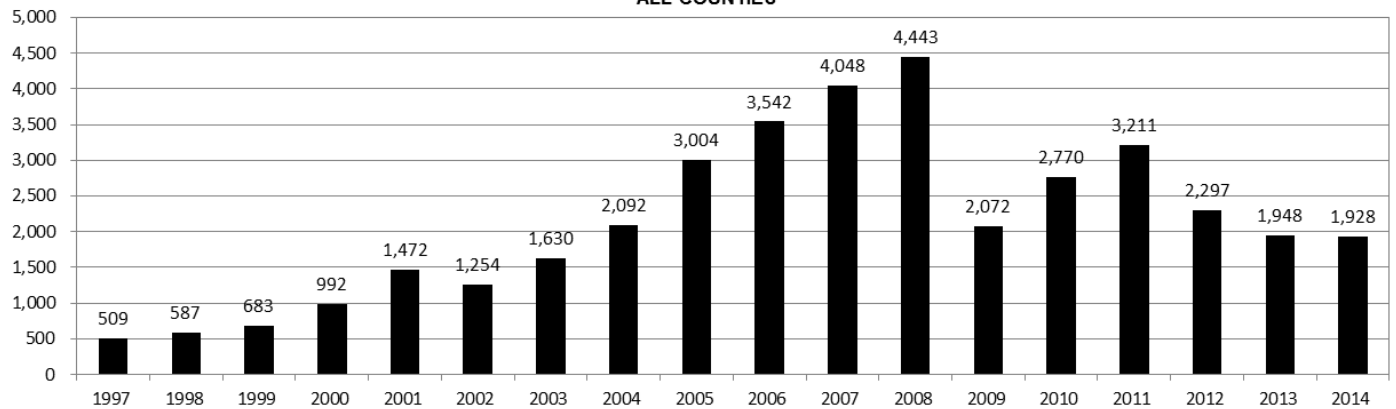
Colorado Oil and Gas Conservation Commission
Horizontal Wells by Year and County as of November 24, 2014

COUNTY	Prior Years		2009		2010		2011		2012		2013		2014		Total			Completion		
	Drilled	PA	Permit	Spud	Permit	Spud	Permit	Spud	Permit	Spud	Permit	Spud	Permit	Spud	Spud	AC	PR	DA	PA	
ADAMS			6	5	2	3	1		17	2	26	2	41	14	26	5	4			
ARAPAHOE	2						10	1	22	4	11	13	18	11	31	2	3	2		
ARCHULETA	17		7	6	15	7	10	8	5	9	2	1	1		47		42	1		
BENT										1					2					
BOULDER							4								0					
CHEYENNE	5	4									7	2	1	1	8		2	3		
DELTA									6	1	1	1	2	1	2		2			
DOLORES	9		18	2	6				9	3	5	4	3		18		13	1		
EL PASO									10						0					
ELBERT									1						0					
FREMONT	7	6			12	5	3	4	4	1	1	1			18		10	6	1	
GARFIELD	10	2		1	16	2	18	6	43	6	18	4	16	8	37		27		2	
GUNNISON	1				1				3	2	2		9		3		3			
HUERFANO									4	1			2		1					
JACKSON	8	1	1	8	3	3	9	2	4	4	8	5	15	3	21		12	1	1	
KIOWA									1		4	1	1		1		1			
KIT CARSON	1								1		1	1			2				3	
LA PLATA	28	2	11	2	28	3	18	7	12	1	5	1	34	3	45		47	1		
LARIMER	3	2					5	1	2	1					7		4	2		
LAS ANIMAS	16	2	4		1	1									17		15		2	
LINCOLN			2	1	2	1	1			1	6	1	4		4		3			
LOGAN	2								1						2		2			
MESA	3	2	36	1	22	8	24	13	14		9	2	9	1	28		25	2	3	
MOFFAT	7	1	6	3	4		9	4	44	6	18	13	15	1	34	1	20	1	1	
MONTEZUMA	6	1	23	6	11	2	8	2	18	6	3	4	15	2	28		39		1	
MORGAN							6	2	2	1	13	1	6		4		2			
PARK															1					
RIO BLANCO	7	2			1	1	1		15	2	4	5	3	1	18		11	3		
ROUTT	10	6	1						1		1				10		3	6	1	
SAN MIGUEL	1														1				1	
WASHINGTON	1	1													1				1	
WELD	11	3	12	5	208	95	763	233	964	597	2,114	1,092	1,942	1,256	3,289		1,184	10	42	
YUMA	1		6												1				1	
TOTAL Horizontal	156	25	14	147	32	333	132	285	1,203	645	2,260	1,155	2,137	1,302	3,707	8	1,474	32	68	
Percent of Total HZ		16%														0%	40%	1%	2%	
Total All Permits			5,159		5,996		4,659		3,773		4,025		3,760							
HZ Percent of Total			2.8%		5.6%		19.3%		31.9%		56.1%		56.8%							

Colorado Oil and Gas Conservation Commission
 Annual Well Starts by County as of November 24, 2014

COUNTY	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
ADAMS	16	12	17	18	13	4	19	22	24	13	41	14	15	21	1	15	5	20
ARAPAHOE	3	2						6	1	5	2	1	1	3	9	9	25	20
ARCHULETA	1			4	4	2	5	4	10	5	7	26	9	12	9	11		1
BACA	7	11	8	19	6	2	1	6	6	2	6	12		5	4	2	1	
BENT	2	3	6	2				3	2	8	1	1			1	2	1	
BOULDER							2	5	11	9	14	25	16	13	7	14		
BROOMFIELD						2		1				10		21	11	5		
CHEYENNE	29	29	6	2	1	3	3		9	14	15	14	8	12	11	17	35	18
COSTILLA			1															
CROWLEY																		2
DELTA							5	4	6	5	2			4	1	3		1
DENVER	2	3	1		2					7	5	4						
DOLORES								2		2	13	4	2		1	5	10	1
EAGLE																	1	
EL PASO														2		5		1
ELBERT	2	2		2						1								
FREMONT		1						1	3	2	2	5	3	9	16	7	2	2
GARFIELD	28	19	94	190	251	245	417	585	799	1,005	1,304	1,688	768	904	878	495	393	330
GUNNISON						1		1	1	9	5	1	4	5	2	4	1	2
HUERFANO	2	31	9	25	14	19	3	6	2			2		2		2	1	2
JACKSON	3	3		24	2	4	10	10		3	3	10	1	6	7		7	5
JEFFERSON			2								2							
KIOWA	13	6	4	8	16	2	4	2	1	7	7	2	5	15	14	10	11	2
KIT CARSON	3	7	7				1	1	6	2	1	14	3	1	1	3	1	2
LA PLATA	48	65	80	99	135	118	110	103	104	108	179	199	131	67	54	3	9	25
LARIMER	1			1	1				1		4	8	1	28	2	10	4	1
LAS ANIMAS	90	120	182	202	286	205	221	296	384	413	326	221	14	7	78	1		1
LINCOLN	2			2	2	1	5	2	2	1	2	19	10	14	22	23	42	32
LOGAN	10	4		4	6	3	3	2	11	12	12	3	7	3	9	13	4	6
MESA	1	4	4	2	12	12	13	25	89	156	209	222	14	11	39	4	6	16
MOFFAT	1	8	10	18	23	25	28	19	40	60	42	25	18	15	34	25	26	2
MONTEZUMA	2	2		2	3	5	5	1	7	2	4	18	11	3	8	18	12	8
MONTROSE					3			2	1		1	2		1				
MORGAN	9	7	4	9	8	1	7	5	5	3	1	1	2	3	2	3	1	2
PARK														2				
PHILLIPS				1			6	10	11	4	35	18	2	42	130	48		4
PROWERS	2	8	4	2	4	4		5	5	6	3	5	2	3	1			
RIO BLANCO	9	9	62	51	82	47	83	92	95	107	95	203	116	107	72	53	36	33
RIO GRANDE																		1
ROUTT			1	5	12	1		1	6	3	2		2	1	2	4	2	2
SAN MIGUEL		3	1	6	9	10	19	28	13	20	17	5	1	2	2			1
SEDGWICK	2						1	2	1	1	5			3	8	3		
WASHINGTON	23	18	4	15	12	24	29	65	34	23	14	11	2	2	4	1	9	7
WELD	94	117	124	237	403	406	522	632	718	931	1,222	1,314	877	1,208	1,664	1,463	1,289	1,340
YUMA	104	93	52	42	162	108	106	144	597	593	445	336	27	213	107	16	13	39
TOTAL	509	587	683	992	1,472	1,254	1,630	2,092	3,004	3,542	4,048	4,443	2,072	2,770	3,211	2,297	1,948	1,928

ALL COUNTIES



Colorado Oil and Gas Conservation Commission
Active Wells by County and Status as of November 24, 2014

COUNTY	Drilling	Domestic	Injecting	Producing	Shut In	Temp Aband	Waiting on Completion	Active Storage	Intent to Plug	Total Active Wells
ADAMS	24		7	849	89	8	1	17		995
ARAPAHOE	24	1	3	122	12	9		43		214
ARCHULETA	2	5		102	9	8	7			133
BACA	1		11	129	41	4		57		243
BENT		1		29	7		1			38
BOULDER				306	9	1				316
BROOMFIELD				93	4					97
CHEYENNE	15		34	318	29	50	4			450
CROWLEY	2									2
DELTA			1	4	13		1			19
DENVER			1	44	4		3			52
DOLORES	3		1	39	3	2	1			49
EL PASO	1	1				1				3
ELBERT				61	8	2				71
FREMONT	3	3		62	4	6				78
GARFIELD	281	5	42	10,234	187	74	55	1		10,879
GUNNISON	3		1	26	13	1	4			48
HUERFANO	3		1	32	5	6	1			48
JACKSON	6		29	108	46	2	2			193
JEFFERSON			2	1	1		1	1		6
KIOWA	5		10	103	17	4	2			141
KIT CARSON	2	1	1	14	1	1	1			21
LA PLATA	15	7	32	3,122	101	26	4	30		3,337
LARIMER	1	2	18	177	39	18	2			257
LAS ANIMAS		4	17	2,816	85	87	21	17		3,047
LINCOLN	22	1	8	86	17	3	4			141
LOGAN	11		15	110	42	29	4	12		223
MESA	19	1	11	852	133	19	6	9		1,050
MOFFAT	5		9	485	54	36	10			599
MONTEZUMA	8	2	6	119	41	13	2			191
MONTROSE						3				3
MORGAN	1		24	83	84	34	3	79		308
OURAY		2				1				3
PARK					1					1
PHILLIPS	6		3	258	3	1	1			272
PITKIN								10		10
PROWERS				26	4					30
RIO BLANCO	26	4	289	2,184	296	85	14	4		2,902
ROUTT	2	2		30	9	1	2			46
SAN MIGUEL	1			117	10	2				130
SEDGWICK			1	13	4		2			20
WASHINGTON	10		24	402	42	7	5			490
WELD	1,782	1	40	18,871	970	28	151	2		21,845
YUMA	13	8	20	3,770	67	12	14	1		3,905
TOTAL	2,297	51	661	46,197	2,504	584	329	283	0	52,906