

Office of Surface Mining Reclamation and Enforcement

Annual Evaluation Summary Report

for the

Wyoming

Regulatory Program

Administered By The

Wyoming

Department of Environmental Quality

Evaluation Year 2009

(July 1, 2008 to June 30, 2009)

# TABLE OF CONTENTS

|                                                                            | <u>Page</u> |
|----------------------------------------------------------------------------|-------------|
| I. Introduction .....                                                      | 1           |
| II. Overview of Coal Mining Industry .....                                 | 1           |
| III. Overview of Public Participation Opportunities .....                  | 2           |
| A. OSM Outreach Efforts .....                                              | 2           |
| B. Wyoming LQD Outreach Efforts .....                                      | 3           |
| IV. Major Accomplishments/Issues/Innovations .....                         | 3           |
| V. Success in Achieving the Purposes of SMCRA .....                        | 6           |
| A. Off-site Impacts .....                                                  | 7           |
| B. Reclamation Success as Measured by Bond Release .....                   | 7           |
| C. Customer Service .....                                                  | 17          |
| VI. OSM Assistance .....                                                   | 17          |
| A. Technical Innovation & Professional Services (TIPS) .....               | 17          |
| B. National Technologic Training Program .....                             | 17          |
| C. Cultural Resources .....                                                | 18          |
| VII. General Oversight Topic Reviews .....                                 | 18          |
| A. State Program Amendments .....                                          | 18          |
| B. Inspection and Enforcement .....                                        | 19          |
| C. Financial Management/Grants .....                                       | 20          |
| D. Contemporaneous Reclamation .....                                       | 20          |
| Appendix A: Tabular Summary of Core Data to Characterize the Program ..... | 22          |
| Appendix B: State Comments .....                                           | 35          |
| Appendix C: CFO Response to Comments .....                                 | 44          |

**(Cover Photo: Reclaimed Highwall Remnant at the Seminoe I Mine near Hanna, WY)**

## **I. Introduction**

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) created the Office of Surface Mining Reclamation and Enforcement (OSM) in the Department of the Interior. SMCRA provides authority to OSM to oversee the implementation of and provide Federal funding for State regulatory programs that have been approved by OSM as meeting the minimum standards specified by SMCRA. This report contains summary information regarding the Wyoming Program and the effectiveness of the Wyoming program in meeting the applicable purposes of SMCRA as specified in Section 102. This report covers the period of July 1, 2008 to June 30, 2009. Detailed background information and comprehensive reports for the program elements evaluated during the period are available for review and copying at the OSM Casper Field Office (CFO).

The following acronyms are used in this report:

|       |                                                      |
|-------|------------------------------------------------------|
| BLM   | Bureau of Land Management                            |
| CFO   | Casper Field Office - OSM                            |
| CO    | Cessation Order                                      |
| DEQ   | Wyoming Department of Environmental Quality          |
| EQC   | Wyoming Environmental Quality Council                |
| EY09  | Evaluation Year 2009                                 |
| LQD   | Wyoming Land Quality Division                        |
| NOV   | Notice of Violation                                  |
| OSM   | Office of Surface Mining Reclamation and Enforcement |
| PRBRC | Powder River Basin Resource Council                  |
| SHPO  | State Historic Preservation Officer                  |
| SMCRA | Surface Mining Control and Reclamation Act of 1977   |
| TDN   | Ten-Day-Notice                                       |
| TIPS  | Technical Innovation and Professional Services       |
| USFS  | United States Forest Service                         |
| WMA   | Wyoming Mining Association                           |
| WOC   | Wyoming Outdoor Council                              |

## **II. Overview of the Wyoming Coal Mining Industry**

Wyoming is the top coal producing state in the nation and supplies nearly 38% of the country's coal needs. Table 1 shows the past 3 years' coal production for Wyoming. Over ninety-nine percent of current coal production in Wyoming is from surface coal mines and ninety-two percent of all coal produced in Wyoming comes from the large surface mines in the Powder River Basin near Gillette, Wyoming. Until 1954, underground mines in the state out produced the surface mines, but since then, surface coal mines have dominated the state's production. By the late 1970's, surface coal mining production in the Powder River Basin became a major contributor to the nation's total coal production. Coal-bearing formations underlie more than 40,000 square miles in Wyoming, equal to 41 percent of the State's total land area. The coal mining industry currently employs approximately 6,740 people and also provides substantial

income and secondary employment in the State. Approximately 97 percent of all coal produced in Wyoming is used for electrical generation facilities spread throughout 36 states.

Wyoming's annual production continues to increase and is up 3.3 percent (15 mtpy) in the last year (see Table 1) and is continuing to grow, up over 38 percent (129 mtpy) in this century alone.

The Wyoming Geological Survey estimates the quantity of Wyoming coal reserves available for surface mining is in excess of 26.3 billion tons; and an additional 38.3 billion tons of coal reserves are estimated to be recoverable by underground mining methods. The main coal seams mined, the Wasatch formation and underlying Fort Union formation, can exceed 100 feet in thickness with 30 to 60 foot seams being common. In a few places 220 foot thick seams have been uncovered. Wyoming coal ranges from lignite to high volatile A bituminous in rank, with the majority of the coal produced being sub-bituminous. Wyoming has the largest reserves of "compliance coal" in the nation; that is coal of such quality that utility companies can burn the coal in power plants without expensive scrubbers to remove the sulfur dioxide emissions.

Wyoming currently has thirty-three active coal mining operations permitted: thirty surface mining operations, one underground mining operation, one permit is for a dragline move from one mine site to another, and one in-situ operation. The dragline move and in-situ operations are listed as "other facilities" in Table 2 of this report.

### **III. Overview of the Public Participation Opportunities in the Oversight Process and the State Program**

#### **A. OSM Outreach Efforts**

The Casper Field Office has contacted special interest groups such as the Wyoming Outdoor Council (WOC), Powder River Basin Resource Council (PRBRC) and the Wyoming Mining Association (WMA) during the evaluation period to obtain input and suggestions concerning oversight topics for evaluating the Wyoming Coal Regulatory Program. In a continuing effort to involve the public and special interest groups, comments were solicited through direct mail, e-mails, and announcements in the Federal Register concerning proposed rule changes submitted by the Wyoming Department of Environmental Quality (DEQ). Citizens and groups were given the opportunity for a hearing or meeting with OSM to discuss any concern or issues of interest to them. No one requested any hearings or meetings. However there were written comments concerning oversight topics and regarding proposed rule changes throughout the evaluation year. Comments concerning oversight were incorporated in the oversight evaluation Performance Agreement, and comments on proposed rule changes were logged into the Administrative Record and addressed in the final decision published in the Federal Register.

#### **B. Wyoming Land Quality Division Outreach Efforts**

The Land Quality Division Advisory Board provides recommendations to the Land Quality Division (LQD) through public forums. The Environmental Quality Council (EQC) rules on regulatory matters for all divisions within DEQ (including LQD) and also serves as the

administrative hearings board for all divisions (i.e., Land Quality, Air Quality and Water Quality Divisions) in the DEQ. Wyoming's outreach efforts include, but are not limited to LQD Advisory Board meetings, and Environmental Quality Council hearings, public notices, and public meetings. LQD has met on several occasions with the special interest groups (PRBRC, WOC, and WMA) to discuss their concerns. In addition, LQD has in the past, hosted several technical forums for the public addressing current issues.

LQD also includes its own public participation program during their permitting, bond release, and enforcement processes. During the permitting and bond release processes, notices are published in local newspapers and comments are solicited. Citizen complaints are investigated as part of the enforcement process. Previous oversight reviews have found that LQD is highly receptive to the concerns of the public, industry and citizen groups. DEQ also has an internet website at: <http://deq.state.wy.us/> with information for the public on permits, current rules, proposed rule changes and contact information.

CFO monitors DEQ's hearings, meetings and outreach efforts and has found the State does an excellent job interacting with citizens and special interest groups.

#### **IV. Major Accomplishments/Issues/Innovations in the Wyoming Program**

Wyoming continues to administer a rigorous Title V program, even with the challenge of increasing coal production, increasing permit sizes, and increasing disturbance areas; with no increase in staff numbers. The LQD program includes commitments to conduct inspections, review and approve permit actions, ensure that operators are in compliance with permit commitments, and address required program amendments. LQD approved 114 permit actions and addressed twenty-four of forty-two required program amendments this year. Through the annual report process, LQD found all coal permittees to be in compliance with their permit commitments.

LQD actively works to improve the program. The conversion of LQD permitting to an electronic process has been a large and costly project, with one person committed full time to the project, and six people committed part time for nine months. This level of staff commitment will continue through implementation of the process. The design phase for the electronic permitting process is complete, development is scheduled to be complete by Thanksgiving, and electronic permitting will be launched in January 2010. This will enable submittal of online permits, amendments, revisions, transfers, and exploration licenses. Electronic permit submittal includes text, tables, and GIS data, which will facilitate more efficient and effective reviews by LQD.

The next process that LQD will tackle is the coal annual report, including submittal requirements and the review and approval process. LQD has scheduled a streamlining workshop for the fall of 2009. This workshop includes LQD staff, industry representatives, and OSM. We anticipate starting the design phase for electronic annual report submittal in 2010.

The LQD has made significant progress towards reducing the number of outstanding program deficiencies identified by the OSM. The LQD and OSM worked together to identify and clarify required program amendments. Forty-two required amendments remained outstanding at the beginning of the year. Rules addressing seventeen of these required amendments were approved

by the Environmental Quality Council (EQC) in June of 2009, and finalized by the State on July 28, 2009. Formal submission to the OSM is anticipated for the fall of 2009. Seven more deficiencies have been recommended by the LQD Advisory Board for EQC approval. A required amendment related to major/minor violations will likely not require rulemaking. The remaining seventeen relate to Ownership and Control rules. Rulemaking will be initiated following the OSM's 732 review process. In addition to OSM program amendment requirements, there is a State initiative in process to revise regulations on self-bonding. These proposed rule revisions were approved by the State in January, 2006, and are in OSM review.

The LQD has reduced the amount of time required to promulgate rules by making the rulemaking process more efficient and by developing a consistent rule package format. Bundling rules into discreet subject matter allows draft rules to proceed more efficiently and reduces the number of hearings. A consistent rule package format facilitates more efficient review and approval. The LQD has worked with the Legislative Service Office, Attorney General, Secretary of State and the EQC to clarify and improve LQD submissions. As a result, thorough vetting and formal promulgation is accomplished in less time, which allows the LQD to more quickly submit the required amendments. The LQD believes these improvements will result in submission of all remaining deficiencies to the EQC within the next year.

The LQD is also active in the development of reclamation special projects:

**1. Development of a remote seismic sensing station by Doug Emme (LQD)**

Surface coal mining is moving closer to towns and subdivisions, resulting in increased citizen complaints about blasting. The mine operator and LQD anticipate that complaints will increase as mining approaches even closer to populated areas. A remote seismic station was established on October 30, 2008 to monitor blasting activity. The data are downloaded via satellite phone, and a monthly report generated. Sixty percent of the blasts have been detected by the seismograph, but none have exceeded legal standards. LQD has used this information to address enquiries and formal complaints regarding blasting.



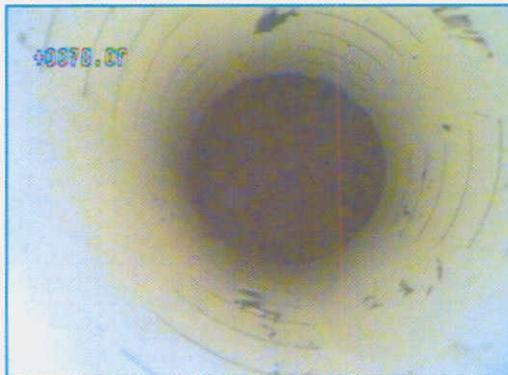
Seismograph with solar panel and satellite phone for data downloading.

**2. Use of the OSM borehole camera by Kathy Mueller Ogle and Matt Kunze of LQD to investigate two hydrology problems: the completion integrity of a backfill well, and a pond leakage problem.**

### Backfill Well Integrity

The completion integrity of an 80 foot deep backfill monitor well at the Seminole 1 Coal Mine in the Hanna Basin was investigated using the OSM borehole camera. This well was selected due to the elevated total dissolved solids and sulfate concentrations. The well was drilled in 1985 and there was concern

that



Borehole camera photo of factory well screen in the backfill well.



Kathy Muller Ogle assembling camera. Well and decontamination tube are in the background.

faulty or

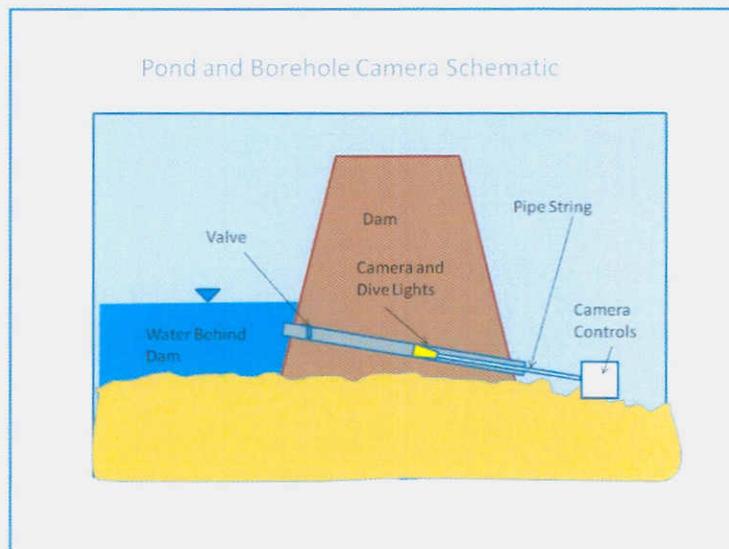
compromised well construction might be a factor in the elevated concentrations. Records left some uncertainty if the factory well screen had been installed. The camera examination showed the well to be in good

shape, and that factory well screen had been installed. Well construction was eliminated as an explanation of elevated water quality concentrations.

### Pond Leakage

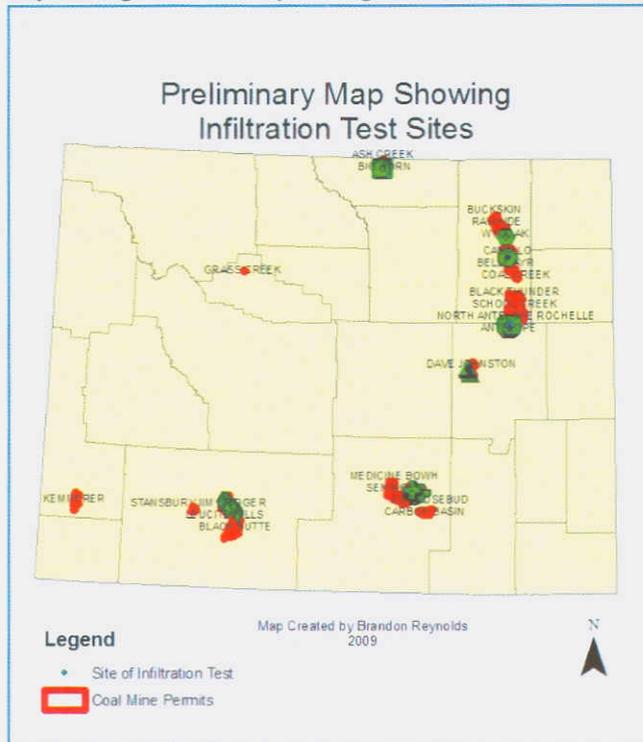
The borehole camera was also used in a less conventional application to examine the integrity of the discharge pipe for a pond at the Rawhide Mine in the northern Powder River Basin. Erratic variable discharge from the outlet pipe was observed when the valve is closed. This pond is part of the mine's runoff control to protect surface water quality. The camera was slid up the pond outlet to examine the outlet and gate valve integrity.

Examination of the camera footage indicated two sources of leakage; the gate valve and areas of unexpected corrosion and disintegration of the outlet pipe. As a result of the camera investigation, the Rawhide Mine repaired the gate valve and is investigating lining materials for the discharge pipe.



### 3. University of Wyoming Internship

Brandon Reynolds spent the 2009 summer as an intern with the LQD working with Kathy Muller Ogle. Brandon recently completed his bachelor's degree at University of Wyoming, and is pursuing his master's degree under the direction of Dr. K. J. Reddy at the University of Wyoming. Brandon's work is supported by a cooperative agreement between the University of Wyoming and the Wyoming DEQ.



Brandon is examining the recharge capacity of reclaimed coal mining lands. Wyoming will eventually have many square miles of reclaimed coal mine lands. Restoration of the recharge capacity is part of the regulatory requirements of coal mining to minimize the mining impacts. Brandon organized historic infiltration test data from both native and disturbed lands from coal mine permits into ARC GIS coverages this summer. The next phase of the project will be to conduct additional infiltration tests on reclaimed areas.

### V. Success in Achieving the Purposes of SMCRA as Determined by Measuring and Reporting End Results

OSM Directive REG-8 (REG-8) dictates that OSM oversight of State programs will focus on the "on-the-ground/end-result" success of the State programs in achieving the purposes of SMCRA. To further the concept of reporting end-results and on-the-ground success, each OSM field office is required by REG-8 to prepare findings from performance standard evaluations of 1) off-site impacts, 2) reclamation success and 3) customer service. These evaluations are required to report the number and degree of off-site impacts, the number and percentage of inspectable units free of off-site impacts; the number of acres that meet the bond release requirements and have been released by the State for the various phases of reclamation; and the effectiveness of customer service provided by the State. In addition to this required information, the CFO and DEQ agreed to further evaluate reclamation success with specific evaluations, as allowed in REG-8 and as addressed in the Regulatory Performance Agreement in effect for the evaluation

year. Specific evaluations were conducted to compare and evaluate the number of acres reclaimed (seeded) to the number of acres mined (disturbed). Based on the results of the following evaluation criteria, CFO finds that the Wyoming program is being carried out in an overall effective manner.

#### **A. Off-Site Impacts:**

For the purpose of oversight, an off-site impact is defined as anything resulting from a surface coal mining and reclamation activity or operation that causes a negative effect on people, land, water, or structures outside the permit area. The State program must regulate or control either the mining or reclamation activity, or the resulting off-site impact. In addition, the impact on the resource must be substantiated and be related to mining and reclamation activity. It must be outside the area authorized by the permit for conducting mining and reclamation activities. As a part of this oversight DEQ and CFO developed an oversight work plan to evaluate and document the effectiveness of the Wyoming program in protecting the environment and the public from negative off-site impacts resulting from surface and underground mining operations in Wyoming.

Several sources of information have been selected for identifying off-site impacts. These include but are not limited to: State and OSM inspection reports, enforcement actions, civil penalty assessments, citizens' complaints, and special studies. If an off-site impact is identified, the sources of information and the basis used to identify and report these impacts will be clearly recorded. Field evaluations for off-site impacts were conducted during routine inspections by DEQ. CFO conducted two complete random sample inspections and seven partial inspections. Off-site impacts were not identified during the reporting period (see Table 4).

#### **B. Reclamation Success as Measured by Bond Release:**

OSM evaluates the effectiveness of the State program in achieving reclamation success based on the number of acres that meet the bond release standards and have been released (reported in Appendix A, Table 5). During this evaluation year information was collected to measure program performance in the area of contemporaneous reclamation. According to REG-8, although not an on-the-ground measure of reclamation success reported in Table 5, contemporaneous reclamation is an important purpose of SMCRA "to assure that adequate procedures are undertaken to reclaim surface areas as contemporaneously as possible with the surface coal mining operations." It provides an overall perspective of how successfully reclamation is staying current with mining in the State.

According to REG-8, contemporaneous reclamation may be measured by evaluating the timeliness of Phase I, Phase II and Phase III bond releases. The intent of this measurement is to provide an overall general picture of how successfully reclamation is staying current with mining in the State.

As part of the evaluation of reclamation success, OSM will adhere to the guidelines as contained in REG 8 for each of the four areas:

**a. Land Form/Approximate Original Contour (AOC)**

MEASUREMENT: AOC achievement will be measured by the acres of Phase I bond released. Acreage disturbed by mining activities that have been released under Phase I bond liability will be documented as having achieved AOC. To date 151,186 acres have been disturbed and of that 34,815 acres (30%) have received Phase I bond release in Wyoming.

**b. Land Capability**

There are several measurements that may be conducted to demonstrate the reestablishment of land capability on mined areas.

MEASUREMENT: Proper replacement of soil resources will be measured by acres of Phase II bond release. Where soil replacement is a Phase I reclamation activity, this measurement will be Phase I bond release. To date 151,186 acres have been disturbed and of that 5,791 acres (4.9%) have received Phase II bond release in Wyoming.

MEASUREMENT: Vegetation stability will be measured by acres of Phase II bond release. Acreage released from Phase II bond liability can be documented as having achieved erosion stability. To date 151,186 acres have been disturbed and of that 5,791 acres (4.9%) have received Phase II bond release in Wyoming.

MEASUREMENT: Achievement of postmining land uses will be measured by acres of Phase III bond release. Land capability is demonstrated by the acres for which the approved post mining land uses have been achieved. The acreage released from Phase III bond liability can be documented as having achieved the approved post mining land uses. To date 151,186 acres have been disturbed and of that 6,197 acres (5.3%) have received Phase III bond release in Wyoming.

MEASUREMENT: Successful revegetation will be measured by the acres of Phase III bond release. Land capability is demonstrated by the acres for which revegetation success has been successfully demonstrated for the land use at the time of Phase III bond release. To date 151,186 acres have been disturbed and of that 6,197 acres (5.3%) have received Phase III bond release in Wyoming.

**c. Hydrologic Reclamation**

There are several measurements that may be conducted to demonstrate the reestablishment of the hydrologic balance and successful hydrologic reclamation on mined areas.

MEASUREMENT: Achievement of groundwater recharge capacity and ground water quantity and quality restoration can be measured by acres of Phase III bond release. Groundwater recharge, quality and quantity will be measured in terms of acreage released from Phase III bond liability. To date 151,186 acres have been disturbed and of that

6,197 acres (5.3%) have received Phase III bond release in Wyoming.

**MEASUREMENT:** Achievement of surface water quality and quantity restoration can be measured by acres of Phase III bond release. Bond release will document that the water quality and quantity leaving the mine site meets the applicable standards. Phase III bond liability can be considered as having achieved restoration of this aspect of surface water quality and quantity. To date 151,186 acres have been disturbed and of that 6,197 acres (5.3%) have received Phase III bond release in Wyoming.

According to the measurements used in REG-8, the data shows that the State program may not be effective in its goal of having all disturbed lands reclaimed to the approved post-mining land use as contemporaneously as possible. Both State and Federal regulations do not require that an operator file for bond release at any prescribed time. Therefore, operators typically do not file for Phase III bond release until completion of the entire mining operation. As a result, the number of acres released from Phase III bond is small compared to the number of acres actually regraded, soiled and seeded. It should also be noted that these REG-8 measurements are not the only measurements that can be used to determine reclamation success.

The CFO believes this measure may not capture the total effectiveness of the Wyoming program due to the type of mining operations, the large size of western mining operations and company policies (not to apply for release until large management units are eligible for final bond release). The number of cumulative acres released from bond is relatively small in Wyoming when compared to those acres that have been graded, topsoiled and revegetated.

Currently in Wyoming a total of 403,231 acres are permitted with approximately 156,683 acres disturbed by mining activity to date. Of these disturbed acres, 69,296 acres have been backfilled, graded, topsoiled and seeded; or approximately 44% of the lands disturbed have been reclaimed.

#### **d. Contemporaneous Reclamation**

According to REG-8, contemporaneous reclamation may be measured by evaluating the timeliness of Phase I, Phase II, and Phase III bond releases. During this evaluation year, 5,205 acres were disturbed; 3,955 acres received Phase I bond release; 1,424 acres received Phase II bond release; and 341 acres received Phase III bond release. These figures show that contemporaneous reclamation is occurring in Wyoming.

CFO believes another general measurement for contemporaneous reclamation is a comparison of the rate at which lands are being permanently reclaimed (seeded) to the rate of disturbance. The following Table 1 and Graph 1 are used to show the rate at which lands are being permanently reclaimed (seeded) compared to the rate of disturbance. Differences in the ratios of disturbance vs. reclamation could be due to the nature of the mining operations in Wyoming, or there could be delays in backfilling & grading or permanent seeding operations due to the mines' operational emphasis on coal production over reclamation. Lands in these charts are considered permanently reclaimed (seeded) when they are seeded with permanent vegetation consisting of species as prescribed in the reclamation plan of the approved permit. These permanently reclaimed (seeded) lands include lands that have obtained Phase II bond release status, lands that have

obtained Phase III bond release status and permanently reclaimed (seeded) lands for which Phase II bond release has not been sought.

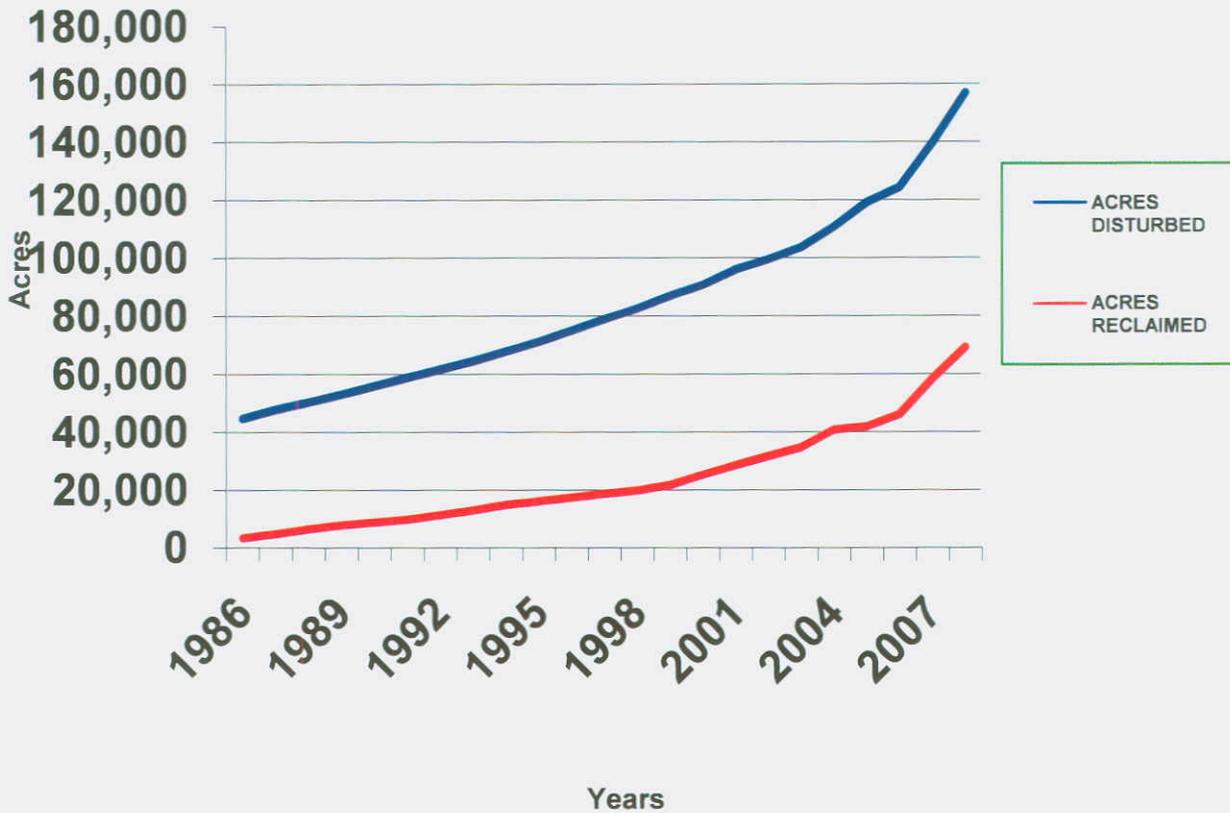
Table 1 and Graph 1 illustrate the overall mining and reclamation activities for the Wyoming coal mines since 1986. Note that the lines are progressively diverging each year, indicating a disproportionate increase of disturbed lands over the reclaimed lands each year.

**TABLE 1. WYOMING STATEWIDE RECLAMATION SUMMARY**

| <b>YEAR</b> | <b>ACRES<br/>DISTURBED<br/>Year</b> | <b>Cumulative<br/>Acres Dist.<br/>All Years</b> | <b>ACRES<br/>RECLAIMED<br/>Year</b> | <b>Cumulative<br/>Acres Recl.<br/>All Years</b> | <b>RATIO<br/>OF<br/>RECLAM<br/>VS<br/>DISTURB<br/>Year</b> | <b>Cumulative<br/>RATIO OF<br/>RECLAM<br/>VS<br/>DISTURB<br/>All Years</b> |
|-------------|-------------------------------------|-------------------------------------------------|-------------------------------------|-------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------|
| 1986        | 3152                                | 44,742                                          | 1456                                | 3,335                                           | .46                                                        | .075                                                                       |
| 1987        | 2521                                | 47,894                                          | 1630                                | 4,791                                           | .65                                                        | .100                                                                       |
| 1988        | 2610                                | 50,415                                          | 1355                                | 6,421                                           | .52                                                        | .127                                                                       |
| 1989        | 2967                                | 53,025                                          | 994                                 | 7,776                                           | .34                                                        | .147                                                                       |
| 1990        | 2833                                | 55,992                                          | 1068                                | 8,770                                           | .38                                                        | .157                                                                       |
| 1991        | 2807                                | 58,825                                          | 1517                                | 9,838                                           | .54                                                        | .167                                                                       |
| 1992        | 2919                                | 61,632                                          | 1641                                | 11,355                                          | .56                                                        | .184                                                                       |
| 1993        | 3173                                | 64,551                                          | 1888                                | 12,996                                          | .60                                                        | .201                                                                       |
| 1994        | 3327                                | 67,724                                          | 1219                                | 14,884                                          | .37                                                        | .220                                                                       |
| 1995        | 3873                                | 71,051                                          | 1234                                | 16,103                                          | .31                                                        | .227                                                                       |
| 1996        | 3954                                | 74,924                                          | 1311                                | 17,337                                          | .33                                                        | .231                                                                       |
| 1997        | 3613                                | 78,878                                          | 1098                                | 18,648                                          | .30                                                        | .236                                                                       |
| 1998        | 4303                                | 82491                                           | 1973                                | 19,746                                          | .43                                                        | .239                                                                       |

| YEAR | ACRES<br>DISTURBED<br>Year | Cumulative<br>Acres Dist.<br>All Years | ACRES<br>RECLAIMED<br>Year | Cumulative<br>Acres Recl.<br>All Years | RATIO<br>OF<br>RECLAM<br>VS<br>DISTURB<br>Year | Cumulative<br>RATIO OF<br>RECLAM<br>VS<br>DISTURB<br>All Years |
|------|----------------------------|----------------------------------------|----------------------------|----------------------------------------|------------------------------------------------|----------------------------------------------------------------|
| 1999 | 3868                       | 86,794                                 | 3541                       | 21,719                                 | .97                                            | .250                                                           |
| 2000 | 5185                       | 90,662                                 | 3174                       | 25,260                                 | .62                                            | .279                                                           |
| 2001 | 3564                       | 95,847                                 | 3295                       | 28,434                                 | .92                                            | .297                                                           |
| 2002 | 4067                       | 99,411                                 | 2857                       | 31,729                                 | .70                                            | .319                                                           |
| 2003 | 5459                       | 103,478                                | 2924                       | 34,653                                 | .54                                            | .335                                                           |
| 2004 | 5062                       | 110,578                                | 3843                       | 40,826                                 | .76                                            | .392                                                           |
| 2005 | 5983                       | 119,001                                | 3501                       | 41,891                                 | .58                                            | .35                                                            |
| 2006 | 5146                       | 124,147                                | 4308                       | 46,199                                 | .84                                            | .37                                                            |
| 2007 | 15,321                     | 139,468                                | 12,258                     | 58,457                                 | .80                                            | .41                                                            |
| 2008 | 5,497                      | 156,683                                | 4,703                      | 69,296                                 | .86                                            | .44                                                            |

### Graph 1. Cumulative Disturbed vs Cumulative Reclaimed Acreage

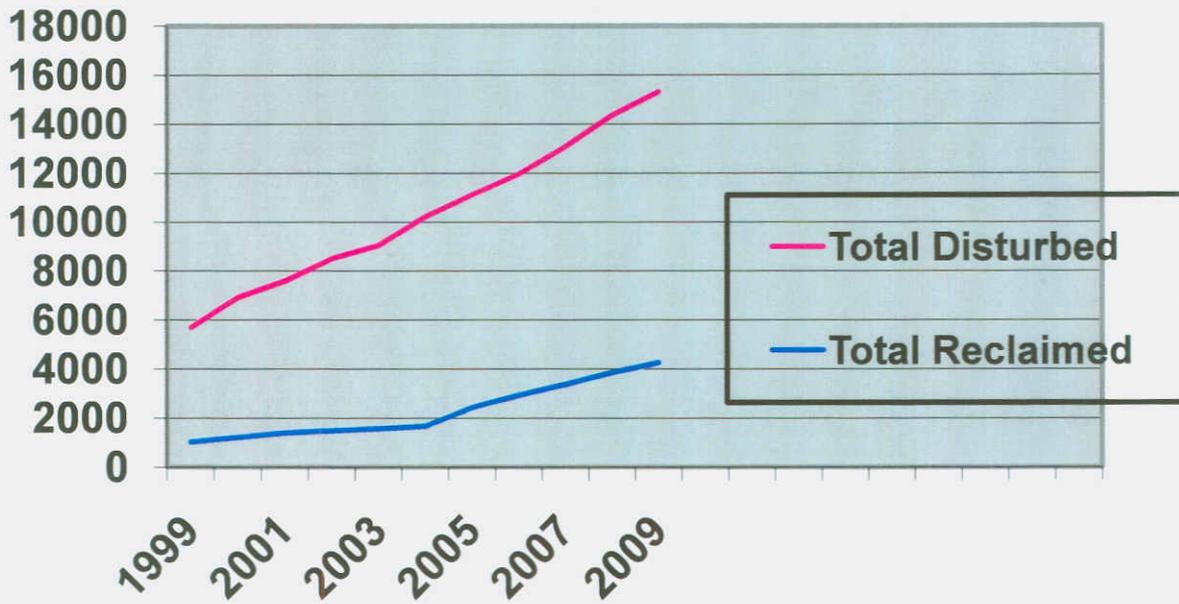


Source of data: 2007 Government Performance Reporting Act (GPRA) data collected from DEQ

Low ratios of reclamation to disturbance indicate that reclamation is not progressing at the same rate as mining, resulting in an increasing acreage of disturbed lands. Conversely, high ratios of reclamation to disturbance indicate that reclamation is occurring faster than disturbance. Reclamation and disturbance at two individual mining operations (North Antelope/Rochelle Mine, Permit 569-T6 and Caballo Mine, Permit 433-T5) were examined during the evaluation year to determine if mines are diligently conducting reclamation efforts. Additional mines will be selected during the 2010 evaluation.

**NORTH ANTELOPE ROCHELLE MINE**

|                 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   |
|-----------------|------|------|------|------|------|--------|--------|--------|--------|--------|--------|
| Total Disturbed | 5699 | 6926 | 7602 | 8496 | 9028 | 10,217 | 11,105 | 11,956 | 13,079 | 14,343 | 15,311 |
| Total Reclaimed | 1029 | 1211 | 1393 | 1485 | 1557 | 1669   | 2419   | 2911   | 3354   | 3834   | 4234   |



A review of the approved mining and reclamation plan along with an onsite inspection documented that the company is in compliance with its approved plan. The data collected shows that this mine has 15,311 acres of disturbed land with 4,234 acres of reclaimed land. The ratio of reclaimed acres to disturbed acres is 0.28.

Reclamation status of areas disturbed under the permanent regulatory program. All numbers in the table are in acres.

Permittee: POWDER RIVER COAL COMPANY Mine: North Antelope Rochelle Permit # 569-T6

Mine type: Surface

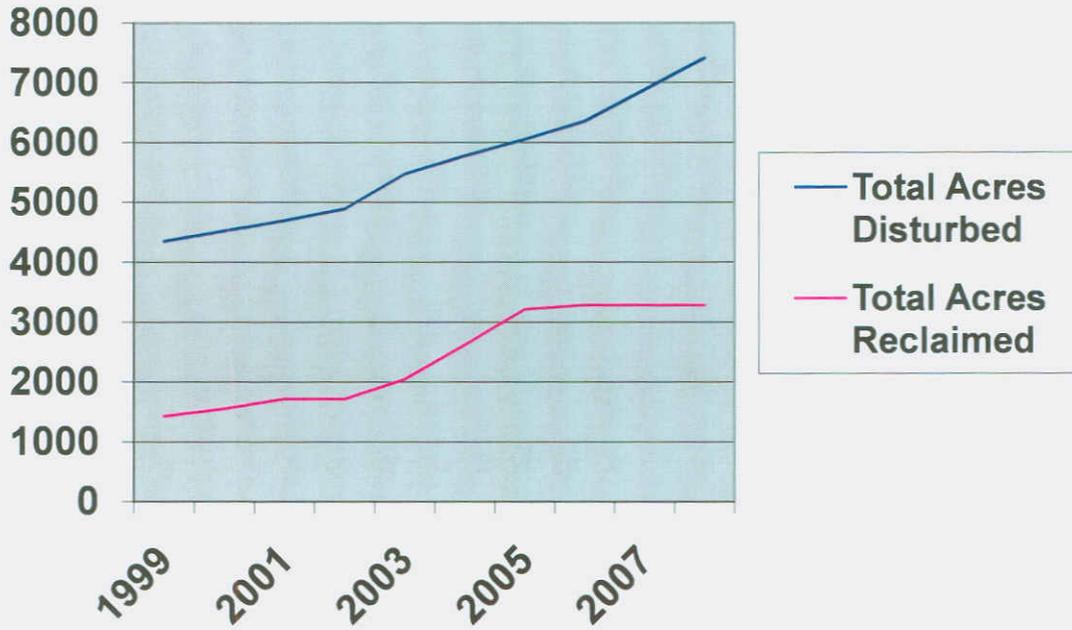
| YEAR | Disturbed area       |                              | 3<br>Acres<br>Long-term<br>mining or<br>reclamation<br>facilities <sup>1</sup> | 4<br>Acres<br>Active mining<br>areas (pits and<br>areas in advance<br>of the pits<br>stripped of<br>topsoil) and<br>areas not yet<br>backfilled and<br>graded | Acres backfilled<br>and graded |                              | Acres where the<br>regulatory<br>authority (RA) has<br>released phase I<br>bond |                              | Acres soiled and<br>seeded/planted |                               | Acres where RA<br>has released<br>phase II bond |                               | Acres final<br>seeded/planted<br>for 10 years |                               | Acres where RA<br>has released<br>phase III bond<br>Final 100% |                               |
|------|----------------------|------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------|---------------------------------------------------------------------------------|------------------------------|------------------------------------|-------------------------------|-------------------------------------------------|-------------------------------|-----------------------------------------------|-------------------------------|----------------------------------------------------------------|-------------------------------|
|      | 1<br>Current<br>Year | 2<br>Total<br>(all<br>years) |                                                                                |                                                                                                                                                               | 5<br>Current<br>Year           | 6<br>Total<br>(all<br>years) | 7<br>Current<br>Year                                                            | 8<br>Total<br>(all<br>years) | 9<br>Current<br>Year               | 10<br>Total<br>(all<br>years) | 11<br>Current<br>Year                           | 12<br>Total<br>(all<br>years) | 13<br>Current<br>Year                         | 14<br>Total<br>(all<br>years) | 15<br>Current<br>Year                                          | 16<br>Total<br>(all<br>years) |
| 1999 | 478                  | 5699                         | 2033                                                                           | 2491                                                                                                                                                          |                                | 1247                         | 0                                                                               | 0                            | 249                                | 1029                          | 0                                               | 0                             | 0                                             | 0                             | 0                                                              | 0                             |
| 2000 | 1227                 | 6926                         | 2033                                                                           | 3311                                                                                                                                                          | 335                            | 1582                         | 182                                                                             | 182                          | 182                                | 1211                          | 182                                             | 182                           | 378                                           | 378                           | 0                                                              | 0                             |
| 2001 | 676                  | 7,602                        | 2,232                                                                          | 3606                                                                                                                                                          | 182                            | 1764                         | 0                                                                               | 0                            | 182                                | 1393                          | 0                                               | 182                           | 0                                             | 378                           | 0                                                              | 0                             |
| 2002 | 894                  | 8496                         | 2503                                                                           | 4120                                                                                                                                                          | 127                            | 1873                         | 0                                                                               | 0                            | 92                                 | 1485                          | 0                                               | 182                           | 0                                             | 378                           | 0                                                              | 0                             |
| 2003 | 532                  | 9028                         | 2503                                                                           | 4652                                                                                                                                                          | 0                              | 1873                         | 0                                                                               | 0                            | 92                                 | 1557                          | 0                                               | 182                           | 0                                             | 378                           | 0                                                              | 0                             |
| 2004 | 1189                 | 10217                        | 3831                                                                           | 4381                                                                                                                                                          | 168                            | 2005                         | 0                                                                               | 0                            | 92                                 | 1669                          | 0                                               | 182                           | 0                                             | 378                           | 0                                                              | 0                             |
| 2005 | 888                  | 11105                        | 3793                                                                           | 4893                                                                                                                                                          | 414                            | 2419                         | 1880                                                                            | 1880                         | 750                                | 2419                          | 0                                               | 182                           | 0                                             | 378                           | 0                                                              | 0                             |
| 2006 | 851                  | 11956                        | 3950                                                                           | 5356                                                                                                                                                          | 492                            | 2911                         | 0                                                                               | 1880                         | 492                                | 2911                          | 0                                               | 182                           | 0                                             | 378                           | 0                                                              | 0                             |
| 2007 | 1123                 | 13079                        | 4144                                                                           | 5581                                                                                                                                                          | 443                            | 3354                         | 0                                                                               | 1880                         | 0                                  | 3554                          | 0                                               | 182                           | 0                                             | 378                           | 0                                                              | 0                             |
| 2008 | 1264                 | 14343                        | 3303                                                                           | 7207                                                                                                                                                          | 480                            | 3834                         | 0                                                                               | 1880                         | 0                                  | 3834                          | 0                                               | 182                           | 1128                                          | 1506                          | 0                                                              | 0                             |
| 2009 | 968                  | 15311                        | 3303                                                                           | 7207                                                                                                                                                          | 0                              | 3834                         | 0                                                                               | 1880                         | 154                                | 4234                          | 0                                               | 182                           | 1128                                          | 1506                          | 0                                                              | 0                             |

<sup>1</sup> Long-term mining or reclamation facilities include haul and access roads; temporary dams and impoundments; permanent dams and impoundments; diversion and collector ditches; water and air monitoring sites; topsoil stockpiles; overburden stockpiles; offices; repair, storage, and construction areas; coal stockpile, loading, and processing areas; railroads; coal conveyor; refuse piles and coal mine waste impoundment; head-of-hollow fills; valley fills; ventilation shafts and entryways; and noncoal waste disposal areas (garbage dumps and coal combustion by-products disposal areas).

**CABALLO COAL COMPANY**

**CABALLO MINE**

**PERMIT #433**



|                        | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|
| <i>Total Disturbed</i> | 4348 | 4519 | 4692 | 4885 | 5466 | 5775 | 6045 | 6349 | 6875 | 7401 | 7743 |
| <i>Total Reclaimed</i> | 1427 | 1583 | 1718 | 1718 | 2048 | 2624 | 3218 | 3287 | 3287 | 3287 | 3287 |

A review of the approved mining and reclamation plan along with an onsite inspection documented that the company is in compliance with its approved plan. However, the last complete set of data collected shows that this mine has 7,401 acres of disturbed land and has 3,287 acres of reclaimed land. The ratio of reclaimed acres to disturbed acres is 0.44. The Caballo Mine operation is one that must keep several active pits open so that coal can be blended to meet customer and contract requirements. This fact is a reason why the mine was unable to conduct reclamation activities for the past several years.

Reclamation status of areas disturbed under the permanent regulatory program. All numbers in the table are in acres.

Permittee: CABALLO COAL COMPANY Mine: CABALLO MINE Permit # 433-T5

Mine type: SURFACE

| YEAR | Disturbed area |                        | 3<br>Long-term mining or reclamation facilities <sup>1</sup> | 4<br>Active mining areas (pits and areas in advance of the pits stripped of topsoil) and areas not yet backfilled and graded | Areas backfilled and graded |                        | Areas where the regulatory authority (RA) has released phase I bond |                        | Areas soiled and seeded/planted |                         | Areas where RA has released phase II bond |                         | Areas final seeded/planted 10 years |                         | Areas where RA has released phase III bond |                         |
|------|----------------|------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------|---------------------------------------------------------------------|------------------------|---------------------------------|-------------------------|-------------------------------------------|-------------------------|-------------------------------------|-------------------------|--------------------------------------------|-------------------------|
|      | 1<br>Year      | 2<br>Total (all years) |                                                              |                                                                                                                              | 5<br>Year                   | 6<br>Total (all years) | 7<br>Year                                                           | 8<br>Total (all years) | 9<br>Year                       | 10<br>Total (all years) | 11<br>Year                                | 12<br>Total (all years) | 13<br>Year                          | 14<br>Total (all years) | 15<br>Year                                 | 16<br>Total (all years) |
| 1999 | 319            | 4348                   | 1716                                                         | 1205                                                                                                                         | 153                         | 1427                   | 0                                                                   | 0                      | 439                             | 1427                    | 0                                         | 0                       | 0                                   | 762                     | 0                                          | 0                       |
| 2000 | 171            | 4519                   | 1773                                                         | 1193                                                                                                                         | 126                         | 1553                   | 0                                                                   | 0                      | 126                             | 1553                    | 0                                         | 0                       | 0                                   | 762                     | 0                                          | 0                       |
| 2001 | 173            | 4692                   | 1525                                                         | 1588                                                                                                                         | 179                         | 1732                   | 0                                                                   | 0                      | 179                             | 1718                    | 0                                         | 0                       | 0                                   | 762                     | 0                                          | 0                       |
| 2002 | 173            | 4885                   | 2106                                                         | 709                                                                                                                          | 427                         | 2159                   | 0                                                                   | 0                      | 427                             | 1718                    | 0                                         | 0                       | 0                                   | 762                     | 0                                          | 0                       |
| 2003 | 601            | 5466                   | 2133                                                         | 1137                                                                                                                         | 146                         | 2305                   | 0                                                                   | 0                      | 330                             | 2048                    | 0                                         | 0                       | 186                                 | 948                     | 0                                          | 0                       |
| 2004 | 289            | 5775                   | 2107                                                         | 616                                                                                                                          | 837                         | 3142                   | 3175                                                                | 3175                   | 580                             | 2624                    | 0                                         | 0                       | 0                                   | 948                     | 0                                          | 0                       |
| 2005 | 290            | 6045                   | 2108                                                         | 615                                                                                                                          | 33                          | 3181                   | 3175                                                                | 3175                   | 570                             | 3218                    | 0                                         | 0                       | 0                                   | 948                     | 0                                          | 0                       |
| 2006 | 304            | 6349                   | 2053                                                         | 1010                                                                                                                         | 69                          | 3250                   | 0                                                                   | 3175                   | 69                              | 3287                    | 0                                         | 0                       | 0                                   | 948                     | 0                                          | 0                       |
| 2007 | 526            | 6875                   | 1544                                                         | 1765                                                                                                                         | 13                          | 3263                   | 0                                                                   | 3175                   | 0                               | 3287                    | 0                                         | 0                       | 40                                  | 988                     | 0                                          | 0                       |
| 2008 | 526            | 7401                   | 1544                                                         | 1765                                                                                                                         | 13                          | 3276                   | 0                                                                   | 3175                   | 0                               | 3287                    | 0                                         | 0                       | 439                                 | 1427                    | 0                                          | 0                       |
| 2009 | 342            | 7743                   | 1544                                                         | 1765                                                                                                                         | 89                          | 3365                   | 0                                                                   | 3175                   | 0                               | 3287                    | 0                                         | 0                       | 0                                   | 1427                    | 0                                          | 0                       |

<sup>1</sup> Long-term mining or reclamation facilities include haul and access roads; temporary dams and impoundments; permanent dams and impoundments; diversion and collector ditches; water and air monitoring sites; topsoil stockpiles; overburden stockpiles; offices; repair, storage, and construction areas; coal stockpile, loading, and processing areas; railroads; coal conveyors; refuse piles and coal mine waste impoundments; head-of-hollow fills; valley fills; ventilation shafts and entryways; and noncoal waste disposal areas (garbage dumps and coal combustion by-products disposal areas). Acreage is not broken out between Pre-law, Interim or Permanent Program. All categories are lumped together in this table.

### **C. Customer Service**

The LQD demonstrates its "customer service" attributes in many aspects of their program, both through required regulatory program functions such as public notices, meetings and hearings as well as one-on-one interactions with the public, industry and other State and Federal agencies, going beyond the requirements of the Act or rules.

LQD has been working with OSM and the Wyoming Mining Association to revise the revegetation standards as they apply to performance standards needed for final bond release. These revisions are currently going through Wyoming's program amendment process and are expected to be approved in early 2010.

During this evaluation period, Wyoming received ten citizen complaints. In all cases, Wyoming followed up with prompt inspections. Where blasting issues were involved, Wyoming also responded with long-term seismic monitoring. Monitoring indicated that the mines were in compliance and no violations were issued.

### **VI. OSM Assistance**

The primary mode of OSM's assistance to Wyoming consists of annual grant funding for the administration and enforcement of Wyoming's coal mining reclamation program. Wyoming's A&E grant from OSM for this evaluation period was \$2,318,000 and funded approximately 87.3% of Wyoming's reclamation program costs (Table 9).

In addition to their grant program funding from OSM, Wyoming also received assistance from OSM in the form of training and technology transfer. Listed below is a compilation of some of this assistance:

#### **A. Technical Innovation & Professional Services (TIPS)**

During the evaluation period, Wyoming had six staff members attend TIPS training courses (primarily related to Geographic Information Systems (GIS)) for a cost of approximately \$1200. Wyoming also provided three of its staff to assist as instructors for TIPS courses. OSM staff from the CFO and WR offices also met to discuss its GIS development efforts with Wyoming.

OSM assisted Wyoming staff in several reference requests and article reprints from our technical library as well as providing the State with a new GPS receiver and software for field use.

#### **B. National Technical Training Program**

Employees from the DEQ are provided the opportunity to attend various technological training sessions and workshops throughout the fiscal year. During this evaluation period, five employees took advantage of these opportunities and attended seven national technology training classes addressing the Endangered Species Act, acid forming materials, hydrology, NEPA procedures, and erosion and sediment control.

## **C. Cultural Resources**

The CFO continues to coordinate the National Historic Preservation Act, Section 106 cultural resource compliance for the State of Wyoming. The CFO cultural resource coordinator works closely with the OSM Archaeologist in OSM's Western Regional Office, LQD, Bureau of Land Management (BLM), Wyoming State Historic Preservation Office (SHPO), U. S. Forest Service (USFS) and the affected mining companies to process cultural resource clearances on new mining lands and previously permitted areas that have not been surveyed for cultural resources. In the past, this detailed involvement was necessary because the Wyoming DEQ does not have a qualified archaeologist on staff; and therefore, the SHPO would not accept cultural resource recommendations from LQD.

Currently, OSM, DEQ, BLM, USFS, and SHPO are working to develop a combined Section 106 procedure for coal leasing and mine permitting undertakings. Once completed, the process will serve to reduce the workload of each individual agency, yet satisfy the National Historic Preservation Act responsibilities of all parties concerned.

## **VII. General Oversight Topic Reviews**

### **A. State Program Amendments**

Wyoming's Coal Regulatory Program contains several unresolved program issues as identified in OSM's letters issued pursuant to 30 CFR 732.17 and subsequent required program amendments and disapprovals identified under 30 CFR 950.

During last year's evaluation period (EY08), the CFO met with LQD on several occasions to jointly review the status of these unresolved issues and discuss a schedule for their resolution and submission to OSM for formal review and approval. From these discussions, LQD developed several amendment packages and submitted these packages to their Advisory Board for review and approval during EY08 and EY09.

Once a proposed program amendment is approved by the Land Quality Advisory Board it is then submitted before the Wyoming Environmental Quality Council (EQC) for their review and approval. The EQC approved rules then pass through the Director of the DEQ, the Wyoming Attorney General, the Governor signs off on them and files them with the Secretary of State. The new rules become effective on the date they are filed by the Secretary of State. During this evaluation period, the LQD had two amendment packages before the EQC for review and approval that should be completely through the rule making process by early in EY10.

On February 11, 2009, the EQC held a hearing to discuss Wyoming's 1-S and 1-Y rule packages. The 1-S package contained proposed changes to the Wyoming rules addressing vegetation success standards, sampling techniques, postmine practices, husbandry, and fish and wildlife enhancements. The 1-Y package contained five unrelated issues addressing cultural and historic resources, prime farmlands, siltation structures and mine operator information. While there was considerable discussion regarding these packages, the EQC recessed without making a final vote on this package.

The EQC reconvened on March 26, 2009 to readdress these packages. Both packages were approved with minor changes and after the June 4, 2009, EQC meeting and were forwarded to the Director of DEQ in anticipation of the Governor's office final approval and signature. OSM can expect to see these packages submitted for our formal review by early fall of 2009.

These two amendment packages when approved will have made a significant reduction in the number of outstanding issues that the Wyoming program needs to address. During the next evaluation period, Wyoming plans to address the remainder of their outstanding issues addressing non-coal waste, ownership and control, and valid existing rights.

The Casper Field Office is encouraged by the progress Wyoming has made addressing their outstanding programmatic issues during this evaluation period and will continue to assist them at every opportunity until all issues have been resolved.

## **B. Inspection and Enforcement**

The LQD continues to conduct frequent and thorough inspections. All LQD performance standards were reviewed and documented during complete inspections and the reports contain a discussion of the current mine status.

On active mine sites, LQD conducted 114 complete inspections and 244 partial inspections. Additionally, LQD conducted 25 complete inspections and 1 partial inspection on inactive mine sites during the evaluation period (see TABLE 9 in Appendix A). The required number of inspections was 122 complete and 244 partial inspections on active mine sites. LQD conducted 2 complete and 20 partial inspections more than the requirement. The required number of inspections was 26 complete inspections for inactive mine sites (due to a mine becoming inactive during the evaluation year). LQD conducted 25 which is 1 short for the evaluation period. The mine that had the shortfall was actually inspected 12 times and this shortfall did not adversely impact the environment or the overall quality of the Wyoming program. Please see TABLE 2 in Appendix A for a tabular version of this data.

The Casper Field Office will continue to monitor WY/LQD inspection activities.

The Casper Field Office conducted a total of nine inspections. Two were complete oversight inspections; six were bond release inspections and one site visit.

LQD maintains an inspectable units list and an inspection database sufficient to meet its program requirements. LQD has made this database available to the CFO.

LQD issued 8 Notices of Violation that contained 8 violations. No pattern of violation exists or show cause hearings / alternative enforcement action (bond forfeiture) were initiated during this evaluation period.

The CFO did not issue any Ten-Day-Notices (TDNs) during this review period.

LQD conducted 10 citizen complaint investigations during the review period.

During (EY07) it was discovered that DEQ was not requiring mine operators to properly design and construct their primary roads with respect to drainage systems. While the designs did show road side ditches and culverts, CFO could not find a supporting demonstration for the design of those items. The DEQ regulations at Chapter 4, Section (j) (vii) (I) require the drainage system to be designed to pass the peak runoff from a 10 year, 6 hour precipitation event, or greater event as specified by the Administrator. LQD and CFO will continue to follow up on this issue for inclusion in EY2010 Performance Agreement.

### **C. Financial Management / Grants**

During this evaluation period, a grants management specialist from OSM's Western Regional Office conducted an evaluation of Wyoming's property procurement, management and disposal procedures. OSM does a cyclical review of various grants, financial management elements within the Wyoming DEQ on occasion. This is the first time this performance measure has been reviewed in several years. This review looked at methods used by the DEQ to make purchases for supplies and equipment. It also sampled large purchases that the DEQ may have made from its FY2007 and FY2008 A&E Grants. This included leased items and contracted services that may have been secured by the DEQ.

This review of Wyoming's DEQ procurement system found that the Coal Program that receives Administration and Enforcement funds from OSM rarely, if ever, makes any purchases above the minimum \$2,500 State procurement threshold. The majority of its purchases are for small office materials and supplies. No real property has been purchased with these funds according to the DEQ accountants. Larger items are either leased or as in the case of vehicles, have a user paid agreement with the Department of Administration and Information General Services motor pool. Disposal procedures of property and equipment were not examined during this review since there has never been the need to dispose of such items by the DEQ Coal Program. The State is required to dispose of property purchased under a grant agreement in accordance with State laws and procedures. At the time of this review there were no equipment purchases that had a value of \$5,000 or more as described in Chapter 1-410 of OSM's Financial Assistance Manual (FAM).

This review also found that the Wyoming DEQ maintains a sound procurement system that complies with Federal and State requirements. By following the State's Purchasing Procedures Manual, the DEQ ensures that purchases are justified and properly accounted for. All purchases are tracked by the Wyoming Accounting System for individual purchases and services. The Wyoming Regulatory Program procedures for property procurement, management and disposal of property are effective in the overall administration of the Coal Program.

### **D. Contemporaneous Reclamation**

In its continued review of the contemporaneous reclamation requirements of the Wyoming program, the CFO revisited the two mines evaluated last year and added another mine from the Cheyenne District for comparison.

During last year's review of conditions at the Black Butte Mine in the Lander District it was discovered that the mine did not have good documentation in its existing permit to clearly identify where the mine should be in its reclamation progression. As a result, the LQD provided the mine with a list of requirements necessary for approval of the permit renewal that the mine

submitted in July 2008. This renewal submittal was reviewed and approved by the LQD in January 2009. As a condition of the approval, the mine now has a clear depiction of its reclamation schedule and acreage determinations to meet its backfilling, soiling and seeding requirements that if followed, should keep reclamation contemporaneous.

The Black Thunder Mine permit in the Sheridan District was also revisited during this evaluation period. Updated maps and permit information for the mine were compared to the reclamation schedule for the mine. The mine had done quite a bit of reclamation activity throughout the winter of 2008/2009 and the updated information indicated that reclamation for Black Thunder did fall within the block area and schedule required by the approved permit.

CFO staff and LQD staff from the Cheyenne District also did an evaluation and inspection of the North Antelope Rochelle Mine during this evaluation period to determine if this mine was in compliance with its approved reclamation schedule. This review indicated that like other mines in the Powder River Basin, the North Antelope Rochelle Mine is producing coal and disturbing more acreage than it is reclaiming. However, a closer review of the permit and lands available for reclamation indicated that the mine is current with its permit requirements and has very little area available for reclamation. The areas available were small and scattered around the mine, but will be picked up in the normal progression of the mines reclamation sequence.

Overall, our review of Wyoming's policy and procedures for determining contemporaneous reclamation indicate that for the mines reviewed, reclamation is proceeding on a schedule consistent with the requirements of the State's program. The CFO and the LQD will select another sample of mines for review for the next evaluation period.

# APPENDIX A

## Tabular Summaries of Data

### Pertaining to Mining, Reclamation and Program Administration

These tables present data pertinent to mining operations and State and Federal regulatory activities within Wyoming. They also summarize funding provided by OSM and Wyoming staffing. Unless otherwise specified, the reporting period for the data contained in all tables is the same as the evaluation year. Additional data used by OSM in its evaluation of Wyoming's performance is available for review in the evaluation files maintained by the Casper Field Office.

When OSM's Directive REG-8, Oversight of State Programs, was revised in December 2006, the reporting period for coal production on Table 1 was changed from a calendar year basis to an evaluation year basis. The change was effective for the 2007 evaluation year. However, with Change Notice REG-8-1, effective July 1, 2008, the calendar year reporting period in Table 1 for coal produced for sale, transfer or use was reestablished and is effective for the 2008 evaluation year forward. In addition, for the 2009 evaluation report, coal production for the two prior years reported on Table 1 was recalculated on a calendar year basis so that all three years of production reported in the table are directly comparable. This difference in reporting periods should be noted when attempting to compare coal production figures from annual evaluation reports originating both before and after the December 2006 revision to the reporting period.

**TABLE 1**

**Coal Produced for Sale, Transfer, or Use**

(Millions of Short Tons)

| Period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Surface Mines | Underground Mines | Total   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|---------|
| Coal production <sup>A</sup> for entire State:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                   |         |
| <b>Calendar Year</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                   |         |
| CY 2006                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 444.245       | 1.125             | 445.370 |
| CY 2007                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 448.727       | 2.638             | 451.365 |
| CY 2008                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 462.623       | 3.570             | 466.193 |
| <p>Coal production as shown in this table is the gross tonnage and includes coal produced during the calendar year (CY) for sale, transfer or use. The coal produced in each CY quarter is reported to OSM during the following quarter by each mining company on line 8 (a) of form OSM-1, 'Coal Reclamation Fee Report.' Gross tonnage does not provide for a moisture reduction. OSM verifies tonnage reported through routine auditing of mining companies. This production may vary from that reported by States or other sources due to varying methods of determining and reporting coal production.</p> <p><sup>A</sup> Provide production information for the latest three full calendar years to include the last full calendar year for which data is available.</p> |               |                   |         |

**TABLE 2**

**Inspectable Units**

As of June 30, 2009

| Coal mines and related facilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Number and Status of Permits                          |    |                                |    |           |    |        |    |                                  |               | Permitted Acreage <sup>S</sup><br>(100's of acres) |     |                                 |                     |   |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----|--------------------------------|----|-----------|----|--------|----|----------------------------------|---------------|----------------------------------------------------|-----|---------------------------------|---------------------|---|-----------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Active or temporarily inactive                        |    | Inactive Phase II bond release |    | Abandoned |    | Totals |    | Nbr. of Insp. Units <sup>A</sup> | Federal Lands |                                                    |     |                                 | State/Private Lands |   | All Lands |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | IP                                                    | PP | IP                             | PP | IP        | PP | IP     | PP |                                  | IP            | PP                                                 | IP  | PP                              | Total               |   |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | LANDS FOR WHICH THE STATE IS THE REGULATORY AUTHORITY |    |                                |    |           |    |        |    |                                  |               |                                                    |     |                                 |                     |   |           |
| Surface mines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0                                                     | 27 | 0                              | 5  | 0         | 0  | 0      | 32 | 32                               | 0.0           | 1,058.1                                            | 0.0 | 2,900.3                         | 3,958.4             |   |           |
| Underground mines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                                                     | 1  | 0                              | 0  | 0         | 0  | 0      | 1  | 1                                | 0.0           | 16.9                                               | 0.0 | 35.8                            | 52.7                |   |           |
| Other facilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                                     | 0  | 0                              | 2  | 0         | 0  | 0      | 2  | 2                                | 0.0           | 0.0                                                | 0.0 | 21.3                            | 21.3                |   |           |
| Total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0                                                     | 28 | 0                              | 7  | 0         | 0  | 0      | 35 | 35                               | 0.0           | 1,075.0                                            | 0.0 | 2,957.4                         | 4,032.4             |   |           |
| Total number of permits:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                       |    |                                |    |           |    |        |    |                                  |               | 35                                                 |     |                                 |                     |   |           |
| Average number of permits per inspectable unit (excluding exploration sites):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                       |    |                                |    |           |    |        |    |                                  |               | 1.00                                               |     |                                 |                     |   |           |
| Average number of acres per inspectable unit (excluding exploration sites):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                       |    |                                |    |           |    |        |    |                                  |               | 11,521.1                                           |     |                                 |                     |   |           |
| Number of exploration permits on State and private lands:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                       |    |                                |    |           |    |        |    |                                  |               | 0                                                  |     | On Federal lands <sup>C</sup> : |                     | 7 |           |
| Number of exploration notices on State and private lands:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                       |    |                                |    |           |    |        |    |                                  |               | 0                                                  |     | On Federal lands <sup>C</sup> : |                     | 0 |           |
| <p>IP: Initial regulatory program sites</p> <p>PP: Permanent regulatory program sites</p> <p><sup>A</sup> Inspectable units include multiple permits that have been grouped together as one unit for inspection frequency purposes by some State programs</p> <p><sup>B</sup> When a single inspectable unit contains both Federal lands and State/Private lands, enter the permitted acreage for each land type in the appropriate category</p> <p><sup>C</sup> Includes only exploration activities regulated by the State pursuant to a cooperative agreement with OSM or by OSM pursuant to a Federal lands program. Excludes exploration regulated by the Bureau of Land Management.</p> |                                                       |    |                                |    |           |    |        |    |                                  |               |                                                    |     |                                 |                     |   |           |

TABLE 3

## State Permitting Activity

As of June 30, 2009

| Type of Application                                                  | Surface mines |        |        | Underground mines |        |                    | Other facilities |        |       | Totals    |        |        |
|----------------------------------------------------------------------|---------------|--------|--------|-------------------|--------|--------------------|------------------|--------|-------|-----------|--------|--------|
|                                                                      | App. Rec.     | Issued | Acres  | App. Rec.         | Issued | Acres <sup>A</sup> | App. Rec.        | Issued | Acres | App. Rec. | Issued | Acres  |
| New Permits                                                          | 0             | 0      | 0      | 0                 | 0      | 0                  | 0                | 0      | 0     | 0         | 0      | 0      |
| Renewals                                                             | 7             | 5      |        | 0                 | 1      |                    | 0                | 0      |       | 7         | 6      |        |
| Transfers, sales, and assignments of Permit rights                   | 3             | 3      |        | 0                 | 0      |                    | 0                | 0      |       | 3         | 3      |        |
| Small operator assistance                                            | 0             | 0      |        | 0                 | 0      |                    | 0                | 0      |       | 0         | 0      |        |
| Exploration permits                                                  |               |        |        |                   |        |                    |                  |        |       | 8         | 7      |        |
| Exploration notices<br>B                                             |               |        |        |                   |        |                    |                  |        |       |           | 0      |        |
| Revisions (exclusive of incidental boundary revisions)               |               | 52     |        |                   | 0      |                    |                  | 0      |       |           | 52     |        |
| Revisions (adding acreage but are not incidental boundary revisions) | 4             | 3      | 10,429 | 1                 | 0      | 0                  | 0                | 0      | 0     | 5         | 3      | 10,429 |
| Incidental boundary revisions                                        | 6             | 4      | 205    | 0                 | 0      | 0                  | 0                | 0      | 0     | 6         | 4      | 205    |
| Totals                                                               | 20            | 67     | 10,634 | 1                 | 1      | 0                  | 0                | 0      | 0     | 29        | 75     | 10,634 |

OPTIONAL - Number of midterm permit reviews completed that are not reported as revisions: 39

A Includes only the number of acres of proposed surface disturbance.

B State approval not required. Involves removal of less than 250 tons of coal and does not affect lands designated unsuitable for mining.

TABLE 4

OFF-SITE IMPACTS (excluding bond forfeiture sites)

| RESOURCES AFFECTED | People |          |       | Land  |          |       | Water |          |       | Structures |          |       |
|--------------------|--------|----------|-------|-------|----------|-------|-------|----------|-------|------------|----------|-------|
|                    | Minor  | Moderate | Major | Minor | Moderate | Major | Minor | Moderate | Major | Minor      | Moderate | Major |
| DEGREE OF IMPACT   |        |          |       |       |          |       |       |          |       |            |          |       |
| Blasting           | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Land Stability     | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Hydrology          | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Encroachment       | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Other              | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Total              | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |

Total number of inspectable units (excluding bond forfeiture sites): 35

Inspectable units free of off-site impacts: 35

Inspectable units with off-site impacts: a

OFF-SITE IMPACTS ON BOND FORFEITURE SITES

| RESOURCES AFFECTED | People |          |       | Land  |          |       | Water |          |       | Structures |          |       |
|--------------------|--------|----------|-------|-------|----------|-------|-------|----------|-------|------------|----------|-------|
|                    | Minor  | Moderate | Major | Minor | Moderate | Major | Minor | Moderate | Major | Minor      | Moderate | Major |
| DEGREE OF IMPACT   |        |          |       |       |          |       |       |          |       |            |          |       |
| Blasting           | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Land Stability     | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Hydrology          | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Encroachment       | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Other              | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |
| Total              | a      | a        | a     | a     | a        | a     | a     | a        | a     | a          | a        | a     |

Total number of inspectable units (only bond forfeiture sites): a

Inspectable units free of off-site impacts: a

Inspectable units with off-site impacts: a

**TABLE 5**

**Annual State Mining and Reclamation Results**

| Bond release phase                                                                                                                           | Applicable performance standard                                                                                                                                                             | During this Evaluation Year              |                                     |                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------|--------------------------------------|
|                                                                                                                                              |                                                                                                                                                                                             | Total acreage released                   | Acreage also released under Phase I | Acreage also released under Phase II |
| A                                                                                                                                            | B                                                                                                                                                                                           | C                                        | D                                   | E                                    |
| Phase I                                                                                                                                      | - Approximate original contour restored<br>- Topsoil or approved alternative replaced                                                                                                       | 3,955                                    |                                     |                                      |
| Phase II                                                                                                                                     | - Surface stability<br>- Establishment of vegetation                                                                                                                                        | 1,424                                    | 0                                   |                                      |
| Phase III                                                                                                                                    | - Post-mining land use/productivity restored<br>- Successful permanent vegetation<br>- Groundwater recharge, quality and quantity restored<br>- Surface water quality and quantity restored | 341                                      | 0                                   | 0                                    |
| <b>Bonded Acreage<sup>A</sup></b>                                                                                                            |                                                                                                                                                                                             | <b>Acres during this evaluation year</b> |                                     |                                      |
| Total number of new acres bonded during this evaluation year                                                                                 |                                                                                                                                                                                             | 10,634                                   |                                     |                                      |
| Number of acres bonded during this evaluation year that are considered remining, if available                                                |                                                                                                                                                                                             | 0                                        |                                     |                                      |
| Number of acres where bond was forfeited during this evaluation year                                                                         |                                                                                                                                                                                             | 0                                        |                                     |                                      |
| <b>Bonded Acreage Status</b>                                                                                                                 |                                                                                                                                                                                             | <b>Cumulative Acres</b>                  |                                     |                                      |
| Total number of acres bonded as of the end of last review period (June 30, 2008) B                                                           |                                                                                                                                                                                             | 393,735                                  |                                     |                                      |
| Total number of acres bonded as of the end of this review period (June 30, 2009) B                                                           |                                                                                                                                                                                             | 403,231                                  |                                     |                                      |
| Sum of acres bonded that are between Phase I bond release and Phase II bond release as of June 30, 2009 B                                    |                                                                                                                                                                                             | 0                                        |                                     |                                      |
| Sum of acres bonded that are between Phase II bond release and Phase III bond release as of June 30, 2009 B                                  |                                                                                                                                                                                             | 0                                        |                                     |                                      |
| <b>Disturbed Acreage</b>                                                                                                                     |                                                                                                                                                                                             | <b>Acres</b>                             |                                     |                                      |
| Number of Acres Disturbed during this evaluation year                                                                                        |                                                                                                                                                                                             | 5,497                                    |                                     |                                      |
| Number of Acres Disturbed at the end of the evaluation year (cumulative)                                                                     |                                                                                                                                                                                             | 156,683                                  |                                     |                                      |
| A Bonded acreage is considered to approximate and represent the number of acres disturbed by surface coal mining and reclamation operations. |                                                                                                                                                                                             |                                          |                                     |                                      |
| B Bonded acres in this category are those that have not received a Phase III or other final bond release (State maintains jurisdiction)      |                                                                                                                                                                                             |                                          |                                     |                                      |

Brief explanation of columns D & E. The States will enter the total acreage under each of the three phases (column C). The additional columns (D & E & E) will "break-out" the acreage among Phase II and/or Phase III. Bond release under Phase II can be a combination of Phase I and II acreage, and Phase III acreage can be a combination of Phase I, II, and III. See "Instructions for Completion of Specific Tables," Table 5 for example.

**TABLE 6**

**State Bond Forfeiture Activity**

(Permanent Program Permits)

| Bond Forfeiture Reclamation Activity by SRA                                                                                       | Number of Sites | Dollars | Acres |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|-------|
| Sites with bonds forfeited and collected that were unreclaimed as of June 30, 2008 (end of previous evaluation year) <sup>A</sup> | 0               |         | 0     |
| Sites with bonds forfeited and collected during Evaluation Year 2009 (current evaluation year)                                    | 0               | 0       | 0     |
| Sites with bonds forfeited and collected that were re-permitted during Evaluation Year 2009 (current evaluation year)             | 0               |         | 0     |
| Sites with bonds forfeited and collected that were reclaimed during Evaluation Year 2009 (current evaluation year)                | 0               |         | 0     |
| Sites with bonds forfeited and collected that were unreclaimed as of June 30, 2009 (end of current evaluation year) <sup>f</sup>  | 0               |         | 0     |
| Sites with bonds forfeited but uncollected as of June 30, 2009 (end of current evaluation year)                                   | 0               |         | 0     |
| <b>Surety/Other Reclamation (In Lieu of Forfeiture)</b>                                                                           |                 |         |       |
| Sites being reclaimed by surety/other party as of June 30, 2008 (end of previous evaluation year) <sup>B</sup>                    | 0               |         | 0     |
| Sites where surety/other party agreed to do reclamation during Evaluation Year 2009 (current evaluation year)                     | 0               |         | 0     |
| Sites being reclaimed by surety/other party that were re-permitted during Evaluation Year 2009 (current evaluation year)          | 0               |         | 0     |
| Sites with reclamation completed by surety/other party during Evaluation Year 2009 (current evaluation year) <sup>C</sup>         | 0               |         | 0     |
| Sites being reclaimed by surety/other party as of June 30, 2009 (current evaluation year) <sup>B</sup>                            | 0               |         | 0     |

<sup>A</sup> Includes data only for those forfeiture sites not fully reclaimed as of this date

<sup>B</sup> Includes all sites where surety or other party has agreed to complete reclamation and site is not fully reclaimed as of this date

"

<sup>L</sup> This number also is reported in Table 5 as Phase III bond release has been granted on these sites

| <b>TABLE 7</b>                                    |              |
|---------------------------------------------------|--------------|
| <b>State Staffing</b>                             |              |
| (Full-time equivalents at end of evaluation year) |              |
| Function                                          | EY 2005      |
| Regulatory Program                                |              |
| Permit Review                                     | 10.11        |
| Inspection                                        | 8.06         |
| Other (administrative, fiscal, personnel, etc.)   | 5.54         |
| <b>Regulatory Program Total</b>                   | <b>23.71</b> |
| <b>AML Program Total</b>                          | <b>11.80</b> |
| <b>Total</b>                                      | <b>35.51</b> |

**TABLE 8**

**Funds Granted To Wyoming**

**BY OSM**

(During the Current Evaluation Year)

(Actual Dollars, Rounded to the Nearest Dollar)

| Type of Funding                           | Federal Funds Awarded<br>During Current<br>Evaluation Year | Federal Funding as a<br>Percentage of Total<br>Program Costs |
|-------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------|
| Regulatory Funding                        |                                                            |                                                              |
| Administration and Enforcement Grant      | \$ 2,318,000                                               | 87.30 %                                                      |
| Other Regulatory Funding, if applicable   | \$ 0                                                       | 0.00 %                                                       |
| <b>Subtotal</b>                           | <b>\$ 2,318,000</b>                                        |                                                              |
| Small Operator Assistance Program         | \$ 0                                                       | 100 %                                                        |
| Abandoned Mine Land Reclamation Funding A | \$ 98,845,000                                              | 100 %                                                        |
| <b>Totals</b>                             | <b>\$ 101,163,000</b>                                      |                                                              |

A Includes funding for AML Grants, the Clean Streams Initiative and the Watershed Cooperative Agreement Program.

| <b>TABLE 9</b>                                                              |                                        |                |
|-----------------------------------------------------------------------------|----------------------------------------|----------------|
| <b>State Inspection Activity<br/>During Current Evaluation Year</b>         |                                        |                |
| <b>Inspectable Unit<br/>Status</b>                                          | <b>Number of Inspections Conducted</b> |                |
|                                                                             | <b>Complete</b>                        | <b>Partial</b> |
| Active A                                                                    | 114                                    | 244            |
| Inactive A                                                                  | 25                                     | 1              |
| Abandoned A                                                                 | 0                                      | 0              |
| <b>Total</b>                                                                | 139                                    | 245            |
| <b>Exploration</b>                                                          | 0                                      | 0              |
| A U <sup>U</sup> ~~~~~I <sup>U</sup> defined by the approved State program. |                                        |                |

**TABLE 10**

**State Enforcement Activity**

**During Current Evaluation Year**

| <b>Type of Enforcement Action</b> | <b>Number of Actions A</b> | <b>Number of Violations A</b> |
|-----------------------------------|----------------------------|-------------------------------|
| Notice of Violation               | 8                          | 8                             |
| Failure-to-Abate Cessation Order  | 0                          | 0                             |
| Imminent Harm Cessation Order     | 0                          | 0                             |

A. Do not include those violations that were vacated.

**TABLE 11**

**Lands Unsuitable Activity**

**During Current Evaluation Year**

|                                             | Number | Acreage |
|---------------------------------------------|--------|---------|
| Number Petitions Received                   | 0      |         |
| Number Petitions Accepted                   | 0      |         |
| Number Petitions Rejected                   | 0      |         |
| Number Decisions Declaring Lands Unsuitable | 0      | 0       |
| Number Decisions Denying Lands Unsuitable   | 0      | 0       |

| TABLE 12                                                       |                                              |
|----------------------------------------------------------------|----------------------------------------------|
| Optional                                                       |                                              |
| Post Mining Land Use Acreage<br>(after Phase III bond release) |                                              |
| Land Use                                                       | Acreage Released during this Evaluation Year |
| Cropland                                                       | a                                            |
| Pasture/Hayland                                                | 342                                          |
| Grazing Land                                                   | a                                            |
| Forest                                                         | a                                            |
| Residential                                                    | a                                            |
| Fish & Wildlife Habitat                                        | a                                            |
| Developed Water Resources                                      | a                                            |
| Public Utilities                                               | a                                            |
| Industrial/Commercial                                          | a                                            |
| Recreation                                                     | a                                            |
| Other (please specify):                                        | 0                                            |
| <b>Total</b>                                                   | <b>342</b>                                   |

## APPENDIX B

### State Comments on Report

The low number of acres released from bond for coal mines is an issue across the U.S. The LQD is addressing this issue using two complimentary approaches. The first approach is to develop a GIS database for all coal mines that tracks land disturbance and reclamation status. This database will allow LQD to determine when lands are eligible for bond release. The framework for this database is being built as part of the electronic permitting process. Additional features will be incorporated through the annual electronic reporting process. The second component is developing and revising guidance documents that will facilitate applications for successful bond release. These two elements will allow the LQD to identify acres that are eligible and facilitate applications for bond release through effective guidance documents.

OSM evaluates the effectiveness of the Wyoming program in achieving reclamation success using acres of land that have been bond released. This is not the only way to evaluate reclamation success, and it is important to distinguish the different approaches. Final (Phase III) bond release occurs a minimum of 10 years after seeding, and is the ultimate regulatory measure of reclamation success. Until an area has achieved bond release, the quality of the reclamation is unproven. However, there are many more reclaimed acres than are actually bond released. Therefore, it is important to realize that evaluating reclamation success using bond release is the most restrictive measure available and should be interpreted accordingly. Contemporaneous reclamation describes the process of reclamation occurring concurrently with mining disturbance, and assesses how diligently operators are reclaiming lands once mining disturbance is completed and the area is available for reclamation. It includes backfilling the pit to a specific topography, replacing topsoil, and final seeding of the reclaimed area. It is a measure of the process of reclamation, whereas bond release is a measure of the success of reclamation ten years later. On an annual basis, fewer acres are bond released than are reclaimed.

Table 1 uses FY2009 data to illustrate the difference between acres that were bond released in 2009, and acres that were reclaimed in 2009. Phase I bond release has a high monetary value and reclaimed areas are eligible as soon as they are reclaimed. This explains why so many acres are Phase I released (prior year's reclamation plus some current reclamation). In contrast, acres reclaimed in 2009 are not eligible for Phase II or III bond release in 2009. This is where the two columns in the table diverge, and the areas that were bond released are NOT the same as the areas that were reclaimed. For example, 341 acres were Phase III (final) bond released, while 1,617 acres were reclaimed and are at the start of the ten-year bond clock. Both of these measures are an indication of reclamation. There is no federal or state requirement that operators request bond release for any or all eligible acres, and there are many reasons why operators might choose to delay requests for bond release. As a consequence, there are many more acres eligible for bond release, particularly Phase III, than are actually released. LQD does not have precise acreage, but an estimate based on annual reports and mines that are fully reclaimed suggests that there are over 10,000 acres of reclamation are eligible for bond release.

The standard for determining if mines are meeting their contemporaneous reclamation obligations is determined by compliance with permit commitments. This evaluation is conducted annually, and all coal mines were found to be in compliance this year. Graphs for each coal mine showing disturbed and reclaimed acres for the last five years are attached below. The graphs indicate that most active mines have low ratios of reclamation to disturbance. Three mines were jointly reviewed by LQD and OSM in FY2009, and LQD looks forward to jointly reviewing another three mines this year

Table 1: Comparison of bond released and reclaimed acres in FY2009, by bond release type.

| Bond Release Type      | Description                                                                    | Bond Released Acres in 2009 | Reclaimed Acres in 2009 |
|------------------------|--------------------------------------------------------------------------------|-----------------------------|-------------------------|
| Phase I bond release   | AOC (approximate original contour) Acres backfilled & graded                   | 3955.8                      | 2160                    |
| Phase II bond release  | Acres topsoiled &/or Sediment Control Release (surface hydrologic restoration) | 1424                        | 3078                    |
| Phase III bond release | Acres permanently reclaimed                                                    | 341                         | 1617                    |

In addition to summarizing reclamation across the state, Wyoming generated graphs for each coal mine showing total acres disturbed and total acres reclaimed through time. These graphs begin on the following page, and are separated into active mines and inactive mines<sup>1</sup>. They are separated because there are distinct patterns in the two categories. The disturbance area in the inactive mines does not change, while reclaimed acres should be increasing or equal to disturbed acres. In contrast, both disturbed and reclaimed acres are increasing at active mines, with disturbed acres increasing at a higher rate. The result is that the gap between reclaimed and disturbed acres is widening in active mines and getting narrower in inactive mines. A cursory review of these graphs suggests that there may be many reclaimed acres available for bond release.

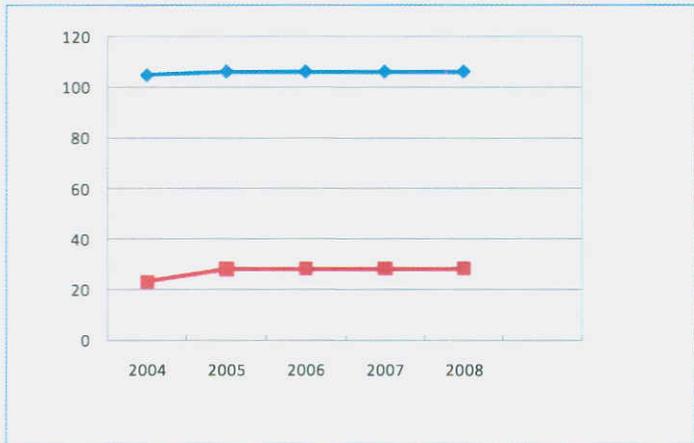
In the graphs below, total affected acres is synonymous with cumulative disturbed acres. The amount of cumulative disturbed acres (blue line) is either stable or increasing through time, and should not decrease. The amount of reclaimed acres (red line) should also remain stable or increase through time. However, there are situations where an active mine may redisturb reclaimed acres due to changes in the mine plan. This is the first year LQD has graphed each mine, so this should be considered a work in progress. There are some obvious problems with the data (e.g. declining disturbance area in the Black Butte Mine), that LQD will resolve during the next year.

<sup>1</sup>The terms active mine and inactive mine are used differently for inspections. Many of the mines termed inactive (in reclamation or temporary cessation) for these graphs are still on a monthly inspection schedule.

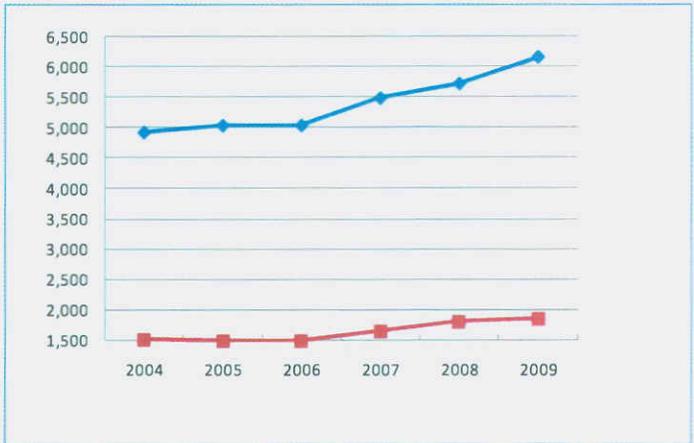
## ACTIVE COAL MINES



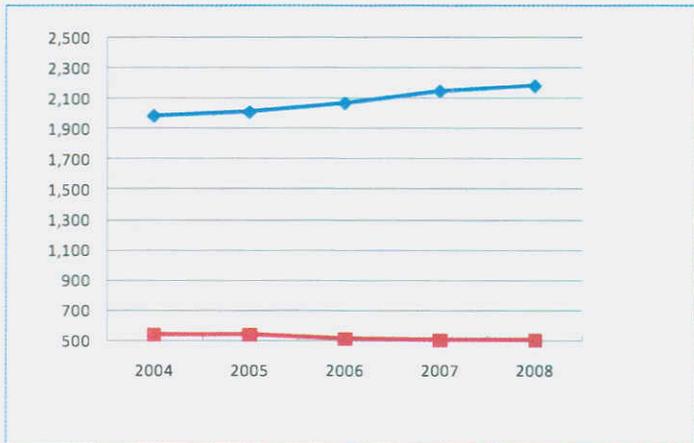
**Grass Creek – PT 211**



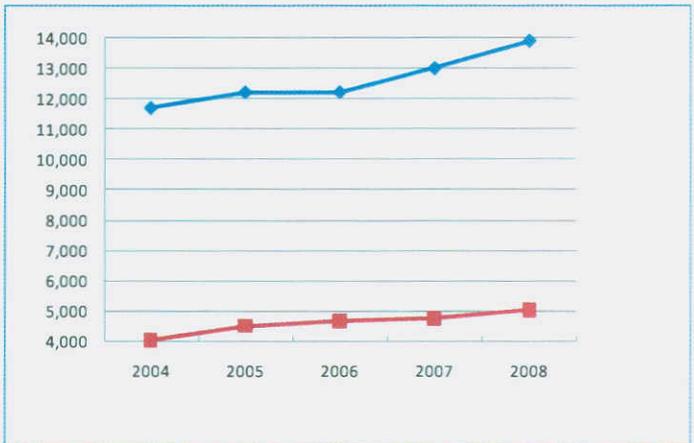
**Belle Ayre – PT 214**



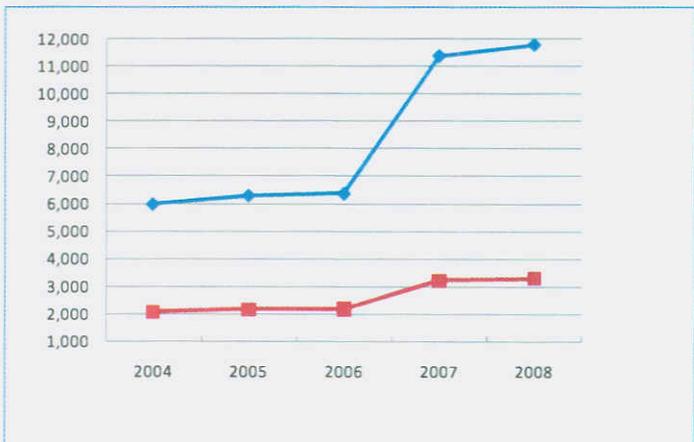
**Wyodak – PT 232**



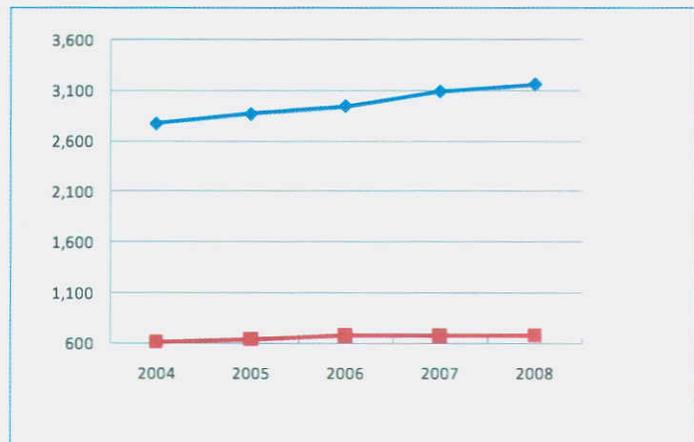
**Black Thunder – PT 233**



**Cordero Rojo – PT 237**

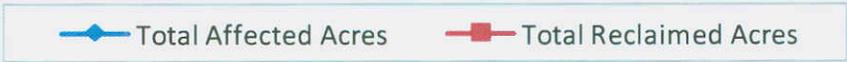


**Rawhide – PT 240**

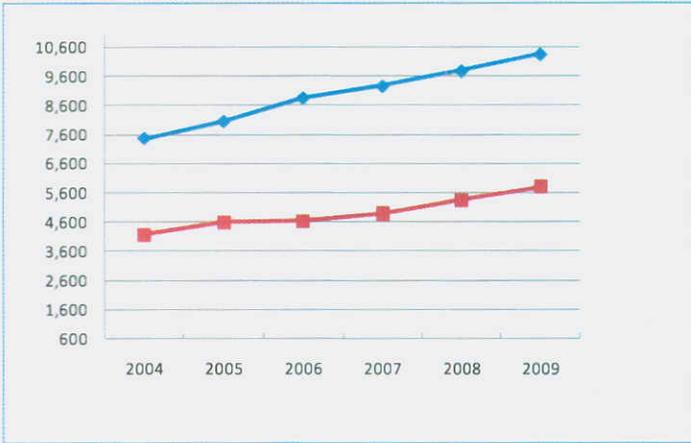


The Cordero and Caballo Rojo mines combined to form Cordero Rojo in 2006. This is why the disturbance area changes so much in 2006.

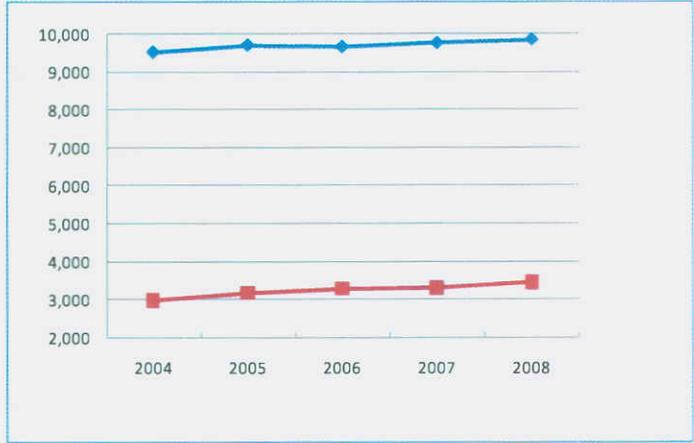
## ACTIVE COAL MINES



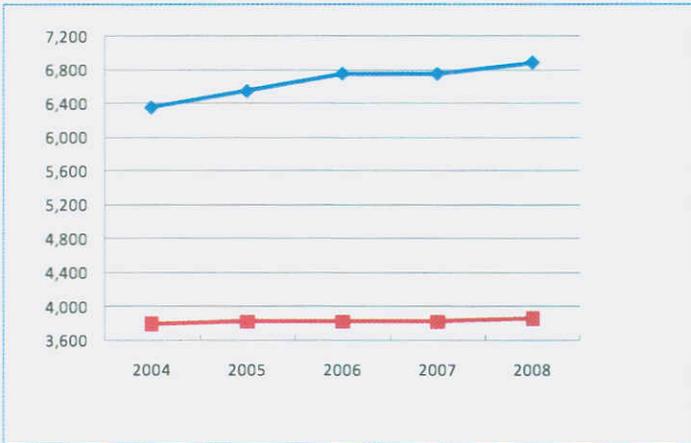
**Jacobs Ranch – PT 271**



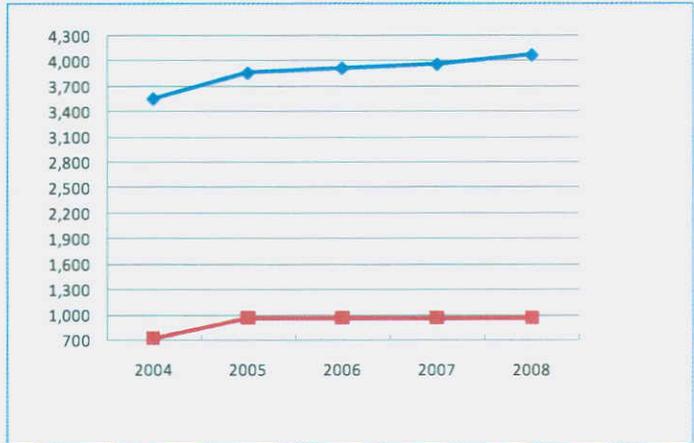
**Jim Bridger – PT 338**



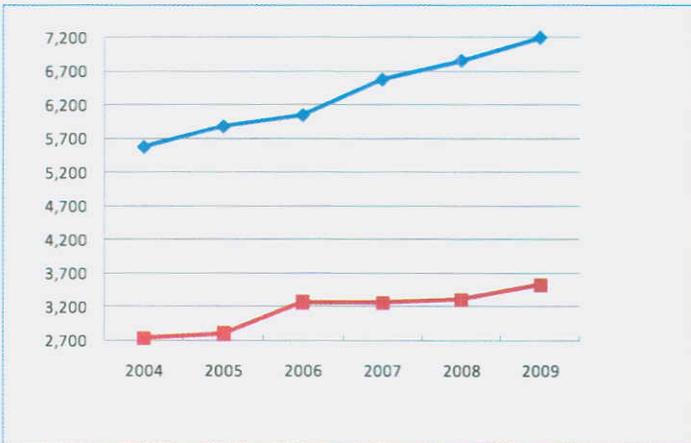
**Kemmerer – PT 379**



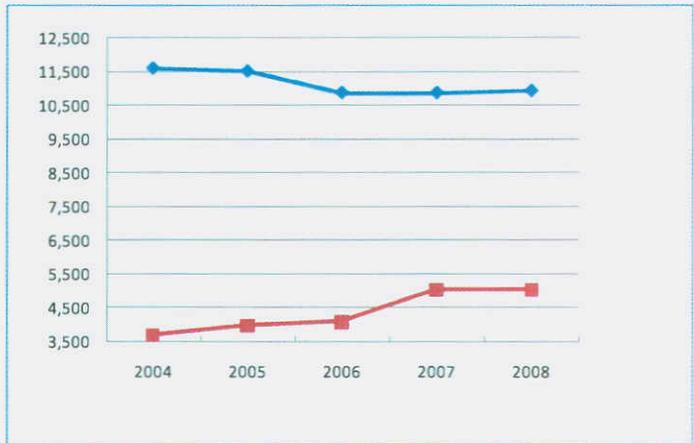
**Eagle Butte – PT 428**



**Caballo – PT 433**



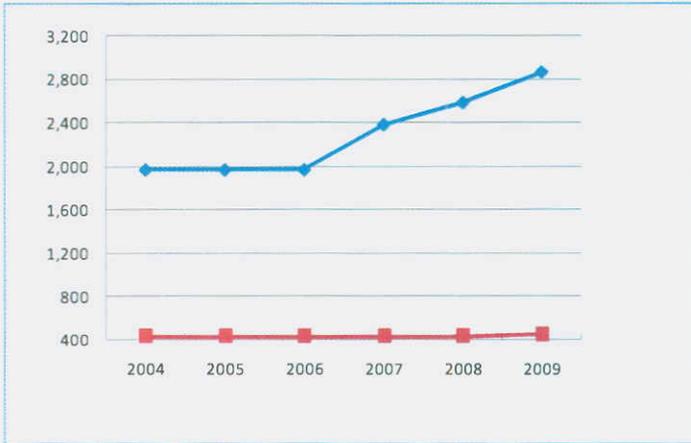
**Black Butte – PT 467**



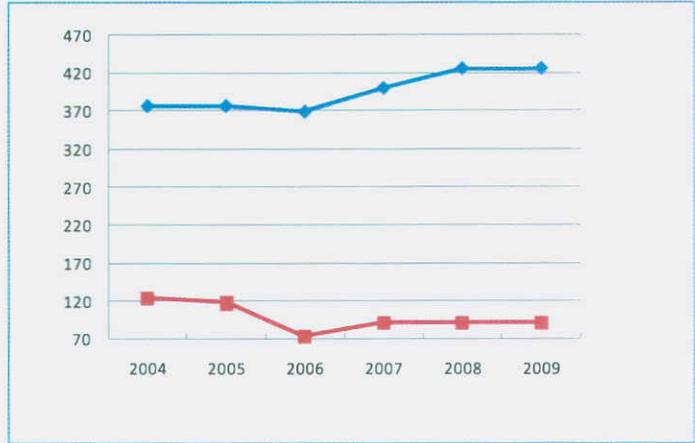
## ACTIVE COAL MINES



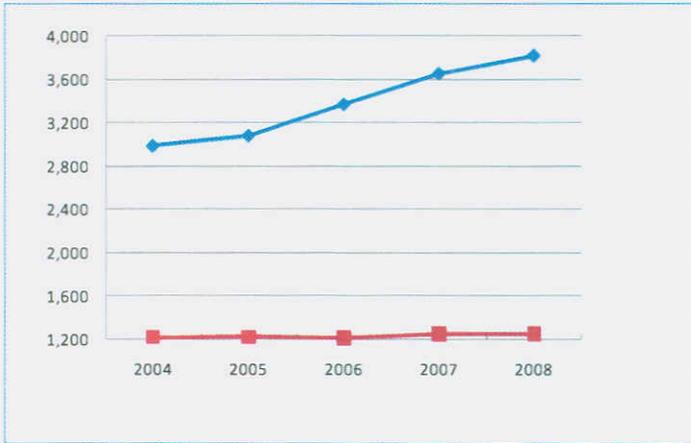
**Coal Creek – PT 483**



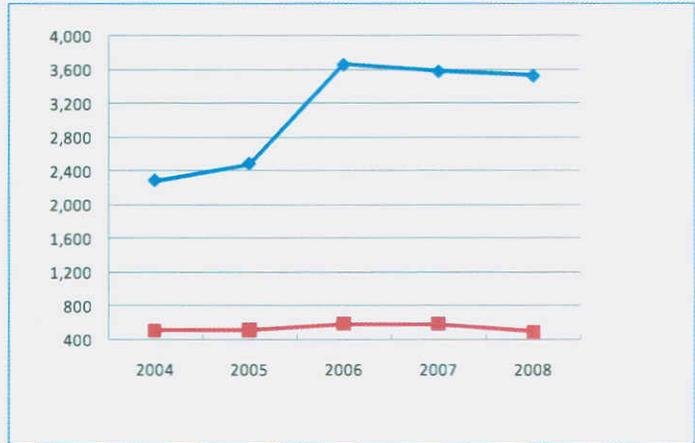
**KFx – PT 486**



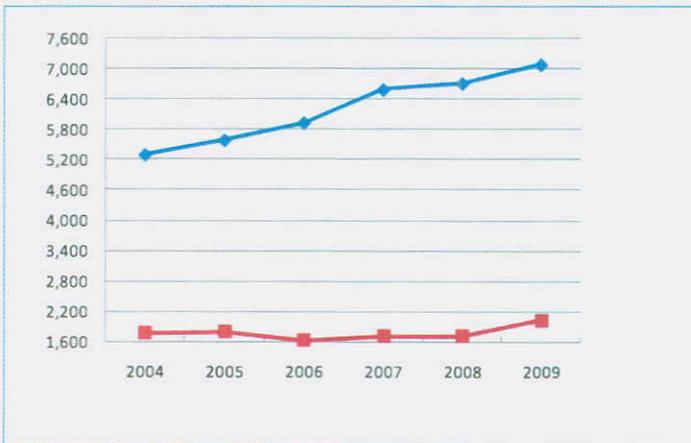
**Buckskin – PT 500**



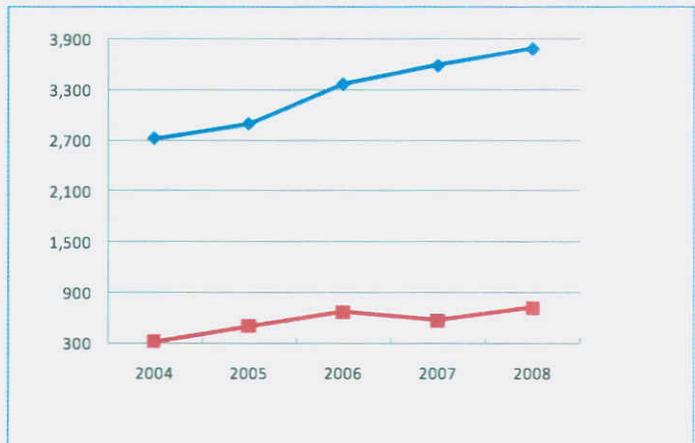
**Leucite Hills – PT 520**



**Antelope – PT 525**



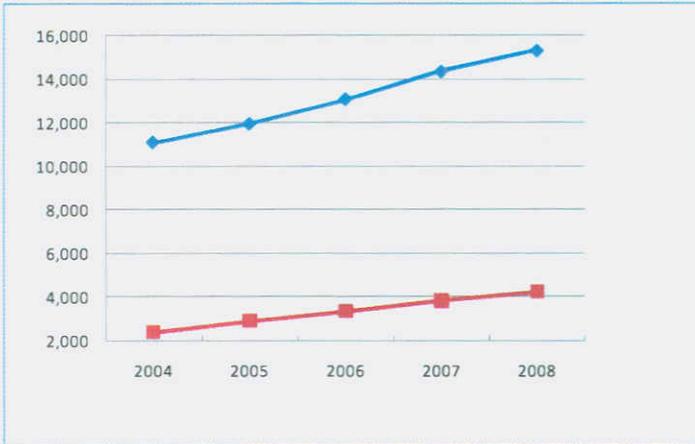
**North Rochelle – PT 550**



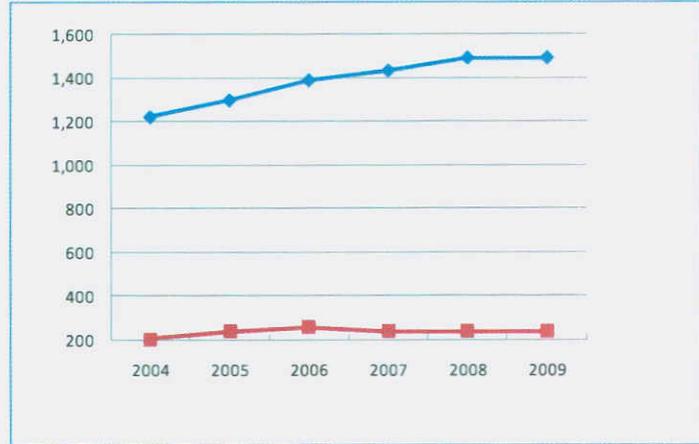
## ACTIVE COAL MINES

◆ Total Affected Acres     ■ Total Reclaimed Acres

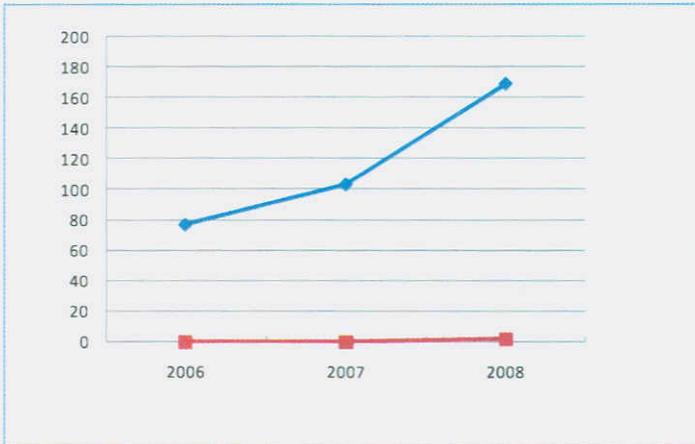
**NA/RM – PT569**



**Dry Fork – PT 599**



**Carbon Basin – PT 730**



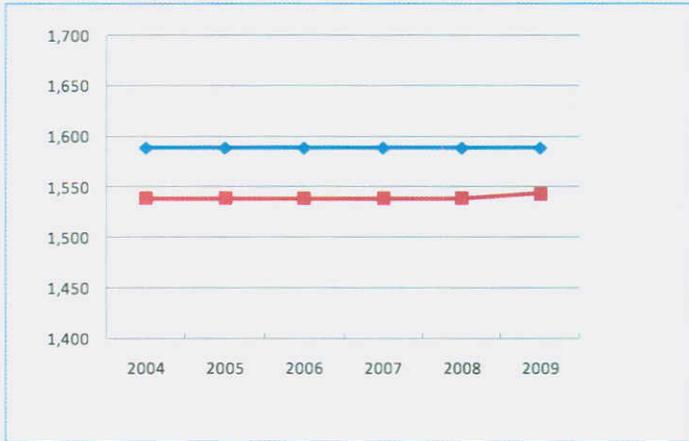
“Total Affected Acres” is defined as the cumulative acres of disturbed land, including current disturbance and all reclaimed areas. This number should only decrease when acres are removed from the permit.

“Total Reclaimed Acres” is defined as the total number of acres seeded with a permanent seed mix. Reclamation is complete, but not necessarily bond released. Active mines may re-disturb reclaimed areas, therefore it is possible for total reclaimed acres to decrease.

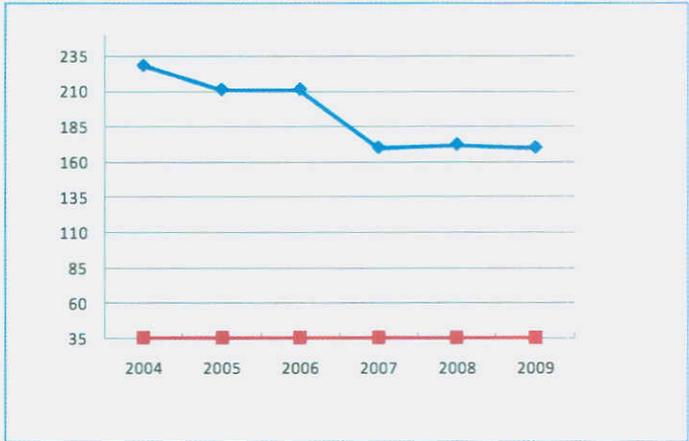
## INACTIVE OR IN-RECLAMATION COAL MINES

◆ Total Affected Acres     ■ Total Reclaimed Acres

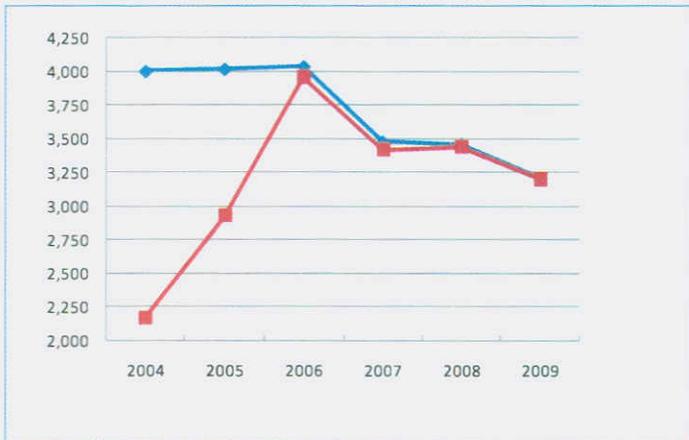
**Big Horn – PT 213**



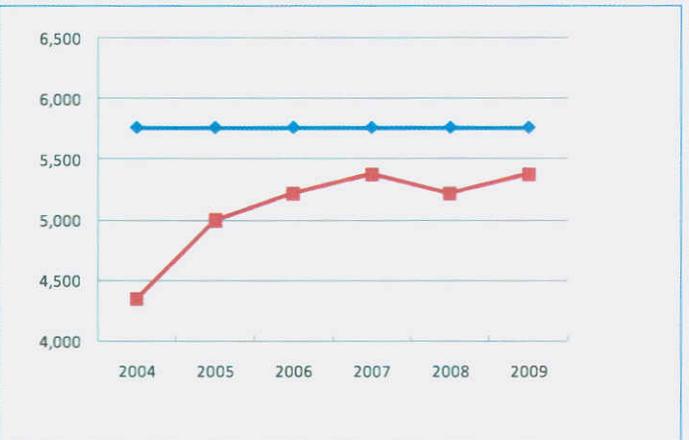
**New Stansbury – PT 264**



**Dave Johnston – PT 291**

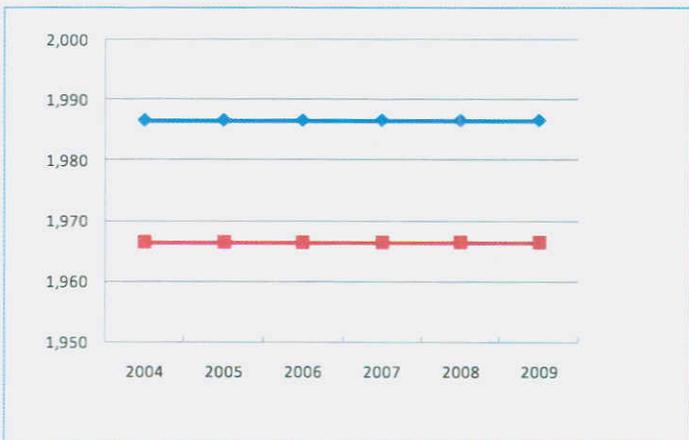


**Medicine Bow – PT 331**

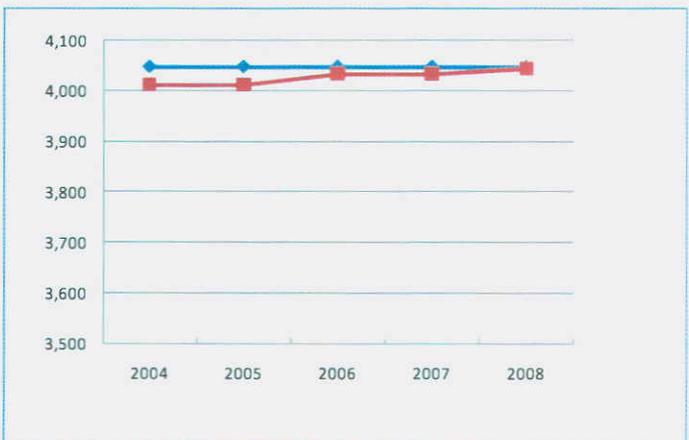


DJ has been removing acres from the permit area, accounting for declines in disturbed and reclaimed acres.

**EDC – PT 334**



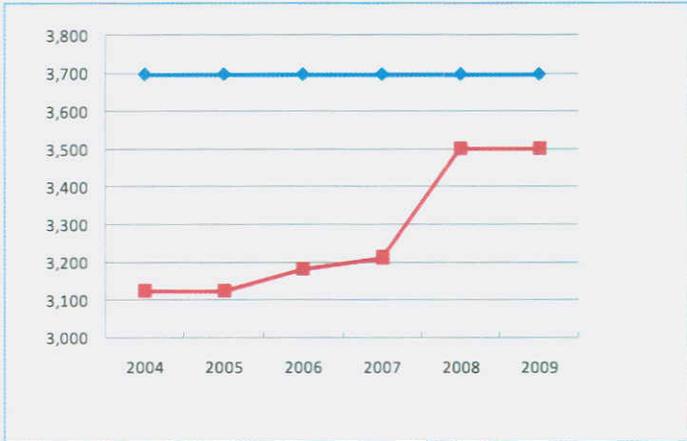
**Rosebud – PT 376**



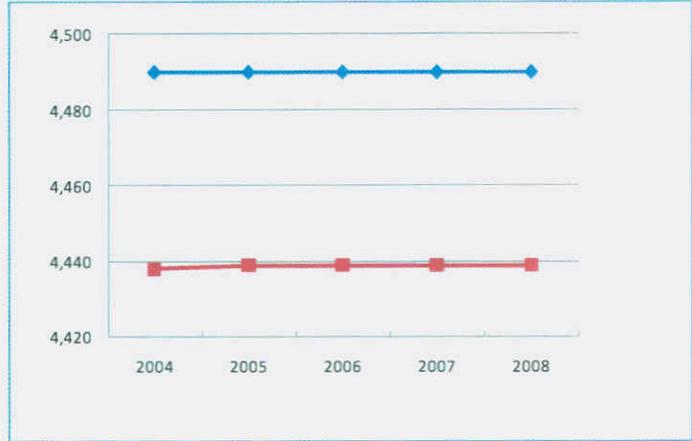
## INACTIVE OR IN-RECLAMATION COAL MINES



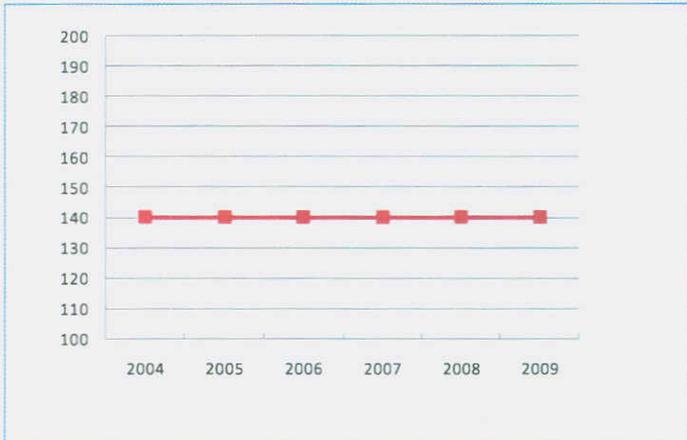
**Seminole II – PT 377**



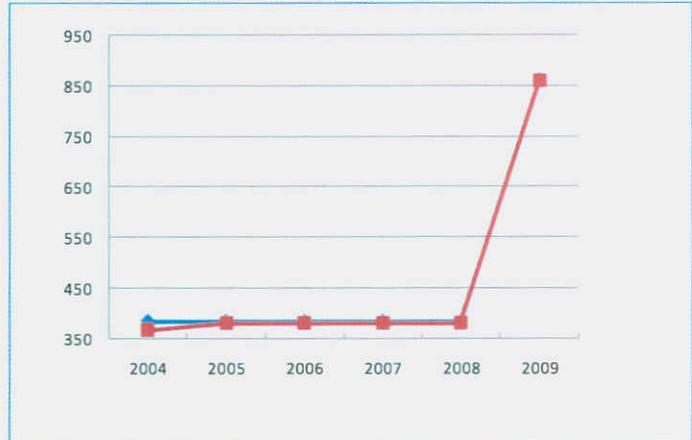
**Seminole I – PT 378**



**Ash Creek – PT 407**

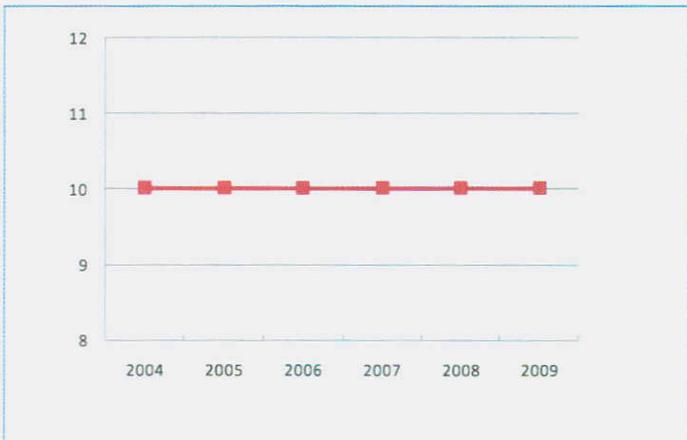


**Shoshone #1 – PT 477**

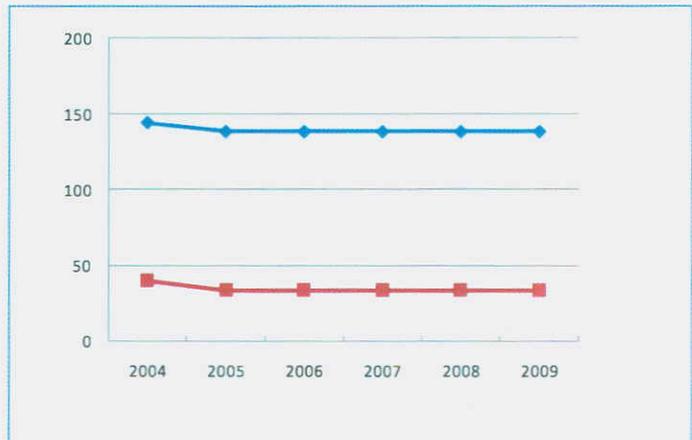


The Shoshone mine had not previously included the Rosebud transfer area in their reports (478.3 acres).

**Welch No. 1 – PT 497**



**Fort Union – PT 659**

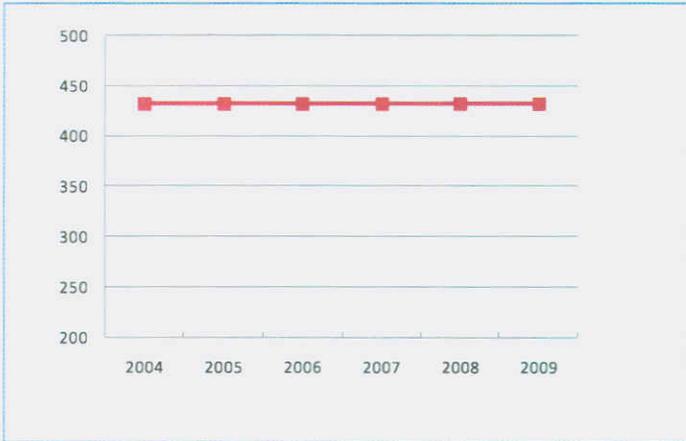


The disturbed acres and reclaimed acres lines lie on top of each other for the Ash Creek, Welch and Izita Mines.

## INACTIVE OR IN-RECLAMATION COAL MINES

◆ Total Affected Acres      ■ Total Reclaimed Acres

### Izita – PT 676



This permit was never mined.

## **APPENDIX C**

### **CFO Response to State Comments**

The Casper Field Office feels that the reclamation graphs provided by the LQD are helpful in analyzing reclamation at individual mines, and once these graphs are refined, will be even more useful.