FY 2004-2005 REPORT TO THE

WATER QUALITY CONTROL COMMISSION
and
WATER QUALITY CONTROL DIVISION
of
THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

by

THE COLORADO OIL AND GAS CONSERVATION COMMISSION

of

THE DEPARTMENT OF NATURAL RESOURCES

IN ACCORDANCE
WITH

THE AUGUST 28, 1990 MEMORANDUM OF AGREEMENT
and
THE IMPLEMENTING PROVISIONS OF SENATE BILL 181

NOVEMBER 2005

TABLE OF CONTENTS

LIST OF APPENDICES

1. 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 SB89-181, and is restated and clarified by a Memorandum of Agreement (MOA) between the agencies.

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

This fourteenth annual report includes a summary of COGCC activity and changes in ground water protection programs that were made during the preceding year. Major issues concerning the implementation of water quality standards and classifications are also reported. Use of technical language and industry jargon is avoided where possible, as well as recitation of the COGCC statute and rules.

2. COGCC ORGANIZATION AND FUNCTIONS

Public Outreach and Communication

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

- The Monthly Staff Report is prepared for submittal to the COGCC Commissioners. It describes ongoing staff activities such as compliance and enforcement actions, environmental and landowner issues, and other topics relevant to the mission of the COGCC. The report is distributed widely to interested parties and it is posted on the COGCC website www.oil-gas.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.

- A total of 11 local public forums (LPF) have been held since October 1998, as provided for in Rule 508. These meetings are held so citizens can provide input to the COGCC regarding potential impacts to the environment and public health, safety, and welfare from the approval of applications to create drilling units (establish well spacing) or to increase well density within units. Two LPFs have been held in Yuma County, one in Las Animas County, two in Huerfano County, five in La Plata County, and one in Garfield County.

  - Meetings are held in counties and areas where the oil and gas industry is active, particularly in areas where concerns ranging from potential impacts to public health, safety, and welfare to the economic effects of fluctuating commodity prices have been voiced.

  - The Commission is committed to holding at least three of its 10 hearings outside Denver each year. We continue to be successful in securing funding for these trips as part of our annual budget. In FY 2004-2005 the COGCC held one hearing in Glenwood Springs, and

one in Trinidad.

- The COGCC continues to solicit participation on all levels from "stakeholders" - those representing the oil and gas industry, local government, citizens, other agencies, agriculture, and the environmental community.

- The COGCC continues to expand our internet presence. In addition to being able to access oil and gas well data, users are able to access information regarding pits, spills/releases, complaints, and remediation projects on the web. The queries by which users access these data continue to be modified and refined to make them “friendly”. Please visit our website at www.oil-gas.state.co.us.

COGCC Commissioners

The Colorado Oil and Gas Conservation Act requires a total of seven (7) Commissioners to represent the COGCC; two (2) Commissioners appointed from west of the continental divide and five (5) Commissioners appointed taking into account the need for representation for areas with high levels of oil and gas activity or employment. The current seven (7) Commissioners have a wide range of experience and expertise in petroleum geology, petroleum engineering, ranching, environmental sciences, and finance and operations. Biographical sketches of the COGCC Commissioners are included in Appendix 1.

COGCC Staff

The COGCC has 38 employees as shown on the organization chart included in Appendix 2. This number reflects three (3) new FTE positions that were approved by the Joint Budget Committee, two field inspectors and one environmental protection specialist. COGCC staff now includes six (6) engineers, seven (7) field inspectors, and five (5) environmental protection specialists (EPS). One (1) of the engineers and six (6) of the field inspectors are located in field offices in Grand Junction, Battlement Mesa, Durango, Greeley, Sterling, Broomfield, and Trinidad, which helps to maximize their available field inspection time. We continue to attempt to fill one of the new field inspector positions. The person that is hired to fill this position will be located in Rifle, CO.

COGCC Environmental Staff

The Operations Unit includes the engineers, field inspectors, and environmental staff. The placement of these disciplines into one group has improved implementation of COGCC programs and cross training. David Dillon is the Deputy Director of Operations Group. The map included in Appendix 3 shows the geographical areas of responsibility assigned to the engineer/inspector and the environmental staff.

The COGCC environmental staff is comprised of four (4) Environmental Protection Specialists (EPS) and the Environmental Supervisor, all of whom have professional experience and expertise in environmental issues associated with oil and gas operations, hydrogeology, and geology. We continue to handle questions, concerns, problems, programs, and issues relating to the oil and gas industry's impact on the environment, and public health safety and welfare. In addition, the new EPS implements the COGCC’s Onsite Inspection Policy, which was adopted earlier this year and is discussed in more detail below in part G. The

environmental staff works closely with the COGCC engineering staff and in particular with the field inspectors. Incidents resulting in environmental impacts are referred to the environmental staff. The primary responsibilities of the environmental staff are discussed below:

A. Spill/Release Response: Operators are obligated to report spills and releases that occur as a result of oil and gas operations. 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), and therefore, are subject to COGCC jurisdiction. Generally, impacts from these events are limited to soils and are relatively small in areal extent.

Spill response by the environmental staff includes onsite inspections, remediation oversight, review of reports and remediation plans, as well as 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 MRDB database and can be accessed via the COGCC website. In FY 2004-2005 approximately 257 spills and releases were reported and approximately 214 spills and releases were resolved and/or remediated.

B. Complaint Response: The COGCC responds diligently to complaints, which are received from individuals and other agencies. Complaints are tracked in the COGCC's MRDB database and can be accessed via the COGCC website. In FY 2004-2005 approximately 144 complaints were filed and responded to, and approximately 116 complaints were resolved. Often the complaints are from landowners, alleging damage to their land or water wells. The environmental staff follows up where appropriate, taking samples when necessary. Operators often are required to perform additional investigation and remediation, as needed, to bring sites into compliance with soil and ground water standards.

C. Remediation Projects: Operators are required to remediate significant adverse environmental impacts that occur as a result of oil and gas activities. Situations requiring remediation often result from spills and releases of produced water and hydrocarbons discovered at the time of occurrence or during due diligence investigations, well pluggings, or pit closures. The environmental staff manages remediation projects by evaluating reports and plans, establishing cleanup standards, points of compliance, and other requirements for operators to meet. Remediation projects are tracked in the COGCC's MRDB database and can be accessed on the COGCC website.. During FY 2004-2005, approximately 43 operators submitted approximately 155 new remediation plans for approval and approximately 41 remediation projects were closed. The environmental staff handled approximately 247 remediation projects during FY 2004-2005.

Where ground water has been impacted, operators are required to: mitigate 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 product"); remediate, establish points of compliance, and monitor contaminant levels.

D. Pit Program: The "pit program" was a result of the May 1995 "points of compliance" rulemaking. The pit program required operators to:

- Inventory all pits, buried and partially buried tanks and vessels by 12/31/95;
- Determine whether the structures listed above are located in a Sensitive Area;
- Test all buried and partially buried tanks and vessels located within a Sensitive Area to determine whether they leaked;
- Close those pits located within a Sensitive Area by 12/31/97;
- Repair, replace, upgrade, or close those structures located within a Sensitive Area that leak by 12/31/97;
- Provide a written summary of the above activities by 12/31/97.

As a result of the program, a significant number of pits were closed in areas where there was a high potential for adverse impact to ground water. Many operators took advantage of the program, closing pits to eliminate discharges with potential impacts, performing closures using cost-effective methods, and reducing overall environmental liability. Also, leaking buried or partially buried concrete vaults, tanks and structures were removed, replaced and impacts remediated. Closures and cleanups are conducted under the oversight of COGCC staff.

During FY 2004-2005, COGCC staff approved permits for 305 new earthen pits and approved the closure of 64 pits, primarily in conjunction with plugging and abandonment of wells. Most of these new pits are located in Las Animas County and are associated with coalbed methane wells. There are approximately 11,457 earthen pits shown as active in the MRDB. COGCC environmental staff intend to verify this number as time allows.

E. Permitted Centralized Waste Management Facilities: The 900-Series rule modifications that became effective 12/31/97 included a change to the previous landfarm rule. The rule now applies to all non-commercial Centralized Exploration and Production (E&P) Waste Management Facilities and includes waste treatment methods such as large pits, thermal and centrifuge systems, or waste treatment for beneficial reuse, as well as landfarms. The Colorado Department of Public Health and Environment (CDPHE) HMHWM-SWM permits commercial E&P waste management facilities, while the COGCC permits non-commercial Centralized E&P Waste Management Facilities.

This change allows the operator greater flexibility in waste management methods, and creates a simple approach to regulation of these facilities. The rule requires operators to apply for an operating permit, and as part of the approval process, staff evaluates the proposed siting, operation, financial assurance, and preliminary closure plans. 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 that may be from more than one field or lease. These facilities are required to have financial assurance of $50,000. During FY 2004-2005 the COGCC permitted five (5) new centralized E&P waste management facilities, including two landfarms and two pits in Garfield County and one pit in Rio Blanco County. This brings the total number of active permitted centralized E&P waste management facilities up to 17. Two centralized landfarms are located on federal lands and are not necessarily under the jurisdiction of the COGCC.

F. Reuse of Produced Water: Approximately 85% of the water co-produced with oil and gas is disposed or used for enhanced recovery by underground injection. Most produced water that is not injected is disposed in evaporation and percolation pits. Some produced water is

discharged under CDPS permit as a waste and a small amount of produced water is used for dust suppression on oil and gas lease roads. Three landowners in La Plata County have filed for and obtained the right from Water Court to use produced water for agricultural purposes.

Wellington Operating Company (WOC) has applied for a permit to construct a pit that would allow produced water from their Wellington Field in Larimer County to percolate into the alluvium of Boxelder Creek. This water, which is produced from the Muddy Sandstone Unit, has been determined to be nontributary by the Office of the State Engineer. The landowner intends to use this water to augment consumptive losses caused by a rural residential development he intends to build. COGCC staff and their consultant are working together to establish a monitoring well network, including establishing points of compliance and a monitoring plan for the water discharged into this pit.

G. Onsite Inspections. In January 2005, COGCC adopted a policy to conduct onsite inspections where oil and gas wells are proposed on lands where the surface owner did not execute a lease or is not party to a surface use agreement. Under COGCC Rule 306., an operator is required to use its best efforts to consult in good faith with the affected surface owner with regards to locations of proposed wells and surface facilities, access roads, and final reclamation and abandonment. If the COGCC Rule 306. good faith consultation between the operator and the surface owner does not resolve operational issues related to the proposed well, the surface owner may request the COGCC to conduct an onsite inspection under the new policy.

During the onsite inspection, the surface owner, operator, and COGCC staff meet at the location and discuss issues related to the proposed well and associated surface facilities. The local government designee may also attend if requested by the surface owner. Following the inspection, the COGCC may apply appropriate site specific drilling permit conditions, if necessary, to avoid potential unreasonable crop loss or land damage, or to prevent or mitigate health, safety and welfare concerns, including potential significant adverse environmental impacts. Any such conditions of approval must be consistent with applicable Commission spacing orders and well location rules, and must take into account cost-effectiveness, technical feasibility, protection of correlative rights, and prevention of waste. The COGCC is not authorized to require an operator to use an exception location, to utilize directional drilling techniques, or otherwise compromise its reasonable geologic and petroleum engineering considerations.

As of November 1, 2005, the COGCC has received twenty-eight (28) requests for onsite inspections. Thirteen (13) requests have been withdrawn, seven (7) onsite inspections have been conducted, and eight (8) onsite inspections are pending and will be scheduled, if necessary, after the APD is received, or after issues related to local governmental designee consultation, location change, or surface use agreements are resolved. Most surface owner concerns relate to surface impacts from proposed oil and gas operations. One surface owner in La Plata County expressed concern that shallow ground water would be impacted by hydraulic fracturing fluids and construction of a cathodic protection well. COGCC staff has investigated this matter, including establishing baseline conditions of the shallow ground water by collecting samples from a spring and is currently evaluating whether conditions of approval to the drilling permit are necessary to protect shallow ground water and associated springs in the area.

Environmental Response Fund

The Severance Tax Trust Fund continues to be the source for the COGCC's Environmental Response Fund (ERF). During FY 2004-2005 this money was used to plug and abandon orphaned wells and to fund a number of projects related to environmental issues. Detailed descriptions of these are provided in Section 6. In addition to the COGCC's annual ERF appropriation, staff asked for and the legislature approved a $200,000 emergency appropriation for our response to an explosion caused by gas leaking from an "orphaned" well (Bryce 1-X) in La Plata County (see the Southwest Colorado section for additional information).

For FY 2005-2006 the COGCC requested and the legislature approved a continuous appropriation of $75,000 to fund emergency situations related to oil and gas operations. As a result, the COGCC's annual ERF appropriation is now $475,000. In addition, the COGCC requested and the legislature approved an appropriation of $229,000 to fund ground water and gas studies in the Piceance and DJ Basins.

ERF Projects proposed for FY 2006-2007 include:

- Plugging, abandoning, and reclamation of orphaned oil and gas wells and associated facilities in various counties.
- Complaint and Spill Response.
- Finish ground water and gas sampling projects in the Piceance and D-J Basins.
- La Plata County ongoing seep study, and operation and maintenance of 3M monitoring wells.
- Continued remediation work on the Bryce 1-X orphaned well, impacted properties, and water wells.

Data Management and Geographical Information Systems (GIS)

A major function of the COGCC is the management of records and data related to exploration and production of oil and gas resources, and potentially related impacts. Historically, the majority of these records and data were available to the public as paper records filed in the COGCC Public Room, located in the Denver office. The number of records and volume of data available through the COGCC continues to grow each year. In 1999, a new data system (Colorado Oil and Gas Information System [COGIS]) was developed. COGIS allows staff and Internet users to access COGCC data through a relational database and imaging system. Almost all entries from COGCC permit/reporting forms are stored in the database. Data pertaining to wells, spills, complaints, and pits are managed in the COGIS database system. In addition, hundreds of thousands of paper documents have been scanned, including a relatively complete set of geophysical well logs. Users are currently able to search the COGCC databases on the web, call up related scanned documents, and view plotted locations on a map.

To ensure that local governments are informed, an Internet application has been developed to allow the local government representatives to view new permits and other well information in their respective areas of concern.

Various specific studies in the San Juan Basin and Raton Basin are available for review and download via the Internet. The raw data from the Raton Basin Baseline Study are also

available for download.

Improvements to the COGCC GIS Internet Map continue to be made. The map contains over 100 map layers including oil/gas wells, facilities (e.g. pits), roads, cities, counties, and CDPHE Regulation 42 Specified Areas. The following new map layers were added in 2005:

1) Water Well Locations – This coverage, provided by the Division of Water Resources (DWR), shows water well locations throughout the State. The user can place the mouse over a well to get the Receipt and Permit number of the well. DWR requests that the users contact them at http://www.water.state.co.us/pubs/records.asp for information about these wells.

2) COGCC Water and Gas Sample Locations- This map layer shows the locations of water wells and gas wells that have been sampled by the COGCC or other interested parties. The sample analytical data are not available via the Internet as of yet; however, the user can contact Debbie Baldwin at the COGCC for data.

3) Topographic Maps – The USGS 1:24,000 quad sheets were added along with the 1:250,000 topographic map.

4) Cities, Towns, and Places – This is a detailed map layer depicting the location of hundreds of small towns and places.

Several GIS projects are currently underway. One project is focused on displaying all directional well boreholes. The plotting of directional well bores will be accomplished through an automated process. This is an industry funded project, and the COGCC is grateful to Petroleum Development Corporation and EnCana for their support. Another project, in cooperation with the State Land Board, will result in the creation of map layers depicting State surface and mineral ownership. A third project is underway to display 1-meter DOQQ aerial imagery for the entire State. If adequate file space can be acquired on the DNR servers, the imagery will be added to COGCC GIS Online.

On September 7, 2005 the COGCC approved new well location rules that will require all permit and “as drilled” locations to be accurately measured by traditional surveying or by global positioning system (GPS) technology. Standards for GPS were established along with new reporting requirements. The new rules mandate that all location data be reported using the NAD 83 datum. We are currently converting all of our existing NAD 27 data to NAD 83.

COGIS is currently available on laptop computers that allows the engineering and environmental staff to take the entire COGIS database and GIS Online Map System to the field for quick information queries while conducting investigations.

Industry Services

The COGCC continues to promote its mission to encourage the development of the state's oil and gas resources by providing information and assistance in complying with the COGCC rules and requirements, including our expanded website, GIS capabilities, and new computer system.

Industry Compliance/Violations/Penalties

In FY 2004-2005, the COGCC found 15 operators in violation of rules and orders and assessed penalties totaling approximately $494,000. A penalty of $371,000 was assessed for one violation which impacted water quality. The money from this fine is being used to fund three public projects in Garfield County. The largest, a detailed hydrogeologic study of a four township area south of Silt and Rifle, is discussed in more detail in the Northwest Colorado Section. Other violations included:

- Failure to:
  - - prevent unauthorized discharged,
  - - obtain approval for shut-in wells,
  - ensure mechanical integrity,
  - obtain APD approval prior to drilling/recompletion,
  - plug and abandon wells lacking mechanical integrity.
  - incomplete reclamation,
  - ensure compressive strength of cement,
  - operate centralized facility without financial assurance,
  - lost circulation.

- Lack of reporting.

Underground Injection Control (UIC)

COGCC staff will continue 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 and that points of compliance are established.

3. COGCC COORDINATION WITH WQCD/WQCC

The COGCC, WQCD, and WQCC continued our semi-annual meetings in FY 2004-2005, Martha Rudolph and Michael Klish are serving as the commissioner representatives of the WQCC and the COGCC, respectively.

4, RULEMAKING

One rulemaking hearing was held since the last report. The Commission adopted a special well location rule for portions of Yuma and Phillips Counties allowing additional wells to be drilled for production of gas from the Niobrara Formation.

5. OIL & GAS EXPLORATION & PRODUCTION ACTIVITY IN COLORADO BY REGION/FIELD

By the end of calendar year 2005 there will be approximately 29,000 active oil and gas wells in Colorado. These wells produce approximately 3.1 billion cubic feet (bcf) of natural gas and 63,500 barrels (bbls) of oil per day, with a total value of approximately $8.16 billion dollars for calendar year 2005.

The activity of the oil and gas industry may be measured in part by the number of drilling and recompletion permits processed by the COGCC. It is estimated that by the end of calendar year 2005 the COGCC will have approved approximately 4,050 drilling permits, which is an increase of approximately 39% from calendar year 2004.

This section describes oil and gas activity and highlights COGCC studies, issues and concerns relating specifically to ground water by region. In each region there are remediation projects of various size and type in which impacted soils and/or ground water are being investigated or cleaned up by operators. All the projects are not described individually in this report. The COGCC environmental staff directs and monitors these projects, as described in Section 1.

SOUTHWEST COLORADO

Oil and Gas E&P Activity

Gas production has continued to increase in this area due to the continued development of coalbed methane wells. Drilling activity in La Plata County had leveled off and in FY 2004-2005 approximately 131 permits for new wells and recompletions of existing wells were approved. However, recently the COGCC Commission has approved applications from several operators for drilling wells on 80 acre spacing in certain areas, so we anticipate that drilling activity will increase in the future. Currently there are approximately 2,723 active wells in La Plata County. These wells produce approximately 1.17 bcf of natural gas per day. Also there is a total of approximately 363 oil, gas, and carbon dioxide wells in four other southwestern Colorado counties, including San Miguel, Delores, Montezuma, and Archuleta.

Public Involvement

La Plata County Gas and Oil Regulatory Team (GORT)

The COGCC established the La Plata County Gas and Oil Regulatory Team (GORT) to provide a forum for meaningful dialogue between operators, La Plata County, the Southern Ute Indian Tribe, the Bureau of Land Management (BLM) and the COGCC. Members of this group continue to fund and provide technical support for the ongoing monitoring of methane seeps along the Fruitland Coal outcrop.

Ground Water and Other Environmental Issues

XTO (formerly J.M. Huber) Development Plan

In 1998, J.M. Huber Corp. (Huber) applied to the COGCC for an additional well per spacing unit within an area of existing Fruitland coalbed methane wells. A condition for COGCC approval of this request was that Huber create and implement a Development Plan to address

concerns regarding potential impacts to public health, safety, and welfare. This was the first instance where COGCC had required such a plan. Subsequently XTO Energy, Inc. (XTO) purchased these wells from Huber. Monitoring, testing, and reporting requirements are being met. XTO (formerly Huber) has sampled 19 water wells as specified in the Development Plan. In addition, they have sampled 27 water wells in the Bellflower Subdivision as required by La Plata and they have sampled 26 other water wells in response to requests by landowners.

Conditions for Optional Additional Coalbed Methane Wells

At the July 2000 hearing the COGCC approved the request by a number of operators for an order to allow the drilling of additional wells on certain drilling and spacing units in lands both north and south of the Ute Line. At the conclusion of the Public Issues Hearing, the COGCC found that additional conditions were necessary to protect the environment and public health, safety and welfare and approved the application by attaching a number of conditions, including extensive sampling of water wells. Selected water wells must be sampled prior to the drilling of an additional well and at least three more times, including within one (1) year, three (3) years, and six (6) years after completion..

As a result of COGCC Orders 112-156 and 112-157, operators have collected approximately 1,188 water samples from 532 water wells. The analytical results have been submitted to the COGCC and to the land owners. To date impacts to water wells from CBM wells drilled under these orders have not been detected.

3M Project

Methane gas has been observed seeping from the outcrop of the Fruitland Formation in many areas along the northern margin of the San Juan Basin, in southwestern Colorado. Some of these seeps were identified prior to the initial development of any Fruitland Coal wells; however, in places the intensity and areal extent of these seeps appears to have increased subsequent to coalbed methane (CBM) production. In addition, what appear to be new seeps have been identified in some areas. Gas seepage at the newly identified and expanding seeps could be linked to depressurization of the Fruitland coals near the outcrop.

The COGCC and the US BLM funded the installation of a network of monitoring wells at four locations between the outcrop of the Fruitland Formation and downbasin production. The wells are equipped with transducers and dataloggers and will be used for the long term monitoring of pressure and water levels in the Fruitland Formation. A total of seven (7) wells, were completed and data are being collected. Pressure monitoring data from these wells are available on the COGCC website.

During FY 2004-2005, approximately $29,400 in ERF money was used for the operation and maintenance of these wells, and report preparation.

Phase III of the Fruitland Outcrop Seepage Study

Industry, La Plata County, BLM, and the COGCC continue to contribute money and/or staff for the ongoing evaluation, maintenance, and monitoring of the 140 permanent soil gas monitoring probes, six flux chambers, and one meteorological station. Aerial surveying with infrared imagery technology is also being used to detect areas of stressed and/or dead vegetation, which can be an indication of methane gas seepage. This detailed work has been expanded to cover the entire

Fruitland Formation outcrop in La Plata County and Archuleta County on land north of the Southern Ute Indian Tribe Reservation boundary. The expanded survey includes the mapping of springs discharging from the Fruitland Formation. The report of the results of the 2005 field work is currently being written.

One of the monitored locations has been the gas seeps in the Basin Creek drainage, which is located southwest of Durango. The seeps occur just down stream of the new Animas-La Plata project dam, so the flux chamber and several of the soil gas probes have had to be removed to accommodate construction activities. We are hopeful that once construction of the dam and associated facilities is complete we will be able to relocate our monitoring devices.

Pine River Ranches Subdivision Methane Seepage

Monitoring of ground water conditions using existing monitoring wells continues by BP America, although the active mitigation efforts have been stopped. In addition, permanent soil gas monitoring probes, a gas flux chamber, and meteorological station have been installed and the area is being mapped as part of the Phase III – Fruitland Outcrop Seepage Study described above.

Bradenhead Testing Program

COGCC and BLM continue to co-fund and share staff responsibility for ensuring that Bradenhead tests are conducted on all wells in La Plata County annually. COGCC or BLM personnel witness the tests on gas wells located in areas known to have methane in shallow ground water. Test results are evaluated to determine whether well casings are leaking. Since annual testing requirements were instituted, leaking casing has been detected in approximately 125 wells on tribal, federal, state, and fee land. Remediation of these conditions has been accomplished.

Citizen Complaints Regarding Ground Water

COGCC received three (3) complaints alleging impacts to water wells and other environmental damage from oil and gas activities. COGCC staff investigated all of these complaints. One complaint was associated with a 1930's orphaned oil and gas well that is acting as a conduit for gas migration into the shallow subsurface and ground water. Methane gas from this well accumulated under an occupied trailer home and caused an explosion that seriously injured the owner. In addition, methane has migrated into six (6) nearby water wells. During FY 2004-2005 approximately $128,800 of ERF money was used to respond to this emergency situation, install methane monitors and alarms in three (homes), a fire station, and a water well house, continue to monitor the aerial extent of the gas seepage, and investigate and identify the source of the gas. COGCC staff is actively working with La Plata County, oil and gas operators, and the Southern Ute Indian Tribe to develop a plan to mitigate this very serious and dangerous problem.

The results of the investigations of water well complaints indicated that the two (2) wells of concern had not been impacted by oil and gas activities.

During FY 2004-2005 approximately $2,300 of ERF money was spent investigating these complaints.

Stream Depletion Study

In September 2005, the COGCC, in conjunction with the Colorado Geological Survey ("CGS") and the State Engineer's Office Division of Water Resources ("DWR"), awarded a contract to S.S. Papadopulos and Associates of Boulder, Colorado to conduct a stream depletion study in the San Juan Basin. This study is a joint effort by the COGCC, the CGS and the DWR with the purpose of developing a quantitative assessment of the levels of stream depletion or reduction in formation outflows (spring flows or flowing stream systems gaining from contact with formations), if any, that may be occurring as a result of the removal of water by coalbed methane wells, in addition to defining wells that are tributary or non-tributary to the surface water flow system. A public meeting was held in Durango on October 24, 2005 to present an overview of the project and to answer questions from the public. The project is scheduled to be completed in early December 2005. During FY 2005-2006 $32,000 of ERF money will be used to pay for this study. CGS will provide some additional funding.

Orphaned Wells

- During FY 2004-2005 approximately $29,000 of ERF money was used to plug and abandon 1940's-1950's vintage oil and gas wells. One was located in La Plata County and one in Archuleta County. Proper plugging ensures that surface water and shallow fresh water aquifers in this area are protected from fluid migration in the boreholes.

NORTHWEST COLORADO

Oil and Gas E&P Activity

Northwest Colorado continues experience a high level of oil and gas activity, especially in Garfield and Rio Blanco Counties. Northwest Colorado drilling permits for FY 2004 accounted for approximately 40 percent of the total drilling permits for the State. For FY 2005, Northwest Colorado drilling permits are now accounting for over 40 percent of the state total with Garfield County exceeding Weld County (historically the county with the largest number of drilling permits) as the county with the most new drilling permits. The driving force behind this active development continues to be the extensive natural gas reserves in the Piceance Basin, the gas sales market and overall higher natural gas prices, and an expanding pipeline infrastructure that enables improved marketing of natural gas from the area.

Public Involvement

The Northwest Colorado Oil and Gas Forum

The Northwest Colorado Oil and Gas Forum (NWCOGF) continues to meet regularly with a quarterly meetings generally held in Rifle, Colorado. The NWCOGF is an important forum for the discussion of oil and gas issues and concerns at the local level. The participants include of the COGCC, other federal, state, and local government agencies, the oil and gas industry, and concerned landowners and citizens. Meetings continue to be well attended.

Colorado Oil and Gas Conservation Commission Hearing

As part of the Commission's commitment to hold a portion of their hearings outside Denver each year, the August 2004 and July 2005 hearings were held in Glenwood Springs, Colorado.

Ground Water Issues

Water Well Impact Complaints

COGCC staff and contractors sampled 11 water wells during FY 2004 in response to requests from the water users in Garfield County (10 users) and Routt County (1 user). None of the water wells sampled had any impacts to water quality as a result of oil and gas operations.

During FY 2004-2005 COGCC staff spent approximately $9,397 of ERF money on these investigations.

West Divide Creek Gas Seep –Update – Garfield County

Remediation of the shallow ground water contamination with BTEX compounds along the West Divide Creek Seep has been implemented and consists of a low-flow air sparging system. The remediation system has been shown to be very effective in addressing the shallow ground water impacts along the creek. Recent data (September 2005) indicate continued improvement in both water quality, and both decreasing aerial extent and decreasing concentrations of thermogenic methane and BTEX compounds in the shallow ground water aquifer in the seep area.

EnCana continues to sample 28 domestic water wells, 2 irrigation wells, 4 ponds, 3 springs, 3 creeks, and 27 ground water monitoring wells (along West Divide Creek) as part of this remediation. With the exception of the ground water monitoring wells along the creek, none of the sampled features have had detections of benzene, ethylbenzene, and xylenes. EnCana now is collecting water samples from these sites on a monthly basis, except for 3 domestic water wells where high concentrations of biogenic methane have been observed, which are being sampled on a weekly basis. EnCana continues to supply water to area residences, as requested.

Hydrogeologic Characterization Study - Garfield County

During the August 16-17, 2004 Commission hearing in Glenwood Springs, Colorado, EnCana stipulated to an amended Order Finding Violation finding EnCana responsible for numerous violations of the COGCC rules and regulations that resulted in the release of natural gas and other related compounds from the Williams Fork Formation to West Divide Creek from the Schwartz 2-15B Well. The subsequent fine levied by the Commission and agreed to by EnCana was $371,200 and has been earmarked for funding three projects.

The largest of these is a hydrogeologic study of the ground water and surface water resources of an area within Garfield County, specifically, in four townships south of Silt and Rifle, Colorado (T6SR92W, T6SR93W, T7SR92W, and T7SR93W). The study is focusing on the hydrogeology of the Wasatch Formation, in which most water wells are completed, and the surface water resources of West and East Divide, West, Middle and East Mamm, and Dry Creeks, and the ground water in the alluvium adjacent to these creeks.

URS Corporation (“URS”) was chosen by competitive bid to conduct the study and a contract between URS and Garfield County was signed on July 11, 2005 and a “kick-off” meeting held with the stakeholders (Garfield County, COGCC, EnCana, URS, and Grand Valley

Citizens Alliance) on July 8, 2005. Since that time URS has continued work on the Hydrogeologic Characterization Project with the cooperation of local oil and gas operators, the COGCC, the USGS, and Garfield County. COGCC staff has provided URS with information in a database format for all of the oil and gas wells located in the study area and provided URS with all of the information contained in our water quality database for approximately 464 water resources within the study area. This includes additional water quality information that EnCana and Bill Barrett Corporation recently provided to the COGCC on approximately 110 water wells that they have sampled on a voluntary basis. This project is expected to be completed by year end 2005.

Former Dietrich Water Well – Garfield County

Thermogenic natural gas that is isotopically and compositionally similar to Williams Fork Formation production gas has been detected in this water well located south of Silt, Colorado. On October 8, 2004 COGCC staff issued an NOAV to EnCana requiring remedial actions to mitigate the gas impact to this water well. The COGCC is pursuing further enforcement related to this matter. The former Dietrich water well is on property that has been purchased by EnCana.

During FY 04-05 $4,090 of ERF funds was spent on data collection and evaluation in response to this complaint.

Amos/Walker Water Well – Garfield County

Thermogenic natural gas which is isotopically and compositionally similar to Williams Fork Formation gas produced from gas wells in the area has been detected in this water well located south of Silt, Colorado. On June 7, 2004 the COGCC staff issued a Notice of Alleged Violation (NOAV) to EnCana requiring remedial actions to mitigate the gas impact to this water well. The COGCC is pursuing further enforcement related to this matter.

During FY 04-05 $10, 487 of ERF funds was spent on the evaluation of data collected in response to this complaint.

Piceance Basin Baseline Water Well Sampling

During FY 05-06 COGCC staff and contractors will be conducting baseline water quality sampling in parts of the Piceance Basin covering parts of Garfield, Mesa, Rio Blanco, and Moffat counties under a special funding appropriation. Approximately $120,000 has been appropriated to conduct this work.

Drilling Near Project Rulison Test Site

Presco Corporation has submitted APDs for and begun drilling a number of wells in Garfield County in the vicinity of the Project Rulison Test Site on Battlement Mesa, although outside the 0.5 mile COGCC buffer zone. In 1969, the Atomic Energy Commission, a predecessor to the U.S. Department of Energy conducted an experiment on the use of a nuclear device to enhance natural gas yield from the Williams Fork Formation. To address concerns regarding the potential for wells to intercept materials impacted by the nuclear test, Presco has agreed to conduct a monitoring program for a number of radionuclides. This monitoring program includes background monitoring of presumably un-impacted gas and water from the Williams Fork and overlying formations, of surface and ground water in the vicinity, and ongoing

monitoring of drilling mud, cuttings and gas brought to the surface during drilling, completion, and production.

On August 29, 2005, COGCC staff inspected two Presco drilling locations in the vicinity of the Rulison Test Site in Garfield County, Battlement Mesa 26-42 and 36-13. COGCC reviewed and provided comment on monitoring, testing, and data-recording procedures for drill cuttings and onsite personnel, in addition to interviewing site personnel responsible for implementing these procedures.

NORTHEAST COLORADO

Oil and Gas E&P Activity

COGCC Rule 318.A., adopted in 1998, allows operators to drill lower density spacing without a hearing for down spacing. This resulted in an increase of drilling permits in the Wattenberg Area of the D-J Basin. Weld County, where the major part of the D-J Basin is located, accounted for approximately 27% of the total drilling permits in 2004. Weld County had approximately 18% of the 2004 total gas production and 49% of the 2004 total oil production in the state. Yuma County accounted for approximately 8% of the total drilling permits in 2004.

Smaller oil fields are located in other northeast Colorado counties. These include Adams, Arapahoe, Boulder, Broomfield, Denver, Elbert, Larimer, Logan, Morgan, Phillips, Sedgwick, and Washington Counties. The production from some of these fields is primarily stripper well operations, where oil production is ten (10) barrels or less per day.

Public Involvement

COGCC staff continues to receive and follow-up on complaints received from the Weld County Department of Public Health & Environment, Tri-County Health Department, Larimer County Environmental Advisory Board, Morgan County Office of Emergency Management, Northeast Colorado Health Department, other municipalities, and the public throughout northeastern Colorado.

Environmental Issues

Approximately $16,965 of ERF money was spent investigating citizen complaints and the findings of COGCC field inspections in northeastern Colorado.

<u>Ground Water</u>

In all cases where ground water was impacted, operators are required to conduct a site investigation and perform appropriate remediation to comply with COGCC requirements. In addition, the COGCC continues to oversee the investigation and remediation of contaminated soil and ground water beneath gas plant and compressor station facilities throughout northeast Colorado.

There were nine (9) complaints alleging impacts to water wells in the northeastern portion of Colorado. Upon investigation, COGCC staff determined that the alleged impacts were not oil and gas related.

COGCC continues to provide oversight to domestic water wells that have been impacted by thermogenic gas. Currently, there are six water wells impacted by thermogenic gas from oil and gas wells where the source has been identified and remedial action is ongoing. Additionally, there are four water well complaints involving thermogenic gas where the source has not been identified and which are still under investigation.

Surface Water

There were three (3) spill/release events in which released fluids flowed into a surface water body. These were reported to the WQCD in accordance with our MOA. In all cases where surface water was impacted, the operators responded with appropriate emergency procedures and other measures to comply with COGCC and WQCD requirements.

There was one complaint alleging impacts to surface water in the northeastern portion of Colorado this year. Upon investigation, COGCC staff observed produced water leaking from a permitted earthen pit at an active oil/gas tank battery facility adjacent to Bobcat Canyon in Washington County. The operator was issued a Notice of Alleged Violation (NOAV) and corrective action included stopping the unauthorized discharge and repairing the earthen pit. No significant environmental impacts resulted from the incident.

Orphaned Wells and Sites

Approximately $104,930 of ERF money was used to restore and reclaim orphaned sites in northeastern Colorado. Projects included:

Three (3) sites in Logan County; plugging/abandonment of leaking P&A well, pit closure, and the remediation/reclamation of approximately 15 acres of produced water impacted soil in cropland.

Seventeen (17) sites in Weld County; plugging/abandonment, pit closures, site restoration, and ongoing remediation and reclamation of approximately 10 acres of produced water impacted soils in pastureland at the Keota Field.

Additionally, the $30,000 bond for Pease Oil & Gas Company was claimed and used for the remediation and reclamation of two sites in northeastern Colorado. One of these sites is the remediation/reclamation of 15 acres in Logan County as mentioned above.

SOUTHEAST COLORADO

Oil and Gas E&P Activities

Raton Basin

A total of 341 wells were drilled in Las Animas County in FY 04-05. Pioneer Natural Resources USA Inc. (Pioneer) drilled 249 of the wells, El Paso Energy Partners, LLC. seven, Petrogulf Corporation 45, and XTO Energy Inc. (XTO) 37. Red River Ranch Holdings, LLC (RRR) completed three exploratory wells.

Pioneer is the operator of nine produced water injection wells and 405 permitted

production pits that allow produced water to percolate into the subsurface or evaporate. Pioneer also discharges produced water under CDPS Discharge Permit. Petrogulf discharges the majority of their produced water through CDPS permit and also uses production percolation/evaporation pits. XTO operates 200 gas wells in the Raton Basin. Produced water is discharged under CDPS permit, injected into two underground injection wells, and disposed of in production pits. Produced water is also used in Las Animas County for dust suppression on county and oil and gas access roads. The Total Dissolved Solids (TDS) concentration for produced water ranges from 612 to 11,800 mg/L.

Petroglyph Operating Co., Inc. (Petroglyph) drilled three CBM wells in FY 04-05 in Huerfano County and now operates 44 gas wells. Petroglyph is discharging produced water under a CDPS permit and also uses production pits as part of their water management program. The TDS for the produced water in the northern part of the Raton Basin ranges from 510 mg/l to 860 mg/l. Produced water is also being applied to county roads for dust control.

Red River Ranch plans to drill 29 additional wells in FY 05-06. Plans for produced water management include production pits, the creation of wetlands and surface water discharge under CDPS permit.

Oil and Gas Outside of Raton Basin

A total of 25 wells were drilled in southeastern Colorado outside of the Raton Basin.

Ground Water Issues

Ten water wells were sampled in response to complaints from landowners alleging impacts to their water wells or from landowners concerned about potential impacts from increased gas production. Analytical results and other data indicate that the alleged impacts were not related to gas operations. One water well did show a change in water chemistry but currently there is no data supporting the claim that the changes are related to gas activities; analytical data does not match produced water, surface water or any known aquifer profiles.

Two water wells were sampled as part of a methane seep investigation at two private residences. Data suggests that thermogenic methane, at explosive concentrations, is present in both wells. These wells are not used for drinking water or for irrigation purposes. These impacted water wells are located in a methane seep area that was initially mapped in 2001. The landowners and operator are currently pursing a private agreement that will be protective of public health, safety, and welfare.

In addition, one water well was sampled and added to the Raton Basin Project. These data will be available for comparison, if in the future questions arise about whether water quality has been impacted by oil and gas activities.

Approximately $22,534 of ERF money was used in responding to these complaints.

Surface Water

One complaint related to a coal bed methane CDPS surface water discharge was received from Las Animas County. The surface water discharge creates a reddish-yellow staining at the outfall, produces a noticeable odor and causes an increase in surface water temperatures downstream of the discharge point. However, after discussions with WQCD staff it appears that there were no violations of the permit.

APPENDIX 1

COGCC COMMISSIONER BIOGRAPHIES

BIOGRAPHICAL SKETCHES OF
COLORADO OIL & GAS CONSERVATION COMMISSIONERS
as of 10/05/05

John B. Ashby is President of Ashby Drilling Corporation, a contract drilling company which drilled many wells throughout the eastern plains of Colorado. He is presently retired from contract drilling and currently consults on oil and gas projects located in the Rocky Mountain region. Mr. Ashby began his industry career as a youth employed on a drilling rig, subsequently earned a B.S. in Geological Engineering from Colorado School of Mines and began his professional career with Tenneco Oil Company. He has worked throughout much of the United States and overseas. Mr. Ashby continues to assist the independent oil and gas sector with planning and supervision of well operations.

Brian Cree is the Vice President of Finance and CFO for ZettaCore, Inc., a semiconductor company developing molecular memory technology. He earned a BA in Accounting from the University of Northern Iowa in 1985. Mr. Cree has extensive experience in the finance and operations related to the oil and gas industry. He served as the Executive Vice President, Chief Operating Officer and Director of Patina Oil & Gas Corporation from 1996 to 1999 and held similar positions with Gerrity Oil & Gas Corporation from 1992 through its merger with Patina. Mr. Cree held several other management and officer level positions at Gerrity and The Robert Gerrity Company between 1987 and 1992. Prior to that he held staff and supervisory level positions in the public accounting firm of Deloitte and Touche for two years.

Kimberlee Miskell Gerhardt is a consulting geologist who has lived in La Plata County for six years. She earned a B.A. in Geology from Wellesley College (1977), a M.S. in Marine Geology and Geophysics from the University of Miami (1983) and a Ph.D. in Geology from Rice University (1989). Ms. Gerhardt began her professional career as a grade control geologist for Kerr-McGee Corp. in the Church Rock uranium mine near Gallup, N.M. She returned to graduate school and subsequently hired on with Exxon Production Research Company in Houston, Texas. During her ten years with EPR, Ms. Gerhardt worked on reservoir geology projects from Wyoming, Alaska, Texas, the USSR, Australia, Norway, Algeria, China, Angola and Nigeria. She is the past-president of the Four Corners Geological Society, a member of AAPG and has authored and co-authored various professional publications. Ms. Gerhardt is also interested in archeology and is currently pursuing research on lithic toolstone resources in southwestern Colorado.

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Peter M. Mueller is a consulting petroleum engineer. He attended the University of Colorado, majoring in Economics, and earned a B.S. in Petroleum Engineering from the Colorado School of Mines in 1978. During his career of over 25 years, Mr. Mueller has worked in management

and/or staff positions in drilling, production, land, regulatory affairs, and gas management. He has worked for both majors and independents, including Westport Resources Corporation, Amoco Production Company, Mobil Oil, Tenneco Oil Company, and Anadarko Petroleum. Mr. Mueller is a member of the Society of Petroleum Engineers and the engineering honor society, Tau Beta Pi. He also serves on the Cardiac Care Board at Denver's Children's Hospital.

J. Thomas Reagan has over 45 years of experience as a senior corporate executive in the commercial banking and energy industries. He is currently Senior Vice President and Manager of Specialized Deposits at Wells Fargo Bank West in Denver. Mr. Reagan earned his degree in Petroleum Engineering from the Colorado School of Mines in 1953, and graduated from the Stonier Graduate School of Banking at Rutgers University in 1972. Mr. Reagan, a Colorado Registered Professional Engineer, has held several positions with independent energy companies. He has served on numerous boards for petroleum and engineering related organizations as well as charitable organizations. Mr. Reagan is a member of various professional societies.

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APPENDIX 2

COGCC STAFF ORGANIZATION CHART

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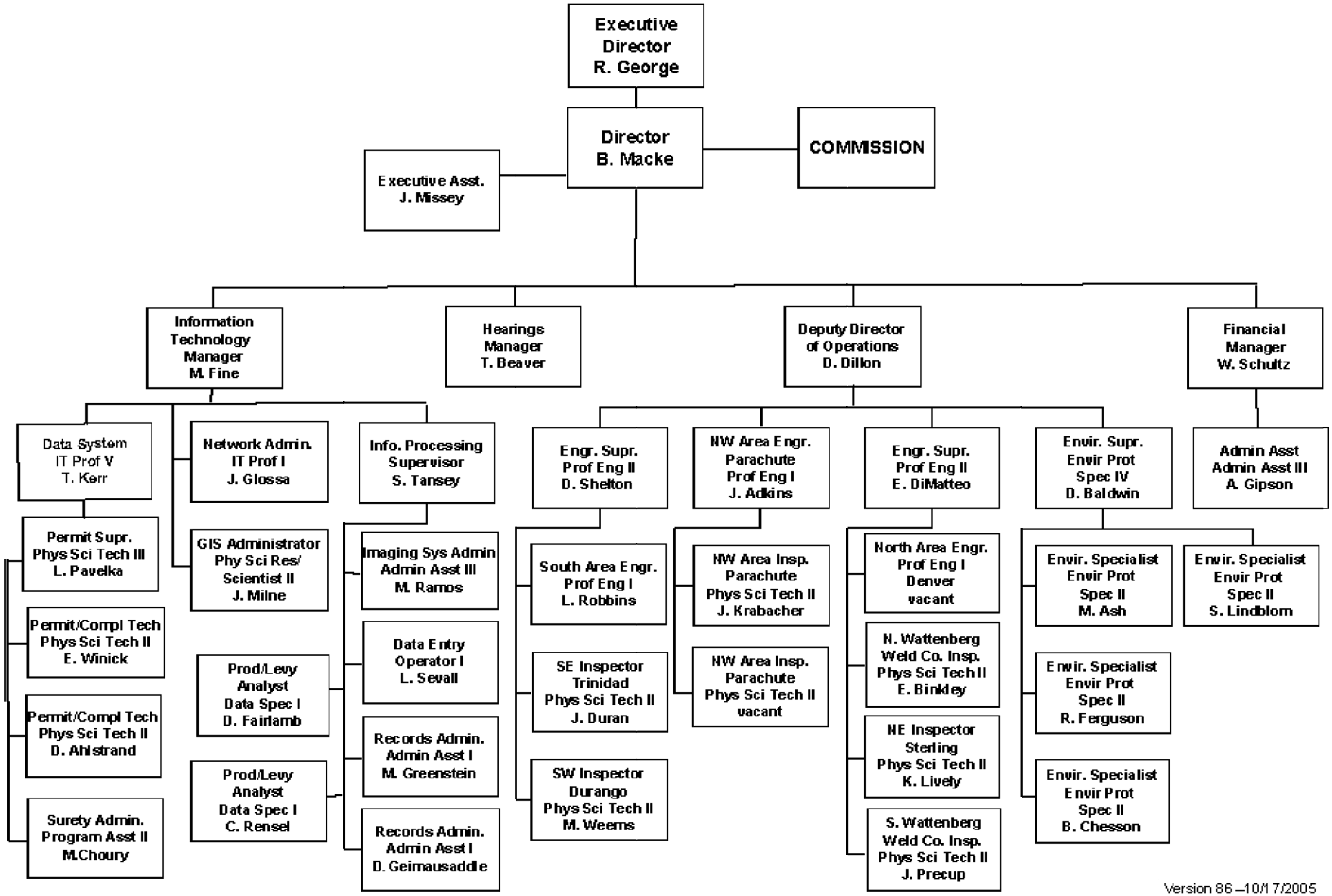

APPENDIX 3

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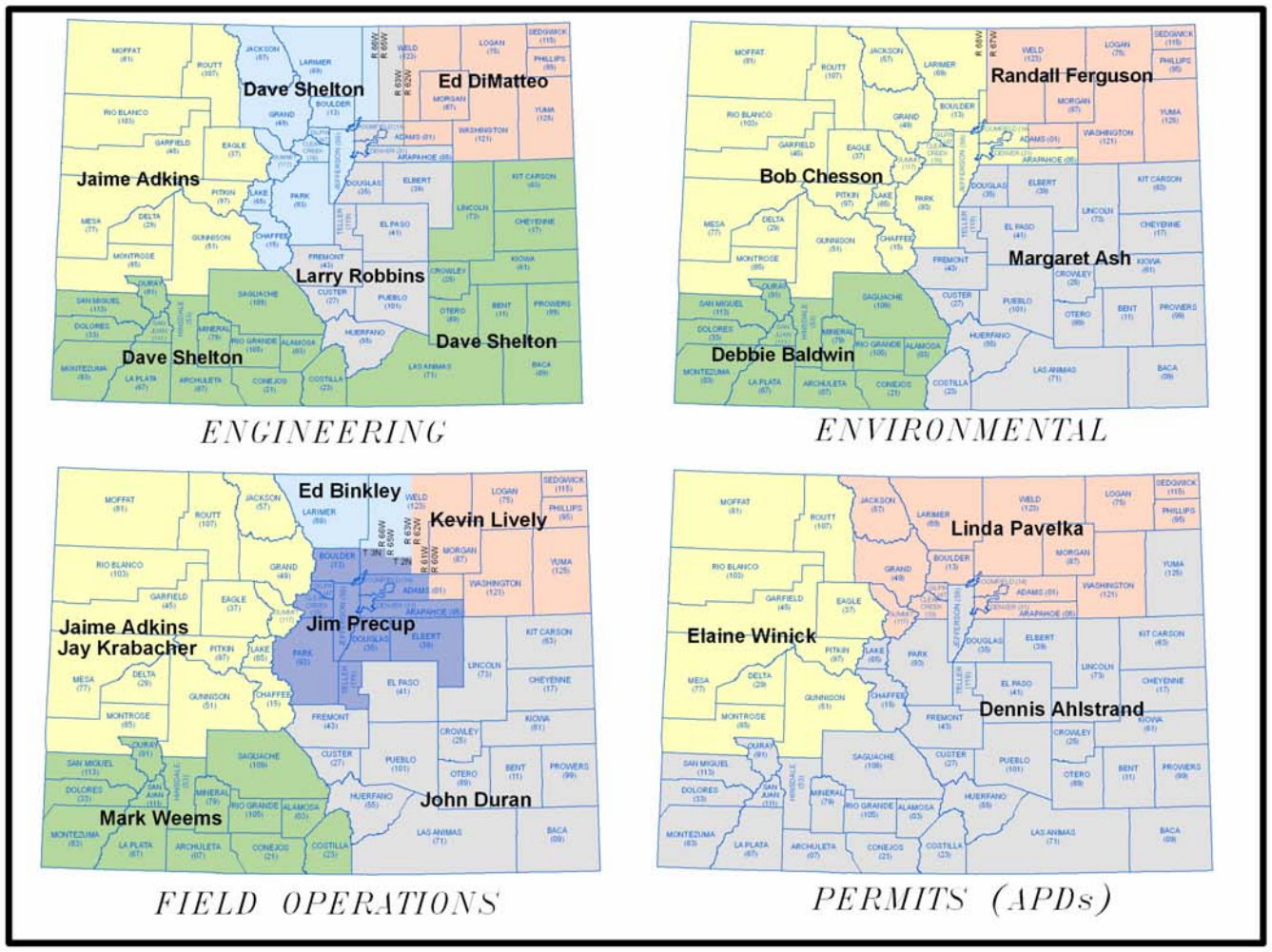
TECHNICAL RESPONSIBILITIES



STATE OF COLORADO
OIL & GAS
CONSERVATION COMMISSION

www.oil-gas.state.co.us

DENVER
Telephone: 303-894-2100
Fax: 303-894-2109

	Extension
Dennis Ahlstrand	102
Margaret Ash	110
Debbie Baldwin	111
Bob Chesson	112
David Dillon	104
Ed DiMatteo	106
Randall Ferguson	118
Steve Lindblom	114
Linda Pavelka	116
Larry Robbins	107
Dave Shelton	108
Elaine Winick	119

Parachute - Jaime Adkins
Phone: 970-285-9000
Fax: 970-285-9000
Cell: 970-250-2440

Grand Junction - Jay Krabacher
Phone: 970-256-9000
Fax: 970-256-9000
Cell: 970-216-5749

Greeley - Ed Binkley
Phone: 970-506-9834
Fax: 970-506-9835
Cell: 970-380-2683

Sterling - Kevin Lively
Phone: 970-522-6747
Fax: 970-521-5076
Cell: 970-380-0166

Trinidad - John Duran
Phone: 719-846-4715
Fax: 719-846-4705
Cell: 719-688-2626

Durango - Mark Weems
Phone: 970-259-4587
Fax: 970-259-4587
Cell: 970-749-0624

Broomfield - Jim Precup
Phone: 303-469-1902
Fax: 303-469-1902
Cell: 303-726-3822

COGCC: November 15, 2005

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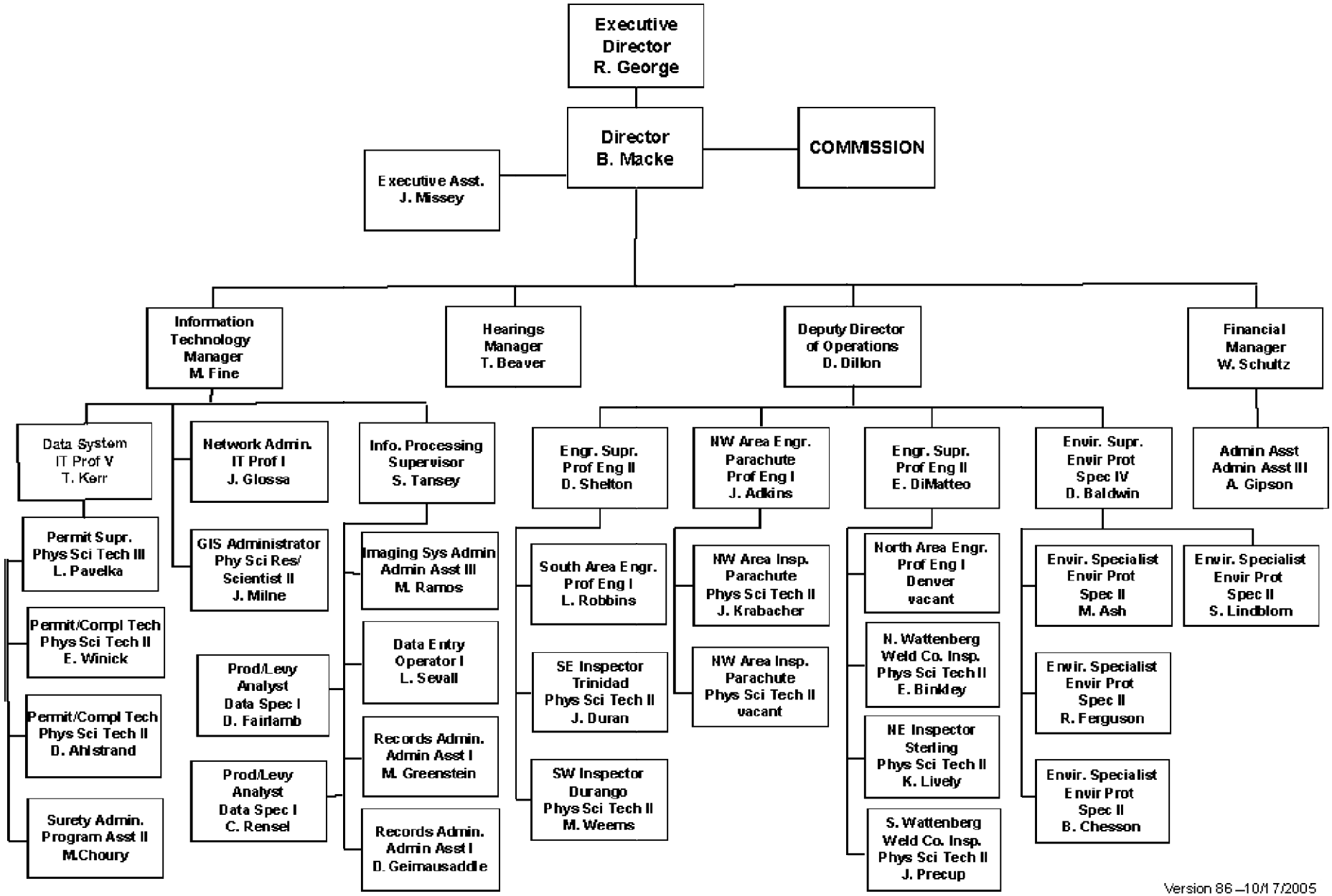

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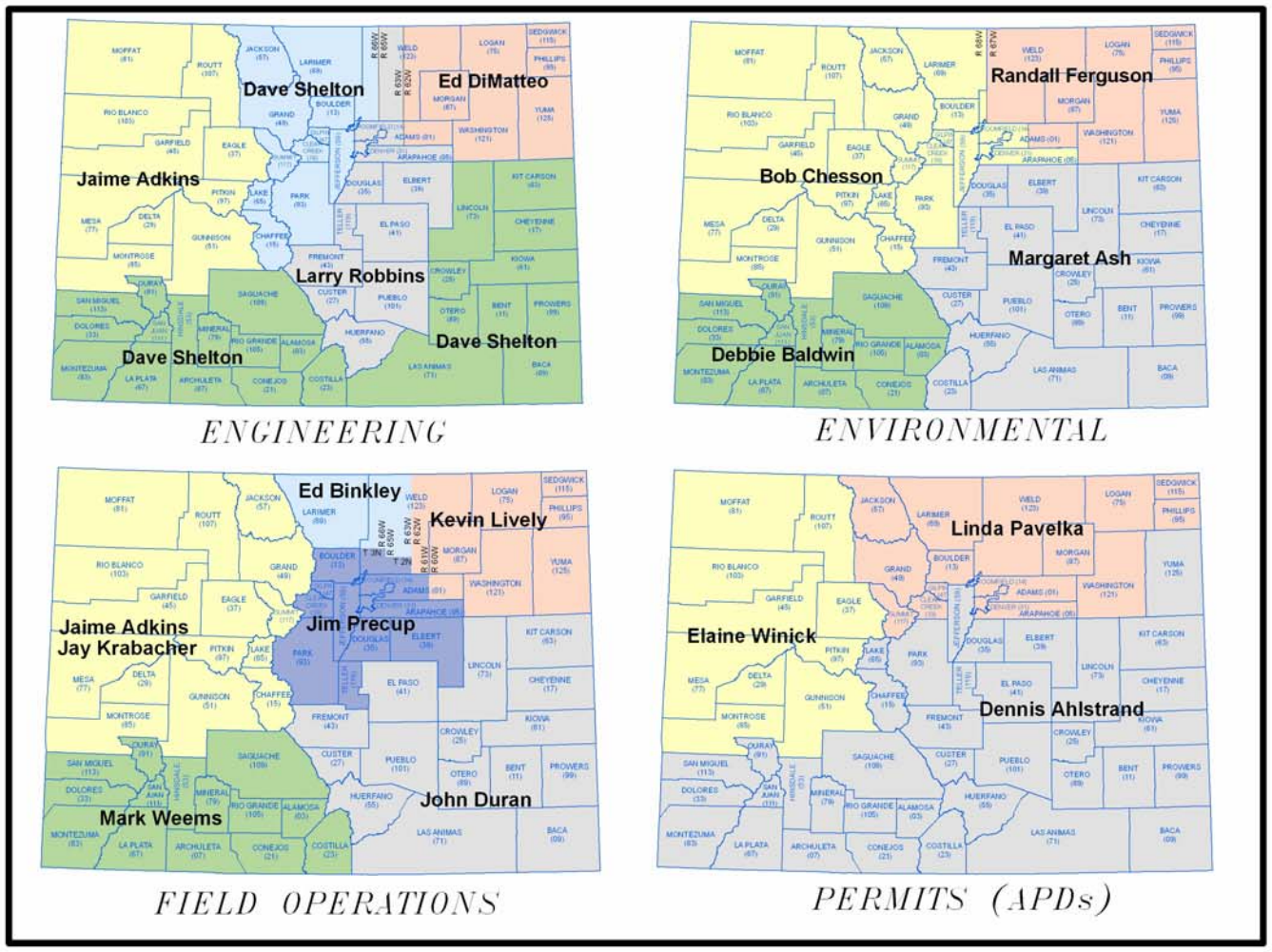

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DENVER
Telephone: 303-894-2100
Fax: 303-894-2109

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Dennis Ahlstrand	102
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Parachute - Jaime Adkins
Phone: 970-285-9000
Fax: 970-285-9000
Cell: 970-250-2440

Grand Junction - Jay Krabacher
Phone: 970-256-9000
Fax: 970-256-9000
Cell: 970-216-5749

Greeley - Ed Binkley
Phone: 970-506-9834
Fax: 970-506-9835
Cell: 970-380-2683

Sterling - Kevin Lively
Phone: 970-522-6747
Fax: 970-521-5076
Cell: 970-380-0166

Trinidad - John Duran
Phone: 719-846-4715
Fax: 719-846-4705
Cell: 719-688-2626

Durango - Mark Weems
Phone: 970-259-4587
Fax: 970-259-4587
Cell: 970-749-0624

Broomfield - Jim Precup
Phone: 303-469-1902
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