

Colorado Oil and Gas Conservation Commission

2013 Annual Report

to the

WATER QUALITY CONTROL COMMISSION (WQCC)

and

WATER QUALITY CONTROL DIVISION (WQCD)



February 21, 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 22nd annual report provides an overview of COGCC functions and a summary of calendar year 2013 activities, with a focus on groundwater protection programs. Rule changes and 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 2013 the COGCC, WQCD worked closely on several issues. Two notable events, the Williams Parachute Creek Gas Plant Spill and the September 2013 Flood Event required close coordination to ensure the appropriate agency responded. There was a heightened level of information and data sharing during these events. More details are provided in Section 6.0.

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 2013 collecting samples and evaluating data regarding tert-butyl alcohol (TBA). TBA was detected in water wells in Las Animas County. This evaluation is ongoing and is discussed in more detail in Section 8.

The COGCC Director and/or Environmental Manager met with WQCD/WQCC on April 25 and December 3, 2013 to discuss program issues.

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 2013 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.
- In 2013, the COGCC held three of its regular nine hearings outside of Denver: one in Longmont, Weld County, one in Grand Junction, Mesa County; and one in Limon, Lincoln County.
- Regularly scheduled meetings are conducted in some parts of the State with active oil and gas basins. 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 2013, 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, as well as in numerous meetings initiated by COGCC.
- 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 95 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. A significant effort to hire new staff was undertaken in 2013, as the legislature added 19 new FTE during the 2013 session. 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, Environmental projects, Form 2A & Pit Permitting, Environmental database.
Engineering	14	Permitting downhole wellbore plans, UIC Permitting, Oil/Gas Facility oversight, Plugging orphan wells.
Field Inspection	27	Complaints, Inspection of Oil/Gas wells, facilities, and locations.
Permitting	21	Permitting oil and gas wells, Bonding, Production reporting, GIS.
Hearings	8	Hearings, Rulemaking, Enforcement.
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:

Well 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 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 are being studied by one of the major Operators in the area through the installation of several local seismometers to evaluate if injection of produced water has some relationship to local seismicity. COGCC Staff approved 41 Class II UIC well permits during 2013.

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 2013, approximately 89 new pits were permitted. Applications for new pits are down over the previous years (192 permits in 2011 and 84 permits in 2012) reflecting both a decrease in new O&G activity in areas that traditionally have used pits for produced water disposal and widespread industry acceptance 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 2013, the COGCC permitted one new centralized E&P waste management facility. There are 31 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 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 2013, COGCC received approximately 39 complaints related to groundwater

or surface water issues. An additional 22 requests were made for baseline sampling which were logged into the complaints database for tracking. 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.

During 2013, thermogenic methane was detected in two domestic water wells; these two water well cases are currently under investigation to determine the likelihood that a nearby oil and gas well was the source of this gas.

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. More details about spill/release response and remediation activities in 2013 are included in Section 8.

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 La Plata, Mesa, Las Animas, Garfield, Moffat, Fremont, and Archuleta Counties. In FY 2013-2014, the engineering staff plans on plugging, abandoning and reclaiming orphaned oil and gas wells in Garfield, Mesa, Moffat, and Rio Blanco Counties. Approximately 18 wells were plugged from July 2012 through the end of 2013. During 2014 site reclamation and remediation is going to be conducted surrounding the recently plugged orphan wells.

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 2013 improvements are provided below. Primary data systems that experienced improvements included:

- eForms – eForm system was enhanced;
- Environmental Database – Database improvements and importation of large amount of data;
- GIS- A new build of the map was deployed; and
- Environmental Reports- 2013 reports were added to the COGCC website within the Library Tab.

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. COGCC Form 4, Sundry Notice, which is the agency's most heavily used form, was developed into an eForm in 2013. Form 19, Spill/Release Report, was also developed into an eForm in 2013 and is currently in

testing for final release. COGCC eForms 2 and 2A were updated and modified in 2013. eForms currently in use 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 10 – Certificate of Clearance/Change of Operator
- Form 15 – Earthen Pit Report/Permit
- Form 17 – Bradenhead Test Report
- Form 19 – Spill/Release Report*
- 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. spacing, engineering, etc.) online. Paper files are not generated for these new permits. Multiple approvals are 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.

3.3.2 Environmental Database

COGCC developed and maintains 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 environmental database was developed in 2011 and 2012, and went “live” in September 2012. Historic sampling data received from several sources dating back as far as 1941 have been migrated to the new database. The environmental database currently contains over 12,910 sample locations and 32,198 individual samples.

In 2013, 1307 samples from 726 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 877 samples from 518 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.

The COGCC is preparing the COENV database for download in an Access database format for those who wish to query large datasets. It is anticipated that the database download will be utilized by a number of entities such as scientific organizations, local governments, and others to better understand background water quality in their area of interest. The database download is

projected to be available in early 2014.

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 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.

A new build of the mapping application was deployed in January 2013 (see **Appendix 4**). 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.

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, and Methane Seep studies in Las Animas/Huerfano Counties 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. COGCC is in the process of redesigning the website so that these documents can be more easily located and reviewed.

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 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 2013 special environmental projects are described in more detail in Section 8.

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

4.0 NEW COGCC REGULATIONS AND POLICIES

4.1 Legislation

Year 2013 was a very active year for oil and gas related bills. Two new bills and one Executive Order were signed. HB 13-1278 required Operators to report spills of 1 barrel or more outside berms or other secondary containment within 24 hours. The effective date of the Bill was August 7, 2013. SB 13-202 instructed the COGCC to develop a risk based strategy towards field inspections and provide a strategy document to the Legislature by February 2014. Executive Order D2013-004 required that the COGCC review its enforcement process and penalty structure and provide recommendations for modifications to both where appropriate.

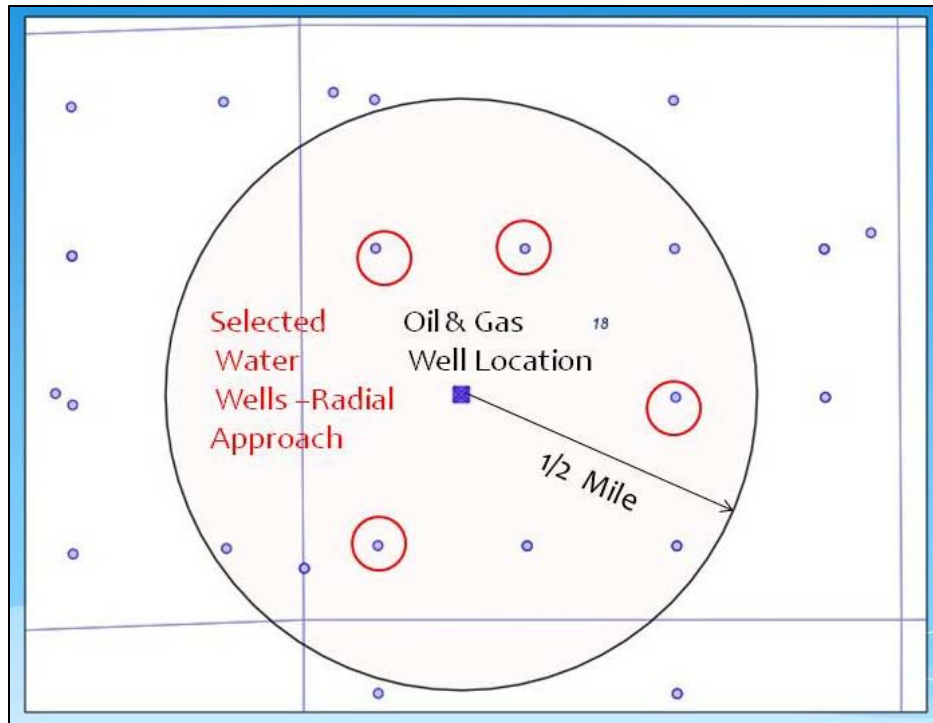
4.2 New Rules

4.2.1 Groundwater Sampling Rulemaking

On January 9, 2013, the Commission adopted new Rules 609 and modified Rule 318A.e(4), requiring pre- and post-drilling baseline water quality groundwater sampling except in association with for Coal Bed Methane (CBM) wells. Baseline groundwater sampling for CBM wells had already been required Statewide under Rule 608. These new Rules became effective on May 1, 2013.

Rule 609 sets forth a new statewide rule for groundwater sampling and monitoring outside of the Greater Wattenberg Area (GWA). The Rule requires Operators to collect groundwater samples from up to four water sources (e.g. water wells) within ½ mile of a proposed oil and gas well (see Figure 4-1). Samples from these locations must be collected three times: within 12 months prior to drilling, 6 to 12 months after well completion, and 60 to 72 months after well completion.

Figure 4-1 Rule 609 Sampling Locations



Sampling requirements in GWA under Rule 318A.e(4) differ somewhat from Rule 609 in that one sample location is required (instead of 4) and the 60 to 72 month sample is not required under 318A.e(4). The GWA Rule attempts to achieve one sample location per quarter section within an 81 township area.

During 2012 and early 2013, several oil and gas operators performed voluntary baseline ground water sampling under the COGA Voluntary Sampling Program and provided analytical data to COGCC. Most of these operators are actively developing the Niobrara Formation in northern Weld County and collected samples from over 300 domestic water wells in this area. Operators continue to provide post drilling samples related to the voluntary program.

On September 17, 2013, the Commission approved updated the Sensitive Wildlife Habitat and Restricted Surface Occupancy maps. The Sensitive Wildlife Habitat maps identify the areas for particular species where consultation with the Colorado Parks and Wildlife (CPW) expert and surface owner is required to identify mitigation procedures that can be implemented to reduce the impact to wildlife from oil and gas development. The Restricted Surface Occupancy maps are areas that have been identified for particular species where oil and gas development should not occur unless it is absolutely unavoidable for very specific reasons and an exception is justified and granted by the Director. These maps were originally adopted by rulemaking in 2008 and specified that that the maps may be updated on a specific interval to capture updates performed by CPW. This was the first time the maps have been updated since that rulemaking.

4.2.2 Spill/Release Reporting Rulemaking

On December 17, 2013 the Commission approved amended Rule 906 for reporting spills and releases. The rulemaking was initiated to accommodate HB 13-1278 (described above in Section 4.1). The new Rule mandates that spills of one barrel or more outside of berms, or other secondary containment, be reported to the COGCC and the local government entity with jurisdiction over emergency response within 24 hours. Spills of 5 barrels or more must also be reported to the COGCC within 24 hours. The former Rule 906 included a reporting requirement for a 20 barrel spill; the 20 barrel spill was eliminated from the new rule. A good faith effort must also be made by the Operator to notify the surface owner within 24 hours. The effective date of amended Rule 906 is February 1, 2014.

5.0 OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITY

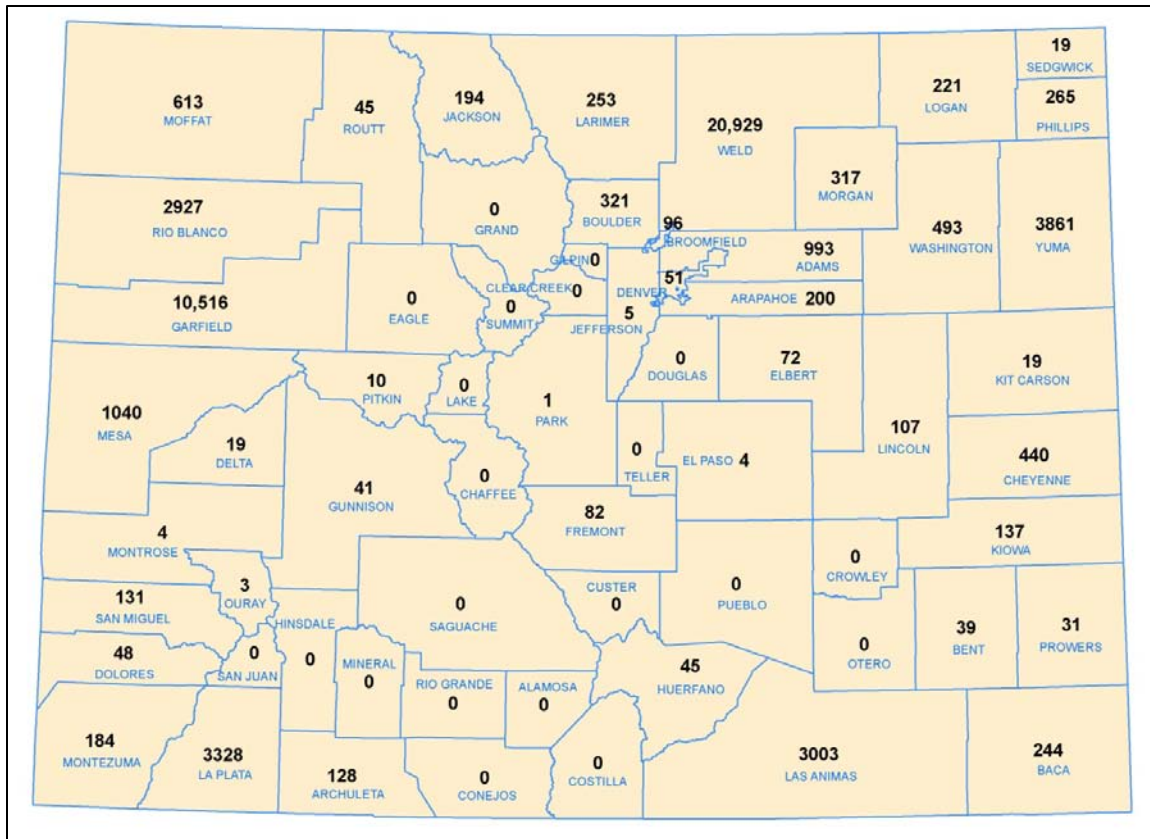
One metric used to measure exploration and development activity levels is approved permits. A total of 4028 permits to drill were issued in 2013. This number represents about a 6.7% increase as compared to 2012. Most of the permits were issued in Weld County (2,468 permits) in response to the active Niobrara Play. The second most active County for permits was Garfield County with 870 permits issued. Only 32 and 2 permits were issued in La Plata and Las Animas Counties, respectively. These numbers are down significantly over past years indicating that CBM development has slowed at the present time. Historic details of permit activity by County, since 1988 are provided in Appendix 5.

Another metric to gage activity level is well starts. This number approximately represents the actual number of wells drilled. There were a total of 1839 well starts in 2013, as compared to 2,301 well starts in 2012. Of the total 1,839 wells starts in 2013, 1,089 of them were for horizontal wells. Clearly, horizontal drilling associated with the Niobrara and Mancos development dominated the drilling activity in 2013.

As of December 31, 2013, there were 51,737 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 20,000 and 10,000 wells, respectively.

Oil and gas production reports for 2013 are not yet complete and therefore final production figures for 2013 are not available. COGCC expects production reporting to be finalized by April 15, 2014. With the caveat, we estimate that approximately 1.63 trillion cubic feet of natural gas was produced in Colorado during 2013. Of that, 317 billion cubic feet (BCF) was produced from coal bed methane operations. We estimate that statewide oil production for 2013 will exceed 53 million barrels (BBLs).

Figure 5-1 Number of Active Wells by County



6.0 SPILLS/RELEASES AND REMEDIATIONS

6.1 Statewide Spills/Releases and Remediations

Operators are required to report spills and releases that occur as a result of oil and gas operations in accordance with COGCC Rule 906. Produced oil, gas, and water are the substances most commonly spilled or released. These substances fall under the exploration and production (E&P) waste exemption to regulation as hazardous wastes under Subtitle C of the Resource Conservation and Recovery Act (RCRA); therefore, they are subject to COGCC jurisdiction. A total of 547 spills and/or releases were reported to the COGCC in 2013. The spills are tracked in the COGCC database and can be accessed by the public from the COGCC website (Database Tab). Most spills occurred as a result of some type of equipment 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 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.

Remediation projects are tracked in the COGCC's database and can be accessed on the COGCC website. During 2013, COGCC received approximately 493 new remediation plans, and closed approximately 541 remediation projects.

6.2 Parachute Creek Gas Plant Spill

A spill of natural gas liquids (NGL) from a 4-inch pipeline was reported to the COGCC on March 8, 2013. The spill impacted shallow groundwater and threatened the surface water of Parachute Creek. COGCC, WQCD, CDPHE, and EPA were all involved. COGCC acted as the lead agency until April 26, 2013, when it was determined the spilled product was not E&P waste and therefore was not under COGCC's jurisdiction. At that point CDPHE Hazardous Material and Waste Management Division assumed the role of regulatory lead. CDPHE has kept COGCC informed regarding remediation plans and data submittals. The remediation is ongoing.

6.3 September 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 more than 1,000 wells and associated tank batteries within the flooded areas. Most wells were shut in prior to the flood event and uncontrolled ongoing releases from wells were not observed. However, hundreds of tank batteries were damaged and some releases of produced water and condensate occurred. COGCC received 43 spill reports that documented a total volume of 1143 barrels of condensate and 1035 barrels of produced water released. All of these sites have been inspected by COGCC staff, and except in a few cases, there are no visible signs of contamination remaining. However, Operators are collecting samples downstream of the spill sites to confirm no lasting impacts. There were 11 remediation plans submitted.

7.0 ENFORCEMENT

In 2013, the COGCC continued efforts to reduce a backlog of enforcement matters. As of December 20, 2013, the Commission entered 38 enforcement orders assessing \$1,313,000 in penalties, of which \$243,000 was suspended pending full performance with compliance schedules. Three of the environmental matters are described below.

1. An operator in Logan County failed to document appropriate closure of a produced water pit. After repeated failed attempts to obtain appropriate closure documentation and repeated attempts requiring the operator to properly reclaim the surface, an NOAV was issued. The operator failed to perform the required corrective actions in the NOAV resulting in an (AOC). A fine of \$10,000 was assessed in this case. The operator eventually agreed to the AOC (Order No. 1V-421) and it was approved by the Commission on September 16, 2013. The operator provided the appropriate closure documentation and

performed the required surface reclamation in accordance with the AOC requirements.

2. An operator in Weld County failed to report a release of oil and produced water from an unlined skim pit. No attempt was made to clean up the release or properly treat or dispose the exploration and production waste. Numerous other rule violations were documented at other facilities owned by the operator in the same unit. The operator had similar violations the previous year; as a result, an AOC was developed that resulted in a \$100,000 fine with half of the fine amount deferred upon successful completion of a comprehensive compliance plan. This plan included corrective actions at several facilities owned by the operator in Washington, Logan and Weld Counties. The AOC included an order requiring the operator to prepare a training program regarding COGCC spill reporting requirements, remediation, exploration and production waste management and good housekeeping practices. The operator agreed to the requirements of the AOC (Order No. 1V-435) and it was approved by the Commission on October 28, 2013.
3. COGCC received a complaint regarding a location in Washington County where it was alleged a produced water pit had overflowed causing damage to the adjacent surface. COGCC EPS staff inspected the location and documented numerous violations including the apparent past overflow of produced water from the pit. Due to several factors including the complaint, a large number of documented violations and the lengthy duration of the ongoing violations, COGCC issued an NOAV and moved directly to an AOC requiring extensive corrective actions to reclaim the surface and remediate widespread oily waste to bring the overall facility into basic compliance with COGCC rules. A fine of \$70,000 was assessed in this case. The operator agreed to the requirements of the AOC (Order No. 1V-420) and it was approved by the Commission on October 28, 2013.

8.0 SPECIAL ENVIRONMENTAL PROJECTS

COGCC is currently working on the following projects using the FY 2013-2014 Special Environmental Projects budget line:

1. 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.
2. Project Rulison and Rio Blanco Nuclear Test Sites, Garfield County – Review of monitoring data and new Sampling and Analysis Plan.
3. Petrophysical Log Analysis, Garfield County- Review of well logs by an expert consultant to provide a tool for identifying fresh water.
4. 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.
5. NORM Project, Statewide – Development of Sampling and Analysis Plan for testing

various E&P wastes for naturally occurring radioactive materials (NORM).

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

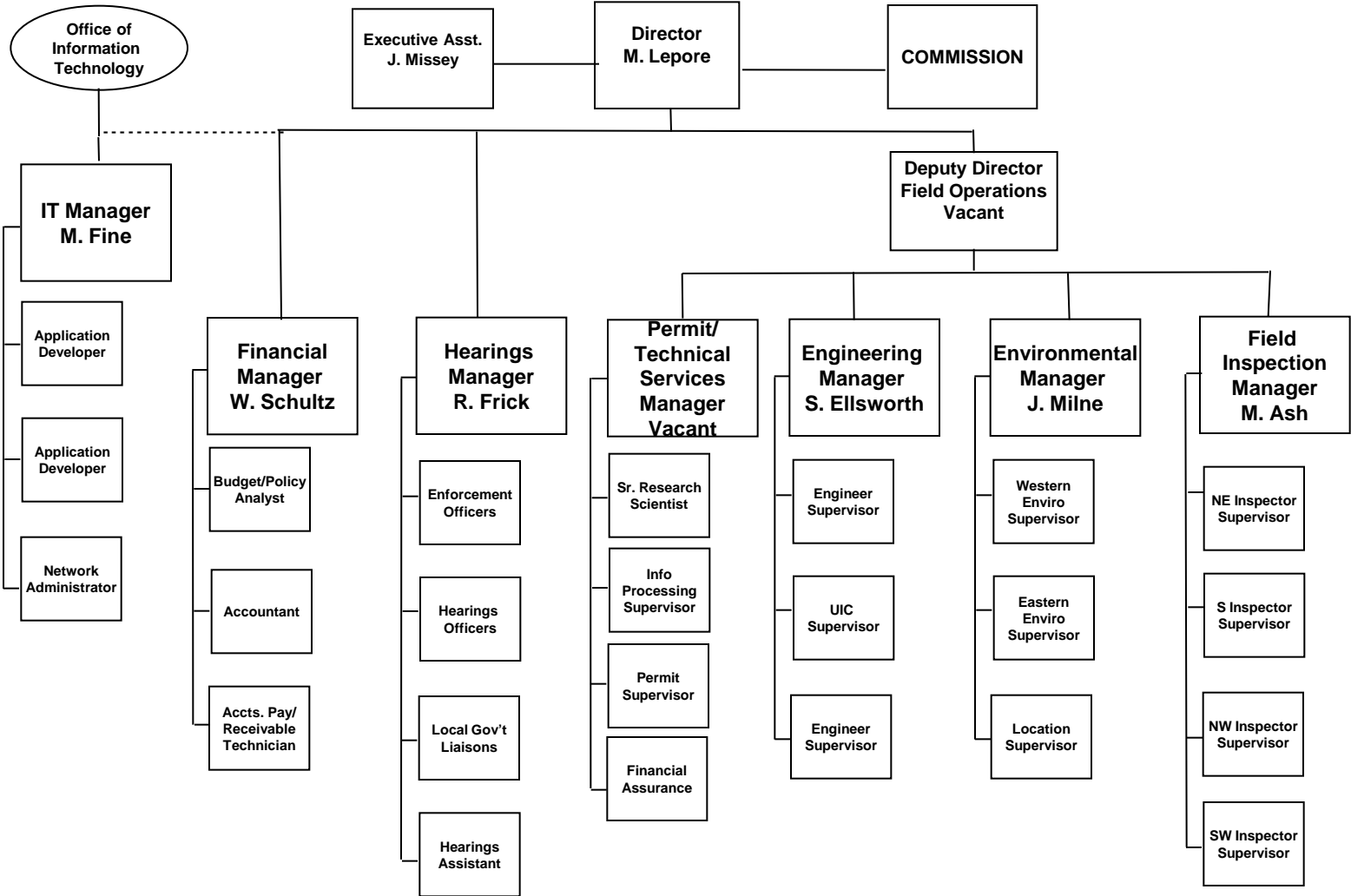
Commissioner (Officer)	2 Executive Directors (ex-officio voting members) (Current Employment)	2 West of Continental Divide (Resident County)	3 with Substantial Oil & Gas Experience (Employed by Oil & Gas Industry) (Current Employment)	2 Out of 3 Must Have a College Degree in Petroleum Geology or Petroleum 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	
W. Perry Pearce Vice Chair		(Denver)	X					D	7/1/2015	
DeAnn Craig		(Denver)	X	X				R	7/1/2012	
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 September 16, 2013)

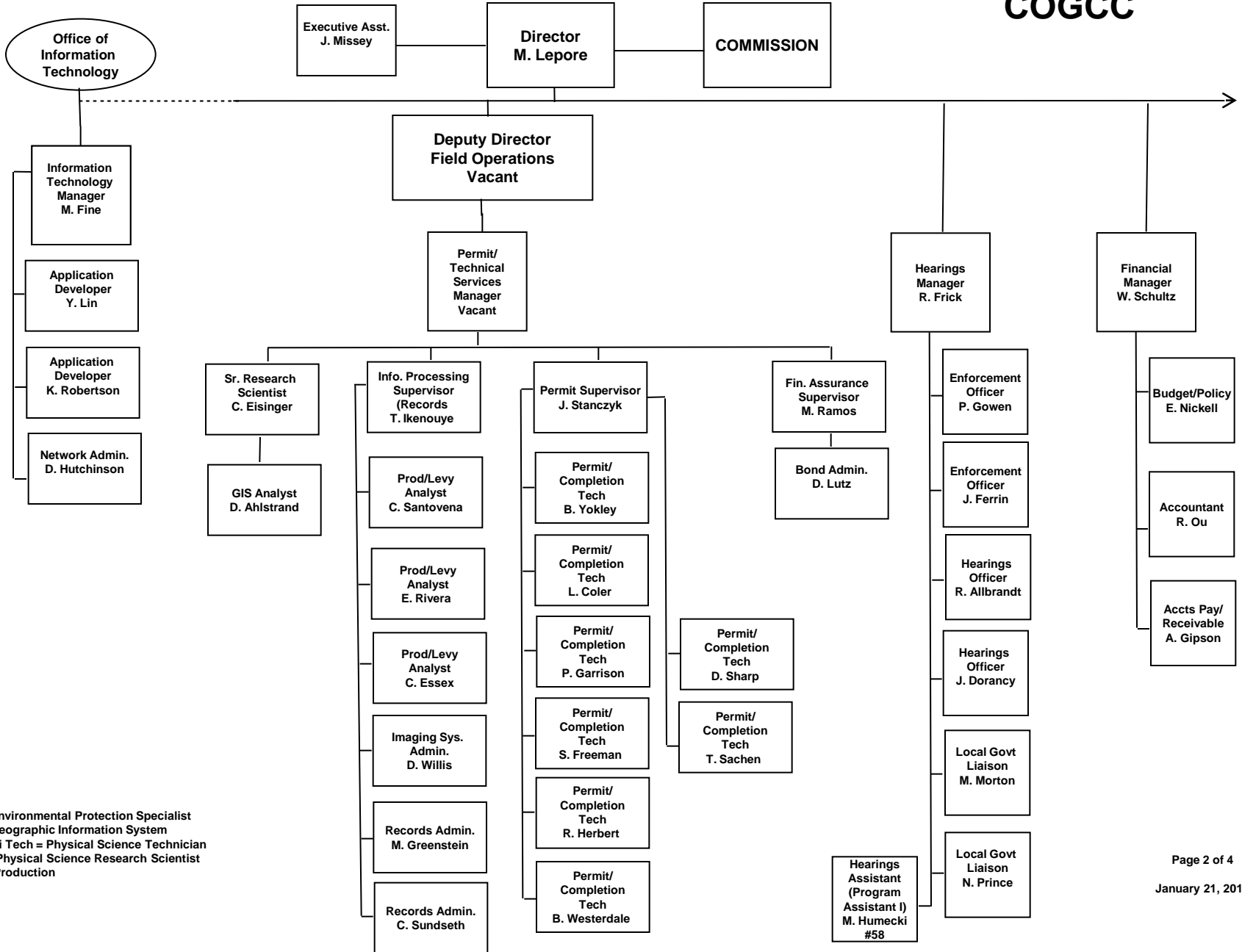
APPENDIX 2

COGCC Organizational Chart

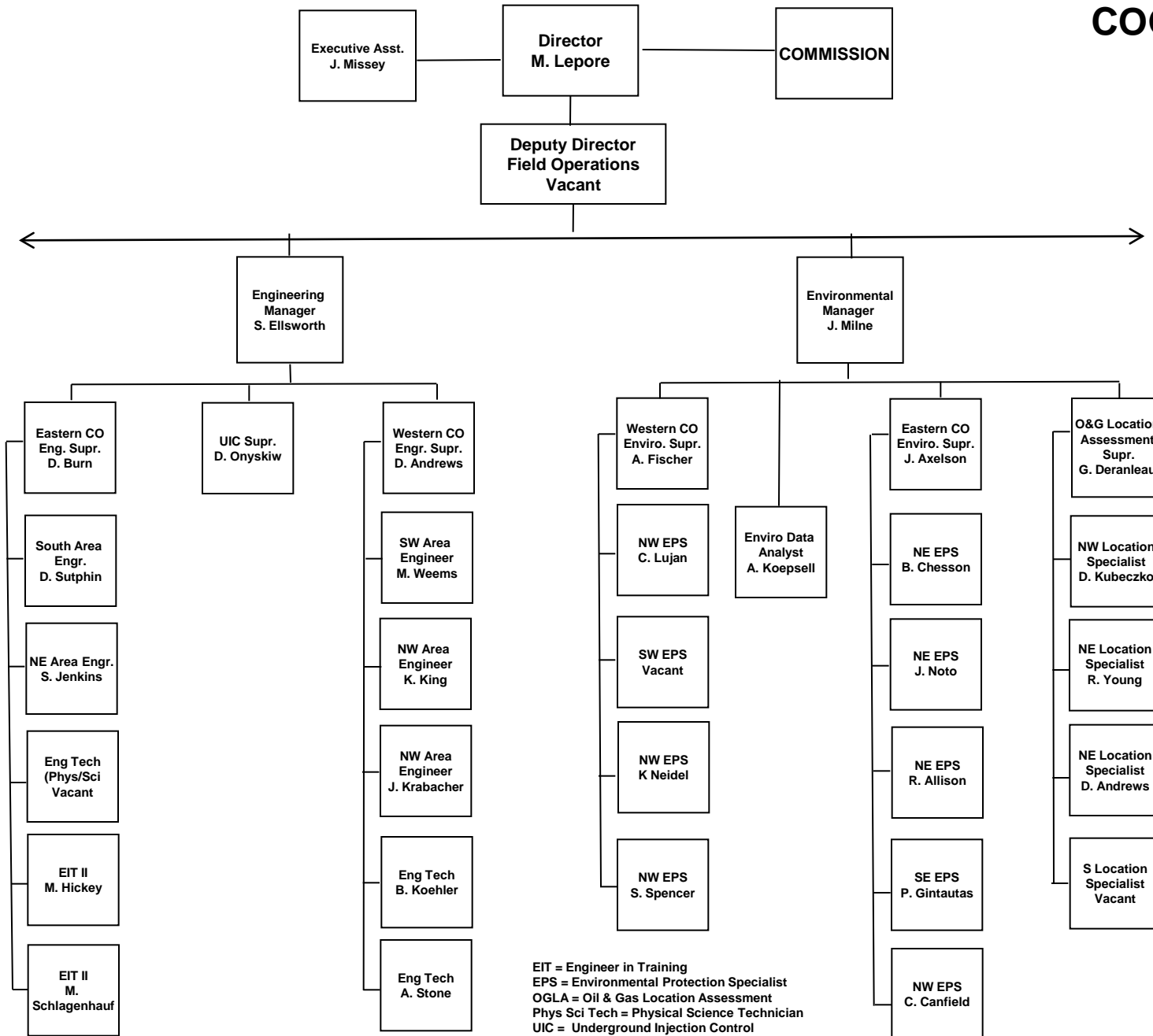
COLORADO OIL & GAS CONSERVATION COMMISSION



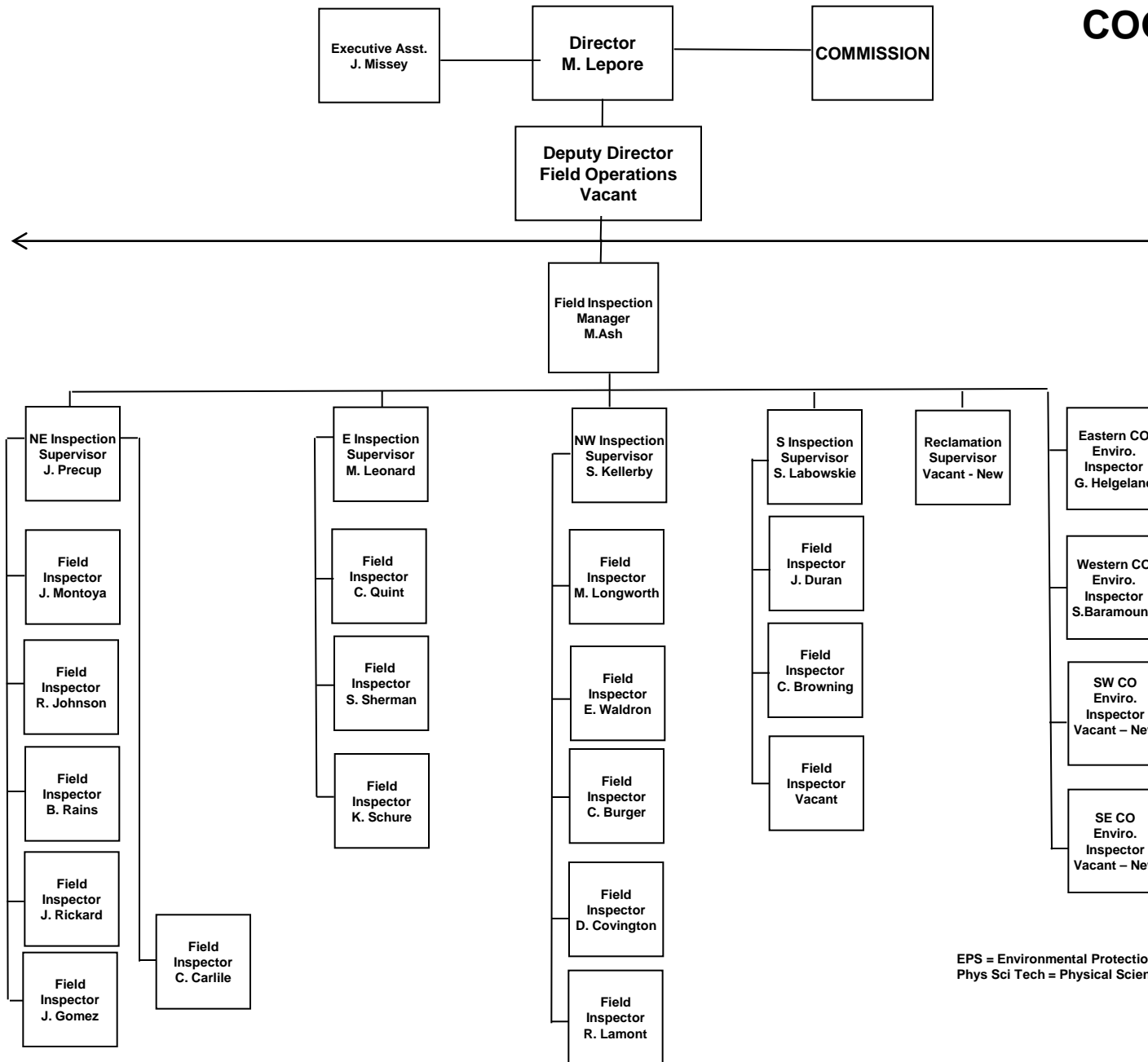
See the next three pages for details



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

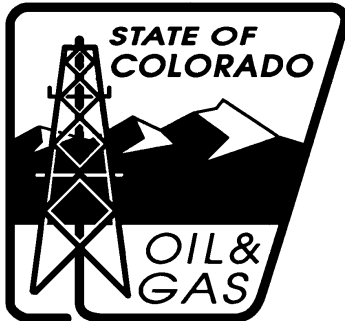
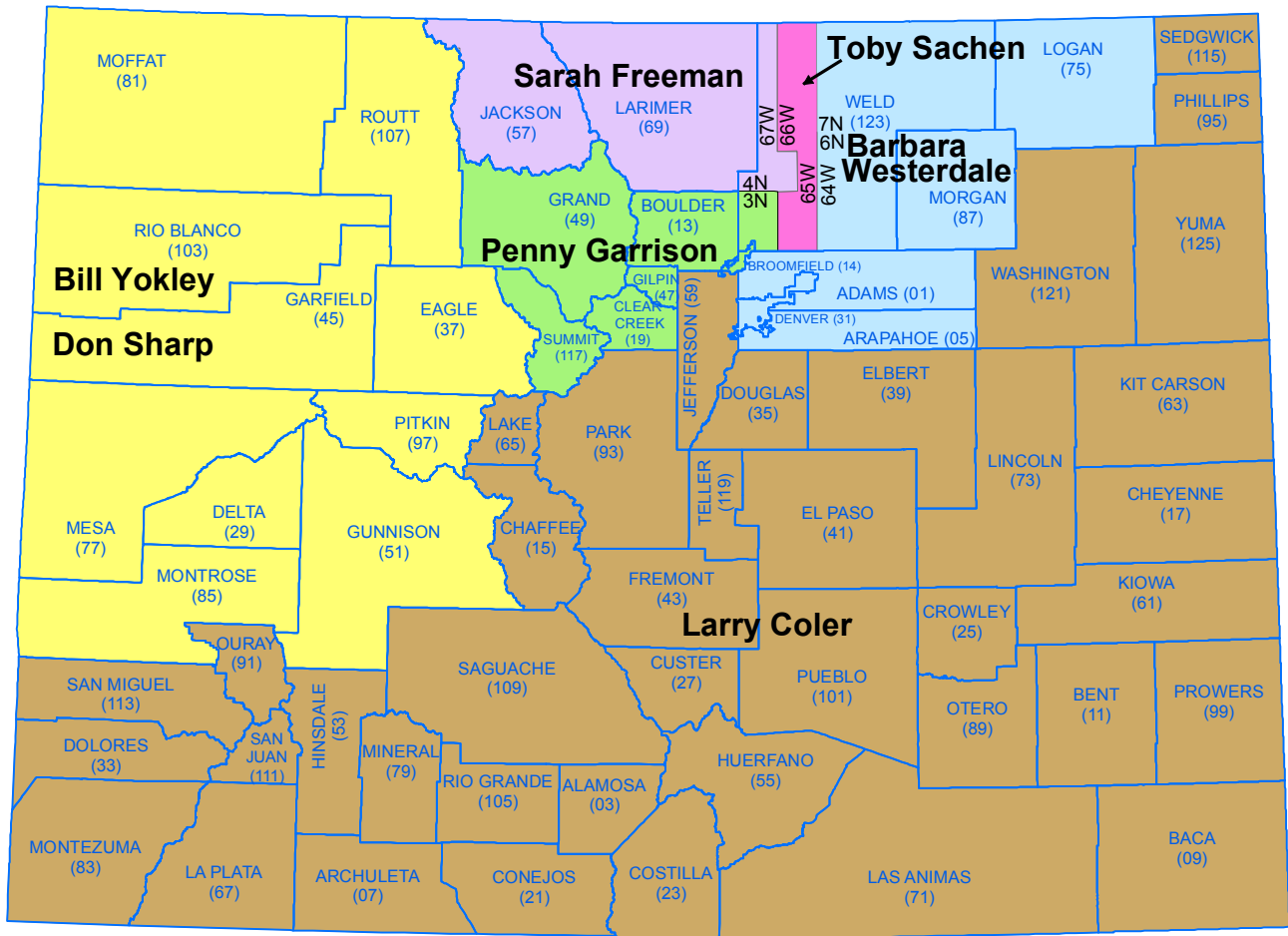


EIT = Engineer in Training
 EPS = Environmental Protection Specialist
 OGLA = Oil & Gas Location Assessment
 Phys Sci Tech = Physical Science Technician
 UIC = Underground Injection Control



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

PERMITTING



Thom Kerr, Permitting Manager
303-894-2100, Ext 5127

Jane Stanczyk, Permitting Supervisor
303-894-2100, Ext 5119

Larry Coler 303-894-2100, Ext 5142

Sarah Freeman 303-894-2100, Ext 5135

Penny Garrison 303-894-2100, Ext 5156

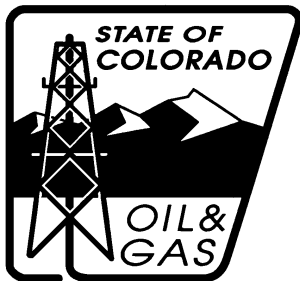
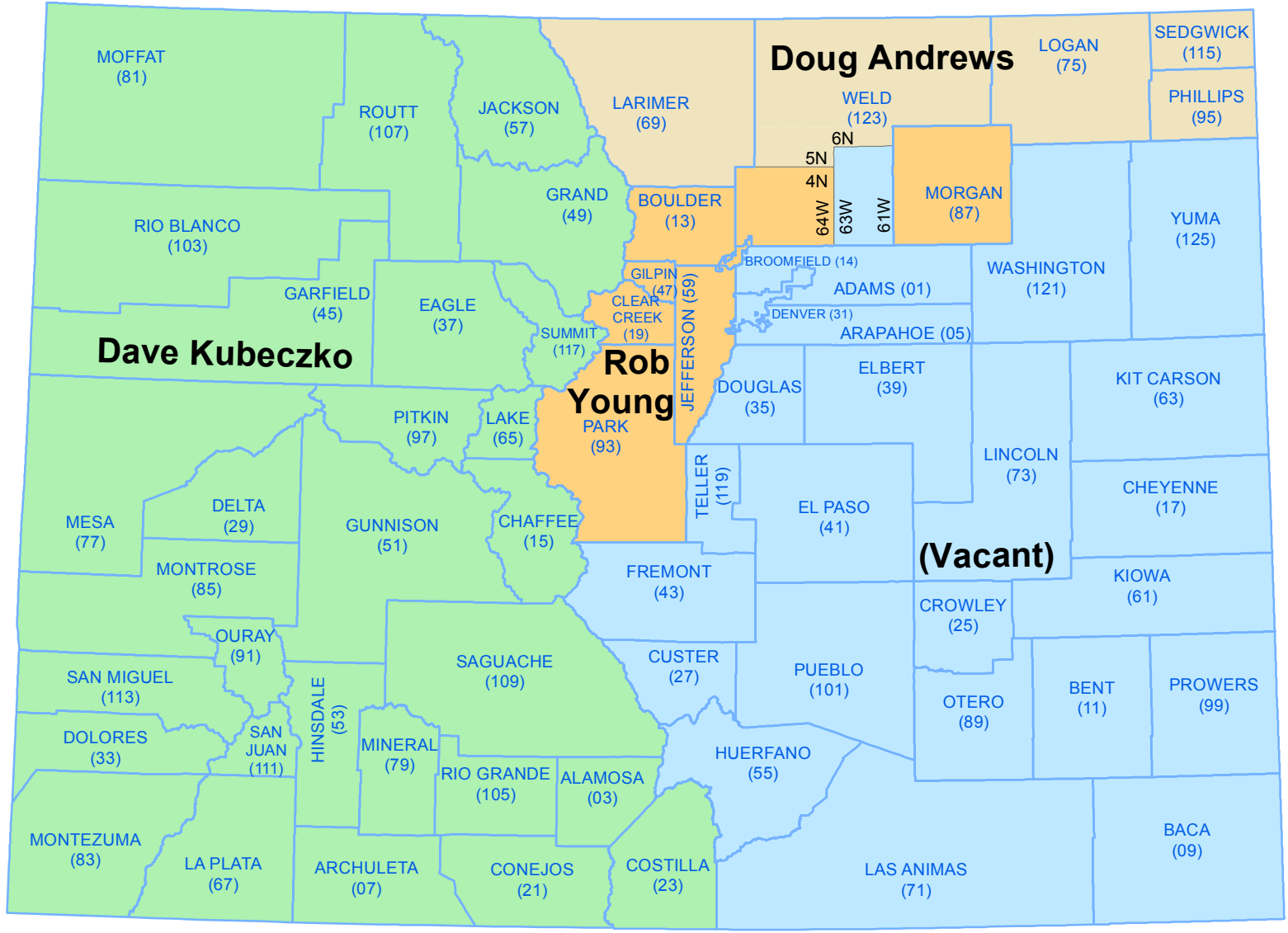
Toby Sachen 303-894-2100, Ext 5141

Don Sharp 303-894-2100, Ext 5174

Barbara Westerdale 303-894-2100, Ext 5159

Bill Yokley 303-894-2100, Ext 5154

OIL & GAS LOCATION ASSESSMENT



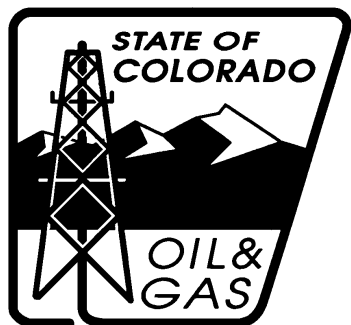
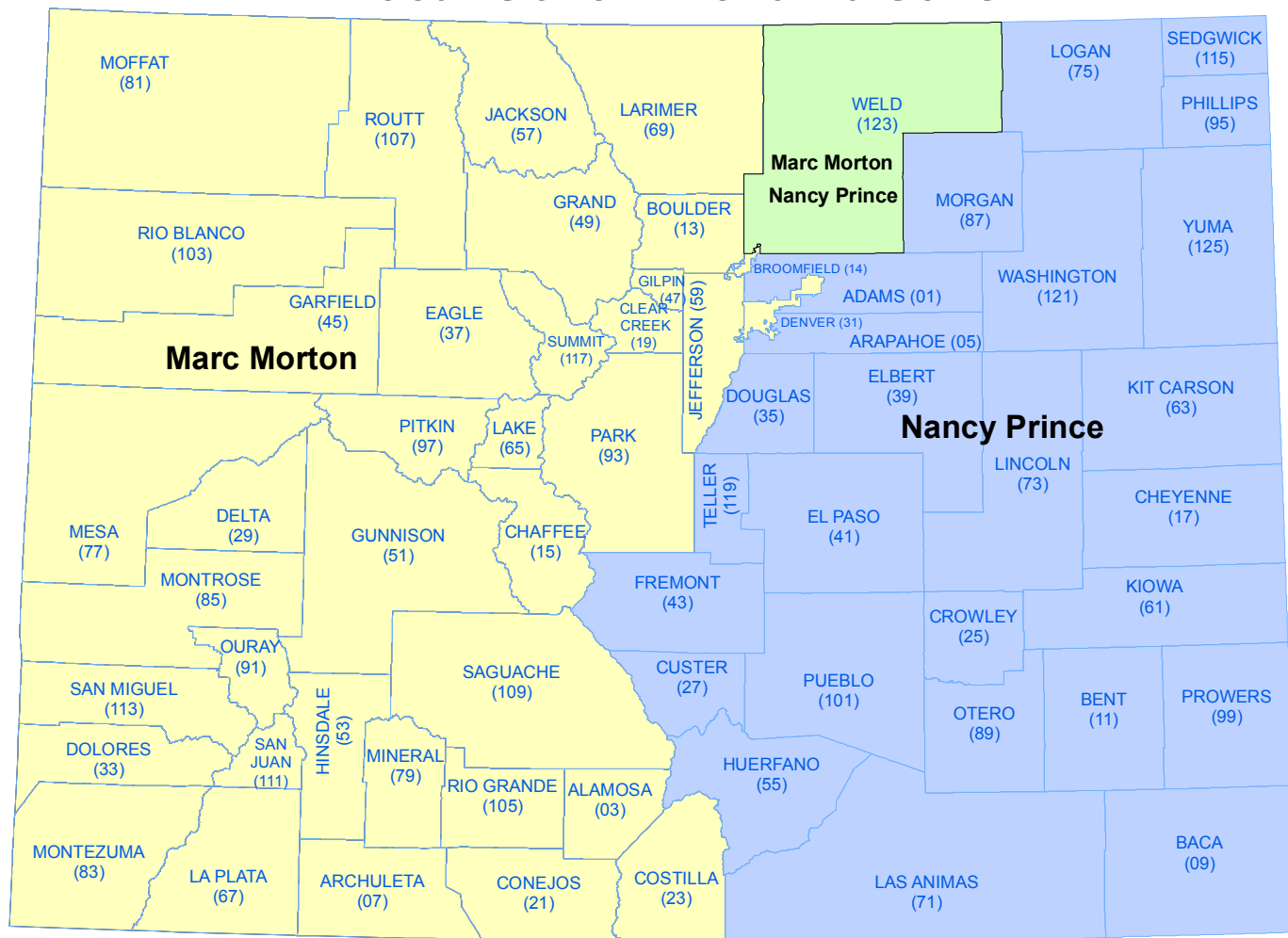
Greg Deranleau, OGLA Supervisor
303-894-2100, Ext. 5153

Rob Young 303-894-2100, Ext. 5144

Dave Kubezcko 970-625-2497, Ext. 5

Doug Andrews 303-894-2100, Ext. 5180

Local Government Liaisons

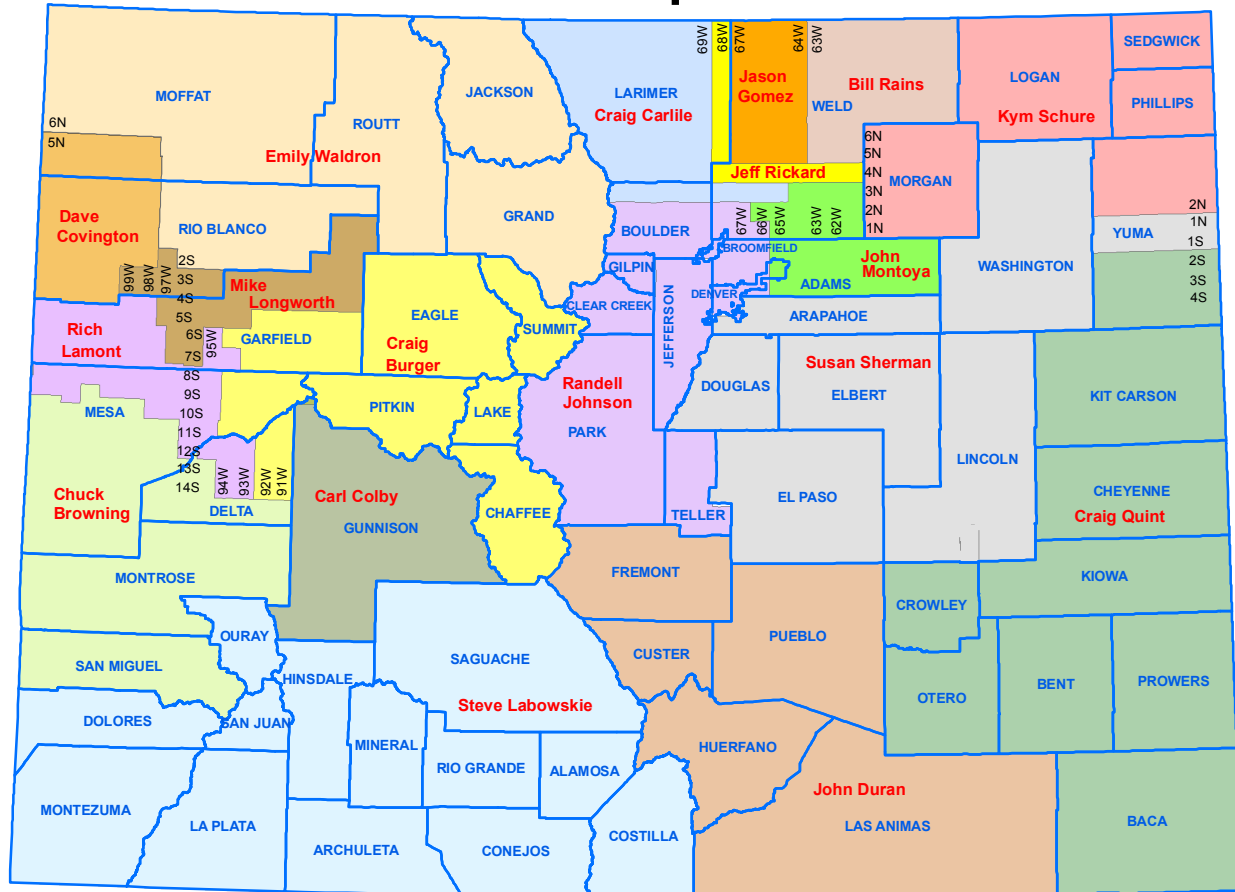


Robert J. Frick, Hearings Manager
303-894-2100, Ext 5152

Marc Morton 303-894-2100, Ext 5132

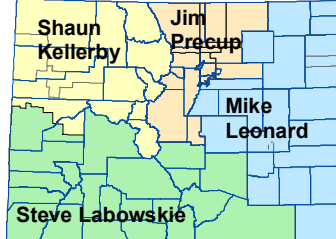
Nancy Prince 303-894-2100, Ext 5103

COGCC Field Inspector Areas

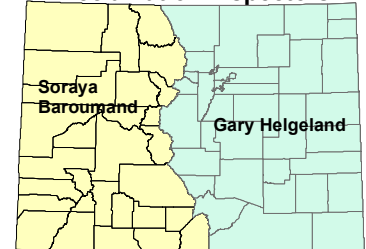


Margaret Ash, Field Inspections Manager
 (O) 303-894-2100, Ext. 5110
 (C) 303 548-6298

Field Inspector Supervisors



Reclamation Inspectors



NW Area
Shaun Kellerby
 NW Area Supervisor
 (O) 970-285-7235
 (C) 970-712-1248

Craig Burger
 (O) 970-945-5372
 (C) 970-319-4194

Mike Longworth
 (O) 970-243-1183
 (C) 970-812-7644

Emily Waldron
 (O) 970-276-9395
 (C) 970-819-9609

Rich Lamont
 (O) 970-858-5297
 (C) 970-623-9301

Dave Covington
 (O) 970-675-2173
 (C) 970-623-9782

NE Area
Jim Precup
 NE Area Supervisor
 (O) 303-469-1902
 (C) 303-726-3822

John Montoya
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 (C) 970-397-4124

Randell Johnson
 (O) 303-655-7472
 (C) 303-815-9641

Bill Rains
 (O) 970-352-3114
 (C) 970-590-6480

Jeff Rickard
 (C) 720-305-8280
 (O) 970-461-2502

Jason Gomez
 (O) 970-667-1593
 (C) 970-573-1277

Craig Carlile
 (C) 970-629-8279

SW Area
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 SW Area Supervisor
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 (C) 970-946-5073

John Duran
 (O) 719-846-4715
 (C) 719-688-2626

Chuck Browning
 (O) 970-242-3348
 (C) 970-433-4139

Carl Colby
 Gunnison County IGA
 (C) 970-326-5776

East Area
Mike Leonard
 South Area Supervisor
 (O) 719-647-9715
 (C) 719-343-0130

Craig Quint
 (O) 719-767-8939
 (C) 719-342-5702

Kym Schure
 (O#1) 970-522-2534
 (O#2) 303-894-2100, x5157
 (C) 970-520-3832

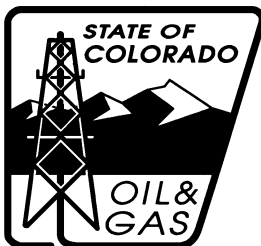
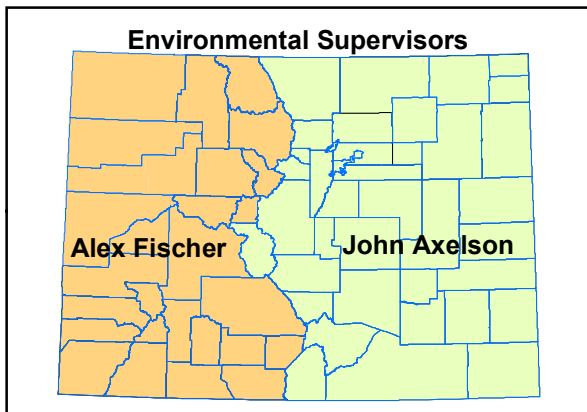
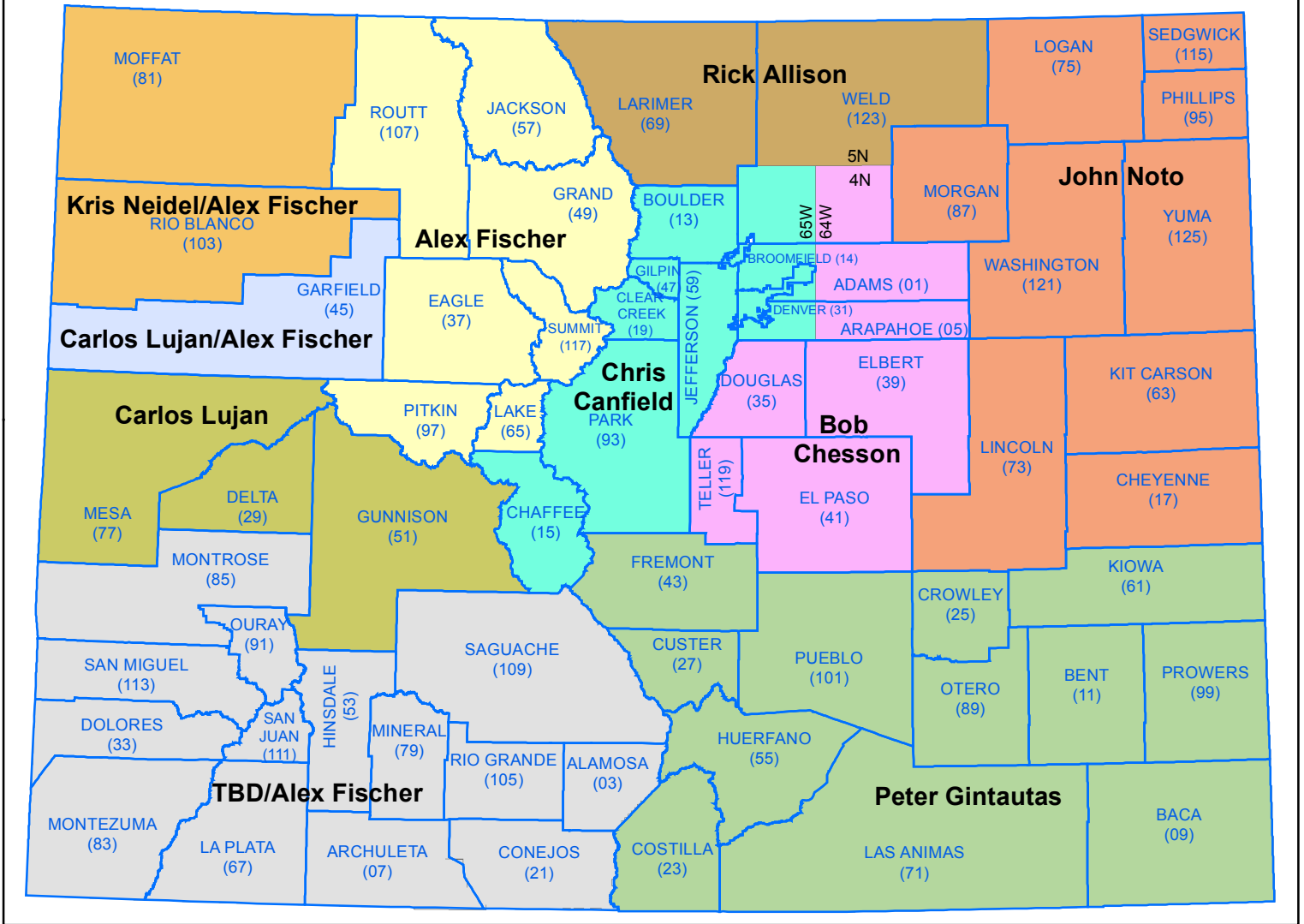
Susan Sherman
 (O) 719-775-9098
 (C) 719-775-1111

Reclamation Inspections
Soraya Baroumand
 (O) 970-876-9910
 (C) 970-620-3277

Gary Helgeland
 (O) 303-666-6013
 (C) 970-216-5749



ENVIRONMENTAL



COGCC: November 18, 2013

James Milne
Environmental Manager
(O) 303-894-2100, Ext. 5117

West Area

Alex Fischer
West Supervisor
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Carlos Lujan
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(C) 970-286-3292

Kris Neidel
(O) 970-871-1963
(C) 970-846-5097

East Area

John Axelson
East Supervisor
(O) 303-894-2100, Ext 5115
(C) 303 877-9964

Peter Gintautas
(O) 719-846-3091
(C) 719-679-1326

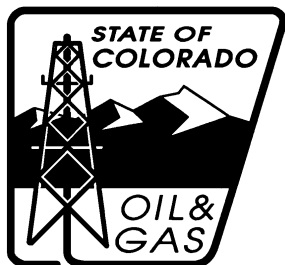
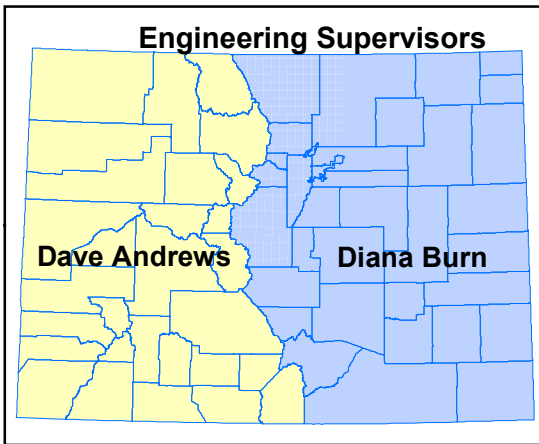
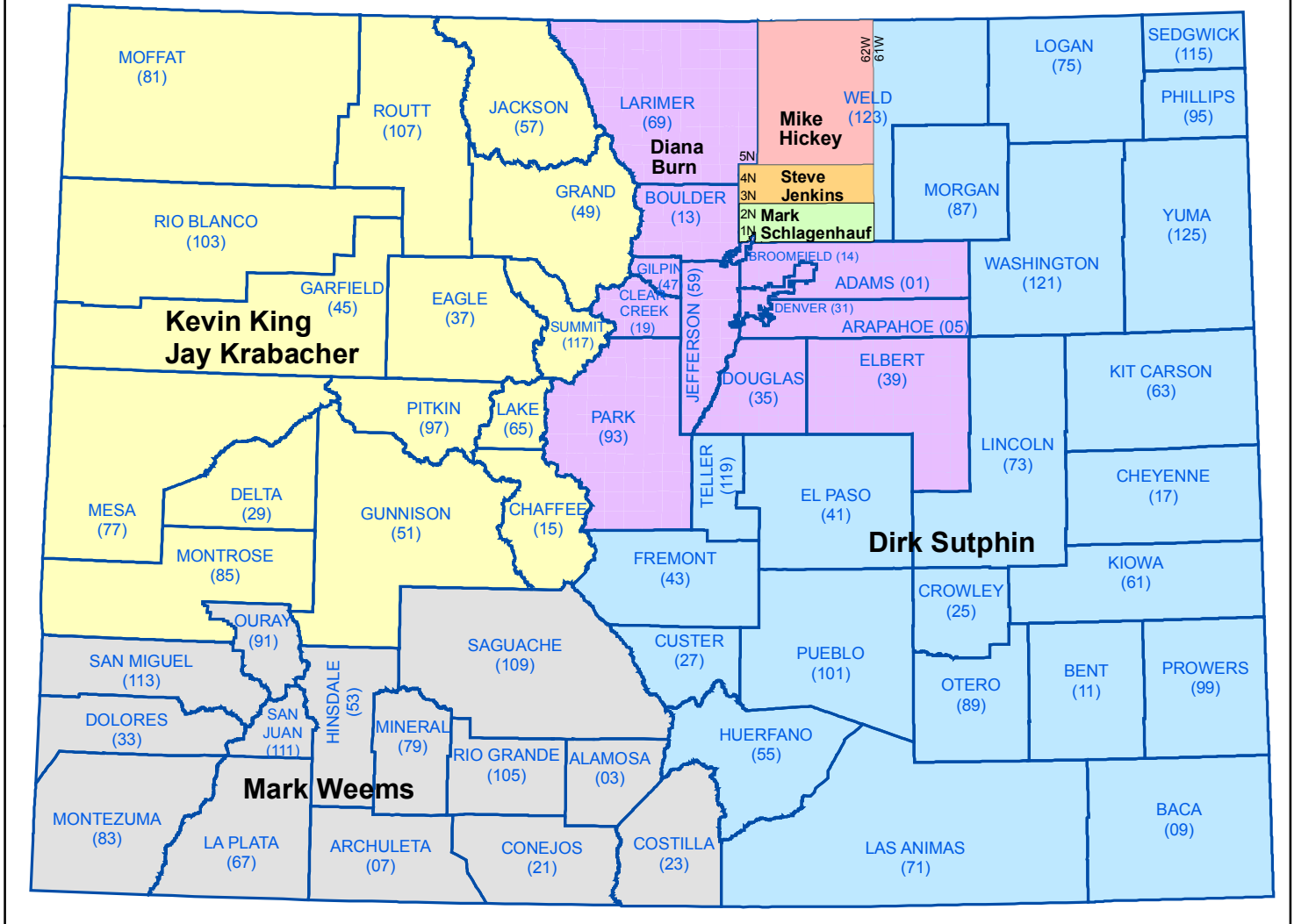
Robert Chesson
(O) 303-894-2100, Ext. 5112

Rick Allison
(O) 970-461-2970
(C) 970-623-0850

Chris Canfield
(O) 303-894-2100, Ext 5183
(C) 720-347-7484

John Noto
(O) 303-400-6136
(C) 720-498-5298

ENGINEERING



COGCC, October 30, 2013

Stuart Ellsworth
 Engineering Manager
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 W. Colorado Engineering Supervisor
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Kevin King
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Mark Weems
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Eastern Region

Diana Burn
 E. Colorado Engineering Supervisor
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 (C) 303-918-6320

Dirk Sutphin
 (O) 303-894-2100, Ext. 5107

Mark Schlagenhauf
 (O) 303-894-2100, Ext. 5177

Steve Jenkins
 (O) 303-894-2100, Ext. 5104

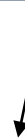
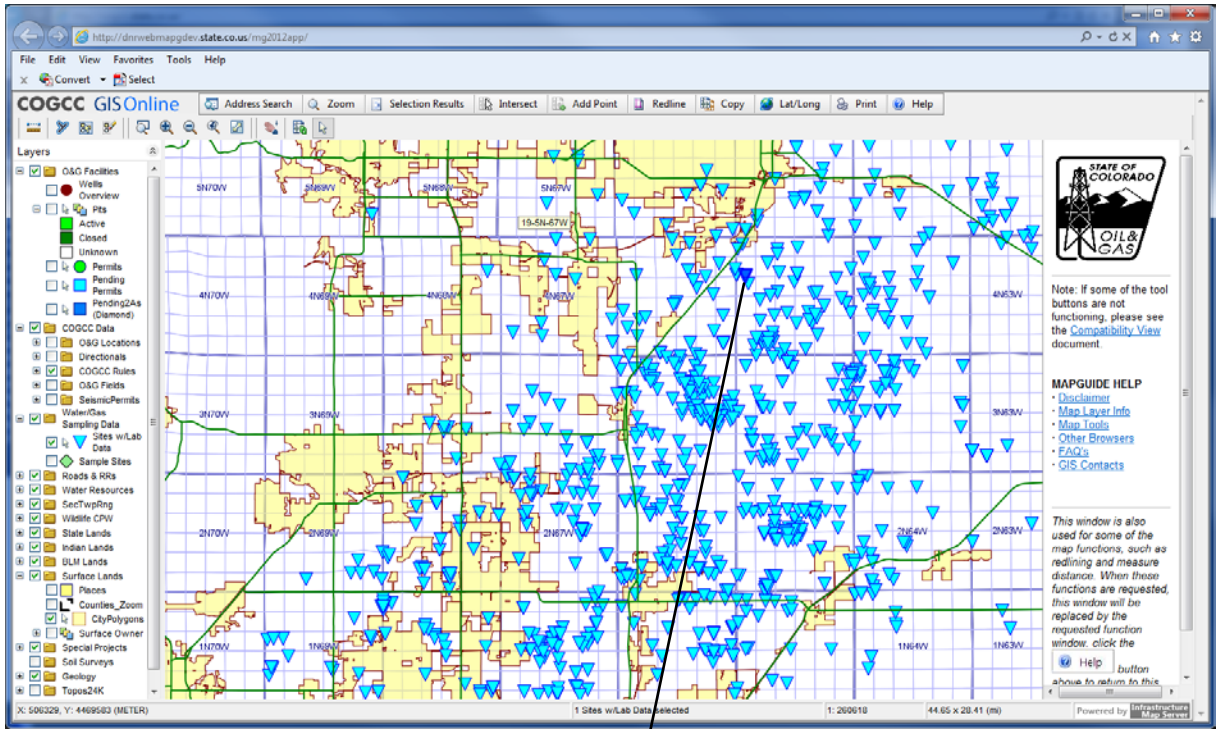
Mike Hickey
 (O) 303-894-2100, Ext. 5105

Denise Onyskiw, UIC Supervisor, Statewide
 (O) 303-894-2100, Ext. 5145

APPENDIX 3

Groundwater Sampling Report Example

GISOnline 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 GISOnline Map

COGCC GISOnline Map

The screenshot displays the COGCC GISOnline web application interface. The browser address bar shows the URL: <http://dnrwebmapgdev.state.co.us/mg2012app/>. The application has a menu bar (File, Edit, View, Favorites, Tools, Help) and a toolbar with various map functions like Address Search, Zoom, Selection Results, Intersect, Add Point, Redline, Copy, Lat/Long, Print, and Help.

The main map area shows a grid of sections with numerous wells and facilities plotted. A pop-up window is visible over a well, displaying the following information:

- 05-017-06167
- MULL DRILLING COMPANY INC
- CHAMPLIN-PELTON A 1
- Double-click to open link (<http://cogcc.state.co.us/cogis/FacilityDetail.asp?facid=01706167&TYPE=WELL>)

The left sidebar contains a 'Layers' panel with the following checked items:

- O&G Facilities
- Wells
- Pits
- Active
- Closed
- Unknown
- Permits
- Pending Permits
- Pending2As (Diamond)
- Well Status
- COGCC Data
- O&G Locations
- Directionals
- COGCC Rules
- O&G Fields
- SeismicPermits
- Water/Gas
- Sampling Data
- Sites w/Lab Data
- Sample Sites
- Roads & RRs
- Water Resources
- SecTwpRng
- Wildlife CPW
- State Lands
- Indian Lands
- BLM Lands
- Surface Lands
- Places
- Counties_Zoom
- CityPolygons
- Surface Owner
- Special Projects
- Soil Surveys
- Geology
- Toos24K

The bottom status bar shows: X: 731542, Y: 4305126 (METER), 0 features selected, 1: 128904, 22.08 x 14.05 (m), and Powered by Infrastructure Map Server.

On the right side, there is a logo for the STATE OF COLORADO OIL & GAS. Below it, a note reads: "Note: If some of the tool buttons are not functioning, please see the [Compatibility View](#) document." Below that is a 'MAPGUIDE HELP' section with links to Disclaimer, Map Layer Info, Map Tools, Other Browsers, FAQ's, and GIS Contacts. At the bottom right, a note states: "This window is also used for some of the map functions, such as redlining and measure distance. When these functions are requested, this window will be replaced by the requested function window. click the Help button above to return to this window."

APPENDIX 5

2013 Permit Statistics

