



STATE OF
COLORADO

Simmons - DNR, Leigh <leigh.simmons@state.co.us>

West Elk MPDD Electronic Copy -- Confirm Receipt

Pinkham, Gretchen <gpinkham@osmre.gov>

Thu, May 2, 2019 at 8:26 AM

To: Desty Dyer <ddyer@blm.gov>, Leigh Simmons - DNR <leigh.simmons@state.co.us>, "Broyles, Levi -FS" <lbroyles@fs.fed.us>

Cc: "Shaeffer, Elizabeth" <eshaeffer@osmre.gov>

Good Morning,

Attached is an electronic copy of the West Elk Mining Plan Decision Document for Federal Leases COC-1362 and COC-67232 which has been sent to the Operator.

Please respond back to me confirming receipt of this email and the attachments.

Best,
Gretchen

Gretchen Pinkham

Natural Resource Specialist

Western Region

U.S. Office of Surface Mining/DOI

1999 Broadway, Suite 3320

Denver, CO 80202-3050

Work # (303) 293-5088

Fax # (303) 293-5032

2 attachments



20190502_West Elk_ASLM Approval Operator Notification Letter.pdf
88K



Mountain Coal Company_April 2019_MPDD COC 1362 and 67232.pdf
11918K



United States Department of the Interior



OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

Western Region
1999 Broadway St., Suite 3320
Denver, CO 80202-3050

May 2, 2019

CO-0021

Kathy Welt
Environmental Engineer III
Mountain Coal Company, LLC
West Elk Mine
5174 Highway 133
Somerset, CO 81434

Ms. Welt,

On April 19, 2019, the Department of the Interior approved a mining plan modification for Federal leases COC-1362 and COC-67232 at the Mountain Coal Company's, West Elk Mine. The mining plan action relates to Federal lands associated with the Colorado Division of Reclamation, Mining and Safety's Decision Document approving Permit Revision No. 15 on November 15, 2018.

I have enclosed a disk containing a copy of the mining plan decision document for this modification to the mining plan. Please read the terms and conditions of the mining plan approval document contained therein. Mining and reclamation operations must be conducted in accordance with both the Utah State permit and the enclosed mining plan approval.

If you have questions please contact Gretchen Pinkham, telephone number (303) 293-5088 and email gpinkham@osmre.gov.

Enclosure

CC:

Leigh Simmons
Environmental Protection Specialist
Department of Natural Resources
Colorado Division of Reclamation Mining and Safety
1313 Sherman Street, Room 215
Denver, CO 80203

Desty Dyer, Mining Engineer
Bureau of Land Management, Uncompahgre Field Office
2465 South Townsend
Montrose, CO 81401

Levi Broyles
Paonia District Ranger
Forest Service, Grand Mesa, Uncompahgre and Gunnison National Forests
2250 South Main Street
Delta, CO 81416

MINING PLAN DECISION DOCUMENT

Mountain Coal Company, LLC

West Elk Mine

Federal Leases COC-1362 and COC-67232

Gunnison County, Colorado



**U.S. Department of the Interior
Office of Surface Mining Reclamation and Enforcement**

Approved April 2019

**Mining Plan Modification
West Elk Mine
Federal Coal Leases COC-1362 and COC-67232**

Fact Sheet

1. This mining plan modification will add approximately 1,720 acres of Federal coal to the mining plan approval area of Mountain Coal Company's, leases COC-1362 (800 acres) and COC-67232 (920 acres)(200 acres were previously-approved and are included within the current permit area). The mine is located approximately one miles east of Somerset, in Gunnison County, Colorado.
2. Approval of this mining plan modification will authorize mining of approximately 10 million tons of Federal coal.
3. Approval of this mining plan modification will add 1,720 acres of Federal coal beneath Federal surface to the mining plan approval area.
4. The projected average annual production rate is estimated to be 4.5 million tons per year, and the maximum production rate will be no more than 8.5 million tons per year. The current average production rate from Permit No. C-1980-007 ranges from 4.7 to 6.5 million tons per year.
5. The permit area for Colorado Permit No. C-1980-007 will increase by 2,820 acres (1,720 Federal acres and 1,100 private acres).
6. Surface disturbance within the State permit will increase to a total of approximately 54 acres.
7. The mining operation uses room and pillar development and longwall retreat mining recovery methods.
8. The current number of employees at the mine is 300 and the number of workers likely to be added a result of the proposed mining plan is up to 50 employees.
9. The current land uses of rangeland and woodland supporting big game (deer and elk) and livestock (cattle and sheep) will not change within the permit and mining plan area.
10. The CDRMS determined that a reclamation performance bond in the amount of \$14,401,088 made payable to both the State of Colorado and the United States, is adequate for the State Permit and this mining plan modification. Currently MCC holds two surety bonds in the amount of \$15,000,000.
11. The proposed action will add approximately 1.5 to 2 years to the life of the mine.
12. On September 10, 2018, High Country Conservation Advocates, WildEarth Guardians, Sierra Club, Center for Biological Diversity and Wilderness Workshop appealed to the 10th Circuit Court of Appeals the August 10, 2018 decision of the U.S. District Court of Colorado affirming BLM and U.S. Department of Agriculture decisions authorizing the

Colorado Roadless Rule North Fork Exemption and two coal lease modifications at the West Elk Mine for Federal leases COC-1362 and COC-67232. The appeal is pending.

13. The applicant requests a decision by February, 2019 in order to avoid major impacts on operations.

Content

CONTENTS

West Elk Mine
Federal Leases COC-1362 and COC-67232
Mining Plan Decision Document

1. Memoranda
 - a. Memorandum from the Acting Director, Office of Surface Mining Reclamation and Enforcement (OSMRE), to the Assistant Secretary, Land and Minerals Management
 - b. Memorandum from the Regional Director, Western Region, to the Acting Director, OSMRE
2. Location Maps
3. Chronology
4. National Environmental Policy Act Compliance Documents
5. Documentation of Consultation, Concurrence, and Compliance:
 - a. Bureau of Land Management
 - b. U.S. Forest Service
 - c. State Historic Preservation Office
 - d. U.S. Fish and Wildlife Service
6. Mining Plan Approval Document
7. State Findings and Decision

Colorado Division of Reclamation, Mining and Safety (CDRMS), SMCRA FINDINGS, Application for Permit Revision 15 for Underground Coal Mining Permit C-1980-007, West Elk Mine, Gunnison County, CO

Memoranda



United States Department of the Interior

OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

Washington, D.C. 20240



MEMORANDUM

To: Joseph R. Balash
Assistant Secretary
Land and Minerals Management
U.S. Department of the Interior

From: Glenda H. Owens *Glenda H. Owens*
Deputy Director, Exercising the Authority of the Director, Office of Surface Mining
Reclamation and Enforcement
U.S. Department of the Interior

Subject: Recommendation for Approval, Without Special Conditions, of the proposed Mining
Plan Modification for Federal Leases COC-1362 and COC-67232 at the Mountain Coal
Company, LLC - Permit No. C-1980-007, located in Gunnison County, Colorado

I recommend approval, without special conditions, of this mining plan modification for Federal Leases COC-1362 and COC-67232 at the Mountain Coal Company, LLC (MCC) West Elk Mine under the Mineral Leasing Act of 1920, as amended. This mining plan approval supplements all previous approvals for the West Elk Mine.

My recommendation to approve MCC's Mining Plan modification is based on:

- (1) MCC's complete permit application package (PAP), including the Resource Recovery and Protection Plan (R2P2);
- (2) Compliance with the National Environmental Policy Act of 1969;
- (3) Documentation assuring compliance with applicable requirements of other Federal laws, regulations, and executive orders;
- (4) Comments and recommendations or concurrence of other Federal agencies, and the public;
- (5) The Bureau of Land Management's findings and recommendations regarding the R2P2, the Federal lease requirements, and the Mineral Leasing Act; and,
- (6) Findings and recommendations of the Colorado Division of Reclamation, Mining and Safety, regarding the PAP and the State program.

The Secretary may approve a mining plan for Federal leases under 30 U.S.C. 207(c) and 1273(c). In accordance with 30 CFR Chapter VII, Subchapter D, I find that the proposed mining plan modification is in compliance with all applicable laws and regulations. The decision document for the proposed mining plan action is attached.

Attachment



United States Department of the Interior

OFFICE OF SURFACE MINING
Reclamation and Enforcement
Western Region Office
1999 Broadway, Suite 3320
Denver, CO 80202-3050



Memorandum

MAR 12 2019

To: Glenda H. Owens
Deputy Director, Exercising the Authority of Director, Office of Surface
Mining Reclamation and Enforcement
U.S. Department of the Interior

Through: Sterling Rideout *[Signature]*
Assistant Director, Program Support

From: David Berry *[Signature]*
Regional Director, Western Region

Subject: Recommendation for Approval, Without Special Conditions, of the
proposed Mining Plan Modification for Federal Leases COC-1362 and
COC-67232 at the Mountain Coal Company, LLC - Permit No. C-1980-
007, located in Gunnison County, Colorado

I. Recommendation

I recommend approval, without special conditions, of a mining plan modification for Federal Leases COC-1362 and COC-67232 at the West Elk Mine, owned by Mountain Coal Company (MCC). This is a mining plan modification for an underground coal mine permitted under the Federal Lands Program, the approved Colorado Division of Reclamation, Mining and Safety (CDRMS), and the State-Federal cooperative agreement. This mining plan approval supplements all previous approvals for the West Elk Mine.

My recommendation to approve this mining plan modification is based on:

- (1) MCC's complete permit application package (PAP) including the Resource Recovery and Protection Plan (R2P2);
- (2) Compliance with the National Environmental Policy Act of 1969;
- (3) Documentation assuring compliance with applicable requirements of other Federal laws, regulations, and executive orders;

(4) Comments and recommendations or concurrence of other Federal agencies and the public;

(5) The findings and recommendations of the Bureau of Land Management (BLM) with respect to the R2P2 and other requirements of the lease and the Mineral Leasing Act; and,

(6) The findings and recommendations of CDRMS regarding the PAP and the State program.

If you concur with this recommendation, please sign the attached memorandum to the Assistant Secretary, Land and Minerals Management (ASLM).

II. Background

The West Elk underground coal mine is located approximately 1 mile east of Somerset, in Gunnison County, Colorado. The mine has been in operation since 1982. The operator will finish mining on the currently-approved mining plan in an estimated 5 years in 2023. The mining operation uses Room and Pillar development and Longwall retreat mining recovery methods. The average production rate for the entire West Elk Mine is 4.5 million tons per year (Mtpy). The maximum production rate for the entire West Elk Mine is 8.5 Mtpy. The mine currently employs 300 full-time employees.

The West Elk Mine currently consists of seven different mining permits, permitted by the CDRMS; D-044569, C-0117192, COC-56447, COC-54558, COC-1362, COC-67011, and COC-67232. CDRMS Permit No. C-1980-007 Revision 15 includes the two Federal Coal Lease modifications COC-1362 and COC-67232.

The Department of the Interior initially approved a mining plan for the West Elk Mine Permit No. C-1980-007 for Federal leases D-044569, C-0117192, and C-1362 on July 24, 1981. Since the original mining plan approval, there have been thirteen mining plan modifications for the West Elk Mine.

1. A mining plan modification for portions of Federal leases C-1362, C-0117192, and D-044569 was approved on August 16, 1985.
2. A mining plan modification for a portion of Federal lease C-1362 was approved on September 27, 1985.
3. A mining plan modification for portions of Federal leases C-1362, C-0117192, and D-044569 was approved on November 18, 1985.
4. A mining plan modification for portions of Federal leases C-1362, C-0117192, and D-044569 was approved on December 22, 1986.
5. A mining plan modification for new Federal lease COC-54558 was approved on December 21, 1994.

6. A mining plan modification for a portion of Federal lease C-1362 and a portion of a new Federal lease COC-67232 was approved on April 26, 1996.
7. A mining plan modification for a portion of Federal lease COC-67232 was approved on June 13, 2000.
8. A mining plan modification for new Federal lease COC-67011 was approved on June 21, 2005.
9. A mining plan modification for the remainder of Federal lease C-1362 was approved on June 30, 2006.
10. A mining plan modification for the construction of the Deer Creek Shaft (and Escapeway) on Federal lease C-1362 was approved on October 31, 2007.
11. A mining plan modification for new Federal lease COC-67232 was approved on June 10, 2008.
12. A mining plan modification to install sixteen methane drainage wells on fourteen well pads and to construct 1.52 miles of access roads disturbing a total of ten surface acres of Federal leases C-1362 and COC-56447 was conditionally approved on July 31, 2008.¹
13. A mining plan modification for Federal leases C-1362 and COC-67232 to install up to 137 methane drainage wells on 116 wells pads and to construct 8.52 miles of access roads disturbing 47.5 surface acres over twelve years was approved on January 15, 2009.

The CDRMS approved Revision 15 to Permit No. C-1980-007 on November 15, 2018. Before approval of Revision 15, the state permit area within Permit No. C-1980-007 consisted of approximately 17,235 acres, of which approximately 5,397 acres are private and 11,838 are Federal.

Before approval of the Permit No. C-1980-007 Revision 15, there were approximately 17,235 acres approved in the state permit area, of which 11,838 acres are on Federal lands and 5,397 are private. It also included 543 acres of surface disturbance for surface facilities, access roads, exploration and monitoring wells, methane drainage wells, and other projects.

Approximately 55.4 million tons of Federal coal were previously approved for mining in the currently approved mining plan area within Permit No. C-1980-007 and MCC is currently mining the coal.

The post mining land use for the currently-approved mining plan area is rangeland and woodland supporting big game (deer and elk) and livestock (cattle and sheep).

¹ Condition 8 of the July 31, 2008, mining plan conditional approval read, "If, under a bilateral agreement with the Federal lease, the Bureau of Land Management amends Federal leases C-1362 and COC-56477 to authorize the capture of coalbed gas that would otherwise be vented as required by the Mine Safety and Health Administration, the operator shall capture the vented coalbed gas if such capture is economically feasible and does not jeopardize the safety and health of the miners. The capture operations must comply with the terms of the amended leases and all applicable laws, and regulations, including those administered by the U.S. Forest Service and the Colorado State program."

On August 10, 2018, the U.S. District Court for the District of Colorado affirmed the Agencies' decisions in *High Country Conservation Advocates v. Forest Service* (17-cv-03025-PAB). The Plaintiffs in that case appealed that decision to the 10th Circuit Court of Appeals. The appeal is pending, however, the leases are in effect and it is appropriate for OSMRE to adopt the Supplemental Final Environmental Impact Statement (SFEIS). Accordingly, OSMRE recommends approval without conditions of the mining plan modification to the ASLM. This action can be implemented following approval of the MPDD by the ASLM.

III. The Proposed Action

This mining plan action consists of a mining plan modification for Federal coal leases COC-1362 and COC-67232. Specifically, the mining plan action proposed by MCC expands underground room and pillar development and Longwall retreat mining recovery methods at the West Elk Mine into the following Federal coal lands. The area where the proposed underground mining and reclamation action will occur is legally described as:

Lease COC-1362
Sixth Principal Meridian, Colorado

T. 14 S., R. 90 W.,
Sec. 10, NE1/4 SW1/4, and SE1/4;
Sec. 11, S1/2 NW1/4, and SW1/4;
Sec. 14, NE1/4 NW1/4, NW1/4 NW1/4, SW1/4 NW1/4, W1/2 SE1/4 NW1/4,
W1/2 NE1/4 SW1/4, and NW1/4 SW1/4;
Sec. 15, E1/2 NE1/4, and N1/2 SE1/4.

Containing approximately 800 acres, more or less, in Gunnison County, Colorado.

Lease COC-67232
Sixth Principal Meridian, Colorado

T. 14 S., R. 90 W.,
Sec. 11, SW1/4 NE1/4, W1/2 S1/4, and SE1/4 SE1/4;
Sec. 14, NE1/4, E1/2 SE1/4 NW1/4, E1/2 NE1/4 SW1/4, S1/2 SW1/4, and SE1/4;
Sec. 15, SE1/4 SE1/4;
Sec. 22, E1/2 NE1/4;
Sec. 23, NW1/4 NE1/4, and NW1/4.

Containing approximately 920.00 acres, more or less, in Gunnison County, Colorado.

Attachment A of the mining plan approval shows the E Seam consisting of approximately 1,720 acres in Federal Coal Leases COC-1362 and COC-67232. Approval of this mining plan modification will authorize mining of approximately 10 million tons of recoverable Federal coal in the E Seam.

Federal coal from COC-1362 and COC-67232 would be mined over approximately two years. Receiving Secretarial approval to mine coal within COC-1362 and COC-67232 would extend the life-of-mine by approximately 1.5 to 2 years until approximately 2021.

The current average production rate for Permit No. C-1980-007 ranges from 4.5 to 6.5 million tons per year. The maximum production rate for the entire West Elk Mine is approved at 8.5 Mtpy based on the current Colorado Air Pollution Control Division Minor Source Permit to Operate, Permit No(s). 09GU1382, 10GU1130, and 13GU1462.

The number of people employed at the mine would increase from approximately 300 to approximately 350 employees.

State approval of Revision 15 for Permit No. C-1980-007 adds 2,820 acres to the permit area, of which 1,720 are federal acres and 1,100 are private acres. State approval of Permit No. C-1980-007 Revision 15 adds approximately 54 disturbance acres, of which all occur on federal lands.

Approval of this Federal mining plan modification will add 1,720 Federal coal and Federal surface acres to the currently-approved mining plan.

CDRMS currently has 3 active stipulations that apply to the permit, which can be found in the *State Findings and Decision* section of this mining plan decision document. The stipulations are 1) upon closure to install water-tight seals within the mine; 2) prior to any disturbance at the upper waste site to install several electronic tilt meter tubes downslope; and 3) MCC to inform the Montrose Office of the Colorado Division of Water Resources of placement of all new survey monuments.

The post mining land use within the permit area would not change from rangeland and woodland supporting big game (deer and elk) and livestock (cattle and sheep).

IV. Review Process

The CDRMS reviewed the PAP under the Colorado Regulatory program, the Federal lands program (30 CFR Chapter VII, Subchapter D), and the Colorado cooperative agreement (30 CFR 906). Pursuant to the Colorado State Program and the cooperative agreement, CDRMS approved the Permit No. C-1980-007 Revision 15 on September 4, 2018.

OSMRE consulted with other Federal agencies for compliance with the requirements of applicable Federal laws. Their comments and concurrences can be found in the *Documentation of Consultation, Concurrence, and Compliance* section of this mining plan decision document.

The Bureau of Land Management (BLM) reviewed the Resource Recovery and Protection Plan (R2P2) for compliance with the Mineral Leasing Act of 1920, 30 U.S.C. 181 et seq. as amended and 43 CFR Part 3480. The BLM found that maximum economic recovery of the Federal coal will be achieved in a memorandum dated August 6, 2018.

A Biological Assessment was prepared by the United States Forest Service (FS) considering all known endangered or threatened species in the area for Federal leases COC-1362 and COC-67232. Due to “may affect, not likely to adversely affect” determinations for Canada Lynx and water depletions related to the four endangered Colorado River fish, informal consultation with the Fish and Wildlife Service (FWS) was completed on June 16, 2010 (ES/CO: FS/GMUG/Paonia RD; Tails 65413-2010-F-0109). The FWS concurred with the FS’s findings. OSMRE requested and received an updated official species list for the project area on July 24, 2018. OSMRE received concurrence from the FWS that it has “no concerns” with the Project based on the FS previous consultation for Federal leases COC-1362 and COC-67232 on August 8, 2018. Additionally, the West Elk Mine PAP includes commitments to develop and implement species-specific protective measures if threatened or endangered species are determined to be present in the vicinity of the mine.

A total of three previous cultural resource inventories have been conducted within the proposed mining plan modification area. These inventories (Class III intensive level surveys) covered approximately 140 acres. None of these previous cultural resource inventories has identified any cultural resources within the mining plan modification area. A Class II survey was completed in August 2018 and surveyed approximately 951 acres of the lease modification area. It was determined that the area did not contain any cultural resources. Therefore, no effect on historic properties is anticipated due to the FS and BLM lease stipulations.

On August 27, 2017, OSMRE initiated Section 106 consultation with Colorado State Historic Preservation Office (SHPO). On October 3, 2018, OSMRE received concurrence from the SHPO on the finding of “no historic properties affected”.

The Grand Mesa, Uncompahgre, Gunnison National Forest Office concurred with the proposed mining plan modification with respect to Federal surface lands within the proposed mining plan area in a letter dated July 31, 2018.

On March 15, 2019, OSMRE sent letters to the following American Indian Tribes to identify any religious concerns or other issues to the: Apache Tribe of Oklahoma; Cheyenne and Arapaho Tribes of Oklahoma; Cheyenne River Sioux Tribe; Comanche Nation of Oklahoma; Crow Creek Sioux Tribe; Crow Nation; Eastern Shoshone Tribe (Wind River Reservation); Fort Sill Apache Tribe; The Hopi Tribe; Jicarilla Apache Nation; Kewa Pueblo; Kiowa Tribe of Oklahoma; Mescalero Apache Tribe; Navajo Nation; Northern Arapaho Tribe; Northern Cheyenne Tribe; Oglala Sioux Tribe; Ohkay Owingeh (Pueblo of San Juan); Osage Nation; Paiute Indian Tribe of Utah; Pawnee Nation of Oklahoma; Pueblo of Acoma; Pueblo de Cochiti; Pueblo of Isleta; Pueblo of Jemez; Pueblo of Laguna; Pueblo of Nambe; Pueblo of Picuris; Pueblo of Pojoaque; Pueblo of San Felipe; Pueblo of San Ildefonso; Pueblo of Sandia; Pueblo of Santa Ana; Pueblo of Santa Clara; Pueblo of Taos; Pueblo of Tesuque; Pueblo of Zia; Rosebud Sioux Tribe; San Juan Southern Paiute Tribe; Shoshone-Bannock Tribes; Southern Ute Indian Tribe; Standing Rock Sioux Tribe; Three Affiliated Tribes; Ute Indian Tribe (Uintah and Ouray Reservation); Ute Mountain Ute Tribe; Wichita and Affiliated Tribes; Ysleta del Sur Pueblo; Zuni Tribe of the Zuni Reservation. The letters requested comments and continued consultation with the tribes concerning OSMRE's Federal action of making a recommendation to the ASLM to approve, disapprove, or approve with conditions the proposed mining plan modification for the Permit No. C-1980-007 Revision 15. No comments have been received and OSMRE did not identify any American Indian religious concerns or traditional cultural properties.

OSMRE has determined that approval of this mining plan modification will not have a significant impact on the quality of the human environment with implementation of FS and BLM lease stipulations. OSMRE has adopted the final supplemental environmental impact statement (FSEIS) prepared by FS, titled: *Supplemental Final Environmental Impact Statement Federal Coal Lease Modifications COC-1362 & COC-67232 (including on-lease exploration plan) August 2017*, and the OSMRE Record of Decision (ROD), describe the impacts that may result from approval of this new mining plan modification and its alternatives. The ROD and supporting EIS are included in this mining plan modification decision document.

OSMRE was a cooperating agency and conducted an independent review of the FS SFEIS. All of OSMRE's comments and suggestions were satisfied in the SFEIS. Therefore, OSMRE is not required to recirculate the SFEIS (40 CFR § 1506.3). OSMRE notified the United States Environmental Protection Agency (EPA) of its intent to Adopt and EPA and OSMRE released a Federal Register Notice on March 8, 2019. On June 1, 2018 OSMRE received a letter from WildEarth Guardians, Center for Biological Diversity, and Sierra Club providing comments on the Federal Mining Plan Modification Review. The comments requested an analysis of site-specific impacts from methane ventilation boreholes and a new alternative analyzing methane flaring. OSMRE has reviewed the

comments and found that the SFEIS did sufficiently address site-specific impacts and a new alternative for methane flaring was not economically feasible.

OSMRE's review of the proposed action did not identify any issues that required resolution via the addition of special conditions to the mining plan approval.

CDRMS received proof of publication of MCC's public notice on May 3, 2018. MCC notified the public of the availability of the administratively-complete Permit No. C-1980-007 Revision 15 for review, by publishing four consecutive weekly notices in the *Delta County Independent*. The last publication date was May 2, 2018. These notices notified the public of the availability of the administratively-complete PAP for review over a 30 day comment period. During the 30 day public comment period following the last publication, the Division received a number of comments from concerned citizens, including a letter dated June 1, 2018, with a packet of supporting documentation from WildEarth Guardians, the Center for Biological Diversity, and the Sierra Club. The June 1, 2018 letter included a request for an informal conference and a site visit. The Colorado Mined Land Reclamation Board heard testimony regarding the West Elk Mine, Revision 15 on October 24, 2018. At the hearing the Board upheld CDRMS's proposed decision to approve Revision 15. The decision became final on November 15, 2018 with the service of the Board's Findings of Fact, Conclusions of Law, and Order.

CDRMS determined that a reclamation performance bond in the amount of \$14,401,088 made payable to both the State of Colorado and the United States, is adequate for the State Permit and this mining plan modification. Currently, MCC holds two surety bonds in the amount of \$15,000,000.

A chronology of events related to the processing of both the PAP and the proposed mining plan decision is included in this mining plan modification decision document.

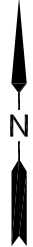
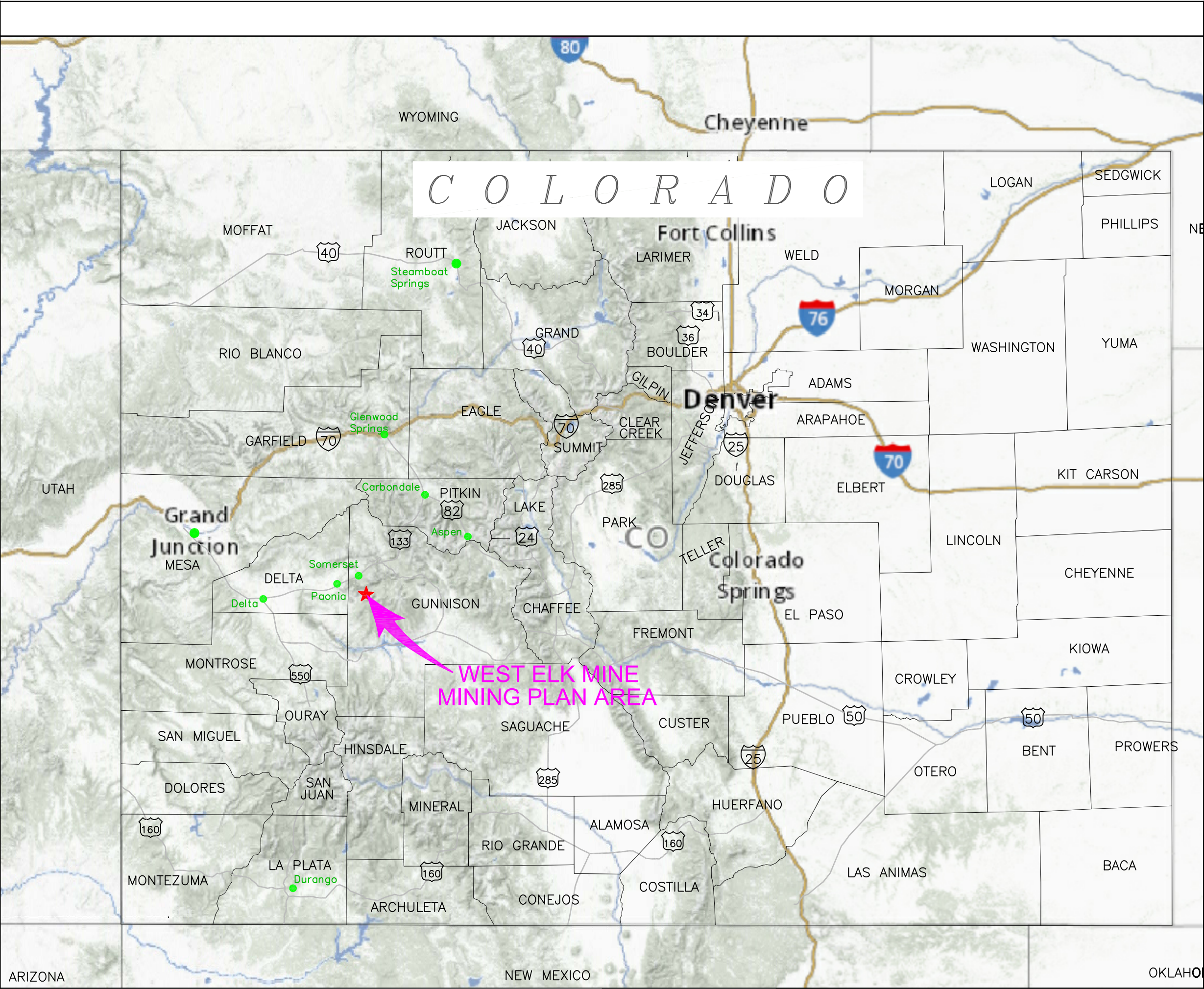
The content of OSMRE's decision record includes the following:

- The PAP submitted by MCC;
- CDRMS's Decision Document for the Permit No. C-1980-007 Revision 15, provided to OSMRE under the cooperative agreement;
- The environmental analysis document, titled *Supplemental Final Environmental Impact Statement for Federal Coal Lease Modifications COC-1362 & COC-67232 (including on-lease exploration plan) by U.S. Forest Service in August 2017*;
- The ROD prepared by OSMRE;

- Other documents prepared by CDRMS;
- The documents mentioned in this Memorandum and their corresponding correspondence.

Attachment

Location Maps



West Elk Mine, Mountain Coal Company, L.L.C. An Arch Coal Company
5174 HWY. 133 Somerset, CO 81434

**WEST ELK MINE
MINING PLAN AREA**

DRAWN BY:
GBG

SCALE:
NTS

DATE:
11/12/18

ACAD DWG NO.:
BVB PR-15 OSM-MAP.DWG

Chronology Of Events

CHRONOLOGY

West Elk Mine
Federal Leases COC-1362 and COC-67232
Mining Plan Decision Document

<u>DATE</u>	<u>EVENT</u>
December 1, 2017	The Bureau of Land Management (BLM) approved the modified leases COC-1362 and COC-67232.
March 29, 2018	The Mountain Coal Company, LLC submitted the permit application package (PAP) under the approved Colorado State Program to the Colorado Division of Reclamation, Mining and Safety (CDRMS) for a Permit Revision for the West Elk Mine.
April 5, 2018	The CDRMS determined that the West Elk Mine Permit No. C-1980-007 Revision 15 Permit Application Package (PAP) was administratively complete.
May 30, 2018	Office of Surface Mining Reclamation and Enforcement (OSMRE) determines that a Mining Plan Decision Document is required for the Permit No. C-1980-007, Revision 15.
May 3, 2018	The Mountain Coal Company published in the <i>Delta County Independent</i> the fourth consecutive weekly notice that an administratively complete Permit No. C-1980-007 Revision 15 was filed with the CDRMS.
July 24, 2018	OSMRE requested and received an updated official threatened & endangered species list from the United States Fish and Wildlife Service (FWS).
August 8, 2018	FWS stated no concerns with OSMRE's findings via letter.
August 6, 2018	The BLM provided its findings and recommendations on the approval of the Resource Recovery and Protection Plan.
September 4, 2018	CDRMS approved the PAP.
October 3, 2018	The State Historic Preservation Office concurs with OSMRE determination of "no historic properties affected."
March 12, 2019	The OSMRE Regional Director signed the Record of Decision (ROD).
March 12, 2019	The Regional Director, OSMRE Western Region recommended to the OSMRE Director, that the mining plan modification be approved.
March 15, 2019	OSMRE and EPA publish Federal Register Notice.
March 15, 2019	OSMRE notifies Tribes of Federal Register Notice publication.
March 13, 2019	The OSMRE Director recommended to the Assistant Secretary, Land and Minerals Management, that the mining plan modification

DATE

EVENT

April 19, 2019

be approved.

The Assistant Secretary, Land and Minerals Management approves the mining plan modification.

NEPA Compliance Documents

RECORD OF DECISION

Federal Coal Lease Modifications COC-1362 & COC-67232

Gunnison County, Colorado

Office of Surface Mining Reclamation and Enforcement

March 2019

1.0 Introduction

The Office of Surface Mining Reclamation and Enforcement (OSMRE) participated as a cooperating agency on the U.S. Forest Service (USFS) Supplemental Final Environmental Impact Statement (SFEIS) for Federal Coal Lease Modifications COC-1362 and COC-67232 (including on-lease exploration plan) at the West Elk Mine located in Gunnison County, CO. The Bureau of Land Management (BLM) also participated as a cooperating agency. The West Elk Mine is owned and operated by Ark Land LLC (Ark) and Mountain Coal Company (MCC). OSMRE has reviewed the mine plan included in Permit Revision 15 (PR 15) submitted to Colorado Division of Reclamation, Mining and Safety (CDRMS), and has concluded that the action is substantially similar to that analyzed in the SFEIS, all comments submitted by OSMRE on the SFEIS were addressed, and the environmental analysis completed in the SFEIS is adequate. OSMRE therefore adopts the SFEIS and has prepared this Record of Decision (ROD).

2.0 Background

2.1 U.S. Forest Service and Bureau of Land Management

A SFEIS for Federal Coal Lease Modifications COC-1362 & COC-67232 (including on-lease exploration plan) was prepared by Grand Mesa, Uncompahgre and Gunnison National Forests (GMUG) by USFS in August, 2017 and was adopted by the BLM in December, 2017. OSMRE and CDRMS participated as cooperating agencies.

The SFEIS supplements the Final EIS for coal lease modifications and incorporates and updates analyses from the BLM Environmental Assessment (EA) for the consideration of on-lease exploration. The EIS and EA were prepared in 2012 and 2013 respectively. In *High Country Conservation Advocates v. United States Forest Service*, 52 F. Supp. 3d 1174 (D. Colo. 2014) the United States District Court for the District of Colorado determined that portions of the environmental analyses were inadequate. The court vacated and enjoined the agency decisions, as well as the exception for temporary road building in the North Fork Coal Mining Area (NFCMA) under the Colorado Roadless Rule (CRR). *High Country Conservation Advocates v. United States Forest Service*, 67 F. Supp. 3d 1262 (D. Colo. 2014). The USFS prepared the SFEIS to address Court-identified deficiencies and to incorporate new information and policies since 2012. The SFEIS incorporates analysis and disclosure of proposed on-lease exploration and analyzes and discloses the impacts of modifying Federal coal leases COC-1362 and COC-67232 in response to applications received by the BLM Colorado State Office.

On February 04, 2015, USFS received a request from BLM to resume analysis of proposed modifications and stipulations to lease COC-1362 containing about 800 acres, and lease COC-67232, containing about 920 acres. Coal in these leases is mined at the West Elk Mine near Somerset, Colorado. Lease COC-67232 is held by Ark, and lease COC-1362 is held by MCC. The applications were made to ensure that compliant and super-compliant coal reserves are recovered and not bypassed. The BLM processed the lease modification applications pursuant to 43 CFR 3432.

and tree cutting, as allowed by the CRR, will likely be used to construct, operate, and maintain MVBs necessary for safety and incidental to underground mining. .

The NFCMA exemption was developed in the CRR (36 CFR Part 294). In compliance with these requirements, all coal leases containing NFS lands and respective subsequent lease modifications contain standard lease notice language in accordance with USFS Manual (FSM) 2820 (SFEIS, Table 2-1); "The permittee/lessee must comply with all the rules and regulations of the Secretary of Agriculture set forth at Title 36, Chapter II, of the Code of Federal Regulations governing the use and management of the NFS when not inconsistent with the rights granted by the Secretary of Interior in the permit." Lease stipulations have also been included that are specifically from the CRR (SFEIS, Table 2-1).

On December 11, 2017, the USFS Supervisor signed the ROD that gave consent to the BLM to modify coal leases underlying NFS land and prescribed stipulations to protect non-mineral surface resources. The USFS issued its Consent Decision on December 11, 2017 following resolution of an administrative appeal of the USFS SFEIS and ROD. The BLM adopted the USFS SFEIS and issued its ROD on December 15, 2017.

On December 15, 2017, groups again challenged the USFS and the Department of the Interior decisions authorizing the lease modifications, exploration plan and the Department of Agriculture's (USDA) final decision reinstating the CRR North Fork Valley coal mining exemption. On August 10, 2018, the court issued an order affirming the agencies' decisions. *High Country Conservation Advocates et al. v. U.S. Forest Service et al.*, Case No. 17-cv-3025-PAB (Dist. Colo.) The court determined that the agencies gave adequate explanations for dismissing an alternative that protected Pilot Knob and an alternative that required methane flaring. Additionally, the court held that the USDA included adequate baseline data in its CRR NEPA analyses (including the previous CRR EIS which the USDA incorporated by reference). The court determined that the agencies appropriately considered the social cost of carbon which was used in the CRR rulemaking NEPA analysis and included the coal within the lease modifications. Additionally, the court did not agree with the plaintiffs' argument that the SCC analysis in the CRR NEPA was outdated. An appeal of the decision is pending. *High Country Conservation Advocates et al. v. U.S. Forest Service et al.*, Appellate Case: 18-1374 (10th Cir.)

2.2 Colorado Division of Reclamation, Mining and Safety

CDRMS is the regulatory authority (RA) for coal mines in Colorado that occur on state and private lands. As provided for under the Surface Mining Control and Reclamation Act of 1977 (SMCRA), in 1980, OSMRE approved the State of Colorado's coal Regulatory Program, authorized to issue permits to conduct coal mining and reclamation operations in Colorado. CDRMS manages its coal Regulatory Program under SMCRA and the Colorado Surface Coal Mining Control Act of 1976. CDRMS has the authority and responsibility to:

- Make decisions to approve SMCRA mining permits

- Consult with Federal land management agencies to determine if permit revisions will adversely affect Federal resources and are consistent with that agency's land use plans, Federal laws, regulations and executive orders (EOs) for which it is responsible, and
- Regulate coal mining under regulations of the Colorado Mined Land Reclamation Board for Coal Mining.

Coal leaseholders in Colorado must submit a Permit Application Package (PAP), or permit revision application, to CDRMS for proposed mining and reclamation operations. If the PAP includes Federal lands, the CDRMS must notify OSMRE that the PAP is administratively complete and ready for OSMRE's review. CDRMS determined the PAP was administratively complete on April 5, 2018. CDRMS reviews the PAP to ensure that the application complies with the permitting requirements and that the coal mining operation would meet Colorado's performance standards. CDRMS is required to work with the coal company until the permit or permit revision can be approved unless prohibited by law.

2.3 Office of Surface Mining Reclamation and Enforcement

The Field Operations Branch of OSMRE's Western Region is responsible for the Federal Lands Program and the preparation of mining plan decision documents for review by the Assistant Secretary for Land and Minerals Management (ASLM). When the RA informs OSMRE of a permit application or revision occurring for leased Federal coal and/or Federal surface, OSMRE reviews the PAP to ensure it contains the necessary information to comply with the coal lease, the Mineral Leasing Act of 1920 (MLA), the National Environmental Policy Act (NEPA), and other applicable Federal laws and their attendant regulations. The ASLM must approve mining and reclamation plans on lands containing leased Federal coal. Operations cannot commence until this approval is granted. Pursuant to 30 CFR Part 746, OSMRE must determine if the permit revision requires a mining plan modification. If it does, OSMRE prepares a mining plan decision document (MPDD) for review by the ASLM. On May 30, 2018, OSMRE determined that the mine plan included in PR 15 required a mining plan modification. . 30 CFR § 740.4(b) and 746.13 require the OSMRE to provide a MLA MPDD recommendation for Secretarial approval. If a MPDD is deemed necessary, pursuant to 30 CFR 746, OSMRE must:

- For new mining plans, or for existing approved mining plans that are proposed to be modified, prepare and submit to the ASLM a MPDD recommending approval, disapproval, or approval with condition(s) of the proposed mining plan. OSMRE's recommendation is based, at a minimum, upon:
 1. The PAP
 2. Information prepared in compliance with the NEPA
 3. Documentation assuring compliance with the applicable requirements of Federal laws, regulations, and EOs other than the NEPA
 4. Comments and recommendations or concurrence of other Federal agencies and the public

5. Findings and recommendations of the BLM with respect to the Resource Recovery and Protection Plan (R2P2), Federal lease requirements, and the MLA
6. Findings and recommendations of the CDRMS with respect to the mine permit application and the Colorado State Program; and
7. The findings and recommendations of the OSMRE with respect to the additional requirements of 30 CFR Chapter VII, Subchapter D.

To assist with assuring compliance with other Federal laws, regulations, and EOs, the OSMRE also reviews, at a minimum, the following documents to make its recommendation to the ASLM:

- Information/correspondence concerning the U.S. Fish and Wildlife Service (USFWS) Section 7 consultation for threatened and endangered (T&E) species potentially affected by the proposed mining plan under the Endangered Species Act of 1973 (ESA); and
- National Historic Preservation Act of 1966 (NHPA) Section 106 consultation for the affected area.

The ASLM must review the MPDD and decide whether to approve the mining plan, and if approved, what, if any, conditions may be needed.

3.0 Purpose and Need

The purpose of the Proposed Action is established by the MLA, as amended, which requires the evaluation of MCC's proposed Mining Plan Modification for PR-15 to continue underground mining and reclamation operations to develop Federal coal lands included in Federal Coal Leases COC-1362 and COC-67232. The OSMRE is the agency responsible for making a recommendation to the ASLM to approve, disapprove, or approve with conditions the proposed Mining Plan Modification under 30 CFR. The ASLM will decide whether the Mining Plan Modification is approved, disapproved, or approved with conditions.

The purpose of this action is to evaluate the environmental effects of coal mining on the proposed portions of Federal Coal Leases COC-1362 and COC-67232 within the West Elk Mine, which will assist the OSMRE in developing a recommendation to the ASLM whether to approve, disapprove, or approve with conditions the Federal Mining Plan Modification. ASLM approval of the Federal Mining Plan Modification is necessary to mine the reserves.

The need for this action is to provide MCC the opportunity to mine the Federal coal obtained under Federal Coal Leases COC-1362 and COC-67232 (issued by the BLM in 2017) located at the West Elk Mine.

4.0 Decision

It is OSMRE's decision to adopt the USFS GMUG "Federal Coal Lease Modifications COC-1362 & COC-67232 (including on-lease exploration plan)" SFEIS (2017), as allowed under 40 CFR §

1506.3. Consistent with the USFS decision, OSMRE is selecting Alternative 3, as described in the SFEIS (Section 2.2.3), based on the agencies' consideration of: the purpose and need for the action; the issues; current policies and regulations; the analysis of alternatives contained in the SFEIS; public comments received and other information in the project record.

Alternative 3 as analyzed in the SFEIS would modify existing Federal coal leases COC-1362 and COC- 67232 by adding 800 and 920 additional acres (respectively). Under Alternative 3, the E seam would be mined containing approximately 26.3 million tons of recoverable coal. The leases would be mined using underground longwall mining techniques producing approximately 6.5 million tons per year and continuing mining operations by approximately 3 years (Federal and private reserves). OSMRE received updated information regarding the anticipated site locations and surface disturbance acreage associated with PR-15 submitted to CDRMS. Under Alternative 3, 73.5 acres of surface disturbance would occur on both Federal and private lands for the construction of MVBs and temporary roads.

OSMRE's decision to adopt the SFEIS and select Alternative 3 was made after carefully considering the contents of the SFEIS, public comments, agency response to comments, and the supporting project file. The SFEIS meets the standards for an adequate EIS under the Council of Environmental Quality (CEQ) regulations. OSMRE has independently evaluated the SFEIS and has determined that the USFS satisfactorily addressed OSMRE's concerns, comments, and suggestions as a Cooperating Agency during the NEPA process.

Other environmental documents (SFEIS, Section 1.11) prepared for activities in the immediate vicinity were also consulted. OSMRE has considered the court's orders in *High Country Conservation Advocates v. United States Forest Service*, 67 F. Supp. 3d 1262 (D. Colo. 2014) and *High Country Conservation Advocates et al. v. U.S. Forest Service et al.*, Case No. 17-cv-3025-PAB (D. Colo.), and the resultant revised and additional analysis and clarifications in the SFEIS, with particular attention to greenhouse gas (GHG) emissions, social cost of carbon (SCC), socioeconomics, and recreation.

OSMRE's decision will be implemented through issuance of this ROD and my recommendation to approve the mining plan. The Operator cannot begin mining until they receive approval from the ASLM.

4.1 Selected Alternative Compliance with Federal Laws and Executive Orders

4.1.1 National Environmental Policy Act

NEPA declares a national environmental policy and promotes consideration of environmental concerns by Federal agencies in decision making. Procedures and regulations issued by the CEQ, as authorized under NEPA, direct implementation of NEPA by Federal agencies. CEQ regulations are promulgated at 40 CFR 1500–1508, and the Department of the Interior's (DOI)'s NEPA regulations are promulgated at 43 CFR 46 and in Department Manual 516. The OSMRE NEPA Handbook (OSMRE 1989) and the BLM NEPA Handbook (BLM 2008) also provide guidance and were considered in the preparation of the EIS.

All documentation in the project record in support of, and including the SFEIS and ROD have been developed to comply with this Act, CEQ regulations at 40 CFR 1500, OSMRE policies, the OSMRE Handbook, and any requirements that evolved through the practice of NEPA, and from case law.

Finding

OSMRE finds that the decision to select Alternative 3 complies with the procedural and analytical requirements of NEPA.

4.1.2 SMCRA/State-Federal Cooperative Agreement/Mineral Leasing Act

OSMRE is a bureau within DOI charged with administration of SMCRA. SMCRA establishes a program of cooperative federalism that allows the states to enact and administer their own regulatory programs within limits established by Federal minimum standards and with prescribed oversight enforcement authority by OSMRE (30 CFR 1253). CDRMS operates an approved state program under SMCRA and therefore has primary jurisdiction over the regulation of surface coal-mining and reclamation operations on non-Federal and non-Indian lands within the state. See 45 CFR 21560; 30 CFR 906.10, 906.15, and 906.30. Under Section 1273(c) of SMCRA, a state with a permanent regulatory program approved by the DOI Secretary, such as CDRMS, can elect to enter into a cooperative agreement for state regulation of surface coal-mining and reclamation operations on Federal lands within the state. OSMRE granted CDRMS this authority, and CDRMS regulates permitting and operation of surface coal mines on Federal lands within Colorado under the authority of Colorado Surface Coal Mining Control Act of 1976.

The State-Federal Cooperative Agreement (Agreement) between CDRMS and OSMRE (codified in 30 CFR 906.30) outlines the decision process for a coal mine in Colorado. Under the Agreement, CDRMS reviews an operator's (in this case, Ark and MCC's) PAP to ensure the permit application complies with the permitting requirements and that the coal-mining operation would meet the performance standards of the approved Colorado program as outlined in Colorado Surface Coal Mining Control Act of 1976. OSMRE, BLM, and other Federal agencies such as the USFWS review the PAP to ensure it complies with the terms of the coal lease(s), MLA, NEPA, and other Federal laws and regulations. CDRMS makes a decision to approve or deny the permit application component of the PAP in accordance with Colorado Surface Coal Mining Control Act of 1976. OSMRE, in accordance with 30 CFR 746.1 through 746.18, reviews CDRMS's permit and recommends approval, disapproval, or conditional approval of the mining plan to the DOI ASLM.

Once the RA informs OSMRE of a permit revision occurring for leased Federal coal and/or Federal surface, OSMRE reviews the PAP to ensure it contains the necessary information to comply with the coal lease, the MLA, the NEPA and other applicable Federal laws and their attendant regulations. Then, in consultation with the BLM, OSMRE must determine if the action requires the preparation of a MPDD. While OSMRE is prohibited from implementing any function of the MLA, 30 CFR § 740.4(b) and 746.13 require the OSMRE to provide a recommendation for Secretarial approval. If a MPDD is deemed necessary, pursuant to 30 CFR 746, OSMRE must prepare and submit to the ASLM a MPDD recommending approval, disapproval, or approval with condition(s) of the proposed mining plan.

Finding

OSMRE finds that the decision to select Alternative 3 is consistent with SMCRA, the State-Federal Cooperative Agreement, and the MLA.

4.1.3 Endangered Species Act

The USFS prepared a Biological Assessment (BA) for this decision considering all known endangered or threatened species in the area. Due to “may affect, not likely to adversely affect” determinations for Canada Lynx and water depletions related to the four endangered Colorado River fish, informal consultation with the USFWS was completed on June 16, 2010 (ES/CO: FS/GMUG/Paonia RD; Tails 65413-2010-F-0109) USFWS had concurred with USFS findings. OSMRE received concurrence from USFWS based on USFS previous consultation on August 8, 2018.

Finding

OSMRE finds that the decision to select Alternative 3 is consistent with the Endangered Species Act. OSMRE completed the Section 7 consultation process under the Endangered Species Act and found no new threatened and endangered species and no new circumstances requiring reinitiating or new consultation. OSMRE received concurrence from the Fish and Wildlife Service on August 8, 2018 that the previous determinations for Canada Lynx and four Colorado River fish made in consultation with USFS remain in effect.

4.1.4 Clean Air Act

This Clean Air Act (CAA) required States to develop plans to implement, maintain, and enforce primary and secondary ambient air quality standards for any criteria air pollutants, and called Federal agencies to prevent deterioration of air quality. The agencies analyze the effects on air quality as a result of this project which showed that this project will have negligible effects on air quality. Further, MCC is required to hold and maintain state air quality permits for their activities under the CAA. MCC currently holds a valid permit from the Colorado Division of Public Health and Environment (CDPHE) for construction air emissions. However, there is no new construction or additional mining capacity required to process the lease modification coal under Alternative 3 (SFEIS page 111 and Appendix F).

Finding

OSMRE finds that the decision to select Alternative 3 is consistent with the Clean Air Act.

4.1.5 Clean Water Act

This Act requires State and Federal agencies to control and abate water pollution. This project was designed to comply with this Act through USFS and the BLM stipulations (Appendix B and SFEIS Table 2-1 through the inclusion of stipulations for surface and ground water, water depletions, baseline data, and monitoring and compliance with all state and local laws).

Finding

OSMRE finds that the decision to select Alternative 3 is consistent with the Clean Water Act.

4.1.6 National Historic Preservation Act

Section 106 of the NHPA and its implementing regulations under 36 CFR 800 require all Federal agencies to consider effects of Federal actions on cultural resources eligible for or listed in the National Register of Historic Places. Traditional cultural properties are also protected under Section 106 of the NHPA.

To date, three cultural resource inventories have occurred within the project area and no heritage resources were located. Therefore the lease modifications are found to have no potential to affect cultural resources, as defined in regulations 36 CFR 800. The addition of the standard lease clause will protect currently undiscovered sites (SFEIS Section 3.31 and Project File). Site specific resource surveys have been completed for exploration disturbance, and must be conducted prior to any post-lease ground disturbing activities in coordination with USFS (Appendix B, SFEIS Table 2-1). OSMRE received concurrence from the State Historic Preservation Office (SHPO) on October 10, 2018.

Finding

OSMRE finds that the decision to select Alternative 3 is consistent with the National Historic Preservation Act.

4.1.7 Executive Order 13175 – Government-to-Government Consultation with Tribes

EO 13175 requires Federal agencies to consult with American Indian tribal representatives and traditionalists on a government-to-government basis. The following affected tribes were contacted during the scoping period that occurred prior to the initiation of the preparation of the DEIS and again when the USFS engaged in a rulemaking that reinstated the NFCMA exception to the CRR: Ute Mountain Utes, Southern Utes, and (Northern) Utes. The Tribes provided no formal comments and did not request any meetings. OSMRE has sent notification letters to Tribes of the Notice to Adopt the SFEIS.

Finding

OSMRE finds that the decision to select Alternative 3 was made in consideration of and consistent with EO 13175.

4.1.8 Executive Order 12898 Environmental Justice

EO 12898 requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations when implementing their respective programs, including American Indian programs. OSMRE's analysis of environmental justice follows the CEQ's guidance on environmental justice and the EPA's guidance on environmental justice. The population around the project area was reviewed (SFEIS Section 3.21.1.1) and for this project, no disproportionately high adverse impacts are expected.

Finding

OSMRE finds that the decision to select Alternative 3 was made in consideration of and consistent with EO 12898.

4.1.9 Executive Orders 11990 and 11988

The management of wetlands and floodplains are subject to EOs 11990 and 11988, respectively. The purpose of the EOs are to avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modification of wetlands and floodplains and to avoid direct or indirect effects of new construction in wetlands wherever there is a practical alternative. This order requires the OSMRE to take action to minimize destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. The project was designed to avoid impacts to wetlands and floodplains through the addition of USFS and the BLM lease stipulations therefore no additional mitigation measures or conditions of approval would be necessary from OSMRE. Permits currently held by MCC, including NPDES, Spill Prevention, Control, and Countermeasure, and CWA section 404 remain valid until renewal is necessary. MCC would complete a pre-construction site visit and survey with the USFS and then implement avoidance measures in order to comply with the USFS lease stipulations for protection of wetlands.

Finding

OSMRE finds that the decision to select Alternative 3 was made in consideration of and consistent with EO 11990 and 11988.

4.1.10 Executive Order 13045

Direction regarding protection of children is recognized in “Protection of Children from Environmental Health Risks and Safety Risks”, April 21, 1997. Children are seldom present at coal mining facilities. On such occasions, the coal mining companies have taken and will continue to take precautions for the safety of children by using a number of means, including fencing, limitations on access to certain areas, and provision of adult supervision (SFEIS, Section 3.21.1.2).

Finding

OSMRE finds that the decision to select Alternative 3 was made in consideration of and consistent with EO 13045.

4.1.11 Executive Order 13783

EO 13783 provides direction regarding promoting energy independence and economic growth. This Order disbanded the Interagency Working Group (IWG) on the Social Cost of Carbon and its technical supporting documents for the SCC analysis. This order rescinded the 2013 President’s Climate Action Plan, the 2014 Climate Action Plan Strategy to Reduce Methane Emissions, and the CEQ’s Final Guidance on Consideration of GHG’s and the Effects of Climate Change in NEPA Reviews.

Finding

OSMRE finds that the decision to select Alternative 3 was made in consideration of and consistent with EO 13783. OSMRE’s decision does not rely on the SCC protocol and technical documents nor

any of the rescinded reports and is therefore consistent with EO 13783. Additional rationale regarding this topic is provided in Section 4.4.1 of this Decision.

4.2 Other Alternatives Considered and Environmentally Preferred Alternative

4.2.1 Alternative 1- No Action Alternative (Environmentally Preferred Alternative)

OSMRE did not select Alternative 1, No Action, because it is only incrementally different from the selected alternative in environmental effects, and does not meet OSMRE's purpose and need as well as the selected alternative. The need for this action is to provide the MCC the opportunity to mine the Federal coal obtained under Federal Coal Lease COC-1362 and COC-67232 which would not be met with this Alternative.

This Alternative was identified as the environmentally preferable Alternative. Under this alternative currently permitted temporary road and pad construction and use would continue for about ten years under this alternative. Most of these uses are and would continue to be in the Sunset Roadless Area. Alternative 3, the selected alternative, would likely add less than 3 years to this progression and add approximately 73.5 acres of additional temporary disturbance to the preexisting surface disturbance already constructed, used, and reclaimed concurrent with other valid uses of NFS lands in the area.

Under PR 15, the revised tonnage would be approximately 57.7 million tons of recoverable coal from the B and E seams. The B seam recoverable reserves would equal 31.4 million tons and the E seam recoverable reserves would equal 26.3 million tons. The B seam is not part of the proposed lease modifications and therefore not part of OSMRE's recommendation and not ripe for the decision maker as it would be mined under previous approvals.

4.2.2 Alternative 2

Alternative 2 was considered but eliminated from further study in the SFEIS. Alternative 2 was eliminated from further study because it followed the provisions of the 2001 CRR which prohibited construction of roads in the lease areas. USFS determined that without the ability to construct temporary roads to access the lease modification areas there would be impacts to worker safety. In addition to worker safety impacts, Alternative 2 was eliminated from further study because the 2001 CRR is no longer in effect and was replaced with 2012 CRR. Section 2.3.1 of the SFEIS provides details as to why Alternative 2 was eliminated. After review of PR 15, OSMRE determined that Alternative 2 did not warrant additional consideration and was not carried forward for further study.

4.2.3 Alternative 4

Alternative 4 was fully considered in this analysis. OSMRE compared: reasonably foreseeable surface disturbance; amount of expected coal to be recovered; and extension of mine life of the Alternatives. Under Alternative 4, the agencies would consent/lease the proposed modification to COC-1362 only, while not consenting to proposed modification to lease COC-67232. Alternative 4 analyzed the effects of post-lease surface activities under the CRR including temporary road construction in the Sunset CRA, as described in Alternative 3 above. The on-lease exploration activities would remain similar to Alternative 3 except roads would stop at the lease modification boundary. See Table 1 below.

Table 1. Summary of Reasonably Foreseeable Actions by Alternative

Action	Alternative 3	Alternative 4	Difference
Estimated Foreseeable Surface Disturbance (acres)	72	66	(6)
Estimated Coal (tons)	10,100,000	9,265,000	(835,000)
Estimated Foreseeable Extension of Mine Life (years)	1.6	1.4	(0.2)

OSMRE considered the relatively small environmental footprint difference between Alternatives 3 and 4 and the temporary nature of the expected post-lease disturbance and past reclamation success at the West Elk Mine when selecting Alternative 3. OSMRE determined that while both the environmental impacts and coal recovery differences were very small between Alternatives 3 and 4, preventing MCC from exercising its valid Federal Coal Leases issued by the BLM and consented to by USFS would not serve OSMRE's purpose and need. The 835,000-ton increase in coal recovery outweighs the environmental effects of disturbing 6 more acres of NFS lands for a short period of time as compared to Alternative 4.

4.3 Alternatives Considered but Eliminated

An alternative may be considered during the environmental analysis process, but not analyzed in detail. The agency must identify those alternatives and briefly explain why they were eliminated from detailed analysis (40 CFR 1502.14). An alternative may be eliminated from detailed study if:

- It is ineffective (does not respond to the purpose and need for the proposed action);
- It is technically or economically infeasible (considering whether implementation of the alternative is likely, given past and current practice and technology);
- It is inconsistent with the basic policy objectives for the management of the area;
- Its implementation is remote or speculative;
- It is substantially similar in design to an alternative that is analyzed; or
- It would result in substantially similar impacts to an alternative that is analyzed.

Alternatives specific to this analysis that were considered, but that would not be analyzed in detail, are discussed in Section 2.3 of the SFEIS and included:

- Alternative 2;¹
- Helicopter drill MDWs in roadless area
- MDWs using horizontal boreholes or directional drilling technology
 - Directionally Drill MDWs from Outside Roadless
 - Use Horizontal Boreholes or Longhole Horizontal Boreholes
- Consideration of other mining methods

¹ Under which the USFS would consent to and BLM would modify the leases with stipulations/notices/addendums above listed for the Action Alternatives but based on the provisions of the 2001 Roadless Area Conservation Rule (which is no longer in effect) road construction or reconstruction was prohibited. Although mining without construction of temporary roads may be physically possible, it may be limited by safety, technology, productivity, and expense (see SFEIS Section 2.3.1).

- Mitigate the potential GHG emissions of the project by requiring MCC to use MDW ventilation air methane (VAM)
- Mitigate the potential GHG emissions of the project by requiring MCC to purchase of carbon credits or do off-set mitigations
- Mitigate the potential GHG emissions of the project by requiring MCC to use other potential methane mitigation measures
 - Methane Capture to Power On-Site Heaters
 - Methane Drainage Well Emissions Capture
 - MDW Capture, Electricity Production
 - MDW Capture, Sale Gas
 - Flaring (MDW Emissions)
 - Thermal Oxidation (VAM & MDW Emissions)
- Prevent all future disturbances from road construction, methane drainage well pads and the like in Roadless Areas
- Shrink the boundaries of the lease to conform to the area where the coal will be mined underground
- Protect values of the area by using this set of stipulations for the Proposed Action
 - No Surface Occupancy (NSO) stipulations prohibiting road and MDW well pad construction within ¼ mile of the hiking route known as “Sunset Trail,” which traverses the lease modification, to protect recreational values.
 - NSO stipulations prohibiting road and MDW well pad construction for all areas within ¼ mile of: (a) all lynx denning habitat; (b) all lynx winter foraging habitat; and (c) all lynx foraging habitat which is adjacent to lynx denning habitat.
 - NSO stipulations prohibiting road and MDW well pad construction for all areas within ¼ mile of a water influence zone.
 - NSO stipulations prohibiting road and MDW well pad construction for all areas within ½ mile of the West Elk Wilderness boundary, to protect roadless, wildlife, scenic, and other values.
 - NSO stipulations prohibiting road and MDW well pad construction within ¼ mile of any old growth forest to prevent fragmentation.
 - Until the Forest Plan is amended to address new information about the threat of climate change, the GMUG should protect existing mature forest through an NSO stipulation.
 - NSO stipulations prohibiting road and MDW well pad construction within ½ mile of any raptor nest site.
 - NSO stipulations prohibiting road and MDW well pad construction on slopes greater than 40% to protect soils and prevent erosion.
- For Exploration, use helicopters to transport drill rig
- For Exploration, do not consider redundant access
- For Exploration, analyze only the holes proposed to be drilled during the first field season

4.4 Basis of Decision

Based on the information contained in the SFEIS, the results of tribal consultation, consultations under the ESA and NHPA, and the additional considerations listed in this ROD, OSMRE has selected Alternative 3, subject to the mitigation and monitoring requirements of the USFS and the BLM lease stipulations, because it achieves the project goals consistent with all applicable regulatory requirements, while minimizing potential impacts. As set forth in Section 4 of this ROD, OSMRE has determined that all applicable statutory and regulatory requirements necessary for approval of the project components addressed in the ROD have been satisfied.

The following section discusses how the selected alternative addresses the key issues considered in the FSEIS. Direct, indirect, and cumulative impacts are described fully by alternative in Chapter 3 of the FSEIS. Effects are summarized in Table 1 below by key issues. The Selected Alternative provides the best balance among the key issues and other concerns identified during the USFS public involvement process (Section 6, Public Involvement).

Table 1. Comparison of the Effects of Alternatives Relative to Key Issues

Key Issue	Alternative 1 – No Action	Alternative 3 – Colorado Roadless	Alternative 4 – COC-1362 Only
Issue 1: Effects on surface water quality and quantity	No mining induced effects on water resources in the lease modification area.	Subsidence may alter surface and groundwater hydrology by altering groundwater regimes, surface water drainages, seeps and stock ponds. Water quality may be impacted in up to 11.3 miles of streams from sedimentation or water derived from mining activities. Monitoring, best management practices, permitting and lease stipulations should ensure that impacts are minimized.	Effects would be similar to Alternative 3 if roads are authorized, but only to a slightly lesser extent.
Issue 2: Effects on vegetation	Ongoing management activities and Sudden Aspen Decline will continue to impact vegetation in the lease modification area.	Subsidence is expected to have minimal disturbance on vegetation. Post-lease surface disturbance is expected to remove vegetation from up to 73.5 acres. Reclamation requirements will ensure that appropriate species are used to revegetate the area and return it to productivity. Additionally, approximately 73.5 acres of vegetation may be removed on parent leases and adjacent private lands because of the COC-1362 lease modification.	Effects would be similar to Alternative 3 except approximately 66 acres of vegetation may be disturbed on the lease modifications. Additionally, approximately 63 acres of vegetation may be removed on parent leases and adjacent private lands because of the COC-1362 lease modification.
Issue 3: Effects on wildlife and their habitats	No change over existing conditions and management.	Canada lynx may affect, but is not likely to adversely affect. Four Big River Endangered Fish-fish not present but water depletions of approximately 4.5 acre feet total for MDWs may affect these species. Water depletion is consistent with existing Programmatic Biological Opinions. Additional MDWs on parent leases and private lands as a result of COC-1362 modification may deplete an additional approximately 4.2 acre-feet of water.	The effects would be similar to Alternative 3 but slightly reduced in scale. Four Big River Endangered Fish-fish not present but water depletions of approximately 4.1 acre feet total for MDWs may affect these species. Water depletion is consistent with existing Programmatic Biological Opinions. Additional MDWs on parent leases and private lands as a result of COC-1362 modification may deplete an additional approximately 4.2 acre-feet of water.

Key Issue	Alternative 1 – No Action	Alternative 3 – Colorado Roadless	Alternative 4 – COC-1362 Only
Issue 4: Effects of the project on air quality, GHGs, and climate change	<p>The maximum predicted concentration of PM₁₀ due to the mines and other background sources was 148 µg/m³, which is below the primary ambient air quality standard. These results indicate that the area around the mine can be expected to remain within ambient air quality standards for PM₁₀. There are no other criteria pollutant emissions from stationary sources at the mine that are in excess of CDPHE's minor source permitting thresholds, and therefore the permit does not contain any limits other than those for particulate matter. By extension, no other criteria pollutant emissions associated with the mine's stationary sources would be considered to be significant with respect to their potential to degrade area air quality.</p> <p>Methane released from VAM and MDWs does not correlate with coal production and has been declining from 2010-2016. No threshold of significance has been established by EPA. See section 3.4 of the SFEIS for additional information.</p> <p>GHGs from combustion of existing coal reserves:</p> <ul style="list-style-type: none"> • CO₂ 137.11 million tons • CH₄ 0.016 million tons • N₂O 0.002 million tons • CO_{2e} 138.22 million tons 	<p>As there would be no change in mine production rate influencing emissions, effects to air quality would be the same as Alternative 1 except the duration would be extended approximately 1.6 years directly (and 2.7 years cumulatively).</p> <p>GHGs from combustion:</p> <ul style="list-style-type: none"> • CO₂ 182.22 million tons • CH₄ 0.021 million tons • N₂O 0.003 million tons • CO_{2e} 183.69 million tons <p>Emissions related to exploration plan would occur related to vehicles and drilling. The construction-related emissions are relatively small and are not expected to contribute significantly to localized or regional air quality degradation.</p>	<p>As there would be no change in mine production rate influencing emissions, effects to air quality would be the same as Alternative 1 except the duration would be extended approximately 1.4 years directly (and 2.6 years cumulatively).</p> <p>GHGs from combustion:</p> <ul style="list-style-type: none"> • CO₂ 180.17 million tons • CH₄ 0.021 million tons • N₂O 0.003 million tons • CO_{2e} 181.62 million tons <p>Emissions related to exploration plan would occur related to vehicles and drilling. The construction-related emissions are relatively small and are not expected to contribute significantly to localized or regional air quality degradation.</p>

4.4.1 Social Cost of Carbon

A protocol to estimate what is referenced as the SCC associated with GHG emissions was developed by a Federal IWG, to assist agencies in addressing EO 12866, which requires Federal agencies to assess the cost and the benefits of proposed regulations as part of their regulatory impact analyses. The SCC is an estimate of the economic damages associated with an increase in carbon dioxide (CO₂) emissions and is intended to be used as part of a cost-benefit analysis for proposed rules. As explained in the Executive Summary of the 2010 SCC Technical Support Document “the purpose of the [SCC] estimates...is to allow agencies to incorporate the social benefits of reducing CO₂ emissions into cost-benefit analyses of regulatory actions that have small, or ‘marginal,’ impacts on cumulative global emissions.” Technical Support Document: SCC for Regulatory Impact Analysis under EO 12866 February 2010 (withdrawn by EO13783). While the SCC protocol was created to meet the requirements for regulatory impact analyses during rulemakings, there have been requests by public commenters or project applicants to expand the use of SCC estimates to project-level NEPA analyses.

USFS received several comments on the Supplemental EIS that suggested it use the SCC protocol to monetize global costs of GHG emissions associated with mining and burning coal from the West Elk Mine.

The CRR was the programmatic decision (rulemaking) to determine how to balance maintaining and preserving roadless area characteristics while addressing the State’s concern of not foreclosing coal mining opportunities in the North Fork Valley (81 FR 91816). The CRR SFEIS included an SCC analysis as part of the cost-benefit analysis as required for the rule-making decision and the coal in the proposed federal coal lease modifications was included within that SCC analysis. OSMRE is familiar with that analysis and believe that the analysis was conducted at the appropriate level at that time and in the appropriate context. This analysis informs OSMRE’s decision and the public.

If GHGs were analyzed in a manner that monetized global costs, this type of analysis would not better inform OSMRE’s decision for this project. The SCC is not appropriate at this time because NEPA does not require a cost-benefit analysis, a cost benefit analysis was not conducted and a cost benefit analysis would not substantively add to OSMRE’s ability to reach an informed decision in the matters before it. While the SFEIS contains quantified impacts, and while some of these quantified impacts are monetary, the SFEIS does not contain comparable economic benefits and costs to the SCC that would be needed for cost-benefit analysis per OMB Circular A-4. The SFEIS contains an analysis of environmental consequences (40 CFR 1502.16) that meets the qualitative requirements of NEPA (40 CFR 1502.23). If the agency set out to quantify climate impacts as monetized costs, it would be necessary to balance these costs by also quantifying the benefits of burning coal to generate electricity such as providing affordable, reliable electricity and the resultant benefits of having electricity in general such as human health from medical advancements, comfort, work efficiencies, etc. and other actions that are beyond the scope of my decision. .

OSMRE acknowledges the potential adverse impacts of GHG release on the local, regional, and global climate. Currently, there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes, and, at present, there are no known NEPA significance levels to prescribe to GHG emissions for evaluating climate change impacts. OSMRE does not believe any additional project level SCC analysis would improve the authorized officer's decision. OSMRE has taken a hard look at climate change impacts and both OSMRE and the public have been informed by the analysis done to date.

OSMRE does not need a project-level SCC analysis to determine potential mitigation measures or conditions of approval and whether non-mineral and surface resource impacts are acceptable or not. The SCC protocol describes the monetary impact at the global scale of increased carbon emissions and does not translate to site-specific surface resource impacts.

OSMRE knows there are resource impacts caused by the effects of climate change and OSMRE knows that GHG releases contribute to this change. My decision has been informed by the climate change analysis for each of the resources in Chapter 3 at the local, regional, global levels of the SFEIS and all other impact analyses contained within the SFEIS.

To summarize, this SFEIS does not undertake an analysis of SCC because 1) it is not engaged in a rulemaking for which the protocol was originally developed; 2) the IWG, technical supporting documents, and associated guidance have been withdrawn; 3) NEPA does not require cost-benefit analysis ; 4) the full social benefits of coal-fired energy production have not been monetized, and quantifying only the costs of GHG emissions but not the benefits would yield information that is both potentially inaccurate and not useful; 5) for this project it was more effective to qualitatively disclose local regional and global effects of climate change for this project and we quantified GHG emissions across all alternatives, 6) the SCC protocol was used in the CRR (which included the coal within the lease modifications) as the framework to consider the uncertainty around the estimates and caveats around using the protocol; and 7) we did not conduct a cost-benefit analysis for several reasons, including: a. because we did not monetize comparable economic benefits and costs and b. we determined that analysis of the domestic and international energy and economic systems were out of the scope for this project.

5.0 Public Involvement

5.1 Supplemental Final Environmental Impact Statement

USFS and the BLM completed extensive public involvement during the preparation of an EA for the same action as this SFEIS. During that comment period (April-May 2010), approximately 32,002 versions of email form letters were received from environmental groups (more detailed description in subsequent sections); 576 hardcopy/faxed form letters were received from local community members in four counties in support of mining in this area; 78 (mostly modified form letters) were received in response to this scoping effort. Issues ranged from support to opposition of coal mining, effects to

Inventoried Roadless Areas, and global climate change. Most concerns dealt with post-leasing development. These issues led the agencies to develop the Proposed Action which has lease stipulations to protect surface resources including: cultural/paleontological resources, threatened/endangered species, Canada Lynx, raptors, big game winter range, water depletions, breeding birds, geological hazards, riparian/wetlands, subsidence, lease notices for presence of roadless areas, lease addendums for methane flaring/capture/use and new lease stipulations for visual resources. The decision was remanded to the forest over stipulations in February of 2012.

In late 2011 and early 2012, Colorado was transitioning to new state-wide roadless area regulations, U.S. Environmental Protection Agency (EPA) was considering GHG regulations, CEQ was considering significance thresholds for analysis of GHGs and the BLM was preparing its own leasing analysis for these modifications. All of these processes combined, contributed to the decision to prepare an EIS.

USFS published a Notice of Intent (NOI) to prepare an EIS in the Federal Register on April 25, 2012. Approximately 830 copies of letters/emails informing interested parties (including state, Federal, local agencies, tribes, environmental groups, and interested parties) of this intent were also sent out on April 25, 2012 inviting additional comments throughout the process. Additional notification was sent out with the DEIS to approximately 768 individuals; additional legal notices were published in the Grand Junction Daily Sentinel and Delta County Independent.

Approximately 24,680 comment letters were received on the DEIS. Of those, 67 were original comments. Responses to comments received during the 30 day period following the printing of the NOI and the 45 day comment period on the DEIS and other comments specifically included by reference can be found in Appendix I. Comments received during this time can be viewed in entirety in Appendix I (Volume II) of the 2012 Final EIS. Previous GMUG and the BLM decisions (available at: <https://www.fs.usda.gov/project/?project=32459>) were vacated in *High Country Conservation Advocates v. United States Forest Service*, 67 F. Supp. 3d 1262 (D. Colo. 2014) on September 11, 2014. The USFS prepared the Supplemental EIS to correct court identified deficiencies and to updated analysis, as needed, since the FEIS in 2012 and the BLM's EA for exploration in 2013. The leasing and exploration analyses were combined into a single document for agency and public convenience.

Over 9,800 additional submissions (primarily form letters, groups of form letters and petitions) were received on the NOI to Prepare the SEIS in 2016-2017 which was not an official comment period. Comments and responses can be found in Appendix J.

During the official comment period (June 2, 2017-July 24, 2017) on the SDEIS the agencies received approximately 127,250 expressions of interest or comment letters. Issue topics are consistent with those raised in previous comment periods. Summarized substantive comments and responses are included in Appendix K of the SFEIS.

USFS sought public and agency comments during preparation of the SFEIS. Responsive to comments on the DEIS the SFEIS included the development of Alternative 4; analyzing and disclosing impacts of consenting to only one of the proposed lease modifications (COC-1362).

5.2 WildEarth Guardians, Center for Biological Diversity, and Sierra Club Comments

On June 1, 2018 OSMRE received a letter from WildEarth Guardians, Center for Biological Diversity, and Sierra Club (referred to as the Commenters) providing comments on the Federal Mining Plan Modification Review (Section III of the letter). OSMRE has reviewed the comments and found that the SFEIS sufficiently addressed site-specific impacts; PR 15 does not propose to construct redundant roads; the SFEIS sufficiently addressed the alternative of methane flaring; and OSMRE conducted consultation under ESA.

OSMRE took a hard look at the proposed locations of MVBs and temporary roads in comparison to what was previously analyzed in the SFEIS. OSMRE determined that the 38 MVB pads and 6.9 miles of road on Federal land and 5 MVB pads and about 1.5 miles of roads on MCC surface land would not have significant site specific impacts and that there is not substantial new information regarding site specific impacts that wasn't already disclosed in the SFEIS. OSMRE recognizes that the SFEIS was based on a reasonably foreseeable mining plan and there are differences between it and the locations in PR 15. Therefore, OSMRE conducted a review of the actual sites to ensure that no new information or significant impacts were discovered.

The SFEIS provided the public with potential MVB pads and temporary road locations as well as outlining both qualitative and quantified data for those impacts. The SFEIS disclosed to the public that the exact sites may not be known but using best available data presented potential impacts. The SFEIS did not defer the entire analysis regarding the MVB pads and temporary roads to a later date when exact locations would be known (see Figure 3-21 of the SFEIS). After review of the site locations outlined in revised PR-15, OSMRE determined that those impacts previously reviewed are not substantially or significantly different from those currently proposed. OSMRE estimates that the MVB pads and temporary roads would result in a loss of approximately 40 acres of aspen, 29 acres of oak, and 4 acres of shrub types. Lease stipulations and Best Management Practices (BMPs such as from FSH 2509.25) prevent pads and roads in wetlands except for crossing of drainages for access, when other access is not feasible. MCC would complete a pre-construction site visit and survey with the USFS and then implement avoidance measures in order to comply with the USFS lease stipulations for protection of wetlands. OSMRE reviewed the Information for Planning and Consultation (IPAC) database for potential impacts to specific T&E species and received concurrence from USFWS on August 8, 2018 that no new impacts would result from the Project based on 73.5 acres of disturbance.

The Commenters assert that the Company will “likely propose mining further to the southwest” following completion of exploration “requiring the construction of even more roads and MDWs.”

MCC submitted a revised PR-15 PAP to CDRMS on July 6, 2018. Map 51, Projected E Seam Operations, presents an updated mining plan based on the exploration drilling. Based on this revised panel alignment MCC would have 38 MVB pads and 6.9 miles of road on Federal land and 5 MVB pads and about 1.5 miles of roads on MCC surface land. This is a reduction from the SFEIS analysis of 77 MVBs on 69 pads (SFEIS page 80). MCC would use roads and drill pads previously designated for exploration for MVB development as well to eliminate redundant roads as shown on the "Sunset Trail Proposed MVB Pads and Roads" Map submitted as part of the PAP and therefore in compliance with 36 C.F.R. § 294.43(d)(1) of the CRR. While OSMRE recognizes that the previous SFEIS analyzed a potential road mileage of 6.5 miles on Federal land and the revised PR-15 states a total of 6.9 miles of road on Federal land, OSMRE does not believe that this 0.4-mile increase (6 percent increase) is a substantial change in what was analyzed under Alternative 3 requiring a supplemental EIS. Furthermore, this increase in road miles combined with the MVB development is within 2 percent of the overall disturbance acreage analyzed in the SFEIS of 72 acres with a total of 73.5 acres (Federal and private lands) not constituting a substantial change warranting a supplemental EIS.

OSMRE reviewed the Alternative of Methane Flaring as described by the Commenters and agree with USFS and the BLM's determination that this alternative is not technically or economically feasible (SFEIS Section 2.3.7.5). In order for OSMRE to carry this alternative forward or include it as mitigation it would need detailed engineering information, approval from the Mine Safety and Health Administration (MSHA), and a determination that it was economically feasible. At this time, none of those criteria have been met. The mine ventilation plan submitted to CDRMS as part of the PAP does not include information on how methane flaring would be technically feasible. Pursuant to its lease stipulations, MCC submitted to the BLM a report on the economic feasibility of methane mitigation at the mine (SFEIS, Appendix B). The BLM reviewed the report and provided OSMRE the summary of that review which OSMRE has considered; however, OSMRE has independently reviewed and found no new information or significant changes to existing information that would warrant this alternative or mitigation to be carried forward at this time. The SFEIS contemplated that methane flaring could potentially reduce the total global warming potential of the gas by approximately 87%. (SFEIS Section 2.7.3.5). OSMRE understands the environmental benefit that would result from this mitigation. But the issues that remain regarding methane mitigation are not environmental in scope and thus do not require additional environmental analysis. The remaining issues are the technical and economic feasibility of the process and miner safety.

OSMRE completed the Section 7 consultation process under the Endangered Species Act and received concurrence from USFWS on August 8, 2018. The Commenters allege that proposed surface impacts would exceed 75 acres and therefore require a reopening of consultation under ESA for the Canadian Lynx. OSMRE disagrees and found that, as outlined in the PAP, proposed surface disturbance acreage on Federal lands is 63 acres and 10.5 acres on private lands totaling 73.5 acres of disturbance including MVBs and roadways. OSMRE received concurrence from USFWS that there have been no substantial changes to the project and the project would not exceed the 75 acres of disturbance of lynx habitat threshold outlined in the 2010 Biological Opinion. OSMRE is including

the following summary of the process of Canada lynx consultations that are included within the project record.

- A BA was prepared for this decision (SFEIS, Sections 3.10, Project File). All known endangered or threatened species in the area were considered.
- Informal consultation with the USFWS was completed on June 16, 2010 (ES/CO:FS/GMUG/Paonia RD; Tails 65413-2010-F-0109). The USFWS concurred with findings of “may affect, not likely to adversely affect” based on the calculation that less than 0.6% (up to 75 acres) of suitable lynx habitat would become unsuitable due to vegetation alterations under the Foreseeable Mining Plan, which included impacts from MVBs and temporary roads.
- During the CRR rulemaking process additional consultation (ES/GJ-6-CO-09-F-001-GP030’ Tails 06E24100-2016-F-0194) occurred with USFWS. The determination of “may affect, not likely to adversely affect” for Canada Lynx applies projected roads and timber removal to the entire NFCMA, not just to the project area which is approximately 1/10th of the NFCMA.
- Further, GMUG consultation of June 2, 2016 for vegetation removal forest-wide (BO ES/LK-6-CO-08-F-024-GJ0t 6 and TAILS 06824t00-201 6-F -0132) included the earlier project consultation acreages and set acreage limits for disturbance within the LAUs before consultation would again be required. There is over 6,000 additional acres beyond this project and previous disturbances of habitat in the Mount Gunnison LAU that may be treated before approaching a conservation limit in compliance with the Southern Rockies Lynx Amendment (SRLA; USFS 2008). Cumulative effects to lynx that occurred on June 2, 2016 that set habitat alteration limits within the LAU at no more than 30%. This threshold is consistent with the SRLA. There is no critical habitat in the Southern Rockies. The project is covered under the SRLA Standards and Guidelines for protection of lynx and lynx habitat and the project is not expected to cause harm to lynx populations or “take” of lynx. This is supported in the concurrence letter from the USFWS.
- The current project consultation (ES/CO:FS/GMUG/Paonia RD; Tails 65413-2010-F-0109) addresses 75 acres of disturbance of lynx habitat in the LAU for the post-leasing development. This includes habitat that may be lost to roads and drill pads.
- Although the forest lynx habitat map was updated in 2010, following the June 16, 2010 concurrence letter from the USFWS, the changes to percentage of affected habitat does not change much from the previous calculations and is far from reaching the thresholds identified in the SRLA. The SRLA provides standards and guidance regarding vegetation alteration in LAUs. Under SLRA, an LAU should not have more than 30% unsuitable habitat.
- The SFEIS and project (ES/CO:FS/GMUG/Paonia RD; Tails 65413-2010-F-0109) consultation identifies that if greater than 75 acres would be affected by the project, consultation would be reinitiated. Given the USFWS concurrence, OSMRE has analyzed

impacts to Canada lynx and their habitat to ensure that cumulative impacts within the LAU are not leading to exceeding the limits of unsuitable habitat within the LAU.

As a result, OSMRE finds that Alternative 3 is in full compliance with ESA requirements for Canada lynx.

5.3 Notice of Adoption

OSMRE was a cooperating agency and conducted an independent review of the SFEIS. All of OSMRE's comments and suggestions were satisfied in the SFEIS. Therefore, OSMRE is not required to recirculate the SFEIS (40 CFR § 1506.3). OSMRE notified EPA of its intent to Adopt and EPA released a Federal Register Notice.

6.0 Approval

In consideration of the information presented above, OSMRE approves this ROD adopting the USFS GMUG SFEIS and concurs with the USFS's selection of Alternative 3 (Consent to and Modification of the Leases) as described in the SFEIS (Section 2.2.3). USFS and the BLM included lease stipulations which were outlined by each agency in their RODs to minimize environmental impacts. On August 10, 2018, the U.S. District Court for the District of Colorado affirmed the Agencies' decisions in *High Country Conservation Advocates v. Forest Service*, 17-cv-03025-PAB (D. Colo). On September 10, 2018, the plaintiffs filed a Notice of Appeal with the 10th Circuit Court of Appeal; however, the leases are in effect and it is appropriate for OSMRE to adopt the SFEIS. Accordingly, OSMRE recommends approval without conditions of the mining plan modification to the ASLM. This action can be implemented following approval of the MPDD by the ASLM.

For more information about this project, contact Gretchen Pinkham by phone 303-293-5088 or email at gpinkham@osmre.gov.

Approved by:



David Berry, OSMRE Western Region Director

3/12/19

Date

Due to the file size and page length OSMRE has included the Executive Summary in the Mining Plan Decision Document. A complete copy of the U.S. Forest Service's 2017 Supplemental Final Environmental Impact Statement is available on their website

at: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd525072.pdf.



United States
Department of
Agriculture

Forest Service

United States
Department of
Interior

Bureau of Land
Management

Office of Surface
Mining
Reclamation
Enforcement

State of
Colorado

Division of
Reclamation
Mining and
Safety

August 2017



Supplemental Final Environmental Impact Statement

Federal Coal Lease Modifications COC-1362 & COC-67232 (including on-lease exploration plan)

**Paonia Ranger District, Grand Mesa, Uncompahgre and Gunnison National
Forests; Gunnison County, Colorado**

Sections 10, 11, 14, 15, 22, 23 T14S; R 90W, 6th PM

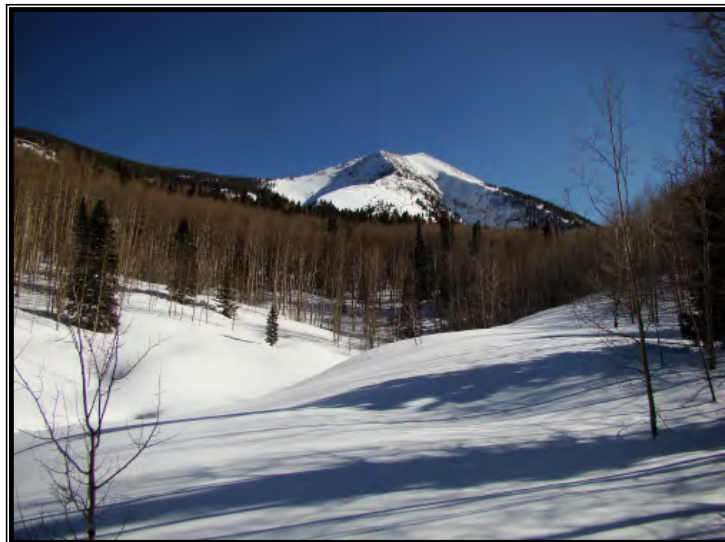
Cooperating Agencies:

Uncompahgre Field Office, Bureau of Land Management

Colorado State Office, Bureau of Land Management

**Western Region, Office of Surface Mining Reclamation and
Enforcement**

Colorado Division of Reclamation Mining and Safety



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**Federal Coal Lease Modifications COC-1362 & COC-67232
Supplemental Final Environmental Impact Statement
Gunnison County, Colorado**

Lead Agency: USDA Forest Service

Cooperating Agencies: Bureau of Land Management-Uncompahgre Field Office
Bureau of Land Management, Southwest District Office
Bureau of Land Management, Colorado State Office
Office of Surface Mining Reclamation and Enforcement
Colorado Division of Reclamation Mining and Safety

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Abstract: The proposed action is to modify existing federal coal leases COC-1362 and COC-67232 by adding 800 and 920 additional acres (respectively) to ensure that 10.1 million tons of compliant and super-compliant federal coal is recovered and not bypassed and to prescribe stipulations for the protection of resources. In 2012, during the preparation of the Draft Environmental Impact Statement (DEIS), the 2001 Roadless Area Conservation Rule was in effect; this represents Alternative 2 in the DEIS. On July 3, 2012 the Colorado Roadless Rule became effective; this represents Alternative 3 (Proposed Action) in the analysis. Alternative 2 was removed from the Supplemental Draft Environmental Impact Statement (SDEIS). Alternative 4 was brought forward for detailed consideration based on comments in the DEIS. Alternative 4 only considers consenting to and leasing the COC-1362 lease. Assuming lease modification(s) are approved, on-lease exploration will be used to delineate coal reserves prior to State regulatory agency mining approval. This Supplemental Final Environmental Impact Statement (FEIS) has been prepared to address Court-identified deficiencies and to provide general updates since 2012.

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Executive Summary

The Forest Service and Bureau of Land Management (BLM) have prepared this Supplemental Environmental Impact Statement (SEIS) to address Court-identified deficiencies in the Final EIS and BLM's Exploration Plan Environmental Assessment. See *High Country Conservation Advocates et al. v United States Forest Service*, 52 F. Supp. 3d 1174 (D. Colo. 2014). The Office of Surface Mining Reclamation and Enforcement (OSMRE) and Colorado Division of Reclamation Mining and Safety (DRMS) have participated as cooperating agencies. This SEIS discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives.

Forest Service and BLM have analyzed the effects of modifying federal coal lease COC-67232 (held by Ark Land LLC (Ark)) and federal coal lease COC-1362 (held by Mountain Coal Company, LLC (MCC)) containing 800 and 920¹ additional acres respectively. DRMS has reviewed and commented on portions of the analysis dealing with the permitting processes and to coordinate with federal agencies for the State permitting processes. The coal lease modification areas lie in portions of sections 10, 11, 14, 15, 22 and 23 of T. 14S, R. 90W, 6th PM in Gunnison County, Colorado. The modification areas include only National Forest System surface lands. The coal estate is administered by the BLM. These federal agency actions are needed to respond to applications submitted by Ark and MCC to ensure that compliant and super-compliant coal reserves are recovered and not bypassed.

The Authorized Officer for the Grand Mesa, Uncompahgre and Gunnison National Forests (GMUG) is considering whether or not to consent to BLM modifying the Federal Coal Leases COC-1362 and COC-67232 by adding 800 and 920 acres, respectively, to them. If the Authorized Officer does consent to lease coal reserves underlying the lands, he will prescribe conditions (as stipulations) for the protection of non-mineral resources. BLM's Authorized Officer will, in turn, decide whether or not to grant lease modifications and will further decide, if leased, whether or not to authorize on-lease exploration consistent with lease terms.

Consideration of the leasing portion of this action does not authorize mining activities or related surface uses. Post-lease authorizations would be handled in separate permitting processes at a later time by the appropriate state and federal agencies after the leases are modified. However, should the BLM approve exploration, this authorization could lead directly to construction of temporary roads and well pads.

Office of Surface Mining Reclamation and Enforcement (OSMRE) will review whether a subsequent mine plan modification is warranted and, if so, would recommend that the U.S. Department of the Interior Assistant Secretary for Lands and Minerals Management approve, approve with conditions, or not approve the federal mining plan modification. The Colorado Division Reclamation of Mining and Safety (DRMS) would be responsible for subsequent permitting of mining.

Extensive public involvement occurred during the preparation of an Environmental Assessment leading to this SEIS. During that comment period (April-May 2010), approximately 32,002 versions of email form letters were received from environmental groups (more detailed description in subsequent sections); 576 hardcopy/faxed form letters were received from local community members in four counties in support of mining in this area; 78 (mostly modified form letters) were received in response to this scoping effort. Issues ranged

¹ Certificates from Cadastral Land Description Reviews on 3/29/2012 and 5/10/2016 have revised this to 920 acres down from 922 acres.

from support to opposition of coal mining, effects to Inventoried Roadless Areas, and global climate change. Most concerns dealt with post-leasing development. These issues led the agencies to develop the Proposed Action which has lease stipulations to protect surface resources including: cultural/paleontological resources, threatened/endangered species, Canada Lynx, raptors, big game winter range, water depletions, breeding birds, geological hazards, riparian/wetlands, subsidence, lease notices for presence of roadless areas, lease addendums for methane flaring/capture/use and new lease stipulations for visual resources. The decision was remanded to the forest over stipulations in February of 2012.

In late 2011 and early 2012 Colorado was in the middle of transitioning to new state-wide roadless area regulations, Environmental Protection Agency was considering greenhouse gas regulations, Council on Environmental Quality was considering significance thresholds for analysis of greenhouse gases and BLM was preparing their own leasing analysis for these modifications. All of these combined contributed to the decision to prepare an Environmental Impact Statement (EIS).

The Forest Service² published a Notice of Intent to Prepare an EIS in the *Federal Register* on April 25, 2012. Approximately 830 copies of letters/emails informing interested parties (including state, federal, local agencies, tribes, environmental groups, and interested parties) of this intent were also sent out on April 25, 2012 inviting additional comments throughout the process. Additional notification was sent out with the Draft EIS to approximately 768 individuals; additional legal notices were published in the *Grand Junction Daily Sentinel* and *Delta County Independent*.

Approximately 24,680 comment letters were received on the Draft EIS. Of those, 67 were original comments. Responses to comments received during the 30 day period following the printing of the NOI and the 45 day comment period on the DEIS and other comments specifically included by reference can be found in Appendix I. Comments received during this time can be viewed in entirety in Appendix I (Volume II) of the 2012 Final EIS.

Previous GMUG and BLM decisions (available at: <https://www.fs.usda.gov/project/?project=32459>) were vacated by U.S. District Court for Colorado (1:13-cv-01723-RBJ) on September 11, 2014. A Supplemental EIS is being prepared to correct Court-identified deficiencies and to update analysis, as needed, since the Final EIS in 2012 and BLM's Environmental Assessment (EA) for exploration in 2013. The leasing and exploration analyses have been combined into a single document for agency and public convenience.

Over 9,800 additional submissions (primarily form letters, groups of form letters and petitions) were received on the Notice of Intent to Prepare a Supplemental Environmental Impact Statement in 2016-2017 which was not an official comment period. Comments and responses can be found in Appendix J.

During the official comment period (June 2, 2017-July 24, 2017) on the Supplemental Draft Environmental Impact Statement we received approximately 127, 250 expressions of interest or comment letters. Issue topics are consistent with those raised in previous comment periods. Summarized substantive comments and responses are included in Appendix K.

² Other agencies were still included as cooperating agencies.

Supplemental Environmental Impact Statement

Previous Grand Mesa, Uncompahgre and Gunnison National Forests (GMUG) and Bureau of Land Management (BLM) decisions were vacated by U.S. District Court for Colorado (1:13-cv-01723-RBJ) on September 11, 2014. This Supplemental Environmental Impact Statement (EIS) has been prepared to correct Court-identified deficiencies and to update analysis, as needed, since the Final EIS in 2012 and BLM's Exploration Environmental Assessment (EA) in 2013. The leasing and exploration analyses are combined into a single document for agency and public convenience.

Document Changes between Supplemental Draft and Supplemental Final Environmental Impact Statements

General edits and clarifications have occurred throughout the document.

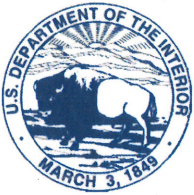
Visuals section was updated and a map included.

Hydrology map was updated.

Subsidence maps were added and acres were updated throughout.

Responses to comments received on SDEIS were summarized and included in Appendix K.

Consultations, Concurrence, & Compliance



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
UNCOMPAHGRE FIELD OFFICE
2465 South Townsend
Montrose, CO 81401
www.blm.gov/co/st/en/fo/ufo.html



In Reply Refer to:
3480, COS05000
COC1362 & COC67232

AUG 06 2018

Leigh D. Simmons, EPS
Colorado Division of Reclamation Mining and Safety
1313 Sherman Street Room 215
Denver CO 80203

RE: Permit Boundary Expansion – Proposed Revised Area of Projected Longwall Panels and
Proposed MVB Sites – West Elk Mine – PN C-1980-007 – PR-15

Dear Mr. Simmons:

This is to inform you that my staff has updated our May 10, 2018 review of the subject permit revision submitted by Mountain Coal Company (MCC) to revise operations at the West Elk Mine. Our current review includes MCC's submission on July 6, 2018 indicating a proposed change in the longwall layout (Map 51) and their submission on July 23, 2018 providing subsidence studies in detail (Exhibit 55B & Exhibit 60E).

Our verification that the Federal mining leases with rights of surface access were issued effective on December 1, 2017 remains the same. A complaint for declaratory and injunctive relief filed on December 15, 2017 has no court ruling to date. In the meantime, we have determined that the new longwall layout in the proposed mine plan could comply with the Mineral Leasing Act of 1920, as amended, all applicable requirements of both 43 CFR Subpart 3480 and the conditions and special stipulations of the federal leases involved. We also find that maximum economic recovery of the federal coal within the active federal leases COC1362 and COC67232 would be achieved.

These determinations cover the entire leased lands encompassed in PR-15. If you have any questions, please call Desty Dyer at 970-240-5302.

Sincerely,

Gregory Larson
Manager, Uncompahgre Field Office

CC Howard Strand, OSM
Dan Gray, USFS
Kathy Welt, MCC



United States
Department of
Agriculture

Forest
Service

Grand Mesa, Uncompahgre and
Gunnison National Forests

2250 South Main Street
Delta, CO 81416
970-874-6600
TDD: 970-874-6660
Fax: 970-874-6698

File Code: 2820
Date: July 31, 2018

Gretchen Pinkham
Natural Resource Specialist
Western Region
U.S. Office of Surface Mining/DOI
1999 Broadway, Suite 3320
Denver, CO 80202-3050

18-08-15-07

Dear Ms. Pinkham:

The Grand Mesa, Uncompahgre and Gunnison National Forests have completed review of Mountain Coal Company, LLC's West Elk Mine, Permit No. C-1980-007, Permit Revision No. PR-15 (Permit Boundary Expansion, Proposed Area of Projected Longwall Panels, and Proposed MVB) dated July 6. This permit action covers coal lease modifications to COC-1362 and COC-67232. Both Lease Modifications were submitted to and ultimately issued by the Bureau of Land Management (BLM) in December 2017.

A joint Forest Service/BLM/OSMRE/Colorado Division of Reclamation, Mining and Safety Supplemental Environmental Impact Statement (SFEIS) was prepared prior to the issuance of the lease modifications. Our Record of Decision and consent for BLM to issue modifications were both issued on December 11, 2017.

The Forest Service has reviewed the unsuitability criteria published in 43 CFR 3461 (SFEIS, Appendix B) and recommended to the Secretary of Interior (or their delegated representative) that there are no significant recreational, timber, economic or other values that are incompatible with modifying the leases within the analysis. None of the affected National Forest System (NFS) lands in the lease were found unsuitable for surface control mining and reclamation pursuant to Section 522 of SMCRA.

Regarding the adequacy of measures to protect Federal resources, any activities proposed in the mining plan must be conducted consistent with measures listed in the modified leases and included herein as Attachment A in order to adequately protect surface resources on NFS lands. We have no additional stipulations to add at this time.

Provided that the conditions of Attachment A are carried forward in OSMRE's decision, this letter constitutes Forest Service concurrence to the decision.

Please be advised, these lease modifications are still in active litigation. However, there is no preliminary injunction or temporary restraining order in place as of the date of this letter affecting the implementation of the proposed PR-15. We will let you know if this situation changes.

If you have any questions or concerns, please contact Levi Broyles, Paonia District Ranger, at 970-527-4131 or lbroyles@fs.fed.us

Sincerely,

SCOTT G. ARMENTROUT
Forest Supervisor

Enclosure



Attachment A- Stipulations for National Forest System Lands Federal Coal Leases COC-1362 & COC-67232

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
Cultural and Paleontological Resources	<p>The FS is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the FS, shall:</p> <ul style="list-style-type: none"> • Contact the FS to determine if a site specific cultural resource inventory is required. If a survey is required then: • Engage the services of a cultural resource specialist acceptable to the FS to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable 	<p>The FS is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the FS, shall:</p> <ul style="list-style-type: none"> • Contact the FS to determine if a site specific cultural resource inventory is required. If a survey is required then: • Engage the services of a cultural resource specialist acceptable to the FS to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable 	<p>Use language from parent leases (required Standard Notice for Lands under the Jurisdiction of the Department of Agriculture.)</p>



United States
Department of
Agriculture

Forest
Service

Grand Mesa, Uncompahgre and
Gunnison National Forests

2250 South Main Street
Delta, CO 81416
970-874-6600
TDD: 970-874-6660
Fax: 970-874-6698

File Code: 2820
Date: July 31, 2018

Gretchen Pinkham
Natural Resource Specialist
Western Region
U.S. Office of Surface Mining/DOI
1999 Broadway, Suite 3320
Denver, CO 80202-3050

18-08-15-07

Dear Ms. Pinkham:

The Grand Mesa, Uncompahgre and Gunnison National Forests have completed review of Mountain Coal Company, LLC's West Elk Mine, Permit No. C-1980-007, Permit Revision No. PR-15 (Permit Boundary Expansion, Proposed Area of Projected Longwall Panels, and Proposed MVB) dated July 6. This permit action covers coal lease modifications to COC-1362 and COC-67232. Both Lease Modifications were submitted to and ultimately issued by the Bureau of Land Management (BLM) in December 2017.

A joint Forest Service/BLM/OSMRE/Colorado Division of Reclamation, Mining and Safety Supplemental Environmental Impact Statement (SFEIS) was prepared prior to the issuance of the lease modifications. Our Record of Decision and consent for BLM to issue modifications were both issued on December 11, 2017.

The Forest Service has reviewed the unsuitability criteria published in 43 CFR 3461 (SFEIS, Appendix B) and recommended to the Secretary of Interior (or their delegated representative) that there are no significant recreational, timber, economic or other values that are incompatible with modifying the leases within the analysis. None of the affected National Forest System (NFS) lands in the lease were found unsuitable for surface control mining and reclamation pursuant to Section 522 of SMCRA.

Regarding the adequacy of measures to protect Federal resources, any activities proposed in the mining plan must be conducted consistent with measures listed in the modified leases and included herein as Attachment A in order to adequately protect surface resources on NFS lands. We have no additional stipulations to add at this time.

Provided that the conditions of Attachment A are carried forward in OSMRE's decision, this letter constitutes Forest Service concurrence to the decision.

Please be advised, these lease modifications are still in active litigation. However, there is no preliminary injunction or temporary restraining order in place as of the date of this letter affecting the implementation of the proposed PR-15. We will let you know if this situation changes.

If you have any questions or concerns, please contact Levi Broyles, Paonia District Ranger, at 970-527-4131 or lbroyles@fs.fed.us

Sincerely,

SCOTT G. ARMENTROUT
Forest Supervisor

Enclosure



Attachment A- Stipulations for National Forest System Lands Federal Coal Leases COC-1362 & COC-67232

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
Cultural and Paleontological Resources	<p>The FS is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the FS, shall:</p> <ul style="list-style-type: none"> • Contact the FS to determine if a site specific cultural resource inventory is required. If a survey is required then: • Engage the services of a cultural resource specialist acceptable to the FS to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable 	<p>The FS is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the FS, shall:</p> <ul style="list-style-type: none"> • Contact the FS to determine if a site specific cultural resource inventory is required. If a survey is required then: • Engage the services of a cultural resource specialist acceptable to the FS to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable 	<p>Use language from parent leases (required Standard Notice for Lands under the Jurisdiction of the Department of Agriculture.)</p>

Resource Area	Stipulations Carried Forward from Parent Lease COG-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COG-67292 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
	<p>inventory report is to be submitted to the FS for review and approval at the time a surface disturbing plan of operation is submitted.</p> <ul style="list-style-type: none"> Implement mitigation measures required by the FS and BLM to preserve or avoid destruction of cultural resource values. Mitigation may include relocation of proposed facilities, testing, salvage, and recordation or other protective measures. All costs of the inventory and mitigation will be borne by the lessee or operator, and all data and materials salvaged will remain under the jurisdiction of the U.S. Government as appropriate. The lessee or operator shall immediately bring to the attention of the FS and BLM any cultural or paleontological resources or any other objects of scientific interest discovered as a result of surface operations under this license, and shall leave such discoveries intact until directed to proceed by FS and BLM. 	<p>inventory report is to be submitted to the FS for review and approval at the time a surface disturbing plan of operation is submitted.</p> <ul style="list-style-type: none"> Implement mitigation measures required by the FS and BLM to preserve or avoid destruction of cultural resource values. Mitigation may include relocation of proposed facilities, testing, salvage, and recordation or other protective measures. All costs of the inventory and mitigation will be borne by the lessee or operator, and all data and materials salvaged will remain under the jurisdiction of the U.S. Government as appropriate. The lessee or operator shall immediately bring to the attention of the FS and BLM any cultural or paleontological resources or any other objects of scientific interest discovered as a result of surface operations under this license, and shall leave such discoveries intact until directed to proceed by FS and BLM. 	

Resource Area	Stipulations Carried Forward from Parent Lease COG-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COG-67292 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
	<p>inventory report is to be submitted to the FS for review and approval at the time a surface disturbing plan of operation is submitted.</p> <ul style="list-style-type: none"> Implement mitigation measures required by the FS and BLM to preserve or avoid destruction of cultural resource values. Mitigation may include relocation of proposed facilities, testing, salvage, and recordation or other protective measures. All costs of the inventory and mitigation will be borne by the lessee or operator, and all data and materials salvaged will remain under the jurisdiction of the U.S. Government as appropriate. The lessee or operator shall immediately bring to the attention of the FS and BLM any cultural or paleontological resources or any other objects of scientific interest discovered as a result of surface operations under this license, and shall leave such discoveries intact until directed to proceed by FS and BLM. 	<p>inventory report is to be submitted to the FS for review and approval at the time a surface disturbing plan of operation is submitted.</p> <ul style="list-style-type: none"> Implement mitigation measures required by the FS and BLM to preserve or avoid destruction of cultural resource values. Mitigation may include relocation of proposed facilities, testing, salvage, and recordation or other protective measures. All costs of the inventory and mitigation will be borne by the lessee or operator, and all data and materials salvaged will remain under the jurisdiction of the U.S. Government as appropriate. The lessee or operator shall immediately bring to the attention of the FS and BLM any cultural or paleontological resources or any other objects of scientific interest discovered as a result of surface operations under this license, and shall leave such discoveries intact until directed to proceed by FS and BLM. 	

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67292 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
Endangered or Threatened Species	<p>The FS is responsible for assuring that the leased land is examined prior to undertaking any surface-disturbing activities to determine effects upon any plant or animal species listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1973 by detrimentally affecting endangered or threatened species or their habitats.</p> <p>The lessee/operator may, unless notified by the FS that the examination is not necessary, conduct the examination on the leased lands at his discretion and cost. This examination must be done by or under the supervision of a qualified resource specialist approved by the FS. An acceptable report must be provided to the FS identifying the anticipated effects of a proposed action on endangered or threatened species or their habitats.</p>	<p>The FS is responsible for assuring that the leased land is examined prior to undertaking any surface-disturbing activities to determine effects upon any plant or animal species listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1973 by detrimentally affecting endangered or threatened species or their habitats.</p> <p>The lessee/operator may, unless notified by the FS that the examination is not necessary, conduct the examination on the leased lands at his discretion and cost. This examination must be done by or under the supervision of a qualified resource specialist approved by the FS. An acceptable report must be provided to the FS identifying the anticipated effects of a proposed action on endangered or threatened species or their habitats.</p>	<p>Use language from parent leases, required Standard Notice for Lands under the Jurisdiction of the Department of Agriculture.</p>
	<p>If there is reason to believe that Forest Service Sensitive species, Threatened or Endangered species of plants or animals, or migratory bird species of high Federal interest are present, or become present in the lease area, the Lessee/Operator shall be required to conduct an intensive field</p>	<p>If there is reason to believe that Sensitive, Threatened or Endangered species of plants or animals, or migratory bird species of high Federal interest are present, or become present in the lease area, the Lessee/Operator shall be required to conduct an intensive field inventory of the</p>	<p>Use language from parent leases, required Standard Notice for Lands under the Jurisdiction of the Department of Agriculture.</p>

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
	<p>Inventory of the area to be disturbed and/or impacted. The inventory shall include species or groups of species identified by the FS, and will be conducted to by a qualified specialist. A report of findings will be prepared and provided to the FS. A plan will be made that recommends protection for these species or action necessary to mitigate the disturbance consistent with the Forest Plan. The cost of conducting such inventory, preparing reports and carrying out mitigation measures shall be borne by the Lessee/Operator.</p>	<p>area to be disturbed and/or impacted. The inventory shall be conducted by a qualified specialist, and a report of findings prepared. A plan will be made that recommends protection for these species or action necessary to mitigate the disturbance. The cost of conducting such inventory, preparing reports and carrying out mitigation measures shall be borne by the Lessee/Operator.</p>	
Canada Lynx	<p>To comply with the USDA Forest Service Conservation Agreement with Fish and Wildlife Service, to follow the conservation measures in the Canada Lynx Conservation Assessment and Strategy (Ruediger et al. 2000), the following special constraints will apply if surface use on the lease is proposed in lynx habitat:</p> <ul style="list-style-type: none"> • Winter access will be limited to designated routes. • Further, should surface disturbing operations be proposed on the lease in lynx habitat, the following special constraints may apply, depending on site-specific circumstances: 	<p>To comply with the Canada Lynx Assessment and Strategy (Ruediger et al. 2000), the following special constraints will apply if post-lease surface use is proposed in lynx habitat:</p> <ul style="list-style-type: none"> • Winter access will be limited to designated routes. <p>Further, should post-lease operations be proposed on the lease in lynx habitat, the following special constraints may apply, depending on site-specific circumstances:</p> <ul style="list-style-type: none"> • Remote monitoring of the development sites and facilities may be required to reduce snow compaction. 	<p>To comply with the GMUG Forest Plan 2008 amendment, the following special constraints will apply if surface use on the lease is proposed in lynx habitat:</p> <ul style="list-style-type: none"> • Winter access will be limited to designated routes. <p>Further, should surface disturbing operations be proposed on the lease in lynx habitat, the following special constraints will apply:</p> <ul style="list-style-type: none"> • Remote monitoring of the development sites and facilities will be required to reduce snow compaction. • A reclamation plan (e.g. road reclamation and vegetation

Resource Area	Stipulations Carried Forward from Parent Lease COC-1962 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-672B2 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
	<ul style="list-style-type: none"> • Remote monitoring of the development sites and facilities may be required to reduce snow compaction. • A reclamation plan (e.g. road reclamation and vegetation rehabilitation) for sites and facilities that promotes the restoration of lynx habitat may be required. • Public motorized use on new roads constructed for project-specific purposes will be restricted. • Access roads will be designed to provide for effective closures and will be reclaimed or decommissioned at project completion if they are no longer needed for other management objectives. • New permanent roads will not be built on ridge tops or in areas identified as important for lynx habitat connectivity. New roads will be situated away from forested stringers. 	<ul style="list-style-type: none"> • A reclamation plan (e.g. road reclamation and vegetation rehabilitation) for sites and facilities that promotes the restoration of lynx habitat may be required. • Public motorized use on new roads constructed for project-specific purposes will be restricted. • Access roads will be designed to provide for effective closures and will be reclaimed or decommissioned at project completion if they are no longer needed for other management objectives. • New permanent roads will not be built on ridge tops or in areas identified as important for lynx habitat connectivity. New roads will be situated away from forested stringers. • If post lease surface use occurs in lynx habitat, the Lessee will be required to submit an annual report to the USDA-FS and USFWS of all activities having occurred in lynx habitat. 	<ul style="list-style-type: none"> • Public motorized use on new roads constructed for project-specific purposes will be restricted. • Access roads will be designed to provide for effective closures and will be reclaimed or decommissioned at project completion if they are no longer needed for other management objectives. • New permanent roads will not be built on ridge tops or in saddles, if possible, or in areas identified as important for lynx habitat connectivity. New roads will be situated away from forested stringers, if possible.

Resource Area	Stipulations Carried Forward from Parent Lease COG-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COG-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
Raptors	<p>For raptors (except American kestrel) the Lessee will be required to:</p> <ul style="list-style-type: none"> • Conduct surveys for nesting raptors on the lease prior to development of any surface facilities, and • No surface activities will be allowed within ¼ mile radius of active nest sites between the dates of February 1 and August 15, unless authorized by the Forest Service on a site-specific basis. • No surface activities will be allowed within 1-mile radius of active bald eagle or peregrine falcon nest sites between the dates of February 1 and August 15, unless authorized by the Forest Service on a site-specific basis. 	<p>For raptors (except American kestrel) the Lessee will be required to:</p> <ul style="list-style-type: none"> • Conduct surveys for nesting raptors on the lease prior to development of any surface facilities, and • No surface activities will be allowed within ½-mile radius of active nest sites between the dates of February 1 and August 15, unless authorized by the Forest Service on a site-specific basis. 	<p>Use combined language from COG-67232 and COG-1362 which reflects Forest Plan standards as well as guidelines from the Biological Evaluation for this project:</p> <ul style="list-style-type: none"> • Conduct surveys for nesting raptors on the lease prior to development of any surface facilities, and • No surface activities will be allowed within ½-mile radius of active nest sites between the dates of February 1 and August 15, unless authorized by the Forest Service on a site-specific basis. • No surface activities will be allowed within 1-mile radius of active bald eagle or peregrine falcon nest sites between the dates of February 1 and August 15, unless authorized by the Forest Service on a site-specific basis. <p>(* No bald eagle or peregrine falcon nest site habitat has been identified within the lease modifications as indicated in the Biological Evaluation prepared for this analysis.)</p>
Big game winter range	In order to protect big game wintering areas, elk calving areas, and other key wildlife habitat and/or activities, specific surface use may be curtailed during specific times of year. Specific time restrictions for	In order to protect big game wintering areas, elk calving areas, and other key wildlife habitat and/or activities, specific surface use may be curtailed during specific times of year. Specific time restrictions for	Use language from parent leases.

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
Water depletions	<p>specific species will be evaluated by the Forest Service at the individual project stage, and any additional site specific conditions of use developed at that time.</p> <p>In the future, if water to be used for mine related activities is taken from a source that is not considered to be non-tributary waters by the U.S. Fish and Wildlife Service, or which exceeds a depletion amount previously consulted upon, the permitting agency must enter into consultation with the U.S. Fish and Wildlife Service to determine appropriate conservation measures to offset effects to listed fish and critical habitat in the upper Colorado River Basin.</p>	<p>specific species will be evaluated by the Forest Service at the individual project stage, and any additional site specific conditions of use developed at that time.</p> <p>In the future, if water to be used for mine related activities is taken from a source that is not considered to be non-tributary waters by the U.S. Fish and Wildlife Service, or which exceeds a depletion amount previously consulted upon, the permitting agency must enter into consultation with the U.S. Fish and Wildlife Service to determine appropriate conservation measures to offset effects to listed fish and critical habitat in the upper Colorado River Basin.</p>	<p>Based on the CRR Section 7 consultation effort for the CRR's NFCMA in 2016, the Forest Service took on the responsibility for reinitiating consultation if minor water depletion caps were exceeded. The Forest Service wants to ensure the lessee provides the necessary information from monitoring and reporting to determine if minor water depletion caps are exceeded, and, in the highly unlikely event that the depletion caps were exceeded, the lessee would meet any additional conservation measures the USFWS might require. This updated stipulation provides clarification to the process that has been occurring on the parent leases regarding water depletion. Changes to stipulation are in <i>italics</i>.</p>
	<p>In the future, if water to be used for mine related activities is taken from a source that is not considered to be non-tributary waters by the U.S. Fish and Wildlife Service, or which exceeds a depletion amount previously consulted upon, <i>the surface management agency</i> must enter into consultation with the</p>		

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
	<p>U.S. Fish and Wildlife Service to determine appropriate conservation measures to offset effects to listed fish and critical habitat in the upper Colorado River Basin. The lessee shall monitor and report all depletions to the Forest Service. Notwithstanding the fact that the surface management agency has the obligation to consult, the Lessee has the obligation to comply with all appropriate conservation measures to offset effects to listed fish and critical habitat in the upper Colorado River Basin in the event the depletion threshold is exceeded and additional reasonable and prudent actions are required.</p>		
Breeding birds	<p>If surface disturbance is proposed on the lease, the lessee/operators will be required to conduct breeding bird surveys prior to surface disturbance as prescribed by the Forest Service.</p>	<p>If surface disturbance is proposed on the lease, the lessee/operators will be required to conduct breeding bird surveys prior to surface disturbance.</p>	<p>Use language from COC-1362 parent lease on both modifications.</p>
Geologic hazards	<p>No surface occupancy would be allowed in areas of high geologic hazard or high erosion potential, or on slopes which exceed 60%.</p> <p>Special interdisciplinary team analysis and mitigation plans detailing construction and mitigation techniques would be required on areas where slopes range from 40-60 percent. The interdisciplinary team could</p>	<p>No surface occupancy would be allowed in areas of high geologic hazard or high erosion potential.</p> <p>Special interdisciplinary team analysis and mitigation plans detailing construction and mitigation techniques would be required on areas where slopes range from 40-60 percent. The interdisciplinary team could</p>	<p>Use language from parent lease COC-1362 on both modifications.</p> <p>Use language from parent leases.</p>

Resource Area	Stipulations Carried Forward from Parent Lease COG-1862 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COG-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
	include engineers, soil scientist, hydrologist, landscape architect, reclamation specialist and mining engineer.	include engineers, soil scientist, hydrologist, landscape architect, reclamation specialist and mining engineer.	
Baseline Information	<p>The operator/lessee would be required to perform adequate baseline studies to quantify existing surface and subsurface resources. Existing data can be used for baseline analyses provided that the data is adequate to locate, quantify, and demonstrate interrelationships between geology, topography, hydrogeology, and hydrology. Baseline studies are critical to the success of future observation and assessment of mining related effects on resources.</p>	<p>The operator/lessee would be required to perform adequate baseline studies to quantify existing surface and subsurface resources. Existing data can be used for baseline analyses provided that the data is adequate to locate, quantify, and demonstrate interrelationships between geology, topography, hydrogeology, and hydrology. Baseline studies are critical to the success of future observation and assessment of mining related effects on resources in the Dry Fork lease tract.</p>	Use language from parent leases.
Monitoring Program	<p>The operator/lessee would be required to establish or amend a monitoring program to be used as a continuing record of change over time of area resources in order to assess mining induced impacts. The monitoring program shall provide the procedures and methodologies to adequately assess interrelationships between geology, topography, hydrogeology, and hydrology identified in the baseline assessment to mining activities on the lease area. The monitoring program shall incorporate baseline data so as to provide a continuing record over time.</p>	<p>The operator/lessee of the lease tract would be required to establish or amend a monitoring program to be used as a continuing record of change over time of area resources in order to assess mining induced impacts. The monitoring program shall provide the procedures and methodologies to adequately assess interrelationships between geology, topography, hydrogeology, and hydrology identified in the baseline assessment to mining activities in the lease tract area. The monitoring program shall incorporate baseline data so as to provide a continuing record over time.</p>	Use language from parent leases.

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
Riparian, wetland or floodplain	<p>Surface use or disturbances (except for surface subsidence and resource monitoring purposes defined in the approved mining permit) will avoid riparian, wetland or floodplain areas, and a buffer zone surrounding these areas (the definition of riparian areas and appropriate buffer zone will be consistent with that defined in the Forest Service Manual and Water Conservation Practices Handbook. Wetland definition will follow Army Corps of Engineers guidelines) unless no practical alternatives exist.</p>	<p>Surface use or disturbances (except for surface subsidence and resource monitoring purposes defined in the approved mining permit) will not be permitted in riparian, wetland or floodplain areas, or within a buffer zone surrounding these areas (the definition of riparian areas and appropriate buffer zone will be consistent with that defined in the Forest Service Manual and Water Conservation Practices Handbook. Wetland definition will follow Army Corps of Engineers guidelines) unless no practical alternatives exist.</p>	<p>Use language from parent leases.</p>
Subsidence	<p>If subsidence adversely affects surface resources in any way (including, but not limited to a documented water loss), the Lessee, at their expense will be responsible to: restore stream channels, stock ponds, protect stream flow with earthwork or temporary culverts, restore affected roads, or provide other measures to repair damage or replace any surface water and/or developed ground water source, stock pond, water conveyance facilities, with water from an alternate source in sufficient quantity and quality to maintain existing riparian habitat, livestock and wildlife use, or other land uses as authorized by 36 CFR 251.</p>	<p>If subsidence adversely affects surface resources in any way (including, but not limited to a documented water loss), the Lessee, at their expense will be responsible to: restore stream channels, stock ponds, protect stream flow with earthwork or temporary culverts, restore affected roads, or provide other measures to repair damage or replace any surface water and/or developed ground water source, stock pond, water conveyance facilities, with water from an alternate source in sufficient quantity and quality to maintain existing riparian habitat, livestock and wildlife use, or other land uses as authorized by 36 CFR 251.</p>	<p>Use language from parent leases.</p>
	<p>The Lessee/Operator shall be responsible for monitoring, repairing and/or mitigating</p>	<p>The Lessee/Operator shall be required to perform the following with respect to</p>	<p>As parent lease for COC-67232 deals specifically with an irrigation ditch on</p>

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
	<p>subsidence effects on existing facilities under Special Use Permit with the Forest Service. Monitoring, repair and/or mitigation, if needed, would be performed at the Lessee's expense. These requirements will be coordinated with the District Ranger and the Special Use Permittee.</p>	<p>monitoring, repairing and/or mitigating subsidence effects on existing facilities under Special Use Permit with the Forest Service. Monitoring, repair and/or mitigation will be performed at the Lessee's expense. The Lessee may request variations on timing for surveys, monitoring and reporting. Approving such requests would be at the discretion of the District Ranger.</p> <p>a. Baseline condition surveys of existing facilities will be completed the Fall following award of lease. Reports of this survey will be deliverable to the Forest Service by December 1 of that same year.</p> <p>b. In consultation with the Special Use Permittee and the Forest Service, install equipment to monitor flow on water conveyance facilities during the Fall following award of lease. Flow monitoring shall commence the following spring and continue until one year post mining. Flow data shall be provided to the Forest Service annually by December 1.</p> <p>c. A Surface Facility Monitoring and Mitigation Plan (Plan) will be submitted to the Forest Service for review and approval not later than 12 months prior to scheduled undermining. The Plan will detail measures to be taken to monitor, repair and mitigate subsidence effects of the facilities during actual mining and for one year.</p>	<p>that lease, use language from COC-1362 on both lease modifications.</p>

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
Roadless	<p>The permittee/lessee must comply with all the rules and regulations of the Secretary of Agriculture set forth at Title 36, Chapter II, of the Code of Federal Regulations governing the use and management of the National Forest System (NFS) when not inconsistent with the rights granted by the Secretary of Interior in the permit. The Secretary of Agriculture's rules and regulations must be complied with for (1) all use and occupancy of the NFS prior to approval of an exploration plan by the Secretary of the Interior, (2) uses of all existing improvements, such as forest development roads, within and outside the area permitted by the Secretary of the Interior, and (3) use and occupancy of the NFS not authorized by the permit/operation approved by the Secretary of the Interior.</p> <p>Federal Coal Lease C-1362, as modified October 2001</p> <p>All or parts of the following lands encompassed in this lease are in the West Elk Inventoried Roadless Area and may be subject to restrictions on road-building pursuant to rules and regulations of the Secretary of Agriculture applicable at the time any roads may be proposed on the lease.</p>	<p>All or parts of the following lands encompassed in this lease are in the West Elk Inventoried Roadless Area and may be subject to restrictions on road-building pursuant to rules and regulations of the Secretary of Agriculture applicable at the time any roads may be proposed on the lease.</p> <p>All or parts of the following lands encompassed in this lease are in the West Elk Inventoried Roadless Area and may be subject to restrictions on road-building pursuant to rules and regulations of the Secretary of Agriculture applicable at the time any roads may be proposed on the lease.</p>	<p>On the following lands within the Sunset CRA, surface operations incident to underground coal mining are subject to regulations in 36 CFR 294, subpart D:</p> <ul style="list-style-type: none"> • All roads that may be constructed must be temporary • All temporary road construction must be consistent with applicable land management plan direction • Road construction may only occur if motorized access has been deemed infeasible by the responsible official; unless a temporary road is needed to protect public health and safety in cases of an imminent threat of flood, fire or other catastrophic event that, without intervention, would cause the loss of life or property • Temporary road construction must be completed in a manner that reduces effects on surface resources, and prevents unnecessary or unreasonable surface disturbance • All temporary roads must be decommissioned and affected landscapes restored when it is determined that the

Resource Area	Stipulations Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
<p>Legal descriptions are approximate. Locations of any proposed surface use would be verified for relationship to IRA boundaries using site-specific maps if/when surface operations are proposed.</p>	<p>road is no longer needed for the established purpose</p> <ul style="list-style-type: none"> All temporary roads must prohibit public motorized vehicles (including off-highway vehicles) except: <ol style="list-style-type: none"> Where specifically used for the purpose for which the road was established; or Motor vehicle use that is specifically authorized under a Federal law or regulation. 		
	<p>For any linear construction zone (LCZ) over 50 inches wide used to install pipelines, the Regional Forester must determine that they are needed, and the responsible official must determine that motorized access without a linear construction zone is not feasible.</p>		<ul style="list-style-type: none"> Construction and use of linear construction zones must be consistent with the GMUG Forest Land and Resource Management Plan, and may be no wider than their respective intended uses. Installation of linear construction zones will be done in a manner that

Resource Area	Stipulations Carried Forward from Parent Lease COG-1362 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COG-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
			<p>minimizes ground disturbance.</p> <ul style="list-style-type: none"> Reclamation of a linear construction zone will not diminish, over the long-term, roadless area characteristics. All authorizations approving the installation of linear facilities through the use of a linear construction zone shall include a responsible official approved reclamation plan for reclaiming the affected landscape while conserving roadless area characteristics over the long-term. Upon completion of the installation of a linear facility via the use of a linear construction zone, all areas of surface disturbance shall be reclaimed as prescribed in the authorization and the approved reclamation plan and may not be waived.
Visuals	n/a	n/a	<p>Within the lease modification areas, the lessee will work with the District Ranger and his/her representative to see that all mine operations are situated on the ground in such a manner that reasonably minimizes impacts to the scenic integrity of that landscape as prescribed in the Forest Plan.</p>

Resource Area	Stipulations Carried Forward from Parent Lease CDC-1962 Specific to Forest Service Lands	Stipulations Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Stipulations Specific to Lease Modifications
Methane use	n/a	n/a	If flaring or other combustion is prescribed as part of any future mitigation measure, lessee will be required to submit a fire prevention and protection plan subject to responsible Forest Service official for approval.

BLM-specific Lease Stipulations for Protection of Non-Mineral (Surface) Resources

Resource Area	Addendum Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Addendum Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Revised Addendum per BLM IM 2017-037 (January 20, 2017)
Methane Flaring, Capture/Use or other alternatives to venting	<p>Sec. 3. Notwithstanding the language in Sec.2 of this lease and subject to the terms and conditions below, lessee is authorized to drill for, extract, remove, develop, produce and capture for use or sale any or all of the coal mine methane from the above described lands that it would otherwise be required to vent or discharge for safety purposes by applicable laws and regulations. For purposes of this lease, "coal mine methane" means any combustible gas located in, over, under, or adjacent to the coal resources subject to this lease, that will or may infiltrate underground mining operations.</p> <p>Sec. 4. Notwithstanding any other provision of this lease, nothing herein shall, nor shall it be interpreted to, waive, alter or amend lessee's right to</p>	<p>Sec. 3. Notwithstanding the language in Sec.2 of this lease and subject to the terms and conditions below, lessee is authorized to drill for, extract, remove, develop, produce and capture for use or sale any or all of the coal mine methane from the above described lands that it would otherwise be required to vent or discharge for safety purposes by applicable laws and regulations. For purposes of this lease, "coal mine methane" means any combustible gas located in, over, under, or adjacent to the coal resources subject to this lease, that will or may infiltrate underground mining operations.</p> <p>Sec. 4. Notwithstanding any other provision of this lease, nothing herein shall, nor shall it be interpreted to, waive, alter or amend lessee's right to</p>	<p>"Section 3. Notwithstanding the language in Section 2 of the lease and subject to the terms and conditions below, lessee is authorized to drill for, extract, remove, develop, produce and capture for use or sale any or all of the waste mine methane for the above described lands that it would otherwise be required to vent or discharge for safety purposes by applicable laws and regulations. For purposes of this lease, "waste mine methane" means any combustible methane gas located in, over, under, or adjacent to the coal resources subject to this lease, that will or may infiltrate underground mining operations and that must be vented to protect the health and safety of the mine workers.</p>

Resource Area	Addendum Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Addendum Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Revised Addendum per BLM IM 2017-037 (January 20, 2017)
	vent, discharge or otherwise dispose of coal mine methane as necessary for mine safety or to mine the coal deposits consistent with permitted underground mining operations and federal and state law and regulation. Lessee shall not be obligated or required to capture for use or sale coal mine methane that would otherwise be vented or discharged if the capture of coal mine methane, independent of activities related to mining coal, is not economically feasible or if the coal mine methane must be vented in order to abate the potential hazard to the health or safety of the coal miners or coal mining activities. In the event of a dispute between lessor and lessee as to the economic or other feasibility of capturing for use or sale the coal mine methane, lessor's remedy as a prevailing party shall be limited to recovery of the compensatory royalties on coal mine methane not captured for use or sale by lessee. Lessee shall have the right to continue all mining activities under the lease, including venting coal mine methane, pending resolution of any dispute regarding the application of the terms of Sections 3 and 4.	vent, discharge or otherwise dispose of coal mine methane as necessary for mine safety or to mine the coal deposits consistent with permitted underground mining operations and federal and state law and regulation. Lessee shall not be obligated or required to capture for use or sale coal mine methane that would otherwise be vented or discharged if the capture of coal mine methane, independent of activities related to mining coal, is not economically feasible or if the coal mine methane must be vented in order to abate the potential hazard to the health or safety of the coal miners or coal mining activities. In the event of a dispute between lessor and lessee as to the economic or other feasibility of capturing for use or sale the coal mine methane, lessor's remedy as a prevailing party shall be limited to recovery of the compensatory royalties on coal mine methane not captured for use or sale by lessee. Lessee shall have the right to continue all mining activities under the lease, including venting coal mine methane, pending resolution of any dispute regarding the application of the terms of Sections 3 and 4.	Section 4. Notwithstanding any other provision of this lease, nothing herein waives, alters, or amends lessee's right to vent, discharge or otherwise dispose of waste mine methane as necessary for mine safety or lessee's obligation to mine the coal deposits consistent with Federal and state law and regulation and with safety requirements contained in permits applicable to underground mining operations subject to this lease. Lessee is not obligated or required to capture for use or sale waste mine methane that would otherwise be vented or discharged if the capture of waste mine methane, independent of the activities related to mining coal, is not economically feasible, or if the waste mine methane must be vented in order to abate the potential hazard to the health or safety of the miners or mining activities. In the event of a dispute between the lessor and the lessee as to the economic or technical feasibility of capturing the waste mine methane for use or sale, lessor's remedy as a prevailing party is limited to recovery of compensatory royalties on the waste mine methane not captured for use or sale by the lessee. Lessee retains the right to continue all mining activities under the lease, including venting waste mine methane, pending resolution of
	Sec. 2 (c) COAL MINE METHANE OPERATIONS AND ROYALTIES- Notwithstanding the language in Part II,	Sec. 2 (c) COAL MINE METHANE OPERATIONS AND ROYALTIES- Notwithstanding the language in Part II,	

Resource Area	Addendum Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Addendum Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Revised Addendum per BLM IM 2017-037 (January 20, 2017)
	<p>Section 2 (a) of this lease, the royalty shall be 12.5 percent of the value of any coal mine methane that is captured for use or sale from this lease. For purposes of this lease, the term "capture for use or sale" shall not include and the royalty shall not apply to coal mine methane that is vented or discharged and not captured for the economic or safety reasons described in Part I, Section 4 of this lease. Lessee shall have no obligation to pay royalties on any coal mine methane that is used on or for the benefit of mineral extraction at the West Elk coal mine. When not inconsistent with any express provision of this lease, the lease is subject to all rules and regulations related to Federal gas royalty collection in Title 30 of the Code of Federal Regulations now or hereinafter in effect and lessor's rules and regulations related to applicable reporting and gas measurement now or hereinafter in effect</p> <p>SEVERABILITY- In the event any provision of this addendum is subject to a legal challenge or is held to be invalid, unenforceable or illegal in any respect, the validity, legality and enforceability of this lease will not in any way be affected or impaired thereby and lessee will retain, in accordance with the terms of</p>	<p>Section 2 (a) of this lease, the royalty shall be 12.5 percent of the value of any coal mine methane that is captured for use or sale from this lease. For purposes of this lease, the term "capture for use or sale" shall not include and the royalty shall not apply to coal mine methane that is vented or discharged and not captured for the economic or safety reasons described in Part I, Section 4 of this lease. Lessee shall have no obligation to pay royalties on any coal mine methane that is used on or for the benefit of mineral extraction at the West Elk coal mine. When not inconsistent with any express provision of this lease, the lease is subject to all rules and regulations related to Federal gas royalty collection in Title 30 of the Code of Federal Regulations now or hereinafter in effect and lessor's rules and regulations related to applicable reporting and gas measurement now or hereinafter in effect</p> <p>SEVERABILITY- In the event any provision of this addendum is subject to a legal challenge or is held to be invalid, unenforceable or illegal in any respect, the validity, legality and enforceability of this lease will not in any way be affected or impaired thereby and lessee will retain, in accordance with the terms of</p>	<p>any dispute regarding the application of the terms of Sections 3 and 4.</p> <p>PART II. TERMS AND CONDITIONS (c) WASTE MINE METHANE OPERATIONS AND ROYALTY – Notwithstanding the language in Part II, Sec.2(a) of this lease, the royalty will be 12.5 percent of the value of any waste mine methane that is captured for use or sale from this lease. For purposes of this lease, the term "capture for use or sale" does not include, and the royalty will not apply to, waste mine methane that is vented, or otherwise discharged and not captured, for the economic feasibility or safety reasons described in Part I, Section 4 of this lease. Lessee will have no obligation to pay royalties on any waste mine methane that is used on or for the benefit of mineral extraction at the (insert mine name here) coal mine. When not inconsistent with any express provision of this lease, this lease is subject to all the rules and regulations related to Federal gas royalty collection in Title 30 of the Code of Federal Regulations now or hereinafter in effect and the lessor's rules, regulations, notices, and orders related to applicable reporting and gas measurement now or hereinafter in effect.</p>

Resource Area	Addendum Carried Forward from Parent Lease COC-1362 Specific to Forest Service Lands	Addendum Carried Forward from Parent Lease COC-67232 Specific to Forest Service Lands	Revised Addendum per BLM IM 2017-037 (January 20, 2017)
	Service Lands	Service Lands	
	<p>this lease, the exclusive right and privilege to drill for, mine, extract, remove or otherwise process and dispose of the coal deposits, upon, or under the lands described in this lease, including the right to vent or discharge coal mine methane for safety purposes as required by applicable laws and regulation.</p>	<p>this lease, the exclusive right and privilege to drill for, mine, extract, remove or otherwise process and dispose of the coal deposits, upon, or under the lands described in this lease, including the right to vent or discharge coal mine methane for safety purposes as required by applicable laws and regulation.</p>	<p>SEVERABILITY – In the event any provision of this addendum is subject to a legal challenge or is held to be invalid, unenforceable, or illegal in any respect, the validity, legality, and enforceability of this lease will not in any way be affected or impaired thereby and lessee will retain, in accordance with the terms of this lease, the exclusive right and privilege to drill for, mine, extract, remove, or otherwise process and dispose of the coal deposits in, upon, or under the lands described in this lease, including the right to vent or otherwise discharge waste mine methane for safety purposes as required by applicable laws and regulations.</p>
			<p>West Elk Mine shall provide to BLM an updated report on the economic feasibility of capturing or flaring the mine's mine methane for beneficial use or abatement, and should provide it to BLM no later than 1 year after the modification is approved.</p>



OFFICE of ARCHAEOLOGY and HISTORIC PRESERVATION

Elizabeth Shaeffer
Manager, Field Operations Branch
Office of Surface Mining Reclamation and Enforcement
Western Regional Office
1999 Broadway, Suite 3320
Denver, Colorado 80202-3050

OCT 03 2018

Re: West Elk Mine Permit Revision 15 (HC#68249)

Dear Ms. Shaeffer:

Thank you for your correspondence dated August 27, 2018 and received by our office on September 5, 2018 regarding the review of the above referenced projects under Section 106 of the National Historic Preservation Act. We would also like to thank Ms. Gretchen Pinkham for her emailed correspondence and phone conversations providing clarification about the proposed undertaking.

After review of the provided documentation, we note that the permit revision intends to add 920 acres within the boundary of lease COC-6732 in Sections 10, 11, 14, and 15 of Township 14 South, Range 90 West and 800 acres within the boundary of lease COC-1362 in Sections 11, 14, 15, 22, and 23 of Township 14 South, Range 90 West. If approved, this undertaking would include 40 acres of surface disturbing activities in order to construct 25 ventilation boreholes and roadways as well in support of increased subsurface longwall mining.


Our office has previously consulted with the Grand Mesa, Uncompahgre, and Gunnison National Forests regarding impacts of the proposed undertaking on cultural resources (HC#74853). A Class II survey of 951 acres recorded no additional cultural resources and we previously concurred with a recommended effect finding of *no historic properties affected* [36 CFR 800.4(d)(1)]. As these two consultations cover permits from differing agencies regarding the same action, we believe that this effect finding is appropriate for both undertakings.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register eligibility criteria (36 CFR 60.4) in consultation with our office pursuant to 36 CFR 800.13. Also, should the consulted-upon scope of the work change, please contact our office for continued consultation under Section 106 of the National Historic Preservation Act.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings. Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

Thank you for the opportunity to comment. We look forward to continued consultation on this undertaking and we request your comment within 30-days of receipt of our letter. If we may be of further assistance, please contact Lindsay Johansson, Section 106 Compliance Manager, at (303) 866-4678 or lindsay.johansson@state.co.us.

Sincerely,


Steve Turner, AIA
State Historic Preservation Officer



Pinkham, Gretchen <gpinkham@osmre.gov>

[EXTERNAL] Re: West Elk Mine Consultation Update

Johansson - HC, Lindsay <lindsay.johansson@state.co.us>

Wed, Oct 10, 2018 at 10:52 AM

To: gpinkham@osmre.gov

Cc: jiliff@osmre.gov

Yes, we are still comfortable with the no historic properties affected finding in this case as the area was included in the Class II survey for which the effect finding was also no historic properties affected. On our end, we are not requesting additional consultation for the added 14 acres.

If there's anything else I can help with, please let me know.

Best,
Lindsay

--

Lindsay D. Johansson
Section 106 Compliance Manager
History Colorado - OAHP
1200 Broadway
Denver, CO 80203
303.866.4678

On Tue, Oct 9, 2018 at 12:33 PM Pinkham, Gretchen <gpinkham@osmre.gov> wrote:

Hi Lindsay,

As we discussed, the acreage included in the letter dated October 3rd is 54 acres of surface disturbance for roadways and ventilation boreholes not 40 acres. The additional 14 acres is part of the existing lease modifications and was part of the previous Class II survey covering 951 acres that had a finding of no historic properties affected.

Please confirm that this does not require additional consultation.

Best,
Gretchen

Gretchen Pinkham

Natural Resource Specialist
Western Region
U.S. Office of Surface Mining/DOI
[1999 Broadway, Suite 3320](#)
[Denver, CO 80202-3050](#)
Work # (303) 293-5088
Fax # (303) 293-5032



United States Department of the Interior



OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

Western Region
1999 Broadway St., Suite 3320
Denver, CO 80202-3050

U.S. FISH AND WILDLIFE SERVICE

☒ NO CONCERNS
☐ CONCUR NOT LIKELY TO ADVERSELY AFFECT
☐ NO COMMENT

Ant T 8/2/18
WESTERN COLORADO SUPERVISOR (DATE)
July 31, 2018

Tails #: 06E24100-2018-TA-0549

Memorandum

To: J. Creed Clayton, PhD, Fish and Wildlife Biologist, U.S. Fish and Wildlife Service, 445 W Gunnison Ave, Suite 240, Grand Junction, CO 81501

From: Elizabeth Shaeffer, Manager, Field Operations Branch Manager, Denver, CO

Subject: West Elk Coal Mine – OSMRE Mining Plan Decision Document Section 7 Consultation under ESA

OSMRE is processing the mining plan decision document (MPDD) for Permit Revision 15 at the West Elk Mine (see enclosed maps). OSMRE would like to verify that additional Section 7 consultation under the Endangered Species Act (ESA) is not needed for the MPDD for Federal Coal Leases COC-1362 and COC-67232 at the West Elk Mine based on previous consultations between U.S. Forest Service (USFS) and U.S. Fish and Wildlife Service (USFWS) for this same project.

USFS completed informal consultation with the USFWS on June 16, 2010 (ES/CO:FS/GMUG/Paonia RD; Tails 65413-2010-F-0109). The USFWS concurred with findings of "may affect, not likely to adversely affect" based on the calculation that less than 0.6% (up to 75 acres) of suitable lynx habitat would become unsuitable due to vegetation alterations under the Foreseeable Mining Plan, which included impacts from Mine Ventilation Boreholes (MVBs) (also referred to as Methane Drainage Wells (MDWs)) and temporary roads. The upcoming MPDD operation does not exceed the 75 acres of disturbance (currently totally 73.5 acres of disturbance) from what was analyzed within the USFS Supplemental Final Environmental Impact Statement (SFEIS) for Federal Coal Lease Modifications COC-1362 and COC-67232 (including on-lease exploration plan) and what was part of the informal consultation.

OSMRE has checked the USFWS Information for Planning and Consultation (IPaC) website to see if the threatened and endangered species consulted on in the area have changed. There are no new threatened and endangered species listed in the area and no critical habitat for any special status species within the West Elk Mine permit boundary.

BACKGROUND

RECEIVED

AUG 03 2018

Ecological Services
Grand Junction, CO

A Biological Assessment (BA) was prepared for the USFS Supplemental Final Environmental Impact Statement Federal Coal Lease Modifications COC-1362 & COC-67232 (including on-lease exploration plan). All known endangered or threatened species in the area were considered.

The Gunnison Sage-grouse, which is now on the GMUG list, does not occur nor is there any habitat for it in the project area. The nearest population is south of Crawford.

The yellow-billed cuckoo was listed as threatened (Western DPS) effective November 2014 and the cuckoo has critical habitat proposed in the North Fork, but not within the project area, on Aug 15, 2015, but that has not been finalized.

The Mexican spotted owl, Uncompahgre butterfly, Debeque (candidate), Greenback trout, Bonytail Chub, Colorado Pikeminnow, Humpback Chub, Razorback Sucker, Skiff milkvetch, Clay-loving Wild Buckwheat, and the Uinta Basin Hookless Cactus do not have habitat present in the Project area. OSMRE did find that the North American wolverine, which is a proposed threatened species, has potential to pass through the West Elk Mine permit boundary but has come to a finding of no effect as this would be a rare occurrence and likely temporary as they travel to more suitable habitat (i.e. alpine meadow).¹

CANADA LYNX

- Informal consultation with the USFWS was completed on June 16, 2010 (ES/CO:FS/GMUG/Paonia RD; Tails 65413-2010-F-0109). The USFWS concurred with findings of “may affect, not likely to adversely affect” based on the calculation that less than 0.6% (up to 75 acres) of suitable lynx habitat would become unsuitable due to vegetation alterations under the Foreseeable Mining Plan, which included impacts from MVBs and temporary roads.
- During the Colorado Roadless Rule (CRR) rulemaking process additional consultation (ES/GJ-6-CO-09-F-001-GP030’ Tails 06E24100-2016-F-0194) occurred with USFWS. The determination of “may affect, not likely to adversely affect” for Canada Lynx applies projected roads and timber removal to the entire North Fork Coal Mining Area (NFCMA), not just to the project area which is approximately 1/10th of the NFCMA.
- Further, Grand Mesa, Uncompahgre, Gunnison National Forests (GMUG) consultation of June 2, 2016 for vegetation removal forest-wide (BO ES/LK-6-CO-08-F-024-GJ0t 6 and TAILS 06824t00-201 6-F -0132) included the earlier project consultation acreages and set acreage limits for disturbance within the lynx analysis units before consultation would again be required. There is over 6,000 additional acres beyond this project and previous disturbances of habitat in the Mount Gunnison Lynx Analysis Unit (LAU) that may be treated before approaching a conservation limit in compliance with the Southern Rockies Lynx Amendment (SRLA). Cumulative effects to lynx that occurred on June 2, 2016 that set habitat alteration limits within the LAU at no more than 30%. This threshold is consistent with the SRLA. There is no critical habitat in the Southern Rockies. The project is covered under the Southern Rockies Lynx Amendment Standards and Guidelines for protection of lynx and lynx habitat and the project is not expected to cause harm to lynx populations or “take” of lynx. This is supported in the concurrence letter from the USFWS.

¹ Aubry, K.B., K.S. McKelvey, and J.P. Copeland. Distribution and Broad-scale Habitat Relations of the Wolverine in the Contiguous United States. *Journal of Wildlife Management* 71:2147-2158.
USDI Fish and Wildlife Service (USFWS). 2014. Wolverine. Available at: <http://www.fws.gov/mountain-prairie/species/mammals/wolverine/>. Accessed July 26, 2018.

- The current project consultation (ES/CO:FS/GMUG/Paonia RD; Tails 65413-2010-F-0109) addresses 75 acres of disturbance of lynx habitat in the LAU for the post-leasing development. This includes habitat that may be lost to roads and drill pads.
- Although the forest lynx habitat map was updated in 2010, following the June 16, 2010 concurrence letter from the USFWS, the changes to percentage of affected habitat does not change much from the previous calculations and is far from reaching the thresholds identified in the SRLA. The SRLA provides standards and guidance regarding vegetation alteration in LAUs. Under SLRA, an LAU should not have more than 30% unsuitable habitat.

COLORADO FISH

Although no special-status fish species are present within the project area, there are four endangered fish within the Gunnison and Colorado River downstream of the project area (Colorado pikeminnow, razorback sucker, humpback chub, and bonytail) that may be affected by water depletions within the watershed. Methane Drainage Wells and exploration drill holes require the use of water to drill. As a result, water depletions were estimated based on the foreseeable mining plan and previous water use activity in the existing mine shown in reports submitted to the USFWS annually although not all water used by the mine is expected to be tributary (i.e., connected) to the Colorado River. The USFS estimated that water use would be only about 1 acre-foot per year or 4.5 acre-feet over the course of 5 years. A concurrence letter from the USFWS for the project was received by the USFS on June 16, 2010, which deferred to the 2007 GMUG Programmatic Biological Opinion (PBO) for water depletion thresholds (one time project use of 50 acre-feet or 100 acre-feet annually) and annual water use reporting by the operator to the USFWS (ES/GJ-6-CO-99-F-033-CP062 and TAILS 65413-2007-F-0019).

Water depletions are best assessed through a cumulative, programmatic approach to best address recovery needs and regulate water use basin-wide. A Recovery Implementation Program for Endangered Fish in the Upper Colorado River Basin was initiated on January 22, 1988. This agreement established a framework for conducting section 7 consultations on depletion impacts related to new projects and impacts associated with existing projects in the Upper Basin. The PBO issued to the GMUG from the USFWS on April 27, 2007 (ES/GJ-6-CO-99-F-033-CP062 and TAILS 65413-2007-F-0019) falls under the umbrella of the original December 20, 1999 PBO for the upper Colorado River Basin above the confluence with the Gunnison River. These PBOs require annual reporting of small water depletions. The 2007 PBO for the GMUG requires that projects do not exceed 50 acre-feet per project and 100 acre-feet per year. Similarly, depletions are covered under the USFWS “Final Gunnison River Basin Programmatic Biological Opinion” (ES/GJ-6-CO-09-F-0001 and TAILS 65413-2009-F-0044) dated December 4, 2009, Which includes all previous depletions consulted on including GMUG’s PBO in 2007. The 2009 PBO also addresses climate change and recognizes adaptive management as a strategy for adjusting to changing needs for recovery (pg. 20).

Additionally, USFWS has conducted progress reviews regarding the Colorado River endangered fishes including their October 7, 2015 “Draft 2014-2015 Assessment of Sufficient Progress Under the Upper Colorado River Endangered Fish Recovery Program in the Upper Colorado River Basin, and of Implementation of Action Items in the December 20, 1999, 15-Mile Reach Programmatic Biological Opinion and December 4, 2009, Gunnison River Basin Programmatic Biological Opinion”. Their review was finalized on December 20, 2016, in the “Final 2015—2016 Assessment of Sufficient Progress Under the Upper Colorado River Endangered Fish Recovery Program in the Upper Colorado River Basin, and Implementation of Action Items in the January 10, 2005, Final Programmatic Biological Opinion on the Management Plan for Endangered Fishes in the Yampa River Basin”.

The conclusion provided by the USFWS in that 2016 Sufficient Progress document (pp 44-45) is as follows: "The Recovery Program has made strong progress in protecting and improving flows and restoring habitat and has demonstrated strong resolve to manage nonnative fishes in recent years...The Service remains convinced that the best chance for success and recovery, rests with this collaborative Recovery Program. Based on our comprehensive evaluation of the status of the endangered fish, provision of flows (particularly during periods of drought), the magnitude of new depletion impacts (relatively minor in the historical context), the focus on nonnative threats, and cumulative Recovery Program accomplishments and shortcomings, the Service concludes that when implemented as Conservation Measures (i.e., part of the proposed action), the Recovery Program is making sufficient progress to continue avoiding the likelihood of jeopardy resulting from depletion impacts of new projects that have an annual depletion of up to 4,500 acre feet. Furthermore, that sufficient progress provides continued avoidance of jeopardy for the water projects and depletions currently provided with ESA compliance by the Program. Projects exceeding 4,500 acre feet or that have direct or indirect effects in addition to water depletions will be evaluated to determine if they jeopardize the species' continued existence on a case by case basis." Therefore, given the USFWS's conclusion under their 2016 Final Assessment, all existing PBOs are still valid because USFWS found sufficient progress toward avoidance of jeopardy for those species. In May 19, 2016, the USFS received a concurrence letter from the USFWS after reinitiating consultation for the reinstatement of the North Fork Coal Mining Area (NFCMA) temporary road exception to the Colorado Roadless Rule. This Biological Opinion covers the project and foreseeable activities, including water depletions, by recognizing the adequacy of the Gunnison River PBO thresholds for water depletions. In the 2016 PBO, the USFWS has "determined that projects that fit under the umbrella of the Gunnison River PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts to the Gunnison River basin. For projects involving water depletions less than 100 acre-feet per year that fit under the umbrella of the Gunnison River PBO, the Federal agency requesting consultation must document the project location, the amount of the water depletion, identify if the depletion is new or historic, and provide the information to the Service when consultation is initiated. This information was provided in your consultation request, therefore, the requirements have been met for the subject project to fit under the umbrella of the Gunnison River PBO. The Service requests that the Forest Service retain discretionary Federal authority for the subject project in case re-initiation of section 7 consultation is required."

Based on this consultation history for the project, the 2010 USFWS concurrence remains valid in light of the USFWS findings in subsequent BOs and recovery agreements which includes by reference all previous consultations including the forest's 2007 programmatic and 2010 project specific consultations. Under OSMRE's MPDD there would no change in the operations and subsequent water depletions requiring re-initiation of Section 7 consultation.

CONCLUSION

Under OSMRE's MPDD there would no change in the operations and subsequent water depletions requiring re-initiation of Section 7 consultation and there would not be an exceedance in the 75-acre disturbance threshold for the Canadian Lynx. OSMRE concurs with USFS previous findings and after review of the latest IPaC did not find any new threatened and endangered species within the Project area that would require initiation of consultation.

Please respond within 30 days if you concur with OSMRE's decision that no further consultation is required and OSMRE can rely on the consultation performed with USFS, of which OSMRE was also a party to.

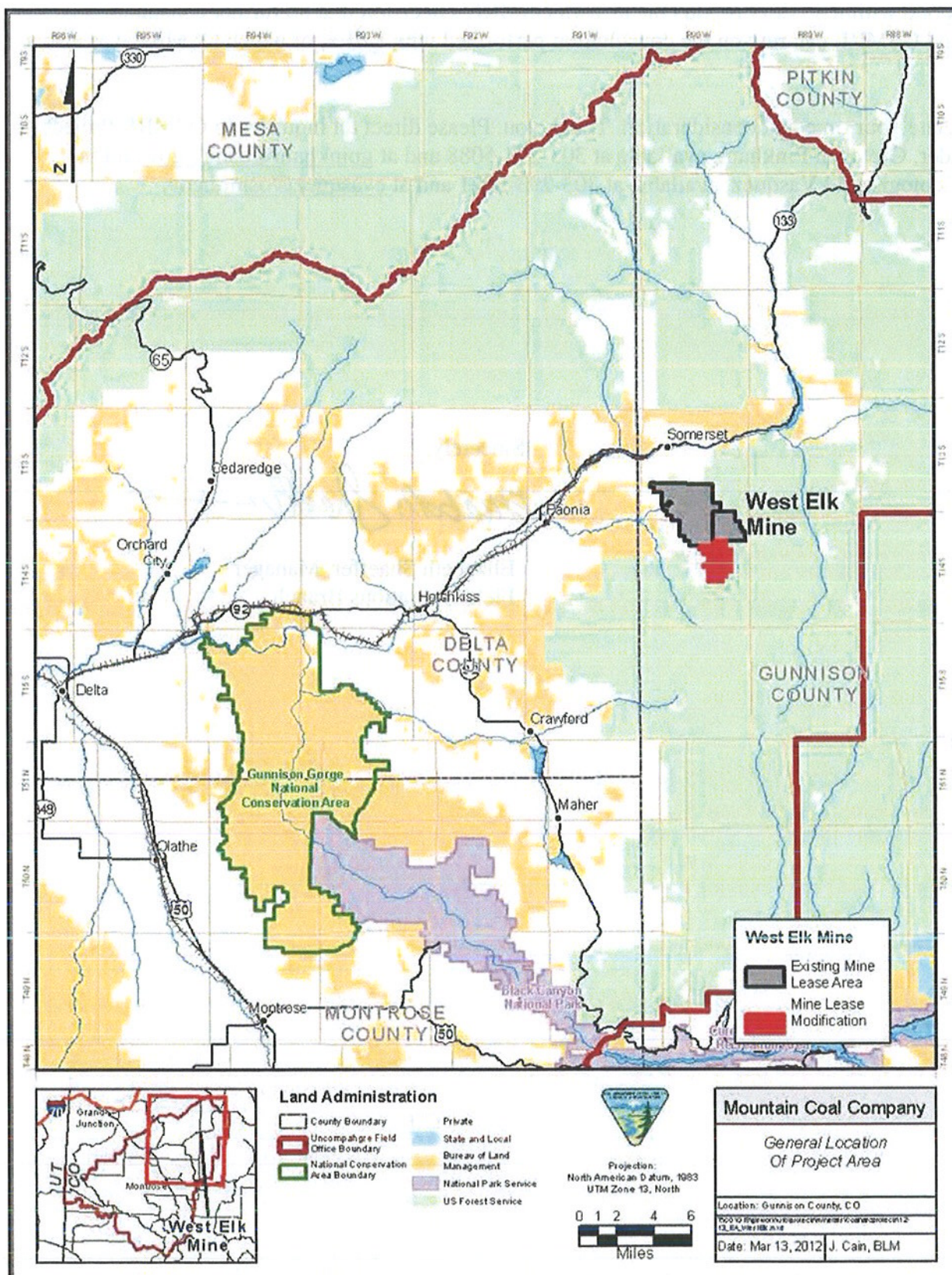
We appreciate your time and consideration. Thank you. Please direct all inquiries to OSMRE Project Team Leader, Gretchen Pinkham, available at 303-293-5088 and at gpinkham@osmre.gov and the OSMRE Ecologist, Ed Vasquez, available at 303-293-5081 and at evasquez@osmre.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Elizabeth Shaeffer", followed by a horizontal line.

Elizabeth Shaeffer, Manager
Field Operations Branch

Enclosure



Mining Plan

Approval Documents

UNITED STATES
DEPARTMENT OF THE INTERIOR

This mining plan approval document is issued by the United States of America to:

Mountain Coal Company, LLC
5174 Highway 133
Somerset, CO 81434

for a mining plan modification for Federal leases COC-1362 and COC-67232 at the West Elk Mine. This mining plan approval supplements all previous mining plan approvals for the West Elk Mine. The approval is subject to the following conditions. Mountain Coal Company, LLC is hereinafter referred to as the operator.

1. Statutes and Regulations: This mining plan approval is issued pursuant to Federal leases COC-1362 and COC-67232; the Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et seq.); and in the case of acquired lands, the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351 et seq.). This mining plan approval is subject to all applicable laws and regulations of the Secretary of the Interior which are now or hereafter in force; and all such laws and regulations are made part hereof. The operator shall comply with the provisions of the Federal Water Pollution and Control Act (33 U.S.C. 1251 et seq.), the Clean Air Act (42 U.S.C. 7401 et seq.), and other applicable Federal laws.
2. This document approves the mining plan modification for Federal leases COC-1362 and COC-67232 at the West Elk Mine and authorizes coal development or mining operations on the Federal leases within the area of mining approval. This authorization expands the approved mining plan area into the following Federal coal lands:

COC-1362:

Sixth Principal Meridian, Colorado
T. 14 S., R. 90 W.,
Sec. 10, NE1/4 SW1/4, and SE1/4;
Sec. 11, S1/2 NW1/4, and SW1/4;
Sec. 14, NE1/4 NW1/4, NW1/4 NW1/4, SW1/4 NW1/4, W1/2 SE1/4 NW1/4,
W1/2 NE1/4 SW1/4, and NW1/4 SW1/4;
Sec. 15, E1/2 NE1/4, and N1/2 SE1/4.

COC-67232:

Sixth Principal Meridian, Colorado
T. 14 S., R. 90 W.,

Sec. II, SW1/4 NE1/4, W1/2 S1/4, and SE1/4 SE1/4;
Sec. 14, NE1/4, E1/2 SE1/4 NW1/4, E1/2 NE1/4 SW1/4, S1/2 SW1/4, and SE1/4;
Sec. 15, SE1/4 SE1/4;
Sec. 22, E1/2 NE1/4;
Sec. 23, NW1/4 NE1/4, and NW1/4.

These lands in Federal leases COC-1362 and COC-67232 encompass 1,720 acres and are found on the United States Geological Service 7.5 minute Quadrangle map of Bowie, Somerset and Minnesota Pass, as shown in the map appended hereto as Attachment A.

3. The operator shall conduct coal development or mining operations only as described in the complete permit application package, and approved by the Colorado Division of Reclamation, Mining and Safety, except as otherwise directed in any conditions of this mining plan approval.
4. The operator shall comply with the terms and conditions of the lease including all lease stipulations, this mining plan approval, and the requirements of Colorado Permit C-1980-007 issued under the Colorado State program, approved pursuant to the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.).
5. This mining plan approval shall be binding on any person conducting coal development or mining operations under the approved mining plan and shall remain in effect until superseded, canceled, or withdrawn.
6. If, during mining operations, unidentified prehistoric resources are discovered, the operator shall ensure that the resources are not disturbed and shall notify the Colorado Division of Reclamation, Mining and Safety and the Office of Surface Mining Reclamation and Enforcement. The operator shall take such actions as are required by the Colorado Division of Reclamation, Mining and Safety in coordination with the Office of Surface Mining Reclamation and Enforcement.
7. The Secretary retains jurisdiction to modify or cancel this approval, as required, on the basis of further consultation with the U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act, as amended, 16 U.S.C. 1531 et seq.



Joseph R. Balash
Assistant Secretary
Land and Minerals Management
U.S. Department of the Interior

4/19/19

Date

Attachment

State Permit Findings



COLORADO

Division of Reclamation,
Mining and Safety

Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

November 15, 2018

Kathleen G. Welt
Mountain Coal Company, LLC
5174 Highway 133
Somerset, CO 81434

**Re: West Elk Mine (Permit No. C-1980-007)
Issuance - Permit Revision No. 15 (PR-15)
Permit Boundary Expansion, Proposed Area of Projected Longwall Panels and Proposed MVB
Sites.**

Dear Ms. Welt:

The Division of Reclamation, Mining and Safety's (Division's) Proposed Decision to approve Permit Revision No. 15 at the West Elk Mine became final on November 15, 2018. Notice of the proposed decision was published in the *Delta County Independent* on September 5, 2018, initiating the thirty (30) day public comment period for the Division's decision. An objection to the proposed decision and a request for a formal hearing before the Mined Land Reclamation Board (Board) was received on September 28, 2018. The formal hearing took place on October 24, 2018. At the hearing the Board upheld the Division's proposed decision to approve PR-15. The decision became final with the service of the Board's Findings of Fact, Conclusions of Law, and Order.

If you have any questions, please contact me.

Sincerely,

Leigh D. Simmons
Environmental Protection Specialist
Leigh.Simmons@state.co.us

cc: Howard Strand, Office of Surface Mining
C-PR-19





COAL MINING PERMIT - PERMIT REVISION DECISION

West Elk Mine, Mountain Coal Company, LLC
Permit No. C-1980-007

The Division of Reclamation, Mining and Safety has proposed the decision stated below. Provided there are no objections, the decision will become effective upon the termination of the thirty (30) day public comment period, in accordance with Rule 2.07.4(3)(c).

Permit Revision No. 15

Decision: Approve

Submittal Date: March 29, 2018

Decision Date: September 4, 2018

Description of Revision: Permit Boundary Expansion, Proposed Area of Projected Longwall Panels and Proposed MVB Sites.

DIVISION OF RECLAMATION, MINING AND PERMITTEE
SAFETY

Authorized Representative - Division

Authorized Representative - Permittee (if applicable)

Date: September 4, 2018

Date:

CHANGE IN ACREAGE	REVISED TOTAL ACREAGE	PERFORMANCE BOND
Disturbed: 53.63	Disturbed: 597.08	Prior Liability: \$13,902,520.97
Affected: 1,053.00	Affected: 15,755.10	Change in Liability: \$498,566.61
Permit: 2,620.00	Permit: 19,854.90	Revised Liability: \$14,401,087.58
State: 0.00	State: 0.00	Bond Held: \$15,000,000.00
Federal: 1,520.00	Federal: 13,358.40	
Private: 1,100.00	Private: 6,496.50	
County: 0.00	County: 0.00	

REVISED APPLICATION PAGES

Master Table of Contents; 2.03-2 through -9; 2.04-8 and -9; 2.04-23 and -24; 2.04-28; 2.04-162; 2.05-3 and -4; 2.05-15 through -29; 2.05-71 and -72; 2.05-186; 2.05-294 and -295; Exhibit 1, page 6; Exhibit 2A "Permit Area Boundary Description"; Exhibit 10F "Negative Results Report, Cultural Resource

REVISED MAPS

Maps 1, 1A, 2-5, 8-23, 31, 34, 37, 40, 42, 50-52, 66, 67; Exhibit 80 "Sunset Trail Proposed MVB Pads & Roads"

Survey, Mountain Coal's Sunset Trail Lease Modifications, Permit Revision #PR-15"; Exhibit 19E "Sunset Trail Lease Modifications 2011 Hydrology Survey, HydroGeo, Inc."; Exhibit 40 "LMA Habitat & Wildlife Survey Reports, 2009-2013"; Exhibit 55B "Stream Channel Parameters and Changes Due to Mining-Induced Subsidence"; Exhibit 60E "Subsidence Evaluation for the Southern Panels, Apache Rocks West, & Sunset Trail Mining Areas"; Exhibit 71A "SST Lease Area Baseline Monitoring Recommendations"

DELETED APPLICATION PAGES

N/A

C-PR-15

DELETED MAPS

N/A

Proposed Decision
and
Findings of Compliance
for the

West Elk Mine
C-1980-007

Permit Revision No. 15

September 4, 2018



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

Virginia Brannon, Director

Prepared by

Leigh D. Simmons
Environmental Protection Specialist

Table of Contents

<u>Introduction</u>	3
<u>Proposed Decision</u>	3
<u>Summary</u>	6
<u>The Review Process</u>	6
<u>Description of the Environment</u>	15
<u>Description of the Operations and Reclamation Plan</u>	26
 Findings of the Colorado Division of Minerals and Geology	30
<u>Section A - Rule 2.07.6</u>	30
I. Roads	34
<u>Section B - Rule 4</u>	35
II. Support Facilities.....	35
III. Hydrologic Balance.....	35
IV. Topsoil.....	50
V. Sealing of Drilled Holes and Underground Openings.....	51
VI. Use of Explosives.....	51
VII. Disposal of Excess Spoil.....	51
VIII. Coal Mine Waste Banks.....	51
IX. Coal Mine Waste.....	54
X. Backfilling and Grading.....	55
XI. Revegetation.....	55
XII. Post-mining Land Use.....	56
XIII. Protection of Fish, Wildlife and Related Environmental Values	56
XIV. Protection of Underground Mining.....	56
XV. Subsidence Control	57
XVI. Concurrent Surface and Underground Mining	62
XVII. Operations on Alluvial Valley Floors	63
XVIII. Operations on Prime Farmland	65
XIX. Mountaintop Removal.....	65
XX. Operations on Steep Slopes.....	65
XXI. In Situ Processing.....	65
 <u>References</u>	i
 <u>Appendix A – Inactive Permit Stipulations</u>	ii

Introduction

This document is the decision package prepared by the Colorado Division of Reclamation, Mining and Safety (the Division) for the West Elk Mine, permit no. C-1980-007. This document includes: 1) the proposed decision to approve the permit revision application; 2) a summary which includes a history of the review of the permit application, a description of the environment affected by the operation and a description of the mining and reclamation plan; and 3) the written findings of compliance the Division has made as required by the Colorado Surface Coal Mining Reclamation Act. Detailed information concerning the findings of compliance can be found in the Regulations of the Colorado Mined Land Reclamation Board for Coal Mining, 2-CCR 407-2.

The Division received an application for Permit Revision No. 15 (PR-15) to conduct surface coal mining and reclamation operations at the West Elk Mine. The application was submitted by Mountain Coal Company, LLC. (MCC), the mine operator, on March 29, 2018, and the Division deemed the application complete for the purposes of filing on April 5, 2018. The mine permit area comprises 17,235 total acres, 11,838 acres located on federal lands and 5,397 acres located on private lands within Delta and Gunnison Counties, Colorado. The legal description of the lands included within the permit area is:

Portions of Sections 9 through 36 (inclusive), Township 13 South, Range 90 West of the 6th P.M.; Portions of Sections 23 through 26 (inclusive), Township 13 South, Range 91 West of the 6th P.M.; and Portions of Sections 1, 2, 3, 4, 5, 8, 9, 10, 11, and 12, Township 14 South, Range 90 West of the 6th P.M.

The application for PR-15 proposes to expand the permit area boundary into the Sunset Trails area to the south of the currently approved permit area boundary, adding 2,620 acres to the permit area; and to revise the currently approved mine plan. The addition of four longwall panels is proposed. The projected area of mining is ~1,120 acres, comprising ~65% federally owned coal and ~35% privately owned. The addition of 43 Mine Ventilation Boreholes (MVBs) is proposed, with associated drill pads and access roads. An addition of 53.63 disturbed acres is proposed under PR-15.

Proposed Decision

The Colorado Division of Reclamation, Mining and Safety proposes to approve the application for PR-15. This proposed decision is based on a finding that the operations will comply with all requirements of the Colorado State Program as found in the Colorado Surface Coal Mining Reclamation Act, Section 34-33-101 *et seq.*, C.R.S., and the Regulations promulgated pursuant to the Act. If no request for a formal hearing is made within thirty (30) days of the first publication of the issuance of this proposed decision, then this decision becomes final. See, section 34-33-119, C.R.S. and Regulation 2.07.4. Upon submittal of acceptable surety by the applicant, the permit will be issued. The permit application, all supporting documentation and any stipulations or conditions will become a binding part of the permit.

No coal mining operations may be conducted on any Federal surface or Federal coal until the Secretary of the Interior has approved the proposed mining plan.

Three outstanding stipulations remain attached to permit number C-1980-007 and are listed below. (A complete list of inactive stipulations previously attached to the permit is given in

Appendix A).

Stipulation No. 3

THE OPERATOR SHALL, UPON CLOSURE, INSTALL WATER-TIGHT SEALS WITHIN THE MINE TO PREVENT GRAVITY DISCHARGE. THIS REQUIREMENT MAY BE WAIVED UPON THE DIVISION'S APPROVAL OF A PLAN SUBMITTED BY THE OPERATOR. THIS PLAN SHALL INCLUDE A DEMONSTRATION THAT THE WATER QUALITY OF THE DISCHARGE FROM THE MINE WORKINGS WILL BE OF ACCEPTABLE QUALITY AND WILL REMAIN ACCEPTABLE AFTER MINE CLOSURE. THIS SHALL INCLUDE CHEMICAL ANALYSIS AND A PREDICTIVE MODEL THAT USES OXIDATION AND REDUCTION POTENTIAL TO DETERMINE LONG-TERM WATER QUALITY OF MINE WATERS. ALSO, THE PLAN SHALL INCLUDE THE CONSTRUCTION OF A SUITABLE CHANNEL FOR MINE DISCHARGE.

STATUS: FUTURE

Stipulation No. 7

THE DIVISION DIRECTS MOUNTAIN COAL COMPANY, PRIOR TO ANY DISTURBANCE AT THE UPPER WASTE SITE, TO INSTALL SEVERAL ELECTRONIC TILT METER TUBES DOWNSLOPE FROM THE TOE OF THE PROPOSED WASTE STRUCTURE. THESE TILT METER INSTALLATIONS SHALL BE INSTALLED AS SPECIFIED IN MCC'S AUGUST 15, 1985 SUBMITTAL. ONE INDICATOR SHALL BE INSTALLED WITHIN 160 FEET OF THE TOE OF THE WASTE PILE CURRENTLY HALF WAY BETWEEN MONUMENTS 51 AND 54. THE SECOND SHALL BE INSTALLED APPROPRIATELY 100 FEET NORTHEAST OF MONUMENT S2, 160 FEET NORTH OF THE TOE OF THE WASTE PILE, AS INDICATED ON DRAWING NO. MG-R C-001, INCLUDED IN THE PERMIT REVISION NO. 6 APPLICATION. DURING THE INSTALLATION OF THESE TILT METER TUBES, THE OPERATOR SHALL AUGER AND LOG THE SURFICIAL AND BEDROCK STRATIGRAPHY ENCOUNTERED. AUGERING SHALL CONTINUE UNTIL THE OPERATOR HAS ESTABLISHED INTACT BEDROCK OCCURRENCE. IF ANY EVIDENCE OF EXISTING LANDSLIDE DEPOSITS IS ENCOUNTERED, THE OPERATOR SHALL DEFINE THE NATURE AND EXTENT OF THE PRE-EXISTING SLOPE INSTABILITY. IF SUCH LANDSLIDE ACTIVITY IS DISCERNED, THE OPERATOR WILL BE REQUIRED TO APPROPRIATELY RECONFIGURE THE PILE DESIGN, PRIOR TO INITIATION OF ANY CONSTRUCTION ACTIVITY.

STATUS: FUTURE.

Stipulation No. 76

MOUNTAIN COAL COMPANY WILL INFORM THE MONTROSE OFFICE OF THE COLORADO DIVISION OF WATER RESOURCES OF PLACEMENT OF ALL NEW SURVEY MONUMENTS. MOUNTAIN COAL COMPANY WILL COPY THE MONTROSE OFFICE OF THE COLORADO DIVISION OF WATER RESOURCES ON ALL SURVEY, PIEZOMETER, AND ACCELEROMETER/SEISMOMETER MONITORING IN AND AROUND MONUMENT DAM. MOUNTAIN COAL COMPANY WILL NOTIFY THE MONTROSE OFFICE OF THE COLORADO DIVISION OF WATER RESOURCES WHENEVER THE PEAK GROUND ACCELERATION (PGA) THRESHOLD IS EXCEEDED DURING THE MONITORING PERIOD, WHETHER MINE-INDUCED OR NATURALLY-OCCURRING.

STATUS: FUTURE.

Summary

The Review Process

Permit C-1980-007 was issued on July 31, 1981 for an initial five-year term, and since then has been renewed for six additional five-year terms. Permit Renewal No.7 (RN-7) is under review by the Division as of the date of these findings. Operations at the West Elk Mine have been conducted under several different names in the past. Before 1991, the West Elk Mine itself was known as the Mt. Gunnison No. 1 Mine. Since the mine opened, operations were conducted under the following names: Anaconda Minerals Company, ARCO Coal Company (a Division of Atlantic Richfield Company), and West Elk Coal Company, Inc. The name was changed from West Elk Coal Company, Inc., Mt. Gunnison No. 1 Mine, to Mountain Coal Company, West Elk Mine, and processed by the Division as a Succession of Operator. Both companies are wholly owned subsidiaries of the Atlantic Richfield Company. The Division issued a proposed decision to approve the name change pursuant to Rule 2.08.6(4) on December 20, 1991. The decision was final following the public comment period, on January 20, 1992. The permit was subsequently transferred by succession of operator to MCC, LLC, a subsidiary of Arch Coal, Inc., on April 23, 1998.

Including PR-15, thirteen permit revisions have been approved (PR-9 was withdrawn and PR-13 was numerically skipped). Ten bond release applications have been approved. A complete summary of previous major permitting actions is given below.

Mountain Coal Company, formerly the West Elk Coal Company, applied on November 6, 1979 for a permit to conduct underground mining and reclamation operations at the West Elk Mine, formerly the Mt. Gunnison No. 1 Mine.

The application was determined to be complete on November 29, 1979. The first review comments from the Division of Water Resources were received on March 26, 1980, and comments from the Division of Wildlife were received on April 22, 1980. During the latter part of June, 1980, the Division received the Office of Surface Mining, Reclamation and Enforcement's (OSM) Apparent Completeness Review of the application, which was subsequently incorporated into the July, 1980 Mined Land Reclamation Board for Coal Mining (MLRB) Preliminary Adequacy Review Letter and then forwarded to the company. On January 13, 1981, a meeting was held between OSM and MLRD to assess the adequacy of MCC's responses, and it was at this point in time that the responses were found to be substantially inadequate in a variety of aspects. This resulted in a decision to prepare a second, joint adequacy letter which was sent to the company on February 6, 1981.

On January 30, 1981 the Division received additional comments from the Division of Water Resources which outlined the deficiencies in the application with regard to water rights and, in particular, with the deficiencies of the proposed Minnesota Creek Basin Augmentation Plan. Additional comments on water rights issues were submitted in February and March of 1981 in the form of objection letters from several concerned citizens. These letters also discussed problems relating to alluvial valley floors, protection for perennial streams, the potential for landslides to be triggered by subsidence, cumulative hydrologic impacts, the adequacy of MCC's subsidence

monitoring and subsidence control plans, and a number of procedural issues. These objections resulted in several requests for a mine site visit and informal conference, which were held on April 30, 1981 and May 12, 1981, respectively. The Division began preparation of its written findings soon after the conference and published its proposed decision on June 22, 1981. The Division's decision was to approve the West Elk permit application with stipulations.

The five-year permit was issued on July 31, 1981, pursuant to the Colorado Surface Coal Mining Reclamation Act, CRS 34-33-101 *et seq.* Construction of the West Elk Mine began in 1981. The mine began producing coal from the F Seam in January 1982. The expiration of this permit was set at July 31, 1986. On January 17, 1986, a complete renewal application was received. This application was subsequently reviewed and the Division issued a proposed decision to approve the renewal application with stipulations. Following the public comment period, the permit was renewed on May 19, 1987. The permit was to expire on August 1, 1991. The Division received MCC's complete renewal application on January 30, 1991 thereby ensuring the operator's right to successive renewal pursuant to 2.08.5(3)(f). The Division issued a proposed decision to approve the renewal application with stipulations, and following the public comment period, the permit was renewed on January 29, 1993, and was to expire on August 1, 1996.

The Division received an application for a permit revision (Jumbo Mountain; PR-5) on February 4, 1994, which was subsequently deemed complete on February 14, 1994. The Division issued the first preliminary adequacy review letter on April 15, 1994, which identified deficiencies in geology, hydrology, and subsidence. MCC's responses to the preliminary adequacy review were received via facsimile on June 3, 1994. An extension of the proposed decision date was requested by MCC and approved by the Division from June 14, 1994, to July 8, 1994. A second adequacy review letter was sent to MCC on July 5, 1994. Another extension of the proposed decision date was requested by MCC and approved by the Division to July 22, 1994. A meeting between the Division and MCC to assist MCC in responding adequately to the Division's questions was held on July 14, 1994. Additional extension requests were made by MCC and approved by the Division for the proposed decision to August 26, 1994, and subsequently to September 16, 1994, then September 23, 1994; October 7, 1994; and finally to October 21, 1994. Additional review materials were received September 30, October 7, 14, and 20, 1994. A final meeting concerning PR-5 was held on October 7, 1994. The proposed decision to approve the revision was issued on October 21, 1994.

The Apache Rocks Permit Revision (PR-6) was submitted to the Division on June 8, 1995. The application was deemed complete for the purposes of filing on June 18, 1995. Appropriate agencies were notified of the application by letters dated June 19, 1995. The company's newspaper publication occurred in the *Delta County Independent* on June 21 and 28, and July 5 and 12, 1995. Division adequacy review letters were sent to MCC on June 30, 1995; August 25, 1995; September 20, 1995; October 18, 1995; November 20, 1995; January 15, 1996; and January 26, 1996. All concerns were adequately addressed by MCC. MCC responses and all comments received from other agencies are available for review at the Division office. The proposed decision was issued on January 26, 1996, with full consideration of the adequacy and other agency responses.

On January 31, 1996, a permit renewal application was received by the Division for a successive five-year permit term. On February 1, 1996, the application was deemed incomplete because the proof of newspaper publication was not included with the application. On March 6, 1996 the application was deemed complete for the purposes of filing following the receipt of an Affidavit of Publication for the public notice advertisement required by Rule 2.08.5(2)(b)(ii). On May 10, 1996, an adequacy review letter was submitted to MCC identifying several issues to be addressed as part of the current permit renewal process. All concerns were adequately addressed by MCC. The Division renewed Mining Permit No. C-1980-007 for the West Elk Mine on July 26, 1996.

The Sylvester Gulch Facilities Area Permit Revision (PR-7) was submitted to the Division on November 18, 1996. The application was deemed complete for the purposes of filing on November 26, 1996. Appropriate agencies were notified of the application by letters dated December 04, 1996. Division adequacy review letters were sent to MCC on January 15, 1997, April 14, 1997, and on April 29, 1997. All concerns were adequately addressed by MCC. MCC responses and all comments received from other agencies are available for review at the Division office. The proposed decision to approve the revision was issued on April 30, 1997.

The Box Canyon Revision (PR-8) was originally received by the Division on March 2, 1998. The revision was deemed complete on March 11, 1998, and appropriate agencies were notified of the application by letters that same date. Notice of the application was published in the *Delta County Independent* on March 25, April 1, 8, and 15, 1998. Division adequacy review letters were sent to MCC on May 8, 1998, December 15, 1998, April 1, 1999, and April 30, 1999. All concerns were adequately addressed by MCC. A final Applicant Violator System (AVS) check was completed on January 29, 2000. MCC responses and all comments received from other agencies are available for review at the Division office. The proposed decision to approve the revision was issued on January 19, 2000.

PR-9, for coal handling facilities and E-seam access in Sylvester Gulch, was first received by the Division on September 14, 1999, and deemed complete for the purposes of filing on September 24, 1999. The first adequacy letter was sent to the Operator on November 23, 1999. MCC withdrew the application for PR-9 on August 29, 2002.

MCC submitted a permit renewal application (RN-4) on January 31, 2001, and it was received by the Division on February 2, 2001. The application was found incomplete on February 4, 2001, and was deemed complete for the purposes of filing on April 12, 2001. An adequacy review was conducted but no comments were submitted to the applicant because issues had been resolved by an extensive midterm review, the revisions from which had just been completed in 2000. The proposed decision to approve the revision was issued on July 31, 2001.

The application for PR-11, the addition of 690 acres of the West Flatiron lease, was received November 16, 2004, and deemed complete for the purposes of filing on November 23, 2004. A preliminary adequacy review letter was sent by the Division on January 6, 2005, and responses were received from MCC on February 18, 2005. A

second set of adequacy comments was sent by the Division on March 1, 2005, and responses were received on March 18, 2005. These responses were determined to satisfy the Division. No public comments were received. A letter was received by the Bureau of Land Management (BLM) on March 8, 2005, stating that MCC's plan was adequate to meet all current Federal regulations regarding the Resource Recovery Protection Plan (R2P2). The U.S. Forest Service sent a letter of concurrence with an approval decision on March 17, 2005. Letters were received from the Colorado State Historic Preservation Officer (SHPO) on December 1, 2004, and from the State Engineer's Office on December 3, 2004, indicating there were no comments or objections. The proposed decision to approve PR-11 was issued on April 8, 2005.

The application for PR-10, the addition to the permit area of E-seam longwall panels 1 through 9 and associated development entries in the South-of-Divide area, was received by the Division on April 2, 2004, and was deemed complete for the purposes of filing on April 8, 2004. Mining of the E seam in panels 10, 11, and 12 was approved in a previous revision. Tables 1 and 2, below, summarize the chronology of adequacy letters and responses between the Division and MCC for Permit Revision No. 10, and the chronology of comments received by the Division and their resolution.

Table 1 – PR-10 adequacy review chronology.

Date DMG sent adequacy letter to MCC	Date DMG received responses from MCC
7/6/2004	11/30/2004
2/24/2005	6/13/2005
11/4/2005, 12/16/2005	3/20/06, 4/1/06
5/5/2006	5/16/06, 5/22/06

The proposed decision to approve Permit Revision 10, with new stipulations, was issued on June 2, 2006.

Table 2 – PR-10 chronology of resolution of comments.

Commenter	Comment topic	Date letter received by DMG	Date resolved
Division of Water Resources (J. Norfleet)	Monument Dam	5/26/2004	6/06 (Stipulations 74 and 75 attached to proposed decision)
Division of Water Resources (J. Ward, J. Norfleet's successor)	Monument Dam	4/21/2006	
U.S. Forest Service	Various topics	6/4/2004	4/27/06 (letter from U.S. Forest Service)
U.S. Forest Service	Various topics	1/28/2005	
Minnesota Canal & Reservoir Co. Inc.	Monument Dam	6/4/2004	5/31/06 (letter from Minnesota Canal & Reservoir Co. Inc.)
Minnesota Canal & Reservoir Co. Inc.	Monument Dam	1/31/2006	

MCC submitted Permit Renewal application RN-5 on January 23, 2006 and the application was deemed complete for the purposes of filing on January 26, 2006. An adequacy review found that it was not necessary to submit comments to the applicant. The reclamation cost estimate was updated and the applicant submitted additional reclamation bond. The proposed decision to approve RN-5 was issued on February 13, 2007.

MCC submitted the application for PR-12, the addition of the Dry Fork lease (COC-67232), on October 1, 2007 and DRMS deemed the application complete for the purposes of filing on the same day. An adequacy review was conducted and comments were submitted to the applicant in a letter dated December 5, 2007. The Division's adequacy concerns were related to subsidence impacts in the proposed Dry Fork lease area and various changes to text and tables in the permit application. All concerns were resolved by MCC's responses submitted on February 28, 2008. The Division issued a proposed decision of March 21, 2008.

MCC submitted the application for PR-14 on August 18, 2008 and DRMS deemed the application complete for the purposes of filing on August 28, 2008. PR-14 approved the drilling of up to 152 methane drainage wells to the mine's underground workings in longwall panels E-2 through E-12, over a 12-year period. The wells were approved to be

drilled within the applicant's existing coal leasehold and mining permit area, on Federal (USFS) and private lands. The total aggregate surface disturbance was approved to be approximately 80 acres within an approximate 6-square mile area. A Federal Environmental Impact Statement (EIS) was prepared for the project, titled "The Deer Creek Shaft and E Seam Methane Drainage Wells Project". The applicant substituted PR-14 for a proposed drilling project previously submitted to the Division as Technical Revision 112. A decision to approve PR-14 was proposed on October 10, 2008, and issued on November 14, 2008.

MCC submitted an application for permit renewal, RN-06, on January 20, 2011, and the application was deemed complete for the purposes of filing on January 21, 2011. The Division conducted a preliminary adequacy review of the RN-06 application and submitted comments to the applicant in a letter dated March 18, 2011. Most of the Division's comments related to updating information in the AVS. All concerns noted in the March 18, 2011 letter were resolved by MCC's responses submitted by email on March 25, 2011. During the review of RN-06, the Division updated the reclamation cost estimate for the West Elk Mine. A decision to approve RN-06 was proposed on October 17, 2011, and issued on November 28, 2011.

MCC submitted an application for permit renewal, RN-07, on February 1, 2016, and the application was found complete on the same day. The Division conducted a preliminary adequacy review of the RN-07 application and submitted comments to the applicant in a letter dated May 3, 2016. All concerns noted in the May 3, 2016 letter were addressed by MCC's response received by the Division on May 24, 2016. During the review of RN-07, the Division initiated an update of the reclamation cost estimate for the West Elk Mine. An important component of the revised cost estimate is a complete and accurate inventory of holes drilled by the operator, which continues to be under review by the Division as of the date of these findings. As of the date of these findings, the decision due remains in administrative extension in order to allow for the compilation of the necessary information, and is currently set at August 31, 2018.

Since the publication of the RN-06 findings document, 18 Technical Revisions (TR), 45 Minor Revisions (MR), and 6 Surety Releases (SL) have been submitted to the Division. Details of these actions are summarized in Table 3, initially by revision type, then in the order of submission:

Table 3: Permitting history since RN-06

Revision	Brief description	Approval date
TR-128	Repairs of the ST-2 Pad slump and the slide below the RPEE haul road	5/31/2013
TR-129	Revised Longwall Panel E4 MDW Road and Pad Location	7/11/2012
TR-130	Revised Longwall Panel E5 MDW Road and Pad Location	5/14/2013
TR-131	Updated Reclamation Seed Mixes	10/21/2013
TR-132	Revised Longwall Panel E5 MDW Pad and Road Locations	5/14/2014
TR-133	Revised RPEE Designs	8/1/2014
TR-134	Revised Longwall Panel E6 MDW Pad Locations.	7/7/2014
TR-135	Revised Longwall Panel E6 MDW Pad and Road Locations	8/5/2014

TR-136	Revised MDW E6-14-16 Pad Locations	1/27/2015
TR-137	B Seam Longwall Panels Initial Development	7/23/2015
TR-138	Revise MVB E6-14 and E7-1, 3, & 4 Locations/Eliminate Pad E6-16	6/10/2016
TR-139	Reduction of Sites in Hydrology Monitoring Program.	12/1/2016
TR-140	Revised MVB Pad and Road Locations for Longwall Panels E7 and E8	5/26/2017
TR-141	Incidental permit boundary change	6/2/2017
TR-142	Initial SST South Mains Development Mining	1/3/2018
TR-143	Extend Longwall Panel LWE8	1/30/2018
TR-144	In-Mine Exploration	2/12/2018
TR-145	Revised MVB Pad and Road Locations for Longwall Panel E8	6/11/2018
MR-383	Phase 1A RPE East Buttress and Refuse Placement	12/9/2011
MR-384	Update Surface Owners in Exhibit 3 and Map 2	12/9/2011
MR-385	Coal Pad ST-02 Slump Repair	Withdrawn
MR-386	New well next to existing damaged Box Canyon North (B-Seam) water monitoring well	7/24/2012
MR-387	Replace WWTP Polishing Pond with Enclosing Buried Tank.	10/3/2012
MR-388	Temporary Coal Refuse Stockpiles	11/1/2012
MR-389	Modified Phase 1B RPE East Buttress and additional refuse placement.	11/30/2012
MR-390	Shed for Chlorine Meter.	11/28/2012
MR-391	Rock quarry for RPEE Phase 1B buttress	5/10/2013
MR-392	Add four power poles at Sylvester Gulch fan bench.	4/23/2013
MR-393	Addition to Nitrogen Building.	5/29/2013
MR-394	Changes to Lower Refuse Pile Drainage	8/1/2013
MR-395	Retaining Wall at RPEE HR-2 Switchback	8/1/2013
MR-396	RPE Minor Drainage Revision.	8/28/2013
MR-397	Steep Slope Seed Mix.	Withdrawn
MR-398	Updated Exhibit 1 Officers and Directors	11/1/2013
MR-399	RPEE Haul Road Slope Restoration	Withdrawn
MR-400	RPEE Coble Zone Drainage Pipe	10/9/2013
MR-401	RPEE Drainage Modification.	11/4/2013
MR-402	New Culvert in Ditch at RPE Pond	11/4/2013
MR-403	Temporary Topsoil Pile	1/17/2014
MR-404	Updated Map 51 - E Seam Projected Operations.	6/10/2014
MR-405	Replacement of a Portion of a Culvert Flume at the RPEE with Clay-Lined, Riprap Ditch	6/10/2014
MR-406	Ventilation Portal Investigation Boreholes	8/1/2014
MR-407	Midterm Review MT-7 Responses	1/16/2015
MR-408	Updated Exhibit 1 Officers and Directors	3/26/2015
MR-409	Stormwater Recycling Pipeline Project	4/13/2015
MR-410	Updated Officers and Directors List of Exhibits	5/26/2015
MR-411	As-Built and Approved E Seam MVB Pads and Roads.	7/20/2015

MR-412	Upper Poison Gulch Road Stabilization	6/29/2015
MR-413	General Text and Coal Reserve Estimate Updates	8/20/2015
MR-414	Addition of Concrete Vault to Pond Pipeline.	10/1/2015
MR-415	Reformatted and Updated Permit Sections 1.0 - 2.03.	2/8/2016
MR-416	Updated Exhibit 1 - Officers and Directors.	2/1/2016
MR-417	Updated Permit Text, Exhibit 2 and Map 50 and 51 and Eliminate Exhibit 38; RN-7 Responses.	Withdrawn
MR-418	Rerouted MSB Drainage.	9/22/2016
MR-419	Update Exhibit 1 - ACI Officers and Directors.	11/10/2016
MR-420	Update Exhibit 12 -P & A and MVP Completions.	11/17/2016
MR-421	Ark Land Company Name Change and Addition of Arch Western Acquisition, LLC.	4/20/2017
MR-422	New Potable Water Tank	8/15/2017
MR-423	E Seam Exploration Drill Holes	8/28/2017
MR-424	Additional E Seam Exploration Drill Holes.	9/19/2017
MR-425	Sunset Main South Neck-In and Rock-work	9/20/2017
MR-426	Add Culvert C5E-24A	11/6/2017
MR-427	Updated Exhibit 12-2017 P & A and MVB Completion Reports.	1/21/2018
SL-5	Phase I Bond Release	2/11/2014
SL-6	Phase III Bond Release	6/12/2015
SL-7	Partial Phase I Bond Release	4/13/2015
SL-8	Phase I Bond Release	11/20/2015
SL-9	Phase III Bond Release.	12/1/2016
SL-10	Phase I Bond Release.	12/22/2016

MCC submitted the application for PR-15 (the Sunset Trails expansion) on March 29, 2018, and the Division deemed the application complete for the purposes of filing on April 5, 2018. The Division sent completeness notification letters to various agencies in accordance with 2.07.3(3)(b).

The ownership and control information was cross-checked against the AVS database on April 20, 2018, and again on August 24, 2018. No violations were reported.

The Division received proof of publication of the applicant's public notice on May 3, 2018. The notice was published in the *Delta County Independent* on April 11, 18, 25 and May 2, 2018. During the 30 day public comment period following the last publication the Division received a number of comments from concerned citizens, including a letter dated June 1, 2018, with a packet of supporting documentation, from WildEarth Guardians (WEG), the Center for Biological Diversity (CBD) and the Sierra Club (SC). The June 1 letter included a request for an informal conference and a site visit. All comments were forwarded to MCC.

The Division met with representatives of WEG on June 18, 2018, to discuss a potential site visit based on the request for an informal conference. Details of the site visit were subsequently agreed upon with MCC and WEG and a map, generated by the Division showing locations to be

visited, was shared and agreed upon. The site visit took place on June 21 and 22, 2018, and was conducted in compliance with section 34-33-118(6) and Regulation 2.07.3(6)(b)(iii). The site visit was attended by representatives of the Division, MCC, WEG and CBD. The previously agreed upon locations were inspected. The Division received a follow-up letter from WEG on June 25, 2018, in which WEG asserted that the PR-15 application should be deemed incomplete. A response letter was sent to WEG on July 6, 2018, outlining the Division's internal application review process and proposing a date for the requested informal conference.

The Division published a public notice of an informal conference in the Delta County Independent on July 18, 2018, and the requested informal conference took place in Hotchkiss, CO, on August 1, 2018. The informal conference was attended by representatives of WEG, CBD and High Country Conservation Advocates (HCCA), as well as staff of MCC and the Division. A follow-up letter, signed by WEG, SC, HCCA and CBD, was received by the Division on August 20, 2018.

In addition to the above referenced comment letters, the Division received letters from:

- The Colorado Office of Archaeology and Historic Preservation on May 4, 2018, noting that no historic properties had been recorded within the proposed permit area, but that the area had not yet been fully inventoried.
- The Bureau of Land Management, Uncompahgre Field Office (BLM) on May 17, 2018, verifying the coal leases, right of surface access and maximum economic recovery of federal coal for the leased lands encompassed in PR-15.
- The Office of Surface Mining Reclamation and Enforcement (OSMRE) on June 6, 2018, noting their determination that PR-15 constitutes a mining plan modification, requiring the preparation of a mining plan decision document and approval from the Assistant Secretary of Land and Minerals Management before the proposed mining operations can be conducted on lands containing leased Federal coal.

The Division conducted a preliminary adequacy review of the PR-15 submittal and sent a letter to MCC on June 18, 2018, with ten issues to be addressed. An emailed response to the initial adequacy review was received from MCC on July 6, 2018, with a hard copy of the same material received on July 10, 2018. This submission included revised maps showing an updated mine plan.

The Division received an emailed letter from the BLM on August 7, 2018, updating the findings detailed in the letter of May 17 in the light of the updated mine plan.

During the review process, the Reclamation Cost Estimate for the West Elk Mine was updated to account for new disturbance proposed with PR-15.

Description of the Environment

Site Description and Land Use - Rule 2.04.3

The West Elk Mine is located approximately one mile east of the town of Somerset on Colorado State Highway No. 133. The western permit boundary extends to the outer slopes of Jumbo Mountain. PR-11 extended the eastern permit boundary into the Raven Gulch and Deep Creek watersheds. The northern extremity of the permit area lies just north of the North Fork of the Gunnison. PR-10 extended the southern boundary of the permit area south of Minnesota Reservoir into the drainage basins of Minnesota Creek, Dry Fork, Lick Creek, Poison Gulch, and Deep Creek. PR-12 extended the permit area to the southeast with the addition of the Dry Fork lease. PR-15 seeks to extend the southern boundary of the permit area, to include the South Prong and Horse Creek watersheds. (See Figure 1).

The active Elk Creek Mine is located just northwest of the West Elk Mine facilities, north of the North Fork of the Gunnison River. The reclaimed Bear Mine is adjacent to the West Elk Mine on the west. Several historic mines, including the Hawks Nest, Black Beauty, Edwards and Oliver Mines are situated within or near to the northeast of the West Elk permit area.

The West Elk Mine is on the western flank of the West Elk Mountains in the drainage basin of the North Fork of the Gunnison River. The climate is semi-arid. Topography is characterized by steeply sloping mountains covered primarily with tall shrub vegetation, particularly Gambel oak and Saskatoon serviceberry. The general area where the mine is located is currently used for grazing domestic livestock (cattle and sheep) and wildlife (deer and elk). Recreational activities such as big game hunting also occur here.

Slopes range from 0 to 60 percent on the permit area, and elevations range from 5,900 feet at Somerset in the valley of the North Fork, to above 9,800 feet in the southeast corner of the permit area.

The steep slopes of the stream valleys and the instability of the rock strata in the North Fork drainage basin have contributed to numerous landslides, mud flows and rock falls. These mass wasting features have been mapped by W.R. Junge of the Colorado Geological Survey and published as an open file report, entitled "Geologic Hazards, North Fork Gunnison River Valley, Delta and Gunnison Counties, Colorado."

The primary land uses within the permit area are characterized as rangeland and woodland, supporting big game (deer and elk) and livestock (cattle and sheep). Portions of the permit area are within the boundaries of Grand Mesa, Uncompahgre and Gunnison National Forests.

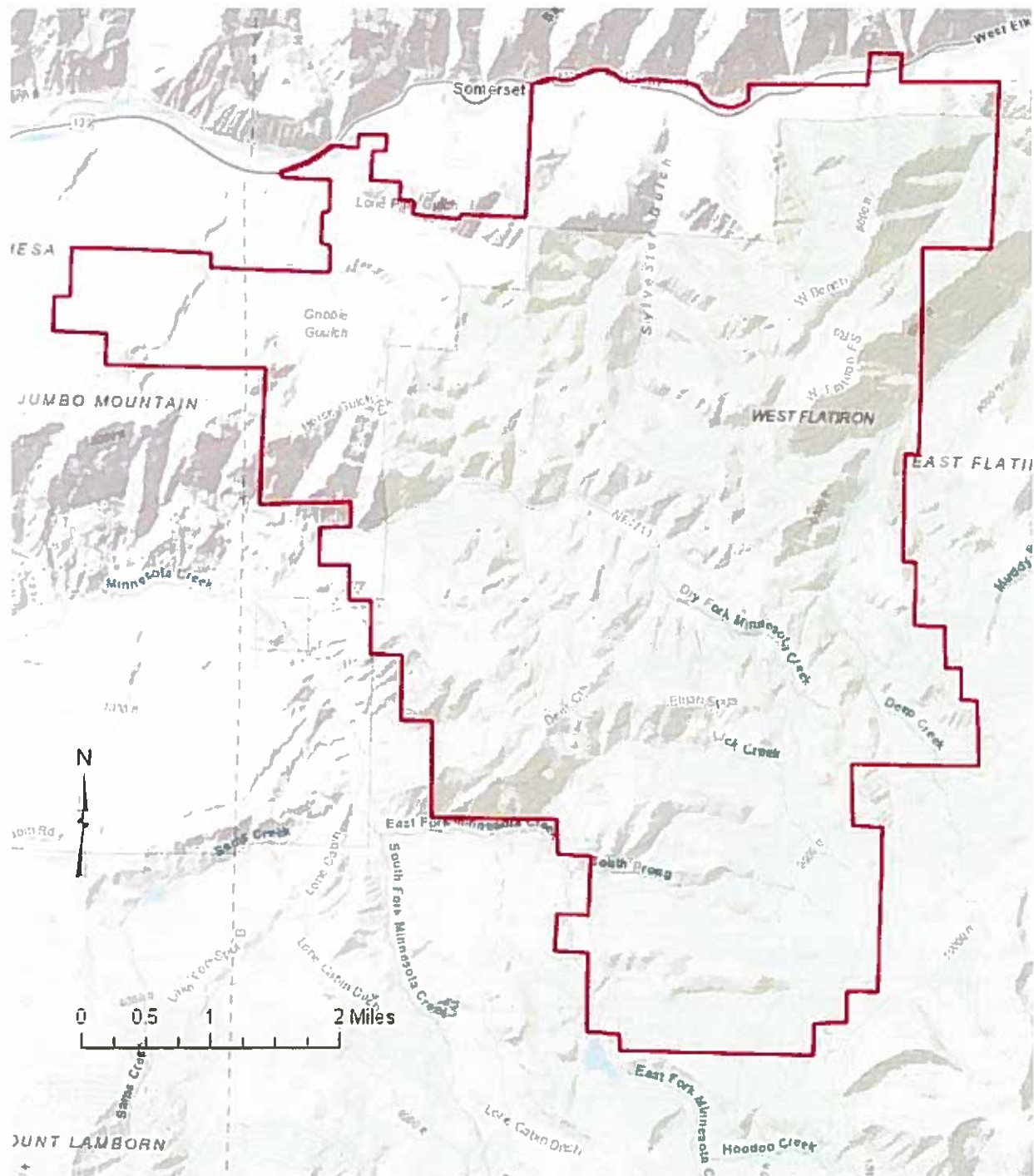


Figure 1: The approximate location of the West Elk Mine Permit Area Boundary

Cultural and Historic Resources - Rule 2.04.4 and 2.05.6(4)

Cultural and historic resources are discussed in Section 2.04.4 of the permit application packet (PAP). Records from the Historic Buildings and Sites file of the Colorado Historical Society and the Archaeological Survey file of the Office of the State Archaeologist were reviewed for previously recorded sites. No evidence was found indicating the existence of known sites in the vicinity of the mine. An archaeological reconnaissance was also conducted. Field studies, laboratory operations, and report preparation were completed by an archaeological team from

Fort Lewis College in Durango, Colorado. This report can be found in Exhibit 10 of the permit document. No sites were found as a result of the field study.

Additional surveys for Jumbo Mountain were completed by Western Cultural Resource Management, Inc. (WCRM, Inc.) during October and November 1993. Map 7A shows the areas surveyed during the field reconnaissance. A literature search was conducted by WCRM, Inc. in September 1993. That search identified 15 cultural resource reports. Those reports are listed in Exhibit 10A. Exhibit 10B contains the results of the survey. Exhibit 11 contains clearance documentation from the State Historic Preservation Officer (SHPO).

A Class II Cultural Resource Assessment was conducted by Metcalf Archeological Consultants, Inc., with the results of the assessment contained in a report dated January 1995. This report was submitted with PR-6 and is contained in Exhibit 10C. The SHPO was contacted by the Division on August 21, 1995, and the SHPO indicated concurrence with the submittal.

The SHPO indicated in a letter to the Division dated October 5, 2007 that the Deep Creek Ditch was found to be ineligible for the National Register of Historic Places in 1996. The SHPO indicated in a letter to the Division dated September 8, 2008 that one cultural resources site had been recorded in the PR-14 project area. The site had been recommended as not eligible for listing in the National Register of Historic Places, but adverse effects to this site should be avoided until the site can be reevaluated and officially determined if it is eligible for listing. The letter was forwarded to MCC who acknowledged existence of the site by email on September 25, 2008 (PR-14 file). MCC has committed to stopping work wherever cultural or archaeological resources are discovered during surface disturbing activities until the SHPO can provide consultation (Section 2.04.4 of the permit application). As for most of Colorado, the PR-14 project area has not been fully inventoried for cultural resources and the activities proposed in PR-14 have the potential to affect unidentified cultural resources.

The State Historic Preservation Office indicated in a letter to the Division, dated February 15, 2011, that a finding of no historic properties affected is appropriate for Permit Renewal RN-6 because no new surface disturbance is proposed.

A Cultural Resource Survey was conducted by ERO Resources Corporation of Durango, CO, for the lands added to the permit area with PR-15. The survey was negative for cultural resources within the area of potential effect, and a determination of "no historic properties affected" was recommended. The report was added to the PAP as Exhibit 10f.

Geology - Rules 2.04.5 and 2.04.6

The applicant describes the geology of the permit and adjacent area in Section 2.04.6 of the PAP. Additional information is detailed on Map 9, which details the geology of the permit area, as well as the coal outcrop line, and the strike and dip of the F, E and B Seams. Stratigraphic information is shown on Maps 10 through 23.

The permit area lies on the southeast margin of the Piceance Basin and just south of Grand Mesa. The general geology of this area consists of gently (three to five degrees) north northeast dipping beds of sandstone, shale, and coal of upper Cretaceous and early Tertiary age.

The geologic formations exposed in the North Fork Drainage Basin consist of Late Cretaceous to Early Tertiary Age sedimentary strata, Tertiary Age igneous intrusives, and Quaternary Age alluvial and colluvial deposits. The units are described below in ascending order.

The Mancos Shale is the oldest stratum exposed in the region, and is of Late Cretaceous Age. This unit is composed of over 4,000 feet of gray marine shales and minor interbedded buff sandstones. This unit is highly erodible and unstable. Erosion and oversteepening of slopes in this formation produce the numerous rock falls and landslides observed in the lower North Fork Drainage Basin (Junge, 1978).

The Mesaverde Formation is of Late Cretaceous Age and conformably overlies the Mancos Shale. This formation consists of approximately 2,300 feet of marine and terrestrial sedimentary rocks. The Mesaverde Formation is the coal bearing formation in the region and is divided into five main members; the Rollins Sandstone, the Lower Coal Bearing (Bowie) Member, the Upper Coal Bearing (Paonia) Member, the Barren (Undifferentiated) Member (Johnson, 1948), and the Ohio Creek Member.

The Rollins Sandstone is a white to buff colored, well sorted, medium to fine grained sandstone, ranging from 150 feet to 300 feet thick. This sandstone is regionally extensive and resistant in outcrop and forms prominent cliffs.

The Lower Coal Bearing (Bowie) Member consists of 260 to 350 feet of interbedded gray shales, thin to thick lenticular beds of buff colored, fine to medium grained sandstones, and coals. Three coal horizons exist in this member: the A (Old King) horizon, the B (Somerset) horizon, and the C (Bear) horizon. The A horizon is immediately above the Rollins Sandstone and is not currently mined at any operation in the vicinity. The B horizon contains two coal seams and occurs about 20 to 120 feet above the Rollins Sandstone and has been mined by MCC. This horizon has also been mined at the Elk Creek and Bowie #2 Mines. The C horizon contains one coal seam that occurs 50 to 100 feet above the B horizon. This horizon has been mined at the Elk Creek Mine and was mined at the Bear No. 1 and 2 Mines. The top of the member is usually capped by a massive buff colored sandstone up to 90 feet in thickness. This sandstone, however, appears not to be a single persistent bed, but is actually several thick lenticular sandstones occurring at progressively lower stratigraphic horizons from east to west.

The Upper Coal Bearing (Paonia) Member consists of 200 to 500 feet of gray shales, interbedded, buff colored, lenticular sandstones, and coals. The top of this member is generally considered to be capped by a massive, cliff forming sandstone. Three coal horizons have been identified in the Upper Coal Member: the D (Oliver) horizon, the E (Hawk's Nest) horizon, and the F horizon. The D horizon occurs directly above the massive sandstone of the Lower Coal Bearing Member and contains three seams. This horizon was mined in the Bowie #1 and #2 Mines. The E horizon occurs about 130 feet above the D horizon and contains two coal seams. This horizon has been mined at the Hawk's Nest Mine and was mined at the Blue Ribbon Mine. The West Elk Mine is mining the E Seam, but did not mine the E seam on Jumbo Mountain because this seam is split and comprised of several thin (< 5 ft.) coal benches which are separated by rock partings. The F horizon contains two coal seams and has been mined at the West Elk Mine. At the mine site, the coal is immediately overlain and underlain by shale. Coal seams of the F horizon do not exist to the north of the North Fork of the Gunnison River in thicknesses sufficient for mining. In the Jumbo Mountain area, the F Seam thins to less than five

feet in thickness and is of limited aerial extent. Therefore, MCC does not plan to mine this seam in Jumbo Mountain.

Overlying the Upper Coal Member is the Barren Member of the Mesaverde Formation. This unit consists of interbedded sandstones, siltstones, shales, and coals. The unit is not thought to be of marine origin and, as a result, the sandstones and the coals are highly lenticular, discontinuous, and of limited lateral extent in outcrop. This unit ranges up to 1,500 feet thick and outcrops throughout most of the permit area.

The Ohio Creek Member is the uppermost member of the Mesaverde Group. This unit is approximately 700 feet thick and consists primarily of interbedded sandstone, mudstone, and shale. The sandstones range from a few feet to more than 100 feet in thickness and are generally lenticular in nature. Although typically fine to coarse grained, the sandstones may locally be conglomeratic.

The Mesaverde Formation is unconformably overlain by the Tertiary Age Rudy or Wasatch Formation. This formation consists of red to buff colored shales, red sandstones, and red to gray conglomerates. The sediments of this formation are weathered volcanic rocks.

Immediately south east of the permit boundary, igneous intrusives of Tertiary age form the laccolith of Mt. Gunnison.

The alluvium of the North Fork of the Gunnison River consists of Quaternary Age deposits of mixed coarse sand, cobbles and boulders. These coarse sediments are composed primarily of igneous and metamorphic rock types, and have their source area in the headwaters and upper reaches of the North Fork. This coarse alluvium is capped by finer sands and silts. The North Fork alluvium in the area of the Hawk's Nest, Bear, West Elk and Elk Creek Mines is fairly narrow in width and is between 50 and 70 feet thick. About a mile below the town of Somerset, Colorado, the width of alluvium increases while the thickness of alluvium decreases to about 35 feet.

Since the three main minable seams (B, E, and F) within the West Elk Mine's permit boundary directly overlie one another, their structural characteristics are virtually identical. The F Seam strikes north 60 degrees west and dips three to five degrees northeast across the lease blocks. In the Jumbo Mountain area, the B Seam has an average dip of 4.6 degrees in a north 25 degrees east direction. The major cleat orientation within the F and B Seams is north 70 degrees east. This face cleat is prominent and consistent throughout the existing F and B Seam workings. Fracture sets and cleat orientations of the E Seam are also the same. The major cleat direction in the nearby Bear and Elk Creek mines is from North 70 to 75 degrees east and is probably representative of the face cleat direction in the Jumbo Mountain area.

In March 1996, MCC experienced a large inflow of water in the B East Mains while mining through a fault/fracture system. The inflow was estimated at approximately 350 gallons per minute (gpm) initially, increasing to a maximum of approximately 800 gpm from the roof and floor. The fault area is a series of small faults oriented in a N60E direction. The fault showed an apparent vertical displacement of 6 feet. In April 1996, MCC encountered the same fault in a subsequent entry, and the inflow was estimated to be a maximum of 2,500 gpm. The flows have since moved down-dip on the fault and were measured at less than 100 gpm in December 1998.

In January 1997, more than 8,000 gpm of water upsurged from the mine floor from a 10-foot cut through a fault area in the first Southeast Headgate off the Box Canyon Mains. Water flooded the mine and some equipment was lost. Water from this inflow was eventually pumped to the surface and discharged to the North Fork of the Gunnison River. Mine water inflow from this area also moved down-dip as the fault was mined through at topographically lower locations. At the end of 1998, the flow was approximately 130 gpm.

A significant fault oriented in a S60E direction was encountered by MCC during the initial development of the Sunset Trail Mains in early 2018. No significant inflows of water occurred. The fault is projected to the southeast on Map 9, but has not yet been well characterized.

Only minor faulting of limited vertical displacement has been observed in the Blue Ribbon, Bear, and Hawk's Nest Mines. However, in the Bowie #1 Mine, a fault with a displacement of 50 feet was encountered during mining. Drill hole data indicate the presence of other faults in the West Elk Mine life of mine area with similar displacements. One major fault has been encountered in the Elk Creek Mine. The faults which have been encountered in existing mines tend to be high angle, normal faults.

Hydrologic Balance - Rules 2.04.5, 2.04.7, 2.05.3(4), 2.05.6(3) and 4.05

Groundwater information can be found in Section 2.04.7 of the PAP. Additional information can be found on Map 34, which shows the location of the groundwater monitoring stations.

A description of groundwater occurrence and mining impacts on groundwater within the permit and adjacent areas can be found in the "Probable Hydrologic Consequences of Mining" section of this document and the "Cumulative Hydrologic Impact Study" document for the North Fork of the Gunnison area.

There are seven categories of potential aquifers that occur in the Somerset Coal Field. These are: 1) the alluvial and terrace deposits associated with the North Fork of the Gunnison River; 2) the localized, shallow alluvium along creeks tributary to the North Fork; 3) the discontinuous, lenticular and laminar sandstones of the Mesaverde Formation; 4) the Rollins Sandstone; 5) the coal seams; 6) shallow colluvial surficial deposits; and 7) fracture zones in bedrock.

Significant hydrogeologic units present within the West Elk Mine permit boundary include (from top to bottom) the Mancos shale, the Mesaverde Formation (including the Rollins Sandstone, Lower Coal Member, Upper Coal Member, and the Barren Member) and the colluvium and alluvium along the drainage side slopes and valley bottoms. These hydrogeologic units are depicted on Map 9 of the PAP.

With the exception of the Mancos shale (which has an extremely low permeability and acts as an aquitard), groundwater is generally localized and of limited areal extent within these hydrogeologic units. The Mesaverde Formation is typically 2,500 feet thick at the mine and consists of sandstone, shale, clay, and interbedded coal. Within the members of the Mesaverde Formation, locally continuous permeable sands may contain groundwater which generally is recharged from the downward percolation of meteoric waters.

The most continuous sandstone of any significance in the region is the Rollins Sandstone of the Mesaverde Formation. The Lower Coal Member of the Mesaverde Formation contains the Upper and Lower Marine Sandstones which may locally produce significant quantities of water. The colluvium which overlies the Barren Member of the Mesaverde Formation consists of discrete, localized units which generally follow topography. The colluvial units recharge and discharge on a seasonal basis in response to snowmelt and precipitation events. The alluvium of the North Fork consists of mixed sand, cobbles, and boulders capped by finer sands and silts. The quantity of groundwater produced from the alluvial deposits is dependent upon the thickness and extent of the deposit.

Evidence shows that groundwater movement is controlled largely by fractures and topography. The West Elk Mine's experience in mining the F and B Seams indicates that groundwater inflows are associated with fractures and are seasonal. As discussed in the previous section of this document, a fault system was encountered while development mining in the B Seam, which produced as much as 8,000 gpm of groundwater inflow to the mine.

Groundwater use in the general area around the West Elk Mine is confined to shallow wells in the alluvium of the North Fork of the Gunnison River and its tributaries. No private, commercial, or industrial wells are presently located within or down-gradient adjacent the permit area, other than the infiltration gallery which supplies domestic water for the town of Somerset and the Elk Creek Mine.

A description of the surface water system can be found in Section 2.04.7 of the PAP. Supporting information is contained in Map 34, which illustrates the drainages associated with the West Elk Mine coal lease area; Map 37, which delineates the location of all known springs on the coal lease area, and Map 36, which shows the reservoirs and irrigation ditches associated with the Minnesota Creek Basin.

A description of the surface water occurrence and mining impacts on adjacent areas can be found in the "Probable Hydrologic Consequences of Mining" section of this document, and the "Cumulative Hydrologic Impact Study" document for this mine area.

All of the streams draining the West Elk Mine permit area are tributaries to the North Fork of the Gunnison River. Lone Pine Gulch and Gribble Gulch are ephemeral streams draining the northern portion of the permit area. Sylvester Gulch has perennial flows in its lower reaches through the mine area. Minnesota Creek and its tributaries, Horse Creek, South Prong, Lick Creek, Dry Fork, and East Fork, drain the southern portion of the permit area. Deep Creek drains the eastern portion of the permit area. Minnesota Creek enters the North Fork of the Gunnison River near Paonia. The overall drainage exhibits a dendritic drainage pattern with steep channels. Horse Creek, South Prong of the East Fork, and Deep Creek are perennial streams. Lick Creek, Upper Dry Fork, upper Sylvester Gulch and Gribble Gulch are ephemeral streams. Minnesota Reservoir controls much of the flow in the lower Dry Fork of Minnesota Creek, and Beaver Reservoir controls the flow in the East Fork of Minnesota Creek. Lone Pine Gulch has no evidence of recent flow; therefore, no gaging station has been constructed. Even when all of the six gaged watersheds were found to be flowing, Lone Pine Gulch showed no flow or evidence of flow. Raven Creek flows through the extreme northeast corner of the permit area, but a permit stipulation expressly forbids mining activities to expand the affected area into the riparian zone of the creek.

There are three different types of springs within the permit area: alluvial, colluvial, and bedrock springs. A study of the groundwater system at the West Elk Mine by Mayo & Associates found 83 different springs within the existing permit area in 1999. From the identified springs, 65% of the cumulative discharge volume comes from superficial springs in alluvium and/or colluvium. Only 5% of the discharge comes from units of the Upper and Lower Coal member. The flow rates of these springs are highly seasonal with peak flows occurring during wet weather conditions.

Reservoirs and stock ponds also occur within or near the permit area. Minnesota Reservoir, on the Dry Fork of Minnesota Creek, is centrally located within the coal permit area. Beaver Reservoir on the East Fork of Minnesota Creek is located near the southwestern boundary of the permit area.

In addition to the storage reservoirs in the area of the West Elk Mine, a total of 61 stock water impoundments have been identified in or adjacent to the permit area as of 2006. Map 37 of the permit document shows the locations of the known stock water ponds. These ponds generally do not represent adjudicated water rights or perennial flows. Within the Gunnison National Forest, the ponds are managed for seasonal use by the U.S. Forest Service.

Exhibit 32B of the permit application describes wetlands and riparian areas in the permit area. There are estimated to be approximately 77 acres of wetlands (as defined by the U.S. Army Corps of Engineers) in the permit area. Most of the wetlands are found in drainage channels, although there are small, isolated wetlands on the hillsides where springs and seeps locally emerge as a result of landslides/sumps. There are an estimated 104 acres of riparian areas in the permit area.

Climatological Information - Rule 2.04.8

Information regarding climate characteristics can be found in Section 2.04.3 and 2.04.8 of the PAP.

The mine site lies within the North Fork valley near Somerset, Colorado. At the mine site, the valley is narrow and steep sided and follows a general east-west orientation. Considerable topographic variation across the mine site, and west central Colorado in general, results in marked fluctuation in seasonal and average precipitation and temperature values for the entire area.

The mountains of the Continental Divide provide an effective barrier to the movement of moisture-laden air that reaches the eastern slope of the Rocky Mountains from the Gulf of Mexico. Under this influence, two basic types of climate, semi-arid and undifferentiated highlands, are characteristic of the general area where the mine is situated. Temperatures can range below freezing in the winter, and yet in the summer, with the exception of higher elevations, can be extremely warm. The precipitation that does fall, originates from the Pacific Ocean weather systems, and most frequently occurs in the winter.

Average annual precipitation ranges from approximately ten inches along the North Fork of the Gunnison River and the lower portion of Minnesota Creek to as much as 24 inches on the flanks

of Mount Gunnison. The majority of precipitation falls as snow during the winter months, while the sparse summer precipitation consists of isolated thunderstorms.

Soils - Rule 2.04.9

Soil Resource Information can be found in Section 2.04.9 in the permit document. More specific information relating to soil mapping units can be found in Exhibit 27, Exhibit 28, Exhibit 29, Exhibit 30, and on Maps 40 and 41.

Soils of the West Elk Mine were mapped during the summer of 1976. Throughout the soil survey, "mapping units" were used to characterize the soils in the mine area. These survey mapping units are combinations of Soil Families or selected Great Groups and Subgroups according to the system of soil taxonomy used in the National Soil Survey Program of the United States. During the summer of 1993, the soils of the Jumbo Mountain Tract were mapped utilizing criteria and descriptions contained in the Soil Conservation Service soil survey of the Paonia, Colorado area (USDA-SCS, 1993). The maps have been updated for subsequent permit revisions. Any discrepancies in soil mapping units can be attributed to the change in soil classification during the time between the mapping efforts. The survey is a general reconnaissance and the mapping units are broad in concept.

Vegetation - Rule 2.04.10

Specific information regarding collection and analysis of vegetation can be found in Section 2.04.10 in the PAP. The distribution of the land and vegetation types can be found on Maps 42 and 43.

The West Elk Mine collected baseline vegetation information in 1975, 1976, and 1993 for a study area which extends approximately one mile outside the permit boundary and mine plan boundary. This area is approximately 25,560 acres in size. This survey identified ten vegetation types and six land types. They are as follows: 1) Aspen, comprising 19 percent of the study area; 2) Douglas fir, comprising four percent of the study area; 3) Wet Mixed Shrub, comprising 50 percent of the study area, dominated by serviceberry and Gambel oak; 4) Dry Mixed Shrub, comprising 10 percent of the study area, distinguished by serviceberry, Gambel oak, Mountain mahogany, Cliff findlerbush, and bitterbrush; 5) Oak, comprising one percent of the study area, including Gambel oak and the larger size oak individuals (15-20 ft in height), which are limited to the bottom of permanent stream drainages; 6) Juniper, comprising five percent of the study area, which includes Rocky Mountain Juniper and Utah Juniper; 7) Riparian, comprising two percent of the study area; 8) Sagebrush, comprising six percent of the study area; 9) Wet Meadow, comprising one percent of the study area, distinguished by open boggy areas along major drainages above 7,000 feet and openings in brushy or forested areas at elevations above 8,000 feet, occupied by herbaceous species such as sedges and false hellebore; 10) Dry Meadow, comprising one percent of the study area which is dominated by various shrub species such as snowberry, Douglas rabbitbrush, and Gambel oak; 11) Barren Terrain, comprising less than one percent of the study area which was identified by no apparent vegetation cover; 12) Chained Area, comprising less than one percent of the study area, is so named because the area has been mechanically treated by chaining to remove tall shrub species and has been trenched along the contours and planted to ponderosa pine; 13) Reservoir, comprising less than one percent of the study area and includes Beaver Reservoir and Minnesota Reservoir; 14) Residential, comprising

less than one percent of the study area and includes the town of Somerset; 15) Industrial, comprising less than one percent of the study area which includes the Elk Creek Mine, the Bear No. 3 Mine, railroad sidings, and mine vents; and 16) Agricultural, comprising less than one percent of the study area.

The two vegetation types that occur within the area to be affected by surface facilities are a dry meadow type and a moist, mixed shrub type.

In a 1994 Environmental Analysis (EA) produced by the Uncompahgre Basin Resource Area of the Bureau of Land Management (BLM) on the Jumbo Mountain coal lease, one plant species, the Grand Mesa penstemon (*Penstemon mensarum*, a Federal category 2 species) was noted as having the potential to occur in the area. The EA further required a threatened and endangered plant survey prior to any surface disturbance. Additional and updated vegetation information was collected and submitted with the Apache Rocks Permit Revision. Although the species is abundant on the MCC property, no operations currently threaten the plants.

In 1996, a baseline vegetation study of the Sylvester Gulch facilities area was conducted. The report is presented in Exhibit 32A of the permit document. The study area for the baseline survey incorporated the lower drainage basin of Sylvester Gulch from the mine access road south approximately 1.75 miles along the drainage. The three lower drainage branches of Sylvester Gulch were included. The study area was a linear corridor, including the drainage bottom, terraces and sideslopes, averaging 300 feet wide. The study area also included the steep slope west of the Sylvester Gulch channel and north of the Dry Meadow Reference Area. Five major vegetation communities were identified in the Sylvester Gulch facilities expansion area: oakbrush, aspen, riparian, dry meadow, and Douglas fir communities. The first three of these communities were sampled for vegetative cover, vegetative productivity, woody plant density and species composition. The dry meadow community was found to be significantly altered by cattle grazing within the study area. Since this community had been sampled previously, no further data was collected. The Douglas fir community was anticipated to be impacted to a minor degree with disturbance in this community limited to less than five percent of the affected area. Therefore, no quantitative data was collected for the Douglas Fir community.

Additional information on vegetation in the PR-14 project area is contained in the copy of the Federal Environmental Impact Statement for the Deer Creek Shaft and E Seam Methane Drainage Wells Project which can be found in Exhibit 79 of the permit application.

With PR-15, Map 42 was updated to provide information about the vegetation communities in the expanded permit area.

Fish and Wildlife - Rule 2.04.11

Numerous wildlife species inhabit the general area. The most predominant are mule deer, American elk, and black bear. Other species include: coyotes, long-tailed weasels, desert cottontails, snowshoe hare, beaver, raccoon, Red squirrel, woodrat, ringtails, yellow marmots, ermine, skunk, muskrat, badger, porcupine, bobcat, white-tailed jackrabbit, marten, mink, red fox, grey fox, spotted skunk, deer mouse, long-tailed vole, golden-mantled ground squirrel, chipmunk, red-backed vole, rock squirrel, western jumping mouse, masked shrew, wandering shrew, various songbirds, upland gamebirds, waterfowl, and raptors.

There is no designated critical habitat in the permit area. However, the U.S. Fish and Wildlife Service has proposed 2,094 river miles of the Colorado River and its tributaries as critical habitat for the Colorado Squawfish, Razorback sucker, Humpback chub, and Bonytail chub. These species, on the Federal and State candidate and listed species, have the potential of occurring on the study area or could be affected by a lease and subsequent coal development. None of the fishes occur on the study area or in the North Fork of the Gunnison River.

The Colorado Division of Wildlife has established a corridor along the North Fork of the Gunnison River for use by the bald eagle (*Haliaeetus leucocephalus*), which is a common winter visitor to Colorado. BLM inventories conducted in 1978 through 1980, and monitoring flights conducted through 1985, did not locate any roost or nest sites, or areas of winter concentration on or near the study area. The possibility exists for nesting to occur along the North Fork of the Gunnison River.

Loggerhead shrike (*Lanius ludovicianus*, a Federal category 2 species) use has not been recorded on the study area, although potential breeding and nesting habitat is present. Loggerhead shrikes are dependent upon sagebrush and gambel oak shrub communities for breeding and nesting habitat in this region during spring and summer. They are uncommon in the area during winter.

For specific information regarding study areas, methods for identification and counting of the various wildlife present in the area, see Section 2.04.11 of the PAP.

Additional information on fish and wildlife in the PR-14 project area is contained in the copy of the Federal Environmental Impact Statement for the Deer Creek Shaft and E Seam Methane Drainage Wells Project which can be found in Exhibit 79 of the permit application.

Additional information on fish and wildlife in the PR-15 project area can be found in the habitat and wildlife reports in Exhibit 40, which were incorporated into the Supplemental Final Environmental Impact Statement for Federal Coal Lease Modifications COC-1362 and COC-67232.

Description of the Operations and Reclamation Plans - Rules 2.05.3 and 2.05.4

Mining at the West Elk Mine began in 1982. The West Elk Mine leasehold consists of mineable coal reserves in seven Federal coal leases, one private lease and other fee coal properties. The mine permit area encompasses approximately 19,854.9 acres. Coal production in 2017 was 4.9 million tons, with 3-6 million tons of production projected annually from 2018 through 2023. Coal is produced using the longwall mining method.

Six major coal seams exist within the West Elk Mine permit boundary. The seams are identified by the letters A through F, in ascending stratigraphic order. The seams are separated by shale, siltstone, and sandstone beds that vary in thickness from 15 feet to more than 250 feet. MCC's leasehold has economically minable coal reserves in two of the seams, the B Seam and the E Seam. Mining was by room-and-pillar methods until 1992 when longwall mining began in the northern B Seam. A new longwall was acquired in 2008 for mining in the E Seam, and is intended to be used for future mining in the southern B Seam.

MCC mined in the F Seam from 1982 to 1991 in leases D-004569 and C-0117192. This mining was only marginally successful. Poor mine roof conditions, sandstone channels, low coal areas, poor coal quality areas, and other unfavorable conditions have negatively affected mining and rendered the F Seam uneconomic under past and present market conditions. Mining in the F Seam has been discontinued, pending improved economics for this seam. Existing workings in the F Seam are shown on Map 50 of the PAP.

In April 1989, an application for a technical revision for an incidental boundary change to add 35.5 acres to the permit area was submitted. The revision was for access and associated activities by way of slopes and a ventilation shaft from inside the existing F Seam workings to the B Seam. The revision also included mining in the B Seam by room and pillar, as well as longwall mining methods. The 35.5-acre incidental boundary change was necessary to accommodate the B Seam main access entries. The Division subsequently issued a proposed decision to approve the revision on July 12, 1989.

The mine plan for the B Seam is shown on Map 52 of the PAP. Mining has been completed in the northern B Seam reserves (in leases D-044569, CO-117192, COC54558 and COC-67011), but recoverable reserves totaling an estimated 31.4 million tons remain in leases COC-56447, COC-67232 and C-1362. Since recoverable reserves in the E Seam overlie the projected B Seam panels, it is intended that the E Seam be mined out before returning to the southern B Seam reserves by new rock slope entries from the E Seam workings, as approved in TR-137.

In January 2000, elevated levels of indicator gases showed there was probable combustion in gob in a mined-out area of the B-West mains. Operations were curtailed and MCC immediately began an operation to access the B-seam by drilling into the mine from the Apache Rocks area above. Approval was obtained from both the Division and the US Forest Service to initiate a drilling program in that area. Nineteen 4-inch boreholes were drilled for locating the combustion area and water was pumped into that part of the workings. In the spring of 2001, the Mine Safety and Health Administration (MSHA) gave MCC permission to curtail the pumping of water, so the company completely sealed off the area underground and initiated the approved reclamation of the disturbed ground on the surface.

A second episode of elevated levels of gas occurred in the mine in late 2005, necessitating the drilling of several boreholes from the surface to the B Seam workings in the Box Canyon area. Approval was obtained for the construction of roads and drilling the boreholes. Water and foam were pumped down into the workings and mining resumed within approximately three months.

The mine plan for the E Seam is shown on Map 51 of the PAP. MCC maintains active development entries in the E Seam in leases COC-56447, D-044569, and C-1362. These entries provide access to E seam longwall panels 1 through 12 (LWE1-12), in lease C-1362 in the South of Divide area, as approved in PR-10, and in lease COC-67232 in the Dry Fork area, as approved in PR-12; and to panels LWSS1-4 in modified leases C-1362 and COC-67232 in the Sunset Trails area, as approved in PR-15. As of mid-2018, mining has been completed in panels LWE1-6, and is in progress, from east to west, in panel LWE7 as of the date of these findings.

MCC access the E seam through the mine's existing F to B seam slopes and utilize the existing surface facilities near State Highway 133; consequently, no additional surface facilities or associated surface disturbance were proposed in PR-10 or 12. Surface disturbance and drilling of methane drainage wells in E Seam panel 1 was approved in TR-111. E Seam mining of longwall panels 10, 11, and 12 was approved in PR-6 and is planned to occur prior to mining the underlying B Seam panels.

No major buildings, major structures, occupied dwellings, cemeteries, parks, railroads or highways overlie the coal to be mined. Two reservoirs lie close to the F Seam outcrop; however, neither is directly over the coal to be mined.

Surface facilities at the West Elk Mine are shown on the Map 53 series of the PAP. State Highway 133 provides the access to the main facilities area of the mine. A haul road joins the highway east of the Lower Refuse Pile (LRP) and serves as the access to most facilities and the mine portals. An old haul road accesses the silo storage area and other lower mine facilities, which is now considered an access road. Other access roads include the middle-mine facilities road and the Sylvester Gulch fan road, and the Sylvester Gulch extension. The Lone Pine Gulch road has been designated as a light-use road and provides access to the former site of a ventilation fan.

Power to the mine is supplied via existing lines of the Delta-Montrose Electric Association. Power is stepped down at a substation in the main mine facilities area for powering underground operations and the surface facilities.

Ventilation in the mine is provided by a fan in Sylvester Gulch (PR-7), and a vent shaft in Deer Creek, just to the east of Minnesota Reservoir (TR-109), as well as numerous Mine Ventilation Boreholes (MVBs) which are constructed in advance of mining and are operated so as to control the partial pressure of methane in the air inside the mine. Between 1995 and 2001 ventilation to the B Seam workings was provided by the Lone Pine Fan. Mining ceased in the Lone Pine portion of the mine in early 2001 and the workings served by the fan portal were sealed off underground. The Lone Pine Portals were sealed in 2001 (TR-93).

MCC occasionally uses a relatively small quantity of explosives for blasting for underground construction. The explosives are stored in an explosives magazine located in the main facilities area of the mine.

The West Elk Mine portals are located at an approximate elevation of 6,450 feet. Run-of-mine coal is transported from the production panels to the various surface facilities by a system of belt conveyors. A conveyor carries coal from inside the mine portal to the stacking tubes. From the stacking tubes, an underground conveyor reclaim system transports the coal to the two crushers. A conveyor then moves the coal from the crushers to the two storage silos. A stacktube located to the east of the silos provides additional storage for product coal. A loadout conveyor carries coal from the storage silos to the over-the-track loadout. A portion of this conveyor is completely enclosed where it crosses the North Fork of the Gunnison River and Highway 133. Coal is shipped from the West Elk Mine mainly by rail, although some coal is either trucked from the mine or is transferred to various handling or stockpile facilities on the mine site.

Coal mine waste at the mine is generated during underground construction activities and mining. Other sources of coal mine waste are contaminated coal spillage, material cleaned out of sediment ponds, and soils contaminated with non-hazardous materials. These other sources of waste comprise only a small portion of the coal mine waste produced at the mine. Coal mine waste is currently being processed in a plant that MCC constructed on the Lower Refuse Pile (LRP). The processing plant and an adjacent coal stockpile and laboratory were approved in TR-118. The refuse generated by the processing plant was initially disposed of in a permanent coal mine waste pile called the Refuse Pile Expansion area (RPE). This is a 20 acre site to the east of the LRP, and is east of Sylvester Gulch. The level area on top of the RPE is used as an equipment lay down area and the slopes have been topsoiled and seeded. As the RPE neared its design capacity, a new refuse pile, the Refuse Pile Expansion East (RPEE) was approved for construction with TR-120 (and re-designed with TR-127 and TR-133), in the drainage immediately east of the RPE. Material is transported to and from the RPEE by haul truck. An Upper Refuse Disposal Area has also been approved for construction, but has not been built. Although MCC has verbally indicated this pile will not be needed, Stipulation #7 requires MCC to complete a geotechnical investigation prior to constructing the pile.

Surface runoff from the disturbed area is treated by six ponds (MB-3, MB-4, MB-5E, NSSA, RPE pond, and SG-1) and a number of small area exemptions (SAEs), two additional ponds (FW-1 and FW-2) are used for water storage. Surface water and sediment control structures are shown on the Map 54 series of the PAP, and designs are given in Exhibits 66 and 70. MB-3 is a small lower pond which treats drainage from the silo storage area. MB-4 serves the train loadout area. MB-5E is a large 2-celled pond which can accept mine water and treated discharge from the wastewater treatment plant, and provide some storage, as well as treat stormwater runoff. The NSSA pond treats runoff from the North Soil Storage Area. RPE pond is a 2-celled pond that treats runoff from the RPE and RPEE. SG-1 is located within Sylvester Gulch to treat runoff from the disturbed area associated with ventilation shafts.

Topsoil and subsoil storage areas are located around the disturbed areas and are shown on the Map 53 series of the PAP. The main topsoil stockpile is to the south of the run-of-mine coal stack pad, and will be used during reclamation to cover the majority of the disturbance to a depth of 12 to 18 inches. Other significant topsoil and subsoil piles are located north of Highway 133 in the North Soil Storage Area (NSSA), south of the potable water tank, south of the Materials Storage Bench (MSB), adjacent to the Sylvester Gulch haul road, and adjacent to the RPEE haul road.

With PR-15, of the approximately 19,855 acres in the permit area, approximately 597 acres are approved to be disturbed, which primarily includes long-term surface facilities, and MVB pads and roads. Exhibit 80 of the PAP contains details of the MVB pads and roads, as well as other drill holes.

Upon cessation of mining at the West Elk Mine, reclamation will return the disturbed land to rangeland and wildlife habitat land use. Some reclamation activities (particularly of MVB pads and roads) will occur during the life of the mine as areas cease to be used for mining activities. Final reclamation includes sealing the mine portals, removing the surface facilities, and returning all disturbed areas to the approximate original contour. The waste pile will be shaped to blend into adjacent topography. The mine area will be smooth-graded, and compacted areas will be ripped or scarified to eliminate slippage surfaces, establishing a suitable bond for the overlying seedbed material. Topsoil, which has been salvaged during construction of the surface facilities, will be redistributed over the disturbed area. Drainage control will be retained until the revegetation operation is underway and erosion is under control. Following the distribution of topsoil and final grading, the newly shaped surface will be prepared for planting. Surface preparation will include loosening and roughening the surface by disking, harrowing, or dragging. Various conditioners and neutralizers may be used to modify the seedbed conditions to ensure successful establishment of a vegetative cover. The site will then be planted using West Elk's Permanent and Riparian Seeding mix. Various species of shrubs will also be planted.

Findings of the Colorado Division of Reclamation, Mining and Safety
for the
West Elk Mine

Explanation of Findings

Pursuant to Rule 2.07.6(2) of the Regulations of the Colorado Mined Land Reclamation Board for Coal Mining, and the approved state program, the Division of Reclamation, Mining and Safety or the Board must make specific written findings prior to issuance of a permit, permit renewal or permit revision. These findings are based on information made available to the Division that demonstrates that the applicant will be able to operate in compliance with the Colorado Surface Coal Mining Reclamation Act and the Regulations promulgated pursuant to the Act.

The findings in the following sections required by Rule 2.07.6(2) are listed in accordance with that Rule. The findings and specific approvals required pursuant to Rule 2.07.6(2)(m) are listed in accordance with Rule 4 and are organized under subject or discipline subtitles.

This findings document has been updated for this permit revision. The following findings have been reevaluated and updated if necessary to reflect changes which will occur as a result of this permit revision.

Section A - Rule 2.07.6

1. The permit application is accurate and complete. All requirements of the Act and these rules have been complied with (2.07.6(2)(a)).
2. Based on information contained in the permit application and other information available to the Division, the Division finds that surface coal mining and reclamation can be feasibly accomplished at the West Elk Mine (2.07.6(2)(b)).
3. The assessment of the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance, as described in 2.05.6(3), has been made by the Division. This assessment entitled "Cumulative Hydrologic Impact Study - North Fork of the Gunnison River", is available for inspection at the offices of the Division. The Division finds that the operations proposed under the application have been designed to prevent damage to the hydrologic balance outside the proposed permit area. Please refer to Section B.III (Hydrologic Balance) of this document for additional discussion of the predicted hydrologic consequences of mining operations at the West Elk Mine (2.05.6(3) and 4.05).
4. The Division finds that the affected area is, subject to valid rights existing as of August 3, 1977, not within:
 - a) An area designated unsuitable for surface coal mining operations (2.07.6(2)(d)(i));

- b) An area under study for designation as unsuitable for surface coal mining operations (2.07.6(2)(d)(ii));
- c) The boundaries of the National Park System, the National Wildlife Refuge System, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System including rivers under study for designation, and National Recreation Areas (2.07.6(2)(d)(iii)(A));
- d) Three hundred feet of any public building, school, church, community or institutional building, or public park (2.07.6(2)(d)(iii)(B));
- e) One hundred feet of a cemetery (2.07.6(2)(d)(iii)(C));
- f) The boundaries of any National Forest unless the required finding of compatibility has been made by the Secretary of the U.S. Department of Agriculture (2.07.6(2)(d)(iii)(D)).

The proposed operation (portions of the lease area) is within the boundaries of Grand Mesa, Uncompahgre and Gunnison National Forests. The Secretary of Interior has approved this by indicating that West Elk leases within the Forests are suitable for underground coal mining. Refer to the OSM 1981 Mine Plan Approval, the BLM Report of Coal Unsuitability Criteria and a letter from the U.S. Forest Service dated October 3, 1986, concurring with West Elk's Mining Plan (2.07.6(2)(d)(iii)(D)). Refer also to a letter written by the BLM on March 8, 2005, stating that MCC's plan is adequate to meet all current Federal regulations regarding R2P2. Refer also to the Coal Unsuitability Analysis for Jumbo Mountain Coal Lease, prepared by the Uncompahgre Basin Resource Area of the BLM, which includes an Environmental Assessment. The Apache Rocks Permit Revision is addressed by the U.S. Forest Service in their letter of December 5, 1995, and by the BLM in their letter of November 24, 1995. The Box Canyon Permit Revision is addressed by the U.S. Forest Service in their letter of January 6, 2000, and by the BLM in their letter of December 10, 1999. The South of Divide area (PR-10) is addressed by the U.S. Forest Service in their letter of April 27, 2006. The Dry Fork lease area (PR-12) is addressed by the U.S. Forest Service in their letter of October 15, 2007, and by the BLM in their letter of October 10, 2007. The E-seam methane drainage wells for longwall panels 1 (TR-111) and 2 through 12 (PR-14) are addressed by the U.S. Forest Service in their letter of June 6, 2008. Exploration drilling in Dry Fork Area and on Lion's Mesa (MR-352) was addressed by the U.S. Forest Service in their memo of May 8, 2009. Revisions to Methane Drainage Wells on panels E3 and E4 (TR-121) were addressed by the U.S. Forest Service in their memo of May 28, 2009. Further revisions to Methane Drainage Wells on panel E3 (TR-123) were addressed by the U.S. Forest Service in their letter of January 3, 2011. Further revisions to Methane Drainage Wells on panel E4 (TR-129) were addressed by the U.S. Forest Service in their letter of June 13, 2012. Revisions to Methane Drainage Wells on panel E5 (TR-130) were addressed by the U.S. Forest Service in their letter of April 15, 2013. Revisions to Methane Drainage Wells on panel E6 (TR-135) were addressed by the U.S. Forest Service in their letter of July 22, 2014. Further revisions to Methane Drainage Wells on panel E6 (TR-136) were addressed by the U.S. Forest

Service in their letter of January 20, 2015. Further revisions to Methane Drainage Wells on panel E6 and E7 (TR-138) were addressed by the U.S. Forest Service in their letter of May 18, 2016. Revisions to MVBs on panel E8 (TR-145) were addressed by the U.S. Forest Service in their emails of June 4 and 5, 2018. The Sunset Trails permit revision (PR-15) is addressed by the U.S. Forest Service in their Supplemental Final Environmental Impact Statement published on September 7, 2017.

- g) One hundred feet of the outside right of way line of any public road except where mine access or haul roads join such line, and excepting any roads for which the necessary approvals have been received, notices published, public hearing opportunities provided, and written findings made [2.07.6(2)(d)(iv)]. The West Elk mine permit area is within 100 feet of the outside right of way line of State Highway 133 and Forest Service road 711.

At an informal conference held May 12, 1981, in Paonia, Colorado, to review public input on the proposed West Elk Mine, no mention of any concern with the location of the surface facilities in relation to the existing or proposed right of way of State Highway 133 was expressed or implied.

The Colorado Department of Highways approves the location of the West Elk Mine within 100 feet of the outside right of way.

On August 6, 1981, the Division granted a variance from the road distance requirement of Rule 2.07.6(2)(d)(iv).

The Division's notice of proposed decision approving the variance was published June 29, 1981, and no comments were received during the ten day public comment period, which expired on July 8, 1981.

MCC's public notice for PR-14 indicated Forest Service Road 711 will be within the affected area and a public hearing may be requested for determining whether the interests of the public and affected landowners will be protected. No public hearing was requested.

- h) Three hundred feet of an occupied dwelling unless a written waiver from the owner has been provided (2.07.6(2)(d)(v)).

- 5. On the basis of information submitted by MCC in the form of Exhibit 11, and confirmation letter from the SHPO dated March 18, 1998, the Division finds that subject to valid existing rights as of August 3, 1977, the mining operation will not adversely affect any publicly owned park or place listed on or eligible for listing in the National Register of Historic Places as determined by the State Historic Preservation Office [2.07.6(2)(e)(i)]. This was confirmed by the SHPO for PR-12 in a letter dated October 5, 2007 and for Permit Revision 14 in a letter dated September 8, 2008.

The same finding was confirmed for PR-15 on the basis of information submitted by MCC in the form of a Negative Results Report of a Cultural Resource Survey, conducted by

ERO Resources Corporation of Durango, CO (added to the PAP as Exhibit 10f).

6. The operator proposes no surface mining of coal; therefore, the documentation specified by Rule 2.03.6(2) is not required [2.07.6(2)(f)].
7. On the basis of evidence submitted by the applicant and received from other state and federal agencies as a result of the Section 34-33-114(3) compliance review required by the Colorado Surface Coal Mining Reclamation Act, the Division finds that MCC, as of August 24, 2018 does not own or control any operations which are currently in violation of any law, rule, or regulation of the United States, or any State law, rule, or regulation, or any provision of the Surface Mining Control and Reclamation Act or the Colorado Surface Coal Mining Reclamation Act [2.07.6(2)(g)(i)]. MCC's compliance review information was verified through the use of OSM's AVS.
8. MCC does not control and has not controlled mining operations with a demonstrated pattern of willful violations of the Act of such nature, duration, and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act (2.07.6(2)(h)).
9. The Division finds that surface coal mining and reclamation operations to be performed under this permit will not be inconsistent with other such operations anticipated to be performed in areas adjacent to the permit area (2.07.6(2)(i)).
10. The Division estimates the reclamation liability for mining operations in this permit term to be \$14,401,087.58. The Division currently holds a \$15,000,000.00 performance bond for the West Elk Mine. No additional performance bond is required (2.07.6(2)(j)).
11. The Division has made a negative determination for the presence of prime farmland within the part of the permit area that existed prior to PR-10, based on a letter dated October 10, 1980, from the Soil Conservation Service that demonstrates that no prime farmland mapping units are found within the permit area, updated with letters from the US Forest Service and the Natural Resources Conservation Service on November 23, 2005, finding no prime farmland within the West Flatiron lease area. The Division made a negative determination for the presence of prime farmland within the parts of the permit area proposed for addition in PR-12 and PR-15, based on the absence of land that has historically been used for cropland [2.07.6(2)(k)].
12. The Division has made a negative determination regarding alluvial valley floors within the permit area [2.07.6(2)(k) and 2.06.8(3)(c)].

For additional findings concerning alluvial valley floors please see Section B, XVII.

13. The Division hereby approves the post mining land uses of rangeland and wildlife habitat for this operation. It was determined that these uses meet the requirements of Rule 4.16 for the permit area [2.07.6(2)(l)].
14. Specific approvals have been granted or are proposed. These approvals are addressed in the following section, Section B [2.07.6(2)(m)].

15. The Division finds that the activities proposed by the applicant would not affect the continued existence of endangered or threatened species or result in the destruction or adverse modification of their critical habitats (2.07.6(2)(n)).
16. The Division has contacted the OSM Fees Branch. As of the date of these findings, MCC is current in the payment of reclamation fees required by 30 CFR Chapter VII, subchapter R [2.07.6(2)(O)]. MCC's compliance information was verified through the use of the AVS on August 24, 2018.

Section B - Rule 4

I. Roads - Rule 4.03

A. Haul Roads

1. No roads on the West Elk Mine site are specifically designated or utilized as only haul roads. A majority of the roads are considered both haul and access roads. They are primarily used as access roads, but occasionally coal or coal mine waste is hauled across the road. This classification includes the following roads:

Main Haul/Access Road - from Highway 133 to the intersection with the Upper Mine haul/access road;

Upper Mine Haul/Access Road – from the Main haul/access road to the Portal access road;

Middle Mine Haul/Access Road – from the Main haul/access road to the breaker building

Sylvester Gulch Haul/Access Road – from the Main haul/access road to the Shaft 1 and 2 areas

Silo Haul/Access Road – around the silos and lower stack tube pad

As coal or coal mine waste may be hauled on the above roads, all of the roads have been designed, constructed and certified as haul roads. As-built certifications are provided in Exhibit 8A of the permit document. A discussion of the haul/access roads is found in Section 2.05.3 in Volume 1 of the permit document. The designs are in compliance with Rules 2.05.3 and 4.03.1. Haul/access roads are shown on Map 53 and 53B.

2. With the exception of a portion of the Sylvester Gulch Haul/Access Road, these haul/access roads will be reclaimed upon closure of the mine when the roads are no longer necessary. A portion of the Sylvester Gulch Haul/Access Road (from the Main haul/access road to the Sylvester Gulch fan) will be reduced to a light use road and will provide access to the fan site and areas to the south.

B. Access Roads

1. The West Elk Mine has three access roads which are considered access roads only. These include the Sylvester Gulch Substation Access Road, the Portal access road, and the Materials Storage Bench access road, which are shown on Map 53 and 53B. Access roads are properly certified. These certifications are provided in Exhibit 8A of the permit document. A discussion of the access roads can be found in Section 2.05.3 in Volume 1 of the permit document. The designs are in compliance with Rules 2.05.3 and 4.03.2.
2. All of these roads will be reclaimed upon closure of the mine when the roads are no longer necessary.

C. Light Use Roads

1. The West Elk Mine has numerous light-use roads at the site, within and above the facilities area and on Jumbo Mountain to access monitoring sites and the water tank, the Lone Pine Gulch fan road and roads to the south for MVB pads and the "thermal event area." The designs, except for some preexisting roads, are in compliance with Rules 2.05.3 and 4.03.3.

II. Support Facilities - Rule 4.04

- A. Construction of support facilities did not result in any damage to any protected structures. Therefore, the Division proposes to approve those activities [4.04(6)].

III. Hydrologic Balance - Rule 4.05

A. Water Quality Standards and Effluent Limitations

1. There are six sediment ponds at the West Elk Mine that treat drainage from the disturbed area. These ponds function as designed to ensure compliance with the water quality standards and effluent standards specified in CDPS Permit No. CO-0038776.
2. Underground mine water has been pumped to the ground surface, passed through a polishing pond, and then discharged into Sylvester Gulch at CDPS outfall 017. As of October 8, 2008, Colorado Water Quality Control Division is reviewing past exceedances of discharge limitations for iron (potentially dissolved and total recoverable) at outfall 017. MCC has ceased mine water pumping at Outfall 017 and is investigating potential corrective measures to ensure future discharges at Outfall 017 comply with effluent limitations specified in CDPS Permit No. CO-0038776.

3. The Division proposes to exempt specific small areas from the use of sediment ponds for the following reasons: each area is of limited size, ponds and treatment facilities are not necessary for drainage in each area to meet the effluent limitations of Rule 4.05.2 and applicable State and Federal water quality standards for receiving streams, and no mixing of surface drainage with a discharge from underground workings will occur. The following areas are exempted: the Sylvester Gulch fan site, an area located downstream from the MB-5E pond, the 1.2 million gallon water tank, the area surrounding the raw water intake gallery, the Shaft 3 area, the drill pads utilized at the “thermal event” area, the drill pads at MVBs, the sites of the former Lone Pine substation and Lone Pine ventilation fan and associated facilities, the corrals laydown/staging area, and the Deer Creek Shaft area [4.05.2(3)(b)(i)].

B. Diversions and Conveyance of Overland Flow

1. Sediment control ditches have been designed and constructed in compliance with Rule 4.05.3. Locations are shown on the Map 54 series, and designs can be found in Exhibit 66. A summary of the designs can be found on Table 44 in Exhibit 66 of the PAP [4.05.3(2)].

C. Stream Channel Diversions

1. The West Elk Mine does not propose any stream channel diversions; therefore, this section is not applicable.

D. Sedimentation Ponds

1. Mountain Coal Company has constructed six sediment ponds and two freshwater ponds. The ponds have been designed, constructed and maintained in accordance with the requirements of 4.05.6 and 4.05.9. The location of these ponds can be found on the Map 54 series. The designs of the ponds can be found in Exhibit 66. The ponds are located as near as practical to the disturbed area and are not located within perennial streams according to 4.05.6(1)(b).

E. Acid-forming and Toxic-forming Spoil

1. Underground development waste from underground workings at the West Elk Mine is handled as coal mine waste and placed on the Lower Refuse Pile (LRP), Refuse Pile Expansion (RPE) and Refuse Pile Expansion East (RPEE). No acid-forming or toxic-forming materials are present in the waste in quantities significant enough to affect groundwater quality. Therefore, special handling is not required for these materials [4.05.8(3)]. An Upper Refuse Disposal Area has also been approved for construction, but has not been built. MCC has verbally indicated this pile will not be needed. Stipulation #7 requires MCC to complete a geotechnical investigation prior to constructing the Upper Refuse Disposal Area.

F. Impoundments

1. Refer to the section regarding sediment ponds (4.05.9).

G. Surface and Ground Water Monitoring

1. The applicant will conduct monitoring of ground water in a manner approved by the Division. The ground water monitoring plan is specified in Table 5, Section 2.04.7 and in Exhibit 71. Point-of-compliance monitoring wells are located near the permit boundary at the approximate down-gradient extent of the B and E-seams. Areas mined in the F-seam are up-gradient from the outcrop, resulting in down-gradient flow in the F-seam not leaving the permit area. Colluvium is monitored between the refuse piles and the North Fork of the Gunnison, and data on down-gradient alluvial water is available to the Division from the up-gradient alluvial well at the Bear No. 3 Mine, adjacent to the West Elk Mine on the west, immediately down-gradient from the West Elk operation (4.05.13(1)).
2. The applicant will conduct monitoring of surface water in a manner approved by the Division. The surface water monitoring plan is specified in Table 5, Section 2.04.7 and in Exhibits 71 and 71a. (4.05.13(2)).

H. Transfer of Wells

1. No transfer of wells is proposed at this time. All monitoring wells will be reclaimed prior to bond release [4.05.14 (3)].

I. Discharge of Water into an Underground Mine

1. There will be no discharge of water into an underground mine [4.05.16(2)].

J. Stream Buffer Zones

1. The Division previously approved underground mining activities within 100 feet of the North Fork of the Gunnison River, which is a perennial stream with a biological community. This decision was based on a finding that the original stream channel will not be disturbed, water quality and quantity shall not be adversely affected, and appropriate riparian vegetation will be reestablished. The buffer zone variance was granted for the water intake gallery, sediment pond and associated spillways and ditches, a railroad siding, the railroad loadout facility, a light-use road and a portion of the old Bear No. 1 and 2 Mines site. These facilities are located on the north and south banks of the North Fork of the Gunnison River. Figure 12 in the MCC permit shows the disturbed areas within the buffer zone. The Division approved this variance on August 6, 1981, according to Rule 4.05.18(1). This variance was amended and clarified as a result of MR-111, approved December 16, 1993.

2. The Division approved underground mining, construction of haul/access roads, and installation of a sediment pond (SG-1) and road embankment within 100 feet of Sylvester Gulch. Sylvester Gulch is a stream with a biological community as defined by Rule 4.05.18(3). A map of the Sylvester Gulch Facilities Area, which delineates the area within 100 feet of Sylvester Gulch, is incorporated into Exhibit 69 of the permit document. The Division approved this stream buffer zone variance in accordance with Rule 4.05.18(1) based on a finding that the original stream channel will not be disturbed, water quality and quantity will not be adversely affected, and appropriate riparian vegetation will be reestablished. These conditions will be met by the effective use of slope stabilization methods including Best Management Practices, appropriate use of sediment control structures during construction, revegetation, and mechanically stabilized earth (MSE) walls.
3. In PR-11, MCC proposed a buffer beneath the riparian area of Raven Creek, of 660 feet (1/8 mile) on either side of the creek, as stipulated in lease No. COC-67011. This is shown on Map 52. Since there is no mining proposed to the north of Raven Creek, the affected area occurs only to the south of that stream and does not surround it.

K. Probable Hydrologic Consequences

Under Rule 2.07.6(2)(c), the Division is required to make an assessment of the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance and to make a finding (as discussed in Section A of this document) that the operations proposed in the permit application have been designed to prevent material damage to the hydrologic balance outside of the proposed permit area. This section of the findings document is divided into the following subsections: Description of the Hydrologic Environment, Probable Hydrologic Consequences of the West Elk Mine, and Summary and Findings. A separate Cumulative Hydrologic Impact Assessment (CHIA) is available for review at the Division of Reclamation, Mining and Safety. The CHIA, filed at the Division office, assesses the projected cumulative hydrologic impacts of all anticipated mining operations in the general area of the West Elk Mine on the North Fork of the Gunnison River Valley.

1. Description of the Hydrologic Environment

a. Regional Geology

For information regarding regional geology, see Section A, Description of the Environment, Geology in this Findings Document.

b. Groundwater

Seven categories of potential aquifers occur in the Somerset Coal Field. These are: 1) the alluvial and terrace deposits associated with the North Fork of the Gunnison River; 2) the localized, shallow alluvium along

creeks tributary to the North Fork; 3) the discontinuous, lenticular and laminar sandstones of the Mesaverde Formation; 4) the Rollins Sandstone; 5) the coal seams; 6) shallow colluvial surficial deposits; and 7) fracture zones in bedrock.

The most laterally continuous sandstone units in the region are the Rollins Sandstone and the massive sandstone separating the Upper and Lower Coal Members of the Mesaverde Formation, known as the Bowie Sandstone. The Rollins crops out in the South of Divide area, approximately one mile upgradient from the West Elk Mine's underground workings. In the Jumbo Mountain area, the Rollins Sandstone appears to be hydraulically isolated. To the south and west, the Rollins Sandstone crops out in cliffs. In the Jumbo Mountain area, the average interburden thickness between the B Seam and the Rollins Sandstone is 150 feet.

The Rollins Sandstone has been considered a hydrostratigraphic unit of potential regional importance, because of its wide areal extent in the southeastern Piceance Basin. The Rollins is a poor quality aquifer due to its low permeability and poor water quality. A pump test of the Rollins Sandstone near the West Elk Mine yielded 3 gallons per minute. Drillholes in the Rollins in the vicinity of the Bowie #1 Mine did not yield enough water to function as groundwater supply wells. The West Elk Mine's permeameter tests of the Rollins Sandstone in the permit area found horizontal hydraulic conductivity values in the range 0.0001 ft/day to 0.012 ft/day.

The Bowie sandstone, separating the Upper and Lower Coal Members, may produce water locally. Information from mines operating in the Lower Coal Member (i.e., Elk Creek and Bear No. 1 and No. 2 Mines) indicate this formation can yield small flows of water in the area. The unit crops out toward its down-gradient occurrence within the West Elk permit area and there are no seeps or springs emanating from the unit, demonstrating that the unit is dry in some areas.

The most significant reliable occurrence of groundwater in the region is the alluvium of the North Fork of the Gunnison River. Significant thicknesses of alluvial sand and gravel between 30 and 80 feet exist along the North Fork. Numerous wells are developed in the alluvium with an average yield of 17.4 gpm. A pumping test conducted by Bear Coal Company on an alluvial well near the site of the Bear No. 3 Mine yielded a value of 806.5 gallons/day/foot for transmissivity.

Three water quality analyses were conducted for the Bear No. 3 Mine on three wells completed in the North Fork alluvium. Two wells exceeded drinking water standards for total dissolved solids, sodium and sulfate. The alluvial well nearest the North Fork River channel (the Bear No. 3 office well) showed the lowest levels of these constituents. This is due to

the dilution of alluvial groundwater by North Fork River water at this well.

Except for areas in the Minnesota Creek Drainage, the alluvium along the lower reaches of tributaries to the North Fork is predominantly thin and confined to discontinuous narrow bands along the stream courses. The deeply incised channels of these tributaries restrict the width of the alluvium, while the stream gradient and the presence of resistant sandstone in the stream channels limit the thickness and downstream extent of the alluvium.

Occurrences of groundwater have been noted in the Mesaverde Formation based upon information obtained from drilling, experience in the mines, and from the presence of springs and seeps in the region. This information also indicates that the only potential regional bedrock aquifer in the general area is the laterally continuous Rollins Sandstone. The laterally discontinuous lenticular sandstones within the Upper Mesaverde Formation support only localized groundwater flows.

The Rollins Sandstone is recharged in the vicinity of the West Elk Mine by snowmelt and rainfall on outcrops, and in subcrops beneath stream alluvium and in the channels of the North Fork and its tributaries. These recharge areas have limited areal extent due to the steep dips of outcrops and the narrowness of the stream valleys; consequently, little recharge occurs. Some recharge to the continuous units and much of the recharge to the more discontinuous, lenticular units will come directly from the percolation of snowmelt and precipitation downward through sandstone lens and along fractures. The same is true in the Jumbo Mountain area. Of 112 exploration drill holes at the West Elk Mine that were drilled prior to the mine opening, only three of the holes produced water from the F Seam at a production rate of 3 gpm or less. Three other holes in the Barren Member had rates of about 0.75 gpm.

The Mesaverde Formation is cut by fractures and faults that extend vertically to the surface. The faults and fractures produce narrow bands of permeability and provide the primary ground water flow path in the areas. When faults and fractures are encountered in mines in the North Fork region, they generally produce mine inflows. The flow characteristics of each mine inflow associated with faults and fractures depend on the lateral extent and the proximity of the fault or fracture to a stream valley. All inflows from these sources are characterized by an initial surge of water which then either decreases or ceases completely with time.

Locally, water flow through fractures probably occurs more rapidly, as suggested by the seasonal fluctuation in discharge rates of some springs in the mine plan area. Mine inflow studies conducted as recently as 1985

have shown that the primary source of inflows are from fractures in areas of low overburden.

As previously described in this document, MCC encountered a large inflow of water while mining through a fault/fracture system in the B East Mains. As of the date of this findings document, MCC continues to experience mine inflow in the Sylvester Gulch area of the mine.

Groundwater in the area can be expected to flow generally in a downdip (northward) direction, parallel to bedding, toward the deeper part of the Piceance Basin. Data from monitoring wells generally indicate downdip flow, although some closely spaced wells in the Barren Member have highly variable water levels. Some wells are dry, indicating no groundwater flow. Dry wells and variable water levels may result from areal variation in permeability. Generally, springs in the permit area seem to act independently of the bedrock water zones and appear to be surface features related to weathered and fractured bedrock. Springs tend to exhibit highly seasonal flow and discharge only during spring snow melt. Springs recharge and discharge in relatively small areas.

Inflows into underground mine workings from faults and fractures located outside stream valleys generally dry up with time or flow intermittently at discrete points along the fault or fracture. Those which continue to flow have flow rates which diminish to a trickle. Such mine inflows from faults and fractures may represent the dewatering of lenticular sandstone units with limited recharge areas, or may represent flows through fracture zones extending to the surface which have narrow recharge zones on steep slopes. The large initial flow rates are much larger than what would be expected from intergranular porosity in low-permeability sandstone (Darcy-type flow), indicating flow probably is from fractures or faults.

Discharge of groundwater occurs through numerous seeps and springs identified in the life-of-mine area. The locations of these springs are shown on Map 37 and 37A, Springs and Stock Ponds.

c. Surface Water

The North Fork of the Gunnison River is the principal drainage in the mine area. Smaller streams in or adjacent to the life-of-mine areas are tributary to the North Fork. The North Fork has an average annual streamflow at Somerset of approximately 487.8 cfs per year (1980-2017). Flows in the North Fork usually peak in May or June at around 2,000 to 3,000 cfs, and generally range between 50 and 200 cfs during the rest of the year. The flow is regulated by the Paonia Reservoir on Muddy Creek five miles upstream of the town of Somerset. The reservoir became operational in 1962. Water yields during that period have ranged from a high of 601,800 acre feet per year in water year 1984, to a low of 82,270

acre feet in water year 1977. Water in the North Fork has a neutral to alkaline pH, and is a sodium-bicarbonate type with total dissolved solids generally less than 100 mg/l.

Streams in the northern part of the West Elk Mine permit area are Sylvester Gulch, Lone Pine Gulch, and Gribble Gulch. These three streams flow directly to the North Fork. Lone Pine and Gribble Gulches have ephemeral flows. No flow has been observed in Lone Pine Gulch for several years. Sylvester Gulch is ephemeral in its upper section, but has perennial flow in its lower section due to a spring. Sylvester Gulch has a drainage area of 4.25 square miles. The hydrologic yield of Sylvester Gulch is small for its size compared to other area watersheds due to its lower elevation and gentler slopes.

Raven Creek crosses the northeastern corner of the permit area over a distance of approximately 2,000 feet. This perennial stream and its riparian zone are protected from undermining and subsidence by a buffer zone of 660 feet (1/8 mile) on either side of the stream, as stipulated in Lease COC-67011. Mining approved by PR-11 will terminate to the south of Raven Creek because of that buffer zone.

A major contributor to flow in Raven Gulch is Deep Creek, a perennial stream that drains the southeastern part of the permit area. Flows in Deep Creek historically have been in the 0.1 to 0.5 cfs range during most of the year, as indicated by MCC's monitoring data from 2000 through 2005. Springtime flows exceed 30 cfs. Alluvium in the Deep Creek watershed is too thin to serve as a ground water supply source.

Most of the southern part of the permit area is in the Minnesota Creek watershed that was approved for mining in PR-10. This major watershed covers approximately 53.5 square miles. Tributaries to the mainstem of Minnesota Creek include Horse Creek, South Prong, Lick Creek, Dry Fork, and East Fork. The mainstem of Minnesota Creek enters the North Fork of the Gunnison near the town of Paonia. Based on streamflows measured in water year 1978, prior to mining, the water yields from these drainages are nearly an order of magnitude greater than the yield from Sylvester Gulch.

The evaluation of flow within the Minnesota Creek drainage is considered only an approximation due to infiltration and seepage losses, seasonal variations in precipitation and potential evaporation and sampling difficulties. MCC estimates that more than 80% of the South of Divide mining area is in the Dry Fork drainage. MCC also describes the Dry Fork drainage as having minimal yield, but its stream channel annually conveys approximately 720 acre-feet of water imported from Little Gunnison Creek via the Deep Creek Ditch (based on Office of the State Engineer records for 1970 through 2002). The average annual flow of the East Fork of Minnesota Creek is approximately 19,920 acre-feet.

Irrigation ditches annually remove about 20,000 acre-feet from Minnesota Creek.

Two reservoirs are located in the Minnesota Creek drainage. Minnesota Reservoir is located on the Dry Fork. It has a decreed capacity of 1,285 acre-feet. Beaver Reservoir is located on the East Fork of Minnesota Creek and has an absolute decreed capacity of 1,620 acre-feet and a conditional decree of 522 acre-feet. Both reservoirs store water for irrigation purposes and are filled during spring runoff. They are usually drained by late August or early September.

Water quality data have been collected at several sites throughout the Minnesota Creek and Deep Creek drainages. The data indicate that these waters are of a sodium-bicarbonate type with relatively low total dissolved solids concentration.

Minnesota Reservoir appears to have an effect on the water quality characteristics of Dry Fork. Detention of Dry Fork flows in the Minnesota Reservoir results in a decrease in total suspended solids (TSS) or turbidity, a slight increase in temperature, dissolved oxygen (DO), and total dissolved solids (TDS). The increase in TDS is most likely a result of evaporation losses. There is a slight increase in alkalinity and, as a result, a slight increase in pH. In all likelihood, these changes are also a result of evaporation losses. All of the changes in water quality observed are what would be expected as a result of impounding water in a shallow reservoir in a semi-arid climate.

There are three different types of springs within the permit area including alluvial, colluvial, and bedrock springs. Eighty-three springs have been identified within the permit area. Recent data indicate that 65 percent of the discharge originates from alluvium and/or colluvium, and 35 percent have bedrock formation as their source. Only 5 percent of discharge comes from the Upper and Lower Coal Series. The flow rates of these springs are highly seasonal, with peak flows occurring during wet weather conditions. Measurements indicate that spring flows generally decrease from a high in the early summer to a low in the fall. A number of the springs are ephemeral, indicating that their sources are small localized aquifers (i.e. landslide deposits, colluvium, lenticular sandstones, etc.). There are a total of nineteen (19) decreed spring water rights on or near the West Elk permit area.

Wetlands have also been identified within the permit area. Based on inspection of conventional and infra-red aerial photographs and reconnaissance-level field investigation, there are estimated to be approximately 77 acres of wetlands in the permit area. Most of the wetlands are found in drainage channels, although there are small, isolated wetlands on the hillsides where springs and seeps occasionally emerge as a result of landslides/sumps.

2. Probable Hydrologic Consequences

Section 2.05.6(3) of the permit application contains the applicant's prediction of the probable hydrologic consequences from mining and reclamation activities at the West Elk Mine.

During the first two permit terms, the operator mined the F Seam. During the third through fifth permit terms, MCC mined the B Seam exclusively. Activity in these seams involve longwall mining methods, with very little or no activity in the F Seam. During the sixth permit term the operator conducted development and longwall mining in the B Seam and E Seam. During the current permit term, MCC will be conducting development and longwall mining in the E Seam.

The Probable Hydrologic Consequences section of the permit is divided into two main subsections: Groundwater Effects and Surface Water Effects.

a. Ground Water Effects

During mining at the West Elk Mine, ground water seeps into the underground workings from rock exposed in the workings. Inflow into the workings was estimated to be a total of 166 acre-feet in 2004. Excess accumulations of this water are pumped out of the workings into Sylvester Gulch through a permitted discharge outfall. After mining is completed, pumping will cease, the portals will be sealed, and the underground workings will flood with the water seeping into the workings. The operator estimates it will take between 200 to 800 years for the workings to fully flood. The water that seeps into the workings will saturate the gob in the down-dip end of the workings and minerals will be dissolved from the gob, creating a gob leachate. This leachate can be expected to be alkaline and have TDS between 1,000 and 5,000 mg/l (for comparison, North Fork alluvial water probably has TDS greater than 1,500 mg/l, based on monitoring at the Bear No. 1 Mine.)

As the down-dip end of the West Elk Mine workings fill with gob leachate, this leachate will exert a hydraulic head on the downdip walls of the workings and the leachate may seep into the cleat porosity and fault porosity that is in the coal seams exposed in the workings. This leachate could flow down-dip, parallel to bedding, through the coal seams and discharge from the coal seams into the alluvium of the North Fork of the Gunnison where the coal seams sub-crop underneath the alluvium. This seepage would form a plume of gob leachate in the alluvium that would extend downgradient from the Sylvester Gulch/North Fork confluence toward Somerset. The likely maximum discharge rate of gob leachate into the alluvium would be on the order of 100 gpm based on the maximum head that could develop in the flooded workings. Such a plume would mix with and be diluted by ground water

in the North Fork alluvium and would be attenuated where the alluvium significantly widens upgradient from Somerset. North Fork alluvial ground water is monitored upgradient from Somerset at the Bear No. 3 Mine.

Low permeability of bedrock units in and near the West Elk Mine (Rollins Sandstone, B through F seams, and the Barren Member) will prevent any significant seepage of gob leachate into these units.

MCC has submitted two plans for sealing the portals upon closure of the mine. One plan calls for perpetual gravity discharge of mine water to the surface through a four-inch PVC pipe that will be installed in a block wall at the portal. An alternate plan (to be constructed if water is toxic) is to construct water-tight seals within the mine that will withstand the expected hydraulic pressures. Samples taken in the adjacent Oliver Mine indicate mine waters will not be toxic.

Subsidence fractures that develop over mine workings have the potential to dewater natural springs and wetlands in the West Elk permit area. The permit application explains that the risk of such depletion is significantly reduced by the overburden thickness of greater than 280 ft. and the resistance to fracturing of interbedded fine-grained units that would deform ductilely (bending), rather than brittlely (fracturing). Monitoring of springs since before the mine was developed has not detected impacts from mining. This monitoring will continue.

The operator predicts overall ground water/surface water balance will not be significantly affected if mine inflows are much greater than predicted because mine inflows will ultimately be discharged back to the North Fork of the Gunnison.

i. Refuse Material Disposal Impacts on Groundwater -

Lower Refuse Disposal Area – Coal mine waste will be disposed in the Lower Refuse Disposal and Refuse Pile Expansion sites. The lower refuse pile is permitted for permanent disposal of 1.09 million cubic yards of mine development waste and sediment pond cleanout material. The refuse pile expansion is designed to hold 1.38 million tons of material over a life of 9.4 years. The Refuse Pile Expansion is discussed in Permit volume 10B. An Upper Refuse Disposal Area has also been approved for construction, and has not been built. MCC has verbally indicated this pile will not be needed. Stipulation #7 requires MCC to complete a geotechnical investigation prior to constructing Upper Refuse Pile.

To date, refuse piles have not impacted the groundwater zone near Sylvester Gulch. Because of the low permeability of the

colluvial soils and the lack of a groundwater table near the surface in the colluvium, no impacts on groundwater are anticipated. Water monitoring near the site of the soil stockpiles and waste piles, other water quality monitoring stations on Sylvester Gulch, and sites above and below the mine on the North Fork of the Gunnison, provide data on impacts of this refuse stockpile. The wells in the colluvium in the vicinity of the refuse piles have been mostly dry since 2000 or yielded insufficient water to provide an analysis.

A leachate study of the F Seam refuse was conducted and included in the application for the permanent refuse disposal site in Exhibit 51 of the permit application. In addition, the effects of B Seam refuse on leachate were also evaluated and can be found in Exhibit 56. The permeability contrast found in the pile will cause most of the leachate to perch within the refuse pile and above the native soils. A shallow water mound will probably build within the pile and cause the water to migrate laterally to a small seepage area at the edge of the site. There have been no visible flows from the pile toe and mid-section underdrain.

ii. Mitigation of Groundwater Impacts -

The applicant anticipates no degradation of groundwater quality during mining. The applicant will treat any mine water effluent as necessary to meet water quality standards prior to discharge. There will be no uncontrolled mine water discharge after mining is complete that will significantly degrade surface water or groundwater. The operation plan indicates most water used for dust control will be adsorbed on the coal and carried from the mine, thereby minimizing the quantity to be treated. Any discharge will be treated in the sedimentation ponds and discharged as specified in the NPDES permit.

The required ground water monitoring plan for the West Elk Mine is described in Exhibit 71 for the South of Divide and Dry Fork lease areas, and in Table 5, Section 2.04 of the permit application for other areas. MCC monitors water quality and water levels in 27 wells in the permit area. Monitoring wells are completed in the following stratigraphic units (in ascending order): the B Seam, the E Seam, a stratigraphic interval between the E and F seams, the F Seam, the Barren Member, and Quaternary alluvium. More than one well is completed in most of the stratigraphic units. Sampling occurs seasonally (three times a year). Parameters monitored include: water level, pH, conductivity, temperature, total dissolved solids, total suspended solids, total iron, and total manganese.

Underground or mine water is permitted for discharge at the following locations: Sylvester Gulch fan site, sediment pond MB-1, the Sylvester Gulch mine water treatment facility, Lone Pine Gulch and Minnesota Creek. The Lone Pine discharge has been discontinued, and the portals have been sealed. Mine water is discharged through the main portals to MB-5E and from the mine water treatment facility to Sylvester Gulch. Quality parameters appear to be such that B seam mine water will be suitable for treatment and discharge under current NPDES/CDPS permit requirements to the North Fork of the Gunnison River. The quality of mine water from the E seam workings can be expected to be similar to water from the B seam workings, based on the similar depositional origin of these two seams.

The rate of mine water discharge from West Elk's underground workings ranges from 0 to 2,000 gpm. The average over a year has been about 100 gpm. Water discharged from the mine has met NPDES criteria with periodic excursions of high alkalinity and iron. The high alkalinity caused some WET test failures in past years. MCC has worked with the WQCD and the Division to develop a solution for eliminating the alkalinity problem. As of October 8, 2008, Colorado Water Quality Control Division is reviewing past exceedances of discharge limitations for iron (potentially dissolved and total recoverable) at outfall 017. MCC has ceased mine water pumping at Outfall 017 and is investigating potential corrective measures to ensure future discharges at Outfall 017 comply with effluent limitations specified in CDPS Permit No. CO-0038776.

In 1998, Mountain Coal Company performed an extensive study of the springs in the vicinity of the West Elk Mine. The study showed that nearly all the springs tapped shallow meteoric groundwater in the colluvial deposits, rather than bedrock sources. As a result of the study, a revision was made in the monitoring program, with the eighteen springs monitored to include all decreed springs and those which might have some bedrock groundwater component. Springs are also monitored three times a year for pH, conductivity, temperature, total dissolved solids, total suspended solids, total iron and total manganese. The springs, to date, show no significant trends or changes which can be associated with mining activity. Most springs are responsive to spring runoff, but flow rates are sporadic and many times do not correlate well with other seasonal parameters such as snowpack, precipitation, or streamflow.

b. Surface Water Effects

The West Elk Mine has installed a system of ditches and ponds for controlling sediment eroded from areas disturbed by mining activities. Drainage from undisturbed land is diverted around the site. Almost all drainage from disturbed areas is collected in ponds and treated on-site. There are several small, isolated areas where drainage is not routed to a sediment pond; in these areas, alternative sediment control methods (silt fences, mulch, etc.) are used for controlling sediment.

A system of lined and unlined ditches convey water from the disturbed areas to six sedimentation ponds that have been constructed for the surface facilities area. These are:

MB-3	Small lower pond
MB-4	Train loadout pond
MB-5E	Bear pond
SG-1	Upper Sylvester Gulch pond
NSSA	North Soil Storage Area pond
RPE ponds	Refuse pile expansion area

With the exception of pond SG-1, all sedimentation ponds discharge directly into the North Fork of the Gunnison River. The mine operation has obtained the appropriate NPDES permits for the discharges. Effluent quality for the sedimentation ponds has been monitored and will continue to be monitored to determine permit compliance. With the exception of occasional WET test failures for microorganisms, and isolated exceedances of suspended solids discharge limitations, the mine has not had recurring problems complying with surface water quality standards. The NPDES permit allows for a discharge of 10,000 gpd, based on a 30-day average, from MCC's sanitary waste water treatment plant. The potential impact of discharge of waste water effluent would be greatest when the dilution ratio for effluent is smallest.

After mining is completed at the West Elk Mine, the underground workings may flood to a point where mine water discharges to the surface either through a perpetual drain that MCC may construct at the down-dip end of the workings next to State Highway 133, or as seepage from the coal outcrop on the hillside south of the highway (if the drain is not constructed). The maximum discharge is predicted to be around 100 gpm. The discharge would likely be relatively high in dissolved solids (on the order of 1,500 to 5,000 mg/l total dissolved solids). The maximum 100 gpm discharge would be diluted to near premining quality by water in the North Fork of the Gunnison River, where flow is always more than 4,500 gpm and total dissolved solids are less than 200 mg/l.

MCC predicts the quantity of its water use will not adversely affect the hydrologic balance. Snowmelt provides most surface water flow in the

permit area. Mining activities will not have a significant effect on snowmelt runoff. Overland runoff passes over disturbed areas within the permit area to one of the eight sedimentation ponds, mentioned previously in this section. This water may be discharged to the North Fork or stored when water rights are in priority.

During Water Year 1982, MCC's conditional right to withdraw water from the North Fork was deemed absolute. When this water right is in priority, water can be pumped from the intake point to the 10 acre-foot freshwater pond. This water right is expected to be out of priority from July to September. Average withdrawals from the North Fork of the Gunnison are not expected to exceed 400,000 gallons per day (gpd) and are likely to be on the order of 200,000 gpd. The freshwater pond is filled during spring runoff and kept full until water rights are out of priority. The water is either treated to meet potable and sanitary water requirements, used and then treated as sanitary waste water, or is withdrawn for dust suppression in the mine and becomes mine water.

The potential effects of MCC's water diversion on North Fork flows have been projected for flow rates and flow volumes. With the existing pump capacity, 450 gallons per minute (gpm), the diversion would result in a measurable change in flow during low flows having return periods of about 200 years or greater, and would be less than 5 percent. During extreme low flow periods, MCC's water rights would be out of priority and diversion would not be undertaken.

Although subsidence fractures that develop over and next to mine workings have the potential to dewater streams and ponds, Section 2.05.6(6) of the permit application explains that dewatering is unlikely to occur because subsidence cracks that develop at the surface will not extend deep enough to intersect fractures propagating upward from the caved and fractured zones. Also, the stratigraphic sequence in stream valleys is resistant to fracturing due to the presence of interbedded fine-grained units. These beds would more likely undergo ductile deformation (bed bending), rather than brittle deformation (bed fracturing). Stream flows and local channel elevations will continue to be monitored in the permit area, as set forth in the permit application. Subsidence magnitudes of stock ponds will also be monitored. Specific measures MCC will employ for assessing and protecting the Minnesota Creek water supply are described in Exhibit 58 of the permit application titled, "Protection of Minnesota Creek Water Supply." Possible subsidence impacts to streams and ponds are discussed in the following Subsidence Control section.

Underground mine workings will come within 800 ft. of the Monument Dam and Minnesota Reservoir. MCC explains in Section 2.05.6(6) of the permit application that the reservoir is unlikely to be affected by mining because the dam and reservoir are outside the predicted angle of

draw and a subsidence control plan will be implemented for mitigating possible impacts from mining-induced seismicity. (Possible subsidence impacts to the dam and reservoir and mitigation measures are described in the following discussion of the subsidence control plan.).

MCC's surface water monitoring plan is described in Exhibit 71 for the South of Divide and Dry Fork lease areas, in Exhibit 71a for the Sunset Trails area, and in Section 2.04 of the permit application for other areas. As of late 2008, MCC monitors surface water quantity and quality at 22 stream stations, comprised of 10 stations with continuous recording and 12 stations with instantaneous recording. A minimum of one year of monthly baseline data has been collected on all streams prior to mining in a watershed

3. Summary and Findings

The Division has reviewed the Probable Hydrologic Consequences due to mining operations for the groundwater and surface water systems at the West Elk Mine. The Division finds that underground mining at the West Elk Mine will not cause material damage outside the permit area and hydrologic impacts will be minimized within the permit area. (2.07.6(2)(c)).

IV. Topsoil

Baseline soils information can be found in Section 2.04.9 in Volume 1 of the PAP. A suitability analysis of the topsoil was performed before the site was disturbed. In most areas topsoil quality as seedbed material is considered moderate to good, with a few areas that are considered poor. Soil mapping and physical descriptions of the soil are based on SCS soil surveys completed for the area.

The operator's topsoil salvage and redistribution plan can be found in Section 2.05.4. Topsoil and subsoil stockpiles are shown on Map 53.

Topsoil will be removed ahead of surface disturbance activities. Any vegetative cover that would interfere with topsoil removal will be removed first. The West Elk Mine had already completed the majority of topsoil and vegetation removal when the mine facilities were constructed in 1981. Since the majority of reclamation will occur upon completion of mining, topsoil stockpiles have been designed and maintained so as to minimize wind and water erosion and to preserve the seedbed material. Stockpiles in place for five years or more have been or will be seeded with the permanent seed mix.

Subsoil not fully suitable for seedbed material is also excavated, as necessary, for construction purposes. Topsoil consisting of all of the A horizon and part of the B horizon of each soil series present is stripped before construction begins.

The operator will distribute 12 to 18 inches of topsoil over the entire disturbed area. However, the Lower Refuse Disposal Area will be replaced with 18 to 24 inches of topsoil and subsoil. A variance to the four feet of nontoxic cover has been granted to

the West Elk Mine. This variance is discussed further in Section VIII, Coal Mine Waste Banks in this Findings Document. After the soil has been replaced, the surface is loosened and roughened by disking, harrowing, or dragging, which will increase infiltration, thereby reducing surface runoff. Various conditioners and neutralizers may be used to modify seedbed conditions, or enhance vegetative cover.

V. Sealing of Drilled Holes and Underground Openings

1. The Division will require that each hole, well or other underground opening be capped, sealed, backfilled, or otherwise properly managed (4.07.3).

VI. Use of Explosives

1. Mining techniques used at the West Elk Mine do not require blasting as part of the regular extraction cycle. Occasionally, explosives are used for underground construction purposes. These uses only require small quantities of explosives. MCC's Explosives Handling and Blasting Procedures are presented in Exhibit 41 of the permit document. Map 53 shows the location of the powder magazine.

Limited application of explosives may be necessary for additional future surface construction. Pursuant to Rule 4.08.1(2), blasts that use more than five pounds of explosives or a blasting agent will be conducted according to the blasting schedule required by 4.08.3. As appropriate, a pre-blasting survey will be performed (4.08.2).

VII. Disposal of Excess Spoil

1. The West Elk Mine will not require a disposal area for excess spoil (4.09).

VIII. Coal Mine Waste Banks

The West Elk Mine is currently permitted for five refuse disposal areas – the Lower Refuse Pile (LRP), the Refuse Pile Expansion (RPE), the Refuse Pile Expansion East (RPEE), the Upper Refuse Pile and the Lone Pine Refuse Pile. The Upper Refuse Pile has not been constructed and is on indefinite hold. Specific information on that waste pile can be found in Exhibit 50 of the permit application package. Construction of the LRP is complete and a coal processing plant has been constructed on top of it. The design for the LRP, RPE and RPEE are contained in Exhibits 51, 70 and 82, respectively. As of 2018 refuse is being disposed of on the RPEE.

The LRP is located adjacent to Highway 133, at the west side of the mouth of Sylvester Gulch. MCC initially proposed the disposal of waste rock within two waste piles in the original permit application. One pile, the "initial waste rock pile," would contain approximately 1.25 million cubic yards and would be located on the lower facilities bench (the current location of the shop). Subsequent to permit approval, this initial waste rock pile was deleted from MCC's permit.

In the summer of 1985, MCC submitted an application for PR-3 requesting approval of a permanent lower waste pile to be located adjoining the mouth of Sylvester Gulch. This application originally requested approval to permanently dispose of 1.77 million tons of coal processing waste within the proposed structure. The original design phased the refuse pile into five specific design layouts (Phases I through V), including recompaction and reconfiguration of temporarily stored waste material. The pile was constructed according to this original phased design until the Phase IV configuration. TR-63 was submitted in November 1992, which eliminated Phase V and reduced the pile to 1.2 million tons. The proposed storage volume represents a 15.7 year life. The proposal included the combination of a 28,500 cubic yard topsoil pile during Phases I through III and a maximum of 45,000 cubic yards of non-toxic soil cover (subsoil) stockpile. Topsoil removed for Phase IV will be stored on the 50-foot bench constructed in Phase III. In addition, an access road was constructed in Phase III and a portion of the Sylvester Gulch access road to the main fan portal was relocated. Underdrains have been constructed beneath the pile. Piezometric groundwater monitoring will be conducted. Slopes of the pile will be maintained at 2.5H:1V.

The TR-63 application included a thorough slope stability analysis performed in accordance with the prudent state-of-the-art slope analysis for the original design in 1985, and for the redesigned pile in 1992. Material strength values were derived from on-site sample testing and nearby previously reported test results. Piezometer observations, falling head parameter tests and analytical projections were completed in order to predict appropriate phreatic surfaces within the proposed waste structure. Data for the 1992 analysis utilized data collected for the 1985 analysis.

The applicant has committed to the installation and quarterly monitoring of three sets of survey monuments to monitor slope stability of the waste structure. One row of monuments has been installed parallel to the state highway adjoining the toe of the waste pile on 100-foot intervals. Two additional rows of monuments have been installed perpendicular to the highway on the facial slope of the pile at 50-foot interval spacing. The operator has also committed to quarterly reporting of visual inspections of the topsoil, non-toxic soil cover stockpiles, and refuse pile.

For the LRP, drainage will be controlled by a series of drainage ditches, terraces, and a sedimentation pond. Since the pile will be constructed in phases, the drainage system will also be built in phases. All disturbed area drainage from the topsoil piles, subsoil stockpile and waste pile will be routed to the sedimentation basin at the northwest corner of the lower waste pile (MB-2R).

The design incorporates several permanent drainage features into the plan. After final reclamation of the pile, the terraces will be barricaded with rocks or berms to prevent access to the pile. However, the terraces will still function to control runoff from the pile. A hundred-year diversion ditch has been constructed around the perimeter of the pile to permanently collect any runoff from the site and safely route it to the natural drainage system. For a discussion of the hydrologic effects of the waste pile on both surface and groundwater, see the hydrology section in the Probable Hydrologic Consequences section of this findings document.

The Division has granted a variance from Rule 4.10.4(5), to cover the LRP with a minimum of four feet of non-toxic and non-combustible material. The operator was able to demonstrate that there would be no expected detrimental effects on revegetation and that the probability of spontaneous combustion occurring is very low with a proposed soil cover of 18 to 24 inches. A satisfactory revegetation, erosion, and spontaneous combustion monitoring plan was proposed for the LRP. Also, contingency plans were proposed for all three concerns in the event of failure or poor reclamation success. Therefore, upon reclamation of the LRP, the operator will cover the pile with 18 to 24 inches of topsoil and subsoil. For more information, please see information regarding Technical Revision No. 53.

The West Elk Mine was permitted to accept and dispose coal mine waste from other neighboring operations, if comparable in characteristic to MCC's refuse. In the past, MCC has accepted sediment clean-out from the Terror Creek Loadout and development waste from Bear Coal Company [4.10.1(2)].

The LRP is inspected quarterly by a qualified professional specialist under the direction of a professional engineer, experienced in construction of similar earth and waste structures. Features inspected are erosional, drainage, structural, reclamation, and general compliance and other miscellaneous features [4.10.2(1)].

In January of 1997, MCC submitted an application for TR-79 which proposed the addition of the RPE on approximately 20 acres immediately east of the LRP, on the opposite (east) side of Sylvester Gulch. TR-79 was approved in 1997. The plan is to develop the pile in stages. Phase I is the buildout which involved the removal of topsoil, initial grading, construction of a dual-cell sedimentation pond, liner, and underdrains along with run-off control. Phase II was the initial refuse emplacement. Phase III will involve the main build-out as the pile will proceed up the hillslope to the north at a slope of 2.5 to 1. Sediment controls will be extended to the west, south and east sides. Ultimately Phase IV will be the completion of the pile with a capacity of 1,384,102 cubic yards total.

The sedimentation ponds and initial run-off control berms and ditches were completed prior to the beginning of Phase I. Topsoil was placed north of Highway 133 in an area known as the north soil storage area (NSSA). Subsoil from Phases I and II were used in the development of the Sylvester Gulch facilities area (PR-7). Subsoil removed in phases III and IV will be sufficient for reclamation of the RPE area itself and will be placed in a stockpile to be determined prior to the beginning of Phase III.

The RPE area of Phases I and II is lined with high-density polyethylene liner. An underdrain, designated as a rock drain, is used for collecting refuse fill drainage. The liner will allow subsurface water to migrate into the rock drain system and be routed to the RPE sedimentation pond. Phases III and IV subsurface will not be lined because of the steeper slope grade (2.5H:1V) and the greater clay content of the colluvium.

The reclamation of the RPE was approved with an average total of 18 to 24 inches of subsoil and topsoil. A variance to cover the LRP was approved through TR-43 in July, 1987. That variance was applied also to the RPE. As the RPE is graded and covered

with subsoil and topsoil, it will be revegetated with the approved permanent seed mix. The seeding will be done either by broadcast or by hydroseeding and then mulched. Interim and final revegetation will be conducted in the same manner as for the LRP. The haul road for the RPE will be reclaimed at the end of mine life to approximate original contour.

A small waste pile at the Lone Pine ventilation fan site was approved through TR-69 on August 12, 1994. The pile stores refuse from the development of that facility. It covers 0.7 acres, storing 17,000 cubic yards of refuse. A subdrain system was installed. The pile was covered with three feet of subsoil and one foot of topsoil and reclaimed.

The RPEE was approved with TR-121 in 2010, and was under construction in 2011. This pile has an approximate maximum capacity of 4 million cubic yards. Colluvium is to be left in place underneath the refuse pile, and an underdrain is to be constructed on top of the colluvium after 24 inches of soil is removed and stockpiled. Ditches designed for a one hundred year storm will be constructed on either side of the pile. These ditches are approved as permanent structures. Runoff from the RPEE will go to the RPE ponds. The East RPE will be reclaimed progressively as successive benches are constructed.

IX. Coal Mine Waste

1. The Division proposes to approve a plan for extinguishing coal mine waste fires. This plan has been approved by MSHA and contains provisions about who will be involved in the extinguishing operations (4.11.1). The plan can be found in Exhibit 65 of the PAP.
2. No coal mine waste from the West Elk Mine is proposed to be returned to underground workings (4.11.3).
3. Disposal of non-coal waste will be handled as required (4.11.4).
4. No dams or embankments constructed of coal mine waste have been or are proposed to be constructed (4.11.5).

X. Backfilling and Grading

The Backfilling and Grading plan can be found throughout Section 2.05.4. Exhibit 54 of the permit document contains detailed information regarding abandonment and sealing of portals. Maps 58, 58A, 58B, and 59 show post-mining topography.

During the course of MCC's study of the original West Elk lease property and the Jumbo Mountain lease area, numerous slope failures and rock falls were identified. Landslides and rockfalls identified during their study are delineated on Map 32 and 32A. However, MCC also observed that it believes such slope problems would have a minimal effect on the operation and these areas can be stabilized or removed when the facility is built.

In order to judge the credibility of MCC's statements regarding slope stability, the Division requested the submittal of supporting information. MCC responded by submitting a report prepared by Geo-Hydro Consultants, Inc., entitled "Landslide Study, Geo-Hydro Consultants, Mt. Gunnison No. 1 Mine," included within the permit document in Exhibit 14. This report, prepared in conformance with the current state-of-the-art, includes design recommendations for the surface facilities to be constructed within the landslide deposit delineated in the surface facility area of the West Elk Mine site. One of the design recommendations forwarded within the report is the installation of a dewatering system consisting of horizontally inclined dewatering wells installed throughout the affected area, specifically within the portal bench and access road. Specific engineering design plans for this system have been included within the permit document. In addition, intricate bin-wall retaining structures were subsequently included within the design documents in the permit section.

The area of the surface facilities has been the focus of historic and recent landslide activity. The Division required MCC to demonstrate, through appropriate geotechnical analyses, that the proposed backfilled surfaces would satisfy the required static slope safety factor of 1.3. Merrick and Company prepared a "Report of Stability Analyses and Recommendations for Reclaimed Surface Facilities at the West Elk Coal Company, Mt. Gunnison No. 1 Mine." The report presents the results of the required stability analyses and recommendations for reclamation of the affected area.

MCC proposes to return all surface disturbed areas to approximate original contour, with the exception of the waste disposal sites.

XI. Revegetation

Information regarding the vegetation in the West Elk Mine permit area is found in Sections 2.04.10 and 2.05.4; Exhibits 31, 32 and 33; and Maps 42, 43 and 44 of the PAP. No threatened and/or endangered plant species were found anywhere within the permit area.

Success of revegetation efforts was originally based on reference areas established in July 1980 and enlarged in 1981. Reference areas were established for mixed shrub and dry meadow communities and were shown on Map 44.

MCC proposed replacing the two reference areas with the use of a historic reference area, the Historic Records Study Area (HRSA), for evaluating revegetation success. Vegetation in the HRSA resembles the expected post-mining vegetation community. The HRSA is located in a former agricultural and pasture area southwest of the facilities area as shown on Map 53. Use of the HRSA was approved with PR-7 and is presented in Section 2.05, page 2.05-69 of the PAP.

The following technical standards were established with TR-125 (approved in 2011) as the standards that will be used for determining revegetation success on disturbed areas of the West Elk Mine: minimum live vegetation cover of 53.04 %, minimum herbaceous production of 180.38 grams per cubic meter, and at least three perennial species of which two are cool season perennial grasses and one is a cool season perennial forb. No

one component of the grass and forb species shall comprise greater than 40% relative cover, nor less than 3% relative cover. The technical standards were based on the mean of samples collected in the HRSA in 1996, 1997, 1998, and 2010. Elimination of a standard for woody shrub stem density was approved with TR-125 after the Division consulted with the Colorado Division of Parks and Wildlife and the U.S. Forest Service.

The proposed post-mining land use is rangeland and wildlife habitat. Tables 48 and 49 of the PAP list the seeds and shrubs to be planted to establish this land use. The West Elk Mine also will reclaim 1.3 acres within a riparian buffer zone. The riparian seed and shrub mix is listed on page 2.05.53 of the permit document. The mine based their selection of plant species on species listed in the baseline biological survey, species geographical range, soils, climate, slope and aspect, root competition, cover and seasonal variation. Seed mixes are also based on experience gained on West Elk Mine revegetation plots, and quantitative data collected in 1980 describing the present vegetative cover, and in terms of wildlife requirements suggested in the literature. The Division approves the use of these species based on the post-mining land use.

Once stockpiled topsoil has been distributed and graded, the surface is prepared for planting. Surface preparation loosens and roughens the surface by disking, harrowing, or dragging which increases infiltration and reduces surface runoff. Seeding and planting are conducted parallel to the contour unless such activities prove hazardous to equipment and/or operators. Various conditioners and neutralizers may be used to modify the seedbed conditions. Seeding and shrub planting will be done during the spring (March 15 through June 15) or fall (September 15 through November 15).

Grasses and forbs are seeded primarily by drill seeding. Broadcast of seed is utilized on small areas, with hydroseeding used on areas with slopes steeper than 3:1.

XII. Post-mining Land Use

1. The Division is proposing to approve a post-mining land use of rangeland and wildlife habitat. The land use meets the criteria of Rule 4.16.3.

XIII. Protection of Fish, Wildlife and Related Environmental Values

1. Information regarding compliance with Rule 4.18 is located in Section 2.05.4 of the permit document.
2. Wildlife habitat is a planned post-mining land use. The applicant has selected appropriate plant species and distributions to benefit wildlife.

XIV. Protection of Underground Mining

1. MCC proposes surface impacts incident to an underground coal mine. These impacts are not surface coal mining activities (4.19(1) and 4.22.4(1)).

XV. Subsidence Control

1. MCC has proposed a subsidence control plan in accordance with Rule 2.05.6(6) and has committed to adopting measures for reducing the likelihood of subsidence, preventing material damage, and mitigating the effects of subsidence. The Division proposes to approve the plan (4.20.1(2) and 4.20.3(1)).

- a. Inventory of Structures and Renewable Resource Lands

Rule 2.05.6(6)(b) requires the operator to include in the permit application an inventory of structures and renewable resource lands in and adjacent to areas proposed for underground mining activities. MCC has previously provided such inventories prior to mining in an area. The inventories are in Section Rule 2.05.6(6) of the PAP.

Structures identified in inventories prior to PR-10 are: the segment of State Highway 133 next to panels 18, 18A, and 19 of the mine; Forest Service roads, ditches, trails and stock ponds; and all of MCC's mine facilities. The renewable resource lands identified in inventories prior to PR-10 inventory are water-bearing bedrock and alluvial strata in and adjacent to mining areas.

Structures identified in the PR-10 inventory are: Monument Dam, Minnesota Reservoir, Cow Camp on the Dry Fork (consisting of a wood-framed building on a concrete slab, a smaller wood-framed building, and a livestock enclosure), Forest Service roads, ditches, trails and stock ponds, and MCC's hydrologic monitoring stations. The renewable resource lands identified in the PR-10 inventory are the water-bearing bedrock and alluvial strata in and adjacent to the South of Divide area.

Structures identified in the PR-12 (Dry Fork lease) inventory are: U.S. Forest Service Roads 711 and 711.5, the Deep Creek Ditch, the Minnesota Creek Ditch Rider's cabin, trails, stock ponds, and MCC's hydrologic monitoring stations. The renewable resource lands identified in the PR-12 inventory are the water-bearing bedrock units in and adjacent to the Dry Fork lease area.

A thorough subsidence evaluation was completed for the Sunset Trails expansion (PR-15), which can be found in Exhibit 60e of the PAP. No new structures or renewable resource lands were added to the inventory.

- b. Possible Subsidence Consequences and Mitigation of Impacts

Possible subsidence consequences are described in Section 2.05.6(6)(b)(I) of the permit application. Additional information is contained in a report in Exhibit 55, titled "Subsidence Evaluation for the West Elk Mine". Information for specific areas in the permit area can be found in Exhibit 60.

MCC's predictions of possible subsidence are based on historical observation from past mining, conceptual analytical modeling (relation between extraction height and workings depth, adjusted for lithologic variation), and numerical modeling (computed influence function). MCC predicts the angle of draw for longwall mining in the E seam in the Dry Fork lease area will be 21 degrees. (The angle of draw is the angle between a vertical line at a panel edge and a line extending from the panel edge to the point of zero subsidence at the ground surface.) MCC predicts the angle of draw for longwall mining in the E seam in the South of Divide area will be between 10 and 20 degrees. MCC predicts 95 percent of subsidence will have occurred at a location in the Dry Fork lease area when the longwall face has moved from the location a distance equal to 1.0 to 1.2 times the depth of mining. The depth to mining in the Dry Fork lease area will range between 800 and 1,400 feet, with maximum vertical displacement on the land surface of 7.0 feet. The depth to mining in the South of Divide area will range between 375 ft. and 1,300 ft. Maximum surface crack depth is predicted to occur in brittle sandstone ridges, as observed elsewhere in the permit area, with maximum crack depth of 50 feet. Maximum crack depth is predicted to be 5 to 15 feet on gently sloping land (<30%). Surface cracks are predicted to not occur where mining depth is several hundred feet and alluvium is more than a few feet thick.

Possible subsidence effects on ground water has been previously discussed in this Findings document under the heading "Probable Hydrologic Consequences".

MCC predicts the mining nearest State Highway 133 (600 feet horizontal distance) will probably not re-activate existing landslide deposits in the area because the mining there consists of room-and pillar development entries which have a relatively small subsidence potential. The angle of draw of longwall mining activity does not intersect landslide bodies in the area. MCC monitors monuments it has installed on a landslide mass in the mine's surface facilities area.

Monument Dam and Minnesota Reservoir – MCC predicts the dam or reservoir will not be subsided by mining because the nearest mining will be 800 ft. away in panel E9. The angle of contact between the reservoir is 69 degrees, significantly more than the 20-degree predicted maximum angle of draw in the South of Divide area. MCC has committed to monitoring the angle of draw of panel E9 in order to verify the prediction. MCC predicts that ground vibration (seismicity) created by longwall mining could affect the dam, the reservoir, and the landslide abutting the dam because the static safety factor of the dam has been found to be less than 1.0, as shown in an analysis conducted by MCC's consultant and contained in Exhibit 72 of the permit application. The suspected cause of the relatively low factor of safety is a landslide that underlies the dam's south abutment. Possible effects from mining-induced seismicity are: rockfall into the reservoir; overtopping of the dam by water in the reservoir; catastrophic failure of the dam; flooding, sediment deposition, and erosion downstream from the dam; flood damage to

roads, houses and other structures downstream from the dam. MCC has summarized in the permit application the predicted effects of a catastrophic failure of the Monument Dam determined in a Dam Breach Analysis, dated February 8, 1984. Predicted out-of-channel floodwater depths are in the range 0.3 to 3.5 ft. in the lower 6 miles of Minnesota Creek. Predicted floodwater velocity is in the range 13 feet per second to 42 feet per second. As many as four houses could suffer shallow flooding, although loss of life would not be expected. Depending on proximity to the creek, houses could suffer structural collapse as a result of foundation erosion. Extensive erosion and resource damage would occur along Minnesota Creek and a sediment bar would probably be deposited in the North Fork of the Gunnison River. In order to mitigate any potential impacts to the dam from mining-induced seismicity, MCC has committed to the following measures (which are set forth in more detail in Section 2.05.6(6) of the permit application):

1. Surveying the structures downstream from the dam that could be impacted by dam failure six months prior to longwall mining in the South of Divide area, and incorporating the survey into the permit application as a revision.
2. Conducting annual aerial photo surveys of landslides located north and south of the reservoir,
3. Installing and periodically surveying monuments on the dam and the north, south, and east edges of the reservoir,
4. Monitoring water levels in piezometers installed in the dam,
5. Installing and periodically surveying monuments on the landslide that adjoins the south abutment of the dam,
6. Monitoring seismicity at a seismic station previously installed on Monument Dam and to be installed in selected E-seam panels,
7. Removing any significant sediment accumulation from the reservoir caused by mining,
8. Constructing a stability berm and buttress at the dam, and making other modifications to restore the dam to a 1.5 static safety factor and to enable the dam to withstand the predicted maximum seismic event from mining in the South of Divide area of 2.3 on the Richter scale and peak ground acceleration of 0.15 g,
9. Surveying monuments on the dam within two days of a seismic event that exceeds 0.15 g, and if the integrity of the dam or reservoir appears threatened, immediately notifying the Division, the Minnesota Reservoir Company, the U.S. Forest Service, the Office of the State Engineer, and other appropriate agencies,

10. Submitting periodic reports of monitoring data to the Division, and
11. Replacing, repairing, and otherwise restoring the dam and structures downstream or purchasing insurance policies addressing downstream damage that will be in effect at the time of longwall mining, should catastrophic failure of the dam occur as a result of mine-induced impacts.
12. Augmenting surface water supplies lost due to subsidence according to the Augmentation Plan contained in Exhibit 52 of the permit application.

To address concerns raised by the Division of Water Resources, Office of the State Engineer, Colorado Department of Natural Resources in DWR's letter of April 21, 2006 to the Division of Reclamation, Mining and Safety, the Division attached Stipulations Nos. 74, 75, and 76 to the decision for PR-10. As of late 2008, the West Elk Mine had completed the mitigation measures listed above, and had received final approval of the work on the dam from the Office of the State Engineer (letter dated September 2, 2008). Stipulation Nos. 74, 75, and 76 have been terminated.

Minnesota Creek Ditch Rider's Cabin - MCC predicts the cabin will not be affected by mining because the nearest longwall panel (panel E6) will be at a depth of 1,200 feet, approximately 800 feet away from the cabin. The calculated angle of contact between the panel and the cabin will be approximately 40 degrees, significantly more than the 20-degree predicted maximum angle of draw in the Dry Fork lease area.

To promote more predictable subsidence, MCC may design pillars to yield and crush after mining (in order to minimize humps in the subsidence profile), and mine at a rapid uniform rate.

MCC predicts subsidence cracks may form in areas that are located over or next to underground workings. (See preceding description of predicted crack depths.) Subsidence cracks could dewater streams, ponds, or wetlands; cause local cracking or downcutting in streams; damage roads, fences, and the buildings at the Cow Camp; dewater aquifers or cause cross-stratal flow of ground water or methane.

MCC predicts mining may cause local temporary pooling and temporary accelerated erosion in the main channel and east fork of Sylvester Gulch, and in parts of the Deep Creek Ditch. Channel avulsion could occur in the Deep Creek Ditch.

To mitigate subsidence impacts, MCC has committed to: filling surface cracks; redirecting flow into the original channels of streams or ditches; installing temporary culverts to bridge surface cracks; repairing subsidence-damaged roads, fences, and buildings; monitoring wetland vegetative health in

the South of Divide area and the subsidence magnitudes of Minnesota Creek (as set forth in Exhibit 32 of the permit application); conducting hydrologic monitoring (as set forth in Exhibit 71 for the South of Divide area, and in Section 2.05.4 of the permit application for other areas); and augmenting any water supply losses, including any mining-caused losses from Minnesota Reservoir or the Deep Creek Ditch (as set forth in the Augmentation Plan contained in Exhibit 52 of the permit application).

To detect subsidence impact, MCC has committed to monitoring the following items: wetland vegetative health in the South of Divide area; subsidence magnitudes of Panel E1, Minnesota Creek (as set forth in Exhibit 32 of the permit application), and the Deep Creek Ditch (Section 2.05.6(6)(f)(iii)(C)(IV); surface and ground water flow and quality (as set forth in Exhibit 71 for the South of Divide and Dry Fork lease areas, and in Section 2.05.4 of the permit application for other areas). MCC has committed to performing periodic visual inspections of subsidence impacts to structures and conducting annual traverses recently mined areas. The results of monitoring and inspections are to be submitted to the Division in periodic reports as required by the Rules and the permit application.

MCC predicts rock falls or landslides may occur as a result of mining-induced seismicity. To mitigate these impacts, MCC has committed to placing warning signs where appropriate, conducting visual inspections of possible rock fall and landslide areas, and removing any blockages of roads or drainages caused by mining-caused rockfall or landslides.

2. Section 2.05 and Map 53 of the permit application provide information on the perennial portion of Sylvester Gulch. The information was submitted in TR-25. The information includes: depth of mining, height of mining, lithologic description of overburden, and a map of the workings. Based on this detailed subsurface information, the Division previously found that MCC's proposed undermining of the portion of the perennial portion of Sylvester Gulch will not cause material damage to the main channel or east fork of Sylvester Gulch. (4.20.4).

Flow in Deep Creek in the Dry Fork lease area is perennial. Two of the operator's B seam panels previously undermined the segment of Deep Creek that is downstream from the Dry Fork lease area. Detailed underground information provided in the PR-12 submittal and in the existing permit application (workings maps, depth of mining, height of mining, and the lithologic description of overburden) indicates subsidence may cause localized temporary pooling and temporary accelerated erosion in the channel. Exhibit 55 B contains a prediction that undermining of Deep Creek in the Dry Fork lease area by panels 3 and 4 will tilt the 7.3% pre-mining slope of the stream by 1.9%, an amount too small to significantly change the hydraulic characteristics of the stream. Exhibit 55 B predicts mining effects on Deep Creek in the Dry Fork lease area will be the same as the previously undermined section of Deep Creek which had no detectable impacts, indicating the depth to mining in the Dry Fork lease area (which is similar

to depths downstream) is sufficient to prevent subsidence fractures from capturing significant volumes of stream flows. Based on this information, mining in the Dry Fork lease area does not appear to have the potential to cause material damage to Deep Creek.

3. Until 1999, subsidence monitoring at the West Elk Mine was accomplished using conventional survey methods of a monument grid. The monitoring of MCC's subsidence grid established the amount of subsidence that occurs over a longwall panel, when and where it occurs and when it is complete. MCC was approved to replace the monument survey with a visual inspection of the ground over areas that have been undermined to document any disturbance. A survey is done prior to mining and to areas where effects of subsidence were previously noted in order to monitor the healing of cracks. Given the heavy snow cover and inaccessibility of most of the affected area, MCC conducts the surveys during the summer of each year and reports the results by the end of September. Any mechanical response detected during these surveys that is not consistent with previous observations will be reported to the Division within ten working days of the survey.

Due to the extremely steep topography and dense vegetative cover of the West Flatiron area, MCC has proposed a subsidence monitoring program, in accordance with Rule 2.05.6(6)(c), designed to concentrate on the landslide areas nearest Highway 133. MCC will drive steel rods vertically into the old landslide body and monitor these rods to assess any movement.

Section 2.05.6(6) of the permit application specifies proposed subsidence monitoring locations, frequencies, and methods for the South of Divide area and the perennial portion of Sylvester Gulch. Methods include surveying monuments, aerial photography, surface water flow measurements, piezometer water level measurements, and visual inspections. The monitoring frequency for each structure or feature is designed to span the pre-subsidence to post-subsidence time period.

XVI. Concurrent Surface and Underground Mining

1. This section does not apply to the West Elk Mine.

XVII. Operations on Alluvial Valley Floors

MCC has performed a detailed reconnaissance investigation for alluvial valley floors (AVFs). During the investigation, MCC identified several areas within or adjacent to the mine plan area which may meet the geomorphic criteria of alluvial valley floors. Alluvial deposits were identified along Minnesota Creek, the Dry Fork of Minnesota Creek, Sylvester Gulch, and the North Fork of the Gunnison River. Based on MCC's reconnaissance, and the Division's field inspections, the Division designates the following three areas as alluvial valley floors: 1) **North Fork AVF** – North Fork of the Gunnison River downstream from Gribble Gulch, 2) **Minnesota Creek Main Stem AVF** – The alluvial deposits of the main stem of Minnesota Creek extending from the north section line of Section 17, T14S, R90W, downstream to the North Fork of the Gunnison, 3) **Minnesota Creek Lower East Fork AVF** – The alluvial deposits on the lower East Fork of Minnesota Creek, extending from the upper limit of mapped alluvial deposits in Section 9, T14S, R90W to the confluence with the main stem of Minnesota Creek. Mining will not occur in these AVFs.

MCC's monitoring, as described below, will provide sufficient information for the Division to determine that the requirements of 4.24.4 (1)(a), (b), and (c) are being met.

North Fork AVF – Oxbow Mining, LLC monitors North Fork surface water immediately downstream from the headgate of the Fire Mountain Canal (site NF-3). This site is within a sub-irrigated portion of the modern-day alluvial valley, approximately 2 miles upstream from the agriculturally productive North Fork AVF. Data from site NF-3 enables identification of material damage to the quantity and quality of water supplying the North Fork AVF. MCC's contribution to impacts can be identified from MCC's monitoring of its CDPS outfalls, approximately 2.5 miles upstream from NF-3. Significant inputs from the West Elk Mine would occur only from the part of the mine that is upstream from Somerset, as the Lone Pine Gulch area no longer has a pumping site and has been Phase II bond-released.

Minnesota Creek Main Stem AVF - MCC financially supports the USFS monitoring station that is located on this AVF. This station and MCC's monitoring upstream from the AVF would enable identification of material damage to the quantity of water supplying the AVF. Material damage to water quality would not be expected because the mine does not propose to discharge mine water to this drainage.

Lower Minnesota Creek Lower East Fork AVF - MCC financially supports the USGS monitoring station on this AVF. This station and MCC's monitoring upstream from the AVF would enable identification material damage to the quantity of water supplying the AVF. Material damage to water quality would not be expected because the mine does not propose to discharge mine water to this drainage.

A stipulation regarding the North Fork of the Gunnison AVF was included in the original permit approval requiring MCC to demonstrate that the mining operation's fresh water usage will not materially damage the quantity and quality of water supplying the alluvial valley floor. This stipulation was complied with on March 25, 1982, with the following response:

Mining activities at the West Elk Mine will not affect the quantity and quality of water in the North Fork. The coal seam to be mined lies a significant distance above the North Fork and is not considered to be an aquifer. Surface facilities have been designed and located to prevent contamination of the river.

Alluvial deposits in Sylvester Gulch and along the North Fork of the Gunnison River next to the mine are too small or irregular in shape to support agricultural activities, and therefore do not qualify as AVFs. High terraces along the North Fork of the Gunnison River are colluvial upland deposits and, therefore, do not qualify as AVFs.

Changes in the quantity of water supplied to the North Fork AVF depend on the difference between water used by MCC and water discharged to the North Fork of the Gunnison River. MCC's total water use is expected to be about 150 acre-feet per year during maximum projected production. This represents less than 0.04 percent of the average annual stream flow on the North Fork. Since less than 70 percent of this use is deemed to be consumptive use, the loss is actually less than 0.03 percent of the average stream flow. In addition, water is withdrawn during higher flows when MCC's water rights are in priority. During low flow periods when other calls for water exist, MCC would not be withdrawing water.

Water quality changes resulting from MCC's discharge of waste water will not constitute material damage because no measurable change in water quality is expected to occur. Of the 200,000 gallons/day maximum projected use, 38,000 gallons/day (28.5 acre-feet/year) would be required for potable water use. Consumptive use of potable water would be minimal. Assuming no consumptive use, one would expect a discharge of less than 0.06 cubic feet per second (cfs) during plant operation. This use and return flow is insignificant compared to the flows in the North Fork of the Gunnison. Even during the lowest flow on record (17 cfs) for the 1934 through 1979 period of record on the North Fork at Somerset, the potable water use would be less than 0.4 percent of the flow. The return water will be treated to meet NPDES effluent limits and should pose no problem for downstream irrigation use of AVFs.

The remaining 162,000 gallons per day (gpd) of water use is for coal spraying and dust suppression activities. The estimate is conservative and includes a 15 percent contingency for leakage. Consumptive use is difficult to estimate, but should be less than 85 percent. The return flow along with any seepage water would be collected and routed to sediment pond MB-1. This water is then treated and either released to the North Fork or recycled. Assuming 138,000 gpd (0.2 cfs) is the consumptive use, only about one percent of the lowest flow on record would be consumed. The information provided above demonstrates that there is no risk of material damage to the quantity and quality of water supplying the AVF identified on the North Fork of the Gunnison River.

MCC has met the requirements of Rules 2.06.6 and 2.06.8.

Based on the above information, for the North Fork AVF, Minnesota Creek Main Stem AVF, and the Lower Minnesota Creek AVF, the Division makes the following findings.

1. The surface coal mining operations would not interrupt, discontinue, or preclude farming on an alluvial valley floor (Rule 2.06.8(5)).
2. The surface coal mining operations would not materially damage the quantity and quality of water in surface and underground water systems that supply those alluvial valley floors or portions of alluvial valley floors (Rule 2.06.8(5)).
2. Surface coal mining and reclamation operations will be conducted to preserve, throughout the mining and reclamation process, the essential hydrologic functions of alluvial valley floors not within the affected area (Rule 4.24.2).
3. An environmental monitoring system will be installed, maintained, and operated by the permittee on all alluvial valley floors during surface coal mining and reclamation operations and continued until all bonds are released in accordance with Rule 3 [Rule 4.24.5(1)].

XVIII. Operations on Prime Farmland

1. There are no prime farmlands within the West Elk Mine permit area.

XIX. Mountaintop Removal

1. This section does not apply to the West Elk Mine.

XX. Operations on Steep Slopes

1. This section does not apply to the West Elk Mine.

XXI. In Situ Processing

1. This section does not apply to the West Elk Mine.

References

Colorado Division of Minerals and Geology. "Proposed Decision and Findings of Compliance for Five Year Permit Renewal for the Mt. Gunnison No. 1 Mine." June 22, 1981. 94 pages.

Colorado Division of Minerals and Geology. "Proposed Decision and Findings of Compliance for Five Year Permit Renewal for the Mt. Gunnison No. 1 Mine." April 8, 1987. 94 pages.

Colorado Division of Minerals and Geology. "Proposed Decision and Findings of Compliance for Five Year Permit Renewal Number 4, West Elk Mine." July 16, 2001. 69 pages.

Colorado Division of Minerals and Geology. "Cumulative Hydrologic Impact Study – North Fork of the Gunnison River."

Mayo & Associates, Characterization of the Groundwater System in the Vicinity of the West Elk Mine near Somerset, Colorado. February 1999.

Mountain Coal Company. The West Elk Mine. Reorganized permit application. Twelve volumes.

Appendix A – Inactive Permit Stipulations

Stipulation No. 1

NO MINING IS ALLOWED WITHIN THE MINNESOTA CREEK BASIN UNTIL AN APPROVED ADJUDICATION PLAN IS RECEIVED.

STATUS: TERMINATED 1/25/07, STIPULATION WAS FOR F SEAM MINING THAT WAS NOT PROPOSED

Stipulation No. 2

THE APPLICANT SHALL CONTINUE TO SUBMIT TO THE DIVISION AN ANNUAL REPORT OF INFLOWS, DISCHARGES AND CONSUMPTION OF WATER WITHIN THE MINE. THIS REPORT IS TO INCLUDE: A MINE WORKINGS MAP SHOWING THE LOCATION AND QUANTITY OF INFLOWS, A TABLE KEYED TO THE MINE MAP WHICH SHALL CONTAIN THE SOURCE (FAULT, FRACTURES, ETC.), QUANTITY, DURATION, AND QUALITY (PH, ELECTRO-CONDUCTIVITY AND TEMPERATURE, ETC.) OF ALL INFLOWS, A TABLE CONTAINING RECORDS OF WATER DISCHARGED FROM THE MINE, CONSUMED IN THE MINE AND IMPORTED FOR USE WITHIN THE MINE, A MAP SHOWING CURRENT WATER USES, A DISCUSSION OF THE WATER BALANCE WITHIN THE MINE, AND A PROJECTION OF HYDROLOGIC IMPACTS OF MINING IN THE UPCOMING YEAR. THE REPORT SHALL BE SUBMITTED IN THE ANNUAL HYDROLOGY REPORT NO LATER THAN APRIL 30 OF EACH YEAR.

STATUS: TERMINATED 8/5/93, STIPULATION REQUIREMENTS INCLUDED IN SECTION 2.05 OF PAP

(Note that the termination of Stipulation 2 was overlooked in the RN-6 findings document, published on October 17, 2011)

Stipulation No. 4

WHEN THE APPLICANT SUBMITS A PERMIT APPLICATION TO UNDERMINE THE DRY FORK OF MINNESOTA CREEK, THE SUBSIDENCE PROTECTION PLAN SHALL BE BASED UPON MONITORING INFORMATION COLLECTED DURING THE EARLIER PHASES OF MINING.

STATUS: TERMINATED 11/30/1992.

Stipulation No. 5

FOLLOWING STOCKPILING, TOPSOIL STOCKPILES THAT WILL NOT BE REDISTRIBUTED FOR FIVE OR MORE YEARS SHALL BE SEEDED WITH THE PROPOSED PERMANENT SEED MIX (EXCLUDING SHRUBS) AND NOT THE TEMPORARY SEED MIX.

STATUS: TERMINATED 11/30/1992

Stipulation No. 6

THE DIVISION DIRECTS MOUNTAIN COAL COMPANY PRIOR TO ANY DISTURBANCE AT THE UPPER WASTE PILE SITE TO SUBMIT AN APPROPRIATE AMENDMENT TO THE OPERATION PLAN WITHIN THE EXISTING PERMIT TO LIMIT EXTRACTION BENEATH THE WASTE PILE AND WITHIN A DEFINED BUFFER ZONE TO PRIMARY DEVELOPMENT ONLY. THE SURFACE BUFFER ZONE WILL BE DEFINED BY THE SUBSIDENCE ANGLE OF DRAW.

STATUS: FORGIVEN 8/5/1993

Stipulation No. 8

SURFACE WATER AND GROUNDWATER MONITORING OF THE LOWER PERMANENT UNDERGROUND

DEVELOPMENT WASTE PILE WILL INCLUDE THE CHEMICAL CONSTITUENTS SELENIUM, UN-IONIZED AMMONIA AND NITRATE/NITRITE. DETERMINATION OF NITRITE CONCENTRATION WILL BE MADE ONLY WHEN DEEMED NECESSARY BY THE DIVISION. RESULTS AND INTERPRETATIONS ARE TO BE INCLUDED ON A CONTINUING BASIS IN THE WEST ELK COAL COMPANY QUARTERLY HYDROLOGY REPORTS. ANNUAL HYDROLOGY REPORTS ARE TO INCLUDE A SUMMARY OF SEASONAL CHANGES, IF ANY, FOR ALL CHEMICAL CONSTITUENTS (SURFACE WATER AND GROUNDWATER) MONITORED DURING THE YEAR. ANNUAL HYDROLOGY REPORTS ARE TO INCLUDE AN ASSESSMENT OF THE IMPACTS OF THE LOWER WASTE PILE TO THE HYDROLOGIC BALANCE DURING THE PREVIOUS YEAR.

STATUS: COMPLIED WITH 5/18/1987

Stipulation No. 9

ANNUAL HYDROLOGY REPORTS ARE TO INCLUDE, PURSUANT TO RULE 2.04.7(1)(B), A MAP SHOWING THE PIEZOMETRIC SURFACE OF THE COLLUVIAL AQUIFER IN THE AREA OF THE LOWER PERMANENT UNDERGROUND DEVELOPMENT WASTE PILE, IF ONE DEVELOPS.

STATUS: COMPLIED WITH 5/13/1988.

Stipulation No. 10

THE DIVISION DIRECTS MOUNTAIN COAL COMPANY TO COMPLETE A THOROUGH RECONNAISSANCE GEOLOGIC MAPPING OF THE PROPOSED UPPER WASTE PILE ACCESS ROADWAY CORRIDOR. THE APPLICANT SHALL PLACE SPECIFIC EMPHASIS UPON THE DETECTION OF SLOPE INSTABILITY EVIDENCE AND DRAINAGE CHARACTERISTICS OF THE PROPOSED ROAD ALIGNMENT. FURTHER THE DIVISION DIRECTS MCC, UTILIZING THE RESULTS OF THE MAPPING, AND EARLIER ADJOINING SURFACE FACILITY ROAD DESIGN STUDIES, IF APPROPRIATE, TO COMPLETE A PRELIMINARY ACCESS ROAD CUT-SLOPE STABILIZATION AND DRAINAGE DESIGN. THE MAPPING AND PRELIMINARY DESIGN SHALL BE APPROVED BY THE DIVISION, IN WRITING, PRIOR TO ANY DISTURBANCE OF THE ACCESS ROAD CORRIDOR.

STATUS: TERMINATED 5/28/1992.

Stipulation No. 11

THE DIVISION DIRECTS MCC TO CONSTRUCT THE UPPER WASTE PILE ACCESS ROAD AS AN INITIAL PIONEER ROAD WITH MINIMIZED EXCAVATION. UPON EXPOSURE OF THE EXCAVATED CUT-SLOPES OF THAT PIONEER ROADWAY THE OPERATOR SHALL COMPLETE A FINAL GEOTECHNICAL INVESTIGATION OF THE ACCESS ROAD CORRIDOR. THIS GEOTECHNICAL INVESTIGATION SHALL BE COMPLETED BY APPROPRIATELY QUALIFIED PROFESSIONAL GEOLOGICAL OR ENGINEERING PERSONNEL. THE PURPOSE OF THIS FINAL INVESTIGATION SHALL BE TO VERIFY, OR APPROPRIATELY AMEND, THE FINDINGS OF THE RECONNAISSANCE GEOLOGIC MAPPING OF THE ROADWAY CORRIDOR.

FURTHER, MCC, UTILIZING THE FINDINGS OF THE FINAL GEOTECHNICAL INVESTIGATION, SHALL COMPLETE A FINAL ENGINEERED CUT-SLOPE AND DRAINAGE DESIGN FOR THE UPPER WASTE PILE ACCESS ROAD. THIS FINAL DESIGN SHALL BE APPROVED BY THE DIVISION, IN WRITING, AND THE CONSTRUCTION COMPLETED IN ACCORDANCE WITH THAT DESIGN, PRIOR TO THE TRANSPORTATION OF ANY WASTE MATERIAL ALONG THE ACCESS ROAD.

STATUS: TERMINATED 5/28/1992.

Stipulation No. 12

THE DIVISION DIRECTS MCC TO COMPLETE THE INSTALLATION OF THE SUBSIDENCE MONITORING NETWORK PRIOR TO THE INITIATION OF EXTRACTION OF COAL WITHIN THE PANEL DESIGNATED IN APPENDIX A TO THE NOVEMBER 1984 PERMIT REVISION APPLICATION ENTITLED "APPLICATION TO REVISE THE MINING AND RECLAMATION PLAN FOR THE MT GUNNISON NO. 1 UNDERGROUND MINE." THIS MONITORING NETWORK IS

DESIGNED TO MONITOR THE FIRST PANEL WEST FROM THE SW MAINS INTAKES AND SOUTH OF THE NO. 1 WEST SUBMAINS, DESIGNATED AS "PANEL 1W-1S," LOCATED ADJACENT TO AND PARALLEL TO THE WESTERN BOUNDARY OF SECTION 21, RANGE 90W, TOWNSHIP 13S. THIS MONITORING NETWORK SHALL CONSIST OF SUBSTANTIAL MONUMENTS DESIGNED TO RESIST FROST HEAVE, FIRE, AND THE ACTIONS OF CATTLE AND WILDLIFE.

STATUS: COMPLIED WITH; INCLUDED WITH PR-4 APPROVED 6/14/1985.

Stipulation No. 13

THE SUBSIDENCE MONITORING NETWORK SHALL BE SURVEYED UTILIZING CONVENTIONAL GROUND SURVEYING TECHNIQUES, DESIGNED TO ACHIEVE HORIZONTAL ACCURACIES COMPLYING WITH THE U.S. DEPARTMENT OF COMMERCE'S "SECOND ORDER, CLASS II" SURVEY STANDARDS, AND VERTICAL ACCURACIES NO LESS THAN +/- 1.2 FEET. THIS GRID SHALL BE SURVEYED TWICE PRIOR TO THE INITIATION OF SUBSIDENCE. IN CONJUNCTION WITH THESE SURVEYS, MCC SHALL SELECT AND ESTABLISH A MINIMUM OF SIX TRIANGULATION BENCH MARK MONUMENTS OUTSIDE THE AREA OF ANTICIPATED SUBSIDENCE EFFECTS, FOR THE PURPOSE OF CORRELATION WITH AERIAL PHOTOGRAMMETRIC POST-SUBSIDENCE SURVEYS.

STATUS: TERMINATED 12/11/1992

Stipulation No. 14

MCC HAS REQUESTED TO COMPLETE A PRE-SUBSIDENCE AERIAL PHOTOGRAMMETRIC SURVEY OF THE SUBSIDENCE MONITORING GRID FOR THE PURPOSE OF CORRELATION WITH THE FIELD SURVEY RESULTS. IT IS MCC'S INTENTION TO UTILIZE AERIAL PHOTOGRAMMETRIC METHODOLOGY TO MONITOR POST-SUBSIDENCE MOVEMENTS OF THE SUBSIDENCE MONUMENTS. THE RESULTS OF THE PRE-SUBSIDENCE FIELD AND AERIAL PHOTOGRAMMETRIC SURVEYS SHALL BE COMPARED FOR EACH GRID MONUMENT. THE AERIAL SURVEY WILL BE ACCEPTED AS ACCURATE AND WILL BE USED FOR SUBSEQUENT POST-SUBSIDENCE MONITORING, IN THE EVENT THAT THE AERIAL PHOTOGRAMMETRIC AND FIELD SURVEYS CORRELATE WITH AN AVERAGE SURVEY POINT LOCATION DEVIATION OF LESS THAN 0.2 FEET VERTICALLY AND HORIZONTALLY, WITH SURVEY POINT LOCATION DEVIATIONS OF LESS THAN 0.4 FEET VERTICALLY AND HORIZONTALLY FOR LESS THAN 95% OF THE SURVEY POINTS, AND WITH NO SINGLE SURVEY POINT LOCATION DEVIATION VERTICALLY OR HORIZONTALLY IN EXCESS OF 0.8 FEET.

STATUS: FORGIVEN

Stipulation No. 15

MCC HAS REQUESTED PERMISSION TO COMPLETE AERIAL PHOTOGRAMMETRIC SURVEYS OF THE SUBSIDENCE MONITORING GRID SUBSEQUENT TO THE INITIATION OF SUBSIDENCE, FOR THE PURPOSE OF MONITORING SUBSIDENCE MONUMENT MOVEMENTS. THE ACCURACY OF THE AERIAL PHOTOGRAMMETRIC SURVEYS SHALL BE DETERMINED BY A COMPARISON OF TRIANGULATION BENCH MARK MONUMENT FIELD AND AERIAL PHOTOGRAMMETRIC SURVEY RESULTS FOLLOWING EACH SEMI-ANNUAL SURVEY. THE RESULTS OF EACH AERIAL PHOTOGRAMMETRIC SURVEY SHALL BE ACCEPTED AS ACCURATE IN THE EVENT THAT THE AERIAL PHOTOGRAMMETRIC AND MOST RECENT ANNUAL TRIANGULATION MONUMENT FIELD SURVEY RESULTS CORRELATE WITH AN AVERAGE TRIANGULATION MONUMENT LOCATION DEVIATION OF LESS THAN 0.2 FEET VERTICALLY AND HORIZONTALLY, WITH TRIANGULATION MONUMENT LOCATION DEVIATIONS OF LESS THAN 0.4 FEET VERTICALLY AND HORIZONTALLY FOR LESS THAN 83% OF THE TRIANGULATION MONUMENTS, AND WITH NO SINGLE TRIANGULATION POINT LOCATION DEVIATION VERTICALLY OR HORIZONTALLY IN EXCESS OF 0.8 FEET.

STATUS: FORGIVEN

Stipulation No. 16

IN THE EVENT THAT THE AERIAL PHOTOGRAMMETRIC MONUMENT SURVEYS FAIL TO MEET THE STIPULATED

ACCURACY CRITERIA, MCC SHALL UTILIZE TRADITIONAL FIELD SURVEY TECHNIQUES TO ESTABLISH THE REASONS FOR LACK OF CORRELATION. IF THE RESULTS CANNOT BE CORRELATED, MCC SHALL RESUME TRADITIONAL FIELD SURVEY MONUMENT MONITORING IN COMPLIANCE WITH THE ACCURACY CRITERIA AND STANDARDS WITHIN STIPULATION NO. 15.

STATUS: FORGIVEN

Stipulation No. 17

THE DIVISION DIRECTS MCC TO SUBMIT REPORTS OF ITS SUBSIDENCE MONITORING PROGRAM ON A SEMI-ANNUAL BASIS, COMMENCING ONE MONTH AFTER THE INSTALLATION AND INITIAL SURVEYING OF THE SUBSIDENCE MONUMENTS. FURTHER, DUE TO THE COMPLEXITY OF THE PERMIT AREA, GEOLOGY, PRESENCE OF LANDSLIDES AND STEEP SLOPES, AND SENSITIVE HYDROLOGIC ELEMENTS, MCC IS DIRECTED TO SUBMIT A PROPOSED SUBSIDENCE MONITORING REPORT FORMAT TO THE DIVISION FOR APPROVAL. THIS REPORT FORMAT SHOULD RECOGNIZE THE IMPORTANCE OF CONTINUAL UPDATE OF SUBSIDENCE DATA INTERPRETATION, MONITORING OF GROUND WATER LEVELS AND SPRING FLOWS, MONITORING OF MINE INFLOW, AND SUBSURFACE GROUND CONDITIONS WHICH COULD BE CORRELATED TO SUBSIDENCE PREDICTION. COMMENCEMENT OF EXTRACTION OF COAL WITHIN THE SUBSIDENCE TEST PANEL DESIGNATED IN APPENDIX A TO MCC'S NOVEMBER 1984 PERMIT REVISION APPLICATION (PANEL 1W-1S).

STATUS: TERMINATED 8/27/1993.

Stipulation No. 18

THE DIVISION DIRECTS MCC TO COMPLETE A DETAILED ANALYSIS OF THE POTENTIAL EFFECTS UPON THE SLOPE STABILITY OF THE LANDSLIDE DEPOSITS ADJOINING BEAVER RESERVOIR. MCC SHALL INSTALL AND MONITOR AN APPROPRIATE SET OF MONUMENTS ON THE LANDSLIDE DEPOSITS IN ORDER TO OBSERVE THE POTENTIAL DISPLACEMENT OF THE LAND FORM. THE DETAILED ANALYSIS SHALL BE COMPLETED AND SUBMITTED TO THE DIVISION FOR REVIEW, PRIOR TO REQUEST FOR APPROVAL TO EXTRACT COAL BENEATH THE LANDSLIDE DEPOSITS ADJOINING BEAVER RESERVOIR.

STATUS: TERMINATED 1/26/2007, MINING NOT PROPOSED IN AREA

Stipulation No. 19

THE DIVISION DIRECTS MCC, AS A PORTION OF ITS SUBSEQUENT PERMIT APPLICATIONS FOR THE MINE, TO SUBMIT REVISED SUBSIDENCE EVALUATIONS. THE SUBSIDENCE EVALUATION FOR EACH PERMIT PERIOD REQUESTED SHALL INCORPORATE THE RESULTS OF SUBSIDENCE MONITORING AND THE LANDSLIDE STABILITY STUDIES COMPLETED TO DATE, AS STIPULATED ABOVE. PARTICULAR ATTENTION SHALL BE FOCUSED UPON DESIGNATED SAFE AREA BUFFERS, TO BE OBSERVED IN FUTURE MINING BENEATH CRITICAL AREAS, INCLUDING THE DRY FORK OF MINNESOTA CREEK, AND BEAVER RESERVOIR AND THE LANDSLIDE DEPOSITS ADJOINING IT. THE AMENDED SUBSIDENCE EVALUATIONS SHALL INCLUDE THE PROPOSAL OF APPROPRIATE SUBSIDENCE MONITORING NETWORKS WITHIN EACH OF THESE DESIGNATED AREAS.

STATUS: COMPLIED WITH; 6/2/2006 BY PR-10 SUBMITTAL

Stipulation No. 20

THE DIVISION DIRECTS MCC TO LIMIT EXTRACTION WITHIN THE DEFINED "CRITICAL AREA BUFFER ZONES" BENEATH THE DRY FORK OF MINNESOTA CREEK AND LICK CREEK, AS DEPICTED ON MAP 50 (FORMERLY EXHIBIT 3.4.4.8.1), TO NO MORE THAN THIRTY (30) PERCENT OF THE IN-PLACE COAL.

STATUS: TERMINATED.

Stipulation No. 21

THE APPLICANT MUST INSTALL MONITORING WELLS IN, CONDUCT PUMPING TEST ON, AND MONITOR WATER LEVELS AND WATER QUALITY IN THE ALLUVIUM OF DRY FORK, LICK CREEK, SOUTH PRONG AND HORSE CREEK ONE YEAR PRIOR TO MINING WITHIN THE WATERSHEDS OF THESE STREAMS. THE APPLICANT SHALL SUBMIT TO THE DIVISION THE DATA AND RESULTS OF THESE TESTS AND MONITORING ALONG WITH PROJECTED IMPACTS PRIOR TO CONDUCTING MINING WITHIN ANY OF THE WATERSHEDS. (IDENTICAL TO STIPULATION NO. 1.)

STATUS: TERMINATED 1/26/2007

Stipulation No. 22

IN ITS ANNUAL HYDROLOGY ASSESSMENT, THE APPLICANT SHALL CONTINUE TO INCLUDE WATER QUANTITY DATA FROM THE U.S.G.S. SOMERSET MONITORING STATION. SHOULD THE U.S.G.S. DISCONTINUE MONITORING AT THIS LOCATION, THE OPERATOR SHALL SUBMIT ITS OWN QUANTITY MONITORING PROGRAM FOR THE NORTH FORK OF THE GUNNISON.

STATUS: COMPLIED WITH 3/19/1986. DATA FROM THE USGS MONITORING STATION IS INCLUDED IN THE ANNUAL HYDROLOGY REPORT.

Stipulation No. 23

THE APPLICANT SHALL CONTINUE TO SUBMIT TO THE DIVISION COPIES OF THE REPORTS, EXHIBITS AND ALL SUBSEQUENT AMENDMENTS SUBMITTED TO THE GUNNISON COUNTY PLANNING COMMISSION, TITLED PROTECTION OF MINNESOTA CREEK WATER SUPPLY.

STATUS: TERMINATED 7/17/1987.

Stipulation No. 24

ALL DATA AND REPORTS SUBMITTED TO THE STATE ENGINEER'S OFFICE AND DITCH COMPANIES SHALL BE COPIED TO MLRD AS INCLUSIONS WITHIN THE QUARTERLY REPORT REQUIRED UNDER SECTION 4.05.13(2) OF THE RULES AND REGULATIONS.

STATUS: COMPLIED WITH 5/19/1986.

Stipulation No. 25

WEST ELK COAL COMPANY SHALL SUBMIT WITHIN NINETY (90) DAYS OF THE APPROVAL OF THE WASTE PILE PERMIT REVISION A PLAN TO MONITOR THE FORMATION OF A PERCHED AQUIFER WITHIN THE WASTE PILE. MONITORING SHALL INCLUDE STANDARD WELL WATER QUALITY PARAMETERS AND WATER LEVEL MEASUREMENTS. THE PLAN SHALL BE IMPLEMENTED UPON APPROVAL BY THE DIVISION

STATUS: COMPLIED WITH 5/19/1986.

Stipulation No. 26

THE APPLICANT'S MONITORING REPORTS SHALL CONTINUE TO INCLUDE QUALITY AND QUANTITY MONITORING OF ALL DISCHARGES FROM THE MINE SITE. WATER QUALITY MONITORING SHALL CONSIST OF THE EFFLUENT LIMITATIONS PLUS TOTAL DISSOLVED SOLIDS.

STATUS: TERMINATED 7/17/1987.

Stipulation No. 27

This stipulation was never used. No stipulation No. 27 exists.

Stipulation No. 28

MCC OR ANY SUCCEEDING OPERATOR OF THE WEST ELK MINE MUST CONTINUE TO SUBMIT TO THE DIVISION AN ANNUAL HYDROLOGIC REPORT. THIS REPORT SHALL INCLUDE AN ANALYSIS OF ALL HYDROLOGIC DATA GATHERED DURING THE YEAR, AN ASSESSMENT OF THE IMPACTS OF MINING DURING THE YEAR, AND AN ESTIMATE OF THE PROJECT IMPACTS OF MINING IN THE FOLLOWING YEARS. THIS REPORT SHALL ASSESS THE IMPACTS OF MINING ON THE QUALITY AND QUANTITY OF WATER IN THE SURFACE STREAMS, SPRINGS, GROUNDWATER AQUIFERS, MINE INFLOW AND MINE DISCHARGE.

STATUS: TERMINATED 5/28/1992.

Stipulation No. 29

WITHIN NINETY DAYS (90) OF APPROVAL OF THE LOWER WASTE PILE PERMIT REVISION, MCC SHALL SUBMIT A REVISED WATER MONITORING PLAN THAT INCLUDES MONITORING OF THE WASTE PILE. THE PLAN SHALL INCLUDE DIRECT SAMPLING OF THE SEDIMENT POND AND UNDERDRAIN DISCHARGE TWICE PER YEAR DURING THE SECOND AND THIRD QUARTER OF THE YEAR. THE PARAMETERS SHALL BE THE FULL LIST OF CHEMICAL CONSTITUENTS, AT LEAST FOR THE FIRST YEAR. MCC MAY REQUEST AN ADJUSTMENT OF THE MONITORING REQUIREMENTS AFTER THE FIRST YEAR, DEPENDING ON THE RESULTS OF THE MONITORING.

STATUS: COMPLIED WITH 5/19/1986.

Stipulation No. 30

MCC MUST SUBMIT ADDITIONAL BOND IN THE AMOUNTS DESCRIBED IN THE LOWER WASTE PILE PERMIT REVISION APPLICATION, AT LEAST THIRTY (30) DAYS PRIOR TO THE COMMENCEMENT OF THE CONSTRUCTION OF PHASES III, IV, AND V OF THE LOWER WASTE PILE. THESE ADDITIONAL BONDS MUST BE APPROVED AND ACCEPTED BY THE DIVISION PRIOR TO THE CONSTRUCTION OF THESE PHASES.

STATUS: TERMINATED 5/28/1992.

Stipulation No. 31

MCC SHALL FORWARD FIVE (5) COPIES OF THE COLORADO DEPARTMENT OF HIGHWAY'S WRITTEN APPROVAL FOR ACTIVITIES WITHIN 100 FEET OF THE OUTSIDE RIGHT-OF-WAY OF THE COLORADO HIGHWAY 133 WITHIN THIRTY (30) DAYS OF THE APPROVAL OF THE PERMIT REVISION APPLICATION.

STATUS: COMPLIED WITH 5/19/1986.

Stipulation No. 32

THE APPLICANT SHALL MONITOR THE TWO MONITORING WELLS LOCATED OVER THE FIRST PANEL TO BE SUBSIDED ONE YEAR PRIOR TO MINING THIS PANEL. THE APPLICANT SHALL SUBMIT TO THE REGULATORY AUTHORITY GROUNDWATER LEVEL DATA AND WATER QUALITY DATA PRIOR TO MINING THIS PANEL.

STATUS: COMPLIED WITH 7/18/1993.

Stipulation No. 33

SHOULD THE APPLICANT ENCOUNTER MORE GROUNDWATER THAN ANTICIPATED, PRIOR TO THE DISCHARGE OF EXCESS MINE WATER THE APPLICANT SHALL PROVIDE AN ANALYSIS OF ANTICIPATED WATER QUALITY AND QUANTITY, AND AN ASSESSMENT OF THE EFFECTS ON THE RECEIVING STREAM.

STATUS: TERMINATED 5/28/1992.

Stipulation No. 34

MCC SHALL COLLECT AT LEAST ONE COMPOSITE REPRESENTATIVE SAMPLE OF THE DISCHARGE WATER FROM THE OLD PORTAL AND HAVE IT PROPERLY ANALYZED FOR THE FOLLOWING PARAMETERS: PH, CONDUCTIVITY, T, DO, TSS, TDS, BICARBONATE, CALCIUM, CHLORIDE, MAGNESIUM, SODIUM, SULFATE, ALUMINUM, ARSENIC, CADMIUM, COPPER, IRON, DISSOLVED IRON, LEAD, MANGANESE, DISSOLVED MANGANESE, MERCURY, MOLYBDENUM, SELENIUM, ZINC.

ALL PARAMETERS ARE TOTAL SPECIES UNLESS OTHERWISE SPECIFIED. RESULTS ARE TO BE FORWARDED TO MLRD AS SOON AS THEY ARE AVAILABLE.

STATUS: COMPLIED WITH.

Stipulation No. 35

MCC SHALL USE DURING RECLAMATION EXISTING FILL FROM THE FAN PAD TO BACKFILL AGAINST THE SEAL OF THE PORTAL TO ELIMINATE ANY PORTAL OR DEPRESSION IN THE HILLSIDE (BRINGING THE ENTIRE FAN PAD BACK TO ORIGINAL CONTOUR IS NOT REQUIRED DUE TO THE STEEP SLOPE, EXISTING CONFIGURATION, AND LIMITED FILL AVAILABLE.)

STATUS: TERMINATED 5/28/1992.

Stipulation No. 36

A. ONE COPY OF EACH OF THE FOLLOWING MUST BE SUBMITTED WITHIN 30 DAYS AFTER EACH CALENDAR YEAR TO THE BLM CHIEF, BRANCH OF SOLID MINERALS: (1) LITHOLOGIC AND ANY OTHER LOGS OF STRATA PENETRATED AND CONDITIONS ENCOUNTERED; (2) DRILLHOLE LOCATION MAP SHOWING EXACT HOLE LOCATIONS, EACH HOLE BEING APPROPRIATELY IDENTIFIED BY NUMBER OR LETTER WITH THE DATA BEING TIED TO SUCH NUMBER OR LETTER DESIGNATION; (3) LIST OF HOLE NUMBERS AND DEPTH DRILLED.

B. ALL GROUNDWATER MONITORING WELLS MUST BE COMPLETED AND CEMENTED SO AS TO ISOLATE ALL AQUIFER INTERVALS WHICH SHOW SIGNIFICANT HEAD DIFFERENCES OR CHANGES IN WATER QUALITY IN ORDER TO PREVENT MIXING OF UNLIKE WATERS.

C. ALL WELLS MUST BE COMPLETED AND ABANDONED IN ACCORDANCE WITH APPLICABLE LAWS OF THE STATE ENGINEER'S OFFICE.

D. UPON FINAL ABANDONMENT OF WELLS, ALL WATER-BEARING ZONES SHALL BE SEALED WITH A CEMENT PLUG BEGINNING 20 FEET BELOW THE ZONE AND ENDING 20 FEET ABOVE THE ZONE, OR THE ENTIRE WELL CAN BE SEALED WITH CEMENT FROM THE BOTTOM TO WITHIN THREE FEET OF THE SURFACE.

F. DRY HOLES OR HOLES SEALED IN INTERVALS SHALL BE PERMANENTLY PLUGGED WITH AN EXPANDING PLUG PLACED TEN FEET BELOW GROUND LEVEL FOLLOWED BY SEVEN FEET OF CEMENT.

F. THE TOP THREE FEET OF CASING SHALL BE REMOVED AND THE AREA FILLED WITH SOIL DURING FINAL ABANDONMENT.

G. WELL COMPLETION DATA AND AQUIFER TEST RESULTS SHALL BE INCLUDED IN QUARTERLY HYDROLOGIC REPORTS SUBMITTED TO THE DIVISION.

STATUS: TERMINATED 3/5/1990.

Stipulation No. 37

MCC WILL SUBMIT REVISED PAGE 3-35 AND EXHIBIT 3.2.7.1A AND BOND CALCULATIONS FOR RECLAMATION BY AUGUST 6, 1989.

STATUS: COMPLIED WITH 8/7/1989.

Stipulation No. 38

MCC WILL INCORPORATE DETAILS OR A REFERENCE TO THE WEED CONTROL PLAN INTO THE PERMIT APPLICATION BY SEPTEMBER 14, 1990.

STATUS: TERMINATED 9/26/1990.

Stipulation No. 39

PRIOR TO THE CONSTRUCTION OF THE COAL STORAGE PAD, A PLAN MAP MUST BE SUBMITTED SHOWING THE PROPOSED TOPOGRAPHY OF THE PAD. THIS MAP MUST SHOW THE LOCATION OF THE CLEAN WATER DITCHES, SEDIMENT DITCHES, AND SEDIMENT TRAP AND CULVERTS.

STATUS: COMPLIED WITH 11/25/1991.

Stipulation No. 40

PRIOR TO DISTURBING THE AREA OF THE STORAGE PAD, MCC MUST SUBMIT CALCULATIONS TO SHOW THAT THE SEDIMENT POND RECEIVING THE RUNOFF FROM THE STORAGE PAD IS SUFFICIENTLY SIZED TO HANDLE THE CALCULATED VOLUME OF WATER.

STATUS: COMPLIED WITH 11/25/1991.

Stipulation No. 41

PRIOR TO THE IMPORTATION OF FILL MATERIAL TO CONSTRUCT THE COAL STACKING TUBE PAD, MCC MUST SUBMIT BOND CALCULATIONS AND UPDATE THE RECLAMATION PLAN FOR THE REMOVAL OF THE FILL MATERIAL. THE SOURCE OF THE FILL MATERIAL MUST BE IDENTIFIED. IF GOB IS TO BE USED, THIS MUST BE PROPOSED AS A TECHNICAL REVISION AND BE SUPPORTED WITH DESIGNS THAT MEET THE DIVISION'S PERFORMANCE STANDARDS FOR COAL WASTE BANKS. PLANS MUST BE CERTIFIED BY A QUALIFIED ENGINEER.

STATUS: COMPLIED WITH 11/25/1991.

Stipulation No. 42

THE INFORMATION SUBMITTED WITH THE TECHNICAL REVISION AND AS PART OF THE STIPULATION RESPONSES MUST BE INCORPORATED INTO THE NEW REORGANIZED PERMIT APPLICATION. STIPULATION RESPONSES MUST BE SUBMITTED AS MINOR REVISIONS OR, IF GOB IS TO BE USED AS FILL, THAT PORTION MUST BE SUBMITTED AS A TECHNICAL REVISION.

STATUS: COMPLIED WITH 2/2/1993.

Stipulation No. 43

MCC MUST SUBMIT AS-BUILT DESIGNS FOR ALL STRUCTURES AT THE WEST ELK MINE SITE, INCLUDING BUT NOT LIMITED TO: ALL SURFACE FACILITIES, DEWATERING SYSTEM, PORTAL BENCH AND PORTAL STRUCTURES, WATER TREATMENT PLANT, STORAGE TANKS, AND WASTE WATER PLANT BY DECEMBER 30, 1992.

STATUS: COMPLIED WITH 5/14/1993.

Stipulation No. 44

MCC MUST REVISE WINDY GAP POLICY CALCULATIONS FOR ANNUAL NET WATER DEPLETION, COORDINATE WITH THE U.S. FISH AND WILDLIFE SERVICE AND PROVIDE ALL INFORMATION TO THE DIVISION TO INCORPORATE INTO THE PERMIT. AN APPLICATION FOR A TECHNICAL REVISION TO INCLUDE THE REVISED INFORMATION SHOULD BE RECEIVED BY DECEMBER 31, 1992.

STATUS: COMPLIED WITH 2/1/1993.

Stipulation No. 45

MCC MUST RESOLVE OUTSTANDING ISSUES FROM 1991 PERMIT RENEWAL (SEE SPECIFIC INFORMATION IN THE DIVISION'S LETTER DATED DECEMBER 2, 1992). THE INFORMATION SHALL BE SUBMITTED BY DECEMBER 30, 1992.

STATUS: COMPLIED WITH 2/2/1993.

Stipulation No. 46

MCC MUST SUBMIT AN UPDATED SPCC PLAN TO INCLUDE IN THE PERMIT UPON APPROVAL FROM THE COLORADO DEPARTMENT OF HEALTH.

STATUS: COMPLIED WITH 4/26/1993.

Stipulation No. 47

MCC MUST SUBMIT REVISED MAPS AND PAGES FOR MINOR REVISION 87.

STATUS: COMPLIED WITH 6/21/1993.

Stipulation No. 48

MCC MUST SUBMIT REVISED SECTION 2.05 IN THE PERMIT DOCUMENT UPON APPROVAL OF TECHNICAL REVISION 64.

STATUS: COMPLIED WITH 9/7/1993.

Stipulation No. 49

MCC MUST ADDRESS THE DIVISION'S ASSERTION THAT A TOPSOIL DEFICIT EXISTS FOR FINAL RECLAMATION. IF THERE IS A DEFICIT, MCC MUST PROVIDE A DETAILED PLAN WHICH SPECIFIES HOW THE DEFICIT WILL BE ACCOMMODATED. IF SUBSOIL IS DESIGNATED AS A SUITABLE GROWTH MEDIUM, THEN THE PERMIT SHOULD BE REVISED TO SPECIFY HOW MUCH SUBSOIL WILL BE UTILIZED, WHERE IT WILL BE STORED, AND HOW IT WILL BE PROTECTED. A REVISION ADDRESSING THE ABOVE SHOULD BE SUBMITTED TO THE DIVISION ON OR BEFORE OCTOBER 29, 1993.

STATUS: COMPLIED WITH 11/19/1993.

Stipulation. No. 50

DITCH DESIGNS ASSOCIATED WITH THE RELOCATED TOPSOIL PILE SHOULD BE PROVIDED BY OCTOBER 18, 1993, TO BE INCORPORATED INTO EXHIBIT 66. THE DESIGNS SHOULD REFLECT STORM EVENTS APPROVED IN TECHNICAL REVISION 64 AND SHOULD BE COMPLETED IN ASSOCIATION WITH TECHNICAL REVISION 65. UNTIL THAT TIME, DITCHES SHOULD BE CONSTRUCTED TO HAVE MINIMUM DESIGNS AS REQUIRED BY DITCHES D1-4

AND 2-2D.

STATUS: COMPLIED WITH 10/1/1993.

Stipulation No. 51

THE DIVISION 4 WATER COURT SHALL BE NOTIFIED OF THE NEW POND LOCATIONS WITHIN 45 DAYS OF DMG'S PROPOSED DECISION. IN ADDITION, A DAM SAFETY REVIEW SHALL BE COMPLETED ON MB-2 AND MB-3 WITHIN 45 DAYS AFTER CONSTRUCTION OF THE PONDS IS COMPLETED. (COMMENTS RECEIVED FROM THE DIVISION OF WATER RESOURCES DATED SEPTEMBER 17, 1993.)

STATUS: COMPLIED WITH 4/3/1995.

Stipulation No. 52

SUBMIT TYPICAL CROSS-SECTIONS, DETAILS OF DISTURBANCE THAT WILL OCCUR, AND RECLAMATION WORK TO BE COMPLETED FOR THE EXPLORATION ROAD THAT WILL BE CONSTRUCTED IN LONE PINE GULCH.

STATUS: COMPLIED WITH 4/12/1994.

Stipulation No. 53

ALL UNRESOLVED PERFORMANCE STANDARD ISSUES AND SUBMITTAL REQUIREMENTS SUCH AS, BUT NOT LIMITED TO, GEOTECHNICAL STABILITY ISSUES, SEDIMENT CONTROL PLANS, BONDING REQUIREMENTS, AND REVISED PAGE, MAP AND/OR EXHIBIT HARD COPY SUBMITTALS, SHALL BE SUBMITTED AND APPROVED BY THE APPROPRIATE REVISION PROCESS PRIOR TO PROJECT INITIATION.

STATUS: COMPLIED WITH 8/22/1994.

Stipulation No. 54

FOR THE REFUSE PILE EXPANSION, MCC OR ITS CONSULTANTS SHOULD EITHER (1) PREPARE A MORE DESCRIPTIVE JUSTIFICATION FOR THE SELECTION OF THE MECHANICAL PROPERTIES USED IN COMPLETING THE ANALYSIS OR (2) PERFORM A SENSITIVITY ANALYSIS OF THE PILE USING THE SELECTION OF COAL REFUSE STRENGTH VALUES CONTAINED IN THE EARLIER LOWER REFUSE PILE STABILITY ANALYSIS. THIS INFORMATION SHOULD BE SUBMITTED ON OR BEFORE FEBRUARY 17, 1995. THE DISPOSAL OF THE COAL WASTE SHOULD NOT BEGIN UNTIL THE INFORMATION REQUIRED HAS BEEN REVIEWED BY THE DIVISION.

STATUS: COMPLIED WITH 2/16/1995.

Stipulation No. 55

MCC MUST SUBMIT ADDITIONAL INFORMATION REGARDING A REPAIR PLAN FOR THE HAUL ROAD. A PLAN VIEW OF THE SURFACE WATER DRAINAGE, CROSS SECTION OF BUTTRESS WITH REFUSE PILE AT FINAL CONFIGURATION, AND ANYTHING ELSE REQUIRED AS A RESULT OF THE REVIEW OF THE DESIGN AND STABILITY ANALYSIS OF THE BUTTRESS.

STATUS: COMPLIED WITH 8/1/1995.

Stipulation No. 56

MCC MUST SUBMIT AN INFORMAL AGREEMENT WITH THE US FOREST SERVICE TO MONITOR PONDS. MCC SHOULD PROVIDE A SIGNED COPY OF THE AGREEMENT WITH THE PAONIA RANGER DISTRICT TO INFORMALLY MONITOR THE USFS SURFACE WATER RESOURCES LOCATED ABOVE PANELS TO BE RETREAT MINED OR WITHIN THE ANGLE OF DRAW. THE SIGNED AGREEMENT SHALL BE PROVIDED BY MAY 31, 1995, TO BE INCORPORATED INTO THE PERMIT.

STATUS: COMPLIED WITH 5/4/1995.

Stipulation No. 57

WITH SUBMITTAL OF PERMIT REVISION NO. 6, MOUNTAIN COAL COMPANY HAS REMOVED ALL PERMIT DOCUMENT REFERENCES TO MINING BENEATH THE DRY FORK OF MINNESOTA CREEK INTERMOUNTAIN DIVERSION AND RESERVOIR SYSTEM, INCLUDING REFERENCES TO BUFFER AREAS AND ASSOCIATED SUBSIDENCE CONTROL PLANS. PREVIOUSLY APPROVED SUBSIDENCE CONTROL PLAN DOCUMENTS ARE MAINTAINED IN THE DIVISION'S FILES.

THE DIVISION HAS NOT, AND WILL NOT, APPROVE ANY MINING WHICH WILL POTENTIALLY AFFECT THE DRY FORK OF MINNESOTA CREEK INTERMOUNTAIN DIVERSION AND RESERVOIR SYSTEM, INCLUDING ALL PREVIOUSLY DESIGNATED BUFFER AREAS, UNTIL AN APPROPRIATE SUBSIDENCE CONTROL PLAN IS SUBMITTED AND APPROVED.

STATUS: COMPLIED WITH 6/2/2006 BY PR-10 SUBMITTAL

Stipulation No. 58

MCC WILL NOT INITIATE DISTURBANCE OR DRILLING AND EXPLORATION HOLE II UNTIL A MINOR REVISION IS SUBMITTED AND APPROVED THAT PROVIDES US FOREST SERVICE APPROVAL AND US FISH AND WILDLIFE SERVICE CONCURRENCE FOR ACCESS TO AND DRILLING AT EXPLORATION HOLE II.

STATUS: COMPLIED WITH.

Stipulation No. 59

MCC WILL CONTINUE TO WORK WITH DMG TO FINALIZE AN APPROPRIATE BOND AMOUNT IN A TIMELY MANNER. BOND AMOUNT FINALIZATION WILL PROCEED IN ACCORDANCE WITH THE REQUIREMENTS OF 3.02.2(4).

STATUS: COMPLIED WITH 10/1/1996.

Stipulation No. 60

MCC WILL SUBMIT A REVISED EXHIBIT 51 FIGURE 2.0G (OR EQUIVALENT FIGURE) TO ACCURATELY DEPICT THE LOWER REFUSE PILE TOPSOIL PILE LOCATIONS AND VOLUMES, NO LATER THAN DECEMBER 31, 1996.

STATUS: COMPLIED WITH

Stipulation No. 61

THE DISTURBANCE PROPOSED FOR PERMIT REVISION NO. 7 SHALL NOT BEGIN UNTIL THE DIVISION HAS RECEIVED U.S. FISH AND WILDLIFE SERVICE CONCURRENCE FOR THE PROJECT.

STATUS: COMPLIED WITH 5/30/1997.

Stipulation No. 62

MCC SHALL PROVIDE DOCUMENTATION WHICH VERIFIES THAT THE U.S. FOREST SERVICE DOES NOT MANAGE ANY LANDS WITHIN THE PROPOSED DISTURBED AREA ASSOCIATED WITH PERMIT REVISION NO. 7.

STATUS: COMPLIED WITH 5/12/1997.

Stipulation No. 63

DISTURBANCE ASSOCIATED WITH TECHNICAL REVISION NO. 79, PROPOSED TO OCCUR WITHIN 100 FEET OF THE HIGHWAY RIGHT-OF-WAY, SHALL NOT OCCUR UNTIL THE DIVISION HAS RECEIVED DOCUMENTATION FROM THE COLORADO DEPARTMENT OF TRANSPORTATION FOR APPROVAL OF THE DISTURBANCE.

STATUS: COMPLIED WITH 5/29/1997.

Stipulation No. 64

THE DIVISION APPROVES MINOR REVISION NO. 221 AS A TEMPORARY MEASURE TO ENSURE THAT THE SYLVESTER GULCH CHANNEL REMAINS OPEN TO CONVEY FLOW. THE DIVISION DIRECTS MCC TO SUBMIT A PROPOSED DESIGN FOR REHABILITATION OF THE SYLVESTER GULCH STREAM CHANNEL. THIS SUBMITTAL SHOULD BE IN THE FORM OF AN APPROPRIATE REVISION SUBMITTED TO THE DIVISION NO LATER THAN SEPTEMBER 1, 1997. THE REVISION SHOULD ADDRESS THE CHANNEL CONFIGURATION DURING BOTH THE OPERATIONAL AND RECLAIMED PHASES.

STATUS: COMPLIED WITH 12/5/1997.

Stipulation No. 65

THE DIVISION SPECIFICALLY DOES NOT APPROVE ADDITIONAL DISTURBANCE TO THE SYLVESTER GULCH STREAM CHANNEL AS A RESULT OF THE TEMPORARY PIPE INSTALLATION. THE DIVISION DIRECTS MCC TO PLACE THE PIPE ONTO THE CHANNEL BOTTOM WITHOUT EXCAVATION IN OR NEAR THE STREAM AND WITHOUT CONSTRUCTING A CORRIDOR FOR THE PIPE AS ORIGINALLY PROPOSED IN MCC'S MINOR REVISION NO. 221 APPLICATION, DATED JULY 11, 1997.

STATUS: COMPLIED WITH 8/19/1997.

Stipulation No. 66

THE APPLICANT MUST NOT DISCHARGE ANY FLUIDS FROM THE DRILL HOLES OR PIEZOMETERS PROPOSED FOR INSTALLATION WITH MINOR REVISION NO. 226 UNTIL ALL NECESSARY APPROVALS AND/OR PERMITS HAVE BEEN OBTAINED FROM THE COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT, WATER QUALITY CONTROL DIVISION (WQCD.) THE DIVISION IS APPROVING THE INSTALLATION OF TWELVE (12) BOREHOLES/PIEZOMETERS. ONCE THE NECESSARY APPROVALS HAVE BEEN OBTAINED FROM WQCD, THE DIVISION WILL APPROVE DISCHARGE OF FLUIDS TO AN EXISTING ON-SITE SEDIMENTATION POND.

STATUS: COMPLIED WITH 10/8/1997.

Stipulation No. 67

WITHIN 60 DAYS OF APPROVAL OF MR225, MCC MUST SUBMIT REVISED MODELS FOR POND MR-2R. THE REVISED MODELS MUST REFLECT THE ADDITION OF DISTURBED AREA WHICH WILL RESULT FROM THE CONSTRUCTION OF THE WATER TANK TOPSOIL PILE. THE REVISED MODELS MUST BE SUBMITTED AS A MINOR REVISION TO THE PERMIT AND MUST BE RECEIVED BY DECEMBER 20, 1997.

STATUS: COMPLIED WITH 2/2/1998 BY THE SUBMITTAL OF MR-235.

Stipulation No. 68

WITHIN 90 DAYS OF CONSTRUCTION OF THE SUBSURFACE DRAINAGE STRUCTURES PROPOSED IN MINOR REVISION NO. 239, MCC SHALL SUBMIT DESIGNS FOR THE POND MB-1 SURFACE DRAINAGE SYSTEM WHICH INCLUDES FLOW FROM THE SUBSURFACE DRAINAGE SYSTEM.

STATUS: COMPLIED WITH 5/13/1999.

Stipulation No. 69

WITHIN 15 DAYS OF CONSUMMATION OF THE TRANSFER OF THE WEST ELK MINE PERMIT FROM MOUNTAIN COAL COMPANY TO MOUNTAIN COAL COMPANY, LLC, THE DIVISION SHALL BE PROVIDED WITH DOCUMENTATION THAT ALL NECESSARY RIGHTS OF ENTRY, AS REQUIRED BY SECTION 2.03.6, HAVE BEEN TRANSFERRED TO MOUNTAIN COAL COMPANY, LLC.

STATUS: COMPLIED WITH 7/2/1998.

Stipulation No. 70

ACTIVITIES APPROVED UNDER TECHNICAL REVISION TR-102, NAMELY CONSTRUCTION OF A 600-FOOT ACCESS ROAD, CONSTRUCTION OF A DRILL PAD, AND DRILLING OF METHANE DRAINAGE WELL 19-06, MUST NOT BEGIN UNTIL THE COLORADO DIVISION OF MINERALS AND GEOLOGY RECEIVES PROOF OF US FOREST SERVICE APPROVAL OF THESE ACTIVITIES. THIS STIPULATION HAS BEEN ADDED FOLLOWING CONSULTATION WITH THE US OFFICE OF SURFACE MINING, AND RECOGNIZES THE ONE-TIME UNIQUE SITUATION CREATED FOR MOUNTAIN COAL COMPANY BY THE COMBINATION OF THE IMMEDIATE NEED TO PROVIDE FOR MINE WORKER SAFETY, THE NEED TO COMPLETE THESE ACTIVITIES BEFORE NOVEMBER 30 2005 SO AS TO COMPLY WITH USFS SURFACE DISTURBANCE RESTRICTIONS, AND THE SEPTEMBER 16 2005 NINTH CIRCUIT COURT DECISION (CASE NO. CIV-F-03-6386 JKS; DOCKET NO. 79) CREATING A NEW COMMENT PERIOD FOR THE USFS APPROVAL PROCESS FOR THESE PROPOSED ACTIVITIES.

STATUS: COMPLIED WITH 12/22/2005 BY SUBMITTAL OF TR-102.

Stipulation No. 71

ACTIVITIES APPROVED UNDER MINOR REVISION MR-319, NAMELY CONSTRUCTION OF A 1.0 ACRE DRILL PAD, CONSTRUCTION OF A LIMITED-EXTENT LIGHT-USE ROAD, AND DRILLING OF BOREHOLES 24HS-01, 24HS-02, AND 24HS-03 TO FACILITATE DELIVERY OF WATER FOAM AND NITROGEN INTO THE MINE, MUST NOT BEGIN UNTIL MOUNTAIN COAL COMPANY RECEIVES US FOREST SERVICE APPROVAL FOR THESE ACTIVITIES. THIS STIPULATION RECOGNIZES THE URGENT AND SOMEWHAT UNIQUE NEED BY MOUNTAIN COAL COMPANY TO DRILL THESE BOREHOLES IMMEDIATELY UPON RECEIPT OF USFS APPROVAL.

STATUS: COMPLIED WITH 10/21/2005 BY SUBMITTAL OF MR-319.

Stipulation No. 72

ACTIVITIES APPROVED UNDER MINOR REVISION MR-320, NAMELY CONSTRUCTION OF A 0.45-ACRE DRILL PAD AND DRILLING OF TWO BOREHOLES TO FACILITATE MONITORING/SAMPLING, INJECTING WATER, FOAM AND NITROGEN INTO THE MINE, MUST NOT BEGIN UNTIL MOUNTAIN COAL COMPANY RECEIVES US FOREST SERVICE APPROVAL FOR THESE ACTIVITIES. THIS STIPULATION RECOGNIZES THE URGENT AND UNIQUE NEED BY MOUNTAIN COAL COMPANY TO DRILL THESE BOREHOLES IMMEDIATELY UPON RECEIPT OF USFS APPROVAL.

STATUS: COMPLIED WITH 10/31/2005 BY SUBMITTAL OF MR-320

Stipulation No. 73

ACTIVITIES APPROVED UNDER MINOR REVISION MR-324, NAMELY CONSTRUCTION OF A 0.5-ACRE DRILL PAD AND DRILLING OF TWO BOREHOLES TO FACILITATE MONITORING/SAMPLING, INJECTING WATER, FOAM, AND NITROGEN INTO THE MINE, MUST NOT BEGIN UNTIL MOUNTAIN COAL COMPANY RECEIVES U.S. FOREST SERVICE APPROVAL FOR THESE ACTIVITIES. THIS STIPULATION RECOGNIZES THE URGENT AND UNIQUE NEED BY MOUNTAIN COAL COMPANY TO DRILL THESE BOREHOLES IMMEDIATELY UPON RECEIPT OF USFS APPROVAL.

STATUS: COMPLIED WITH 11/10/05 BY SUBMITTAL OF MR-324.

Stipulation No. 74

LONGWALL MINING AT THE WEST ELK MINE IN E-SEAM PANELS 1 THROUGH 12 MUST NOT BEGIN UNTIL THE MEASURES REQUIRED BY STIPULATION 75 HAVE BEEN SUBMITTED TO THE DIVISION AS A TECHNICAL REVISION AND BEEN APPROVED.

STATUS: COMPLIED WITH 9/2/08 BY APPROVAL OF TR-108 AND SUBMITTAL OF A LETTER FROM THE OSE, DATED SEPTEMBER 2, 2008.

Stipulation No. 75

LONGWALL MINING AT THE WEST ELK MINE IN E-SEAM PANELS 1 THROUGH 12 MUST NOT BEGIN UNTIL MEASURES APPROVED BY THE DIVISION OF WATER RESOURCES, OFFICE OF THE STATE ENGINEER, COLORADO DEPARTMENT OF NATURAL RESOURCES TO STRENGTHEN MONUMENT DAM AND ITS SOUTHERN-ADJOINING LANDSLIDE HAVE BEEN INSTALLED, AND UNTIL AN ENGINEERING CERTIFICATION, DOCUMENTING THAT THE MEASURES WERE INSTALLED IN ACCORDANCE WITH THEIR DWR/OSE-APPROVED DESIGNS, ALONG WITH A COPY OF A FINAL STATEMENT OF ACCEPTANCE FROM THE DWR/OSE, HAS BEEN SUBMITTED TO THE DIVISION OF MINERALS AND GEOLOGY.

STATUS: COMPLIED WITH 9/2/08 BY SUBMITTAL OF A LETTER FROM THE OSE, DATED SEPTEMBER 2, 2008.

Stipulation No. 77

THE PRIOR LIABILITY AMOUNT OF \$13,546,180 AND REVISED LIABILITY AMOUNT OF \$13,570,455 SHOWN ON THE DECISION FORM FOR MR-337 ARE SUBJECT TO FINAL APPROVAL OF PERMIT RENEWAL NO. 5.

STATUS: COMPLIED WITH 3/30/07 BY DECISION TO APPROVE RN-05 BECOMING FINAL. 2008.

Stipulation No. 78

WITHIN 10 DAYS AFTER THE DRMS ISSUES A PROPOSED DECISION TO APPROVE TR-110, MCC SHALL SUBMIT TO THE DRMS FOR INSERTION IN THE PERMIT APPLICATION A P.E.-CERTIFIED REVISED, FULL-SIZED COPY OF MAP 54.

STATUS: COMPLIED WITH 7/10/07 BY SUBMITTAL OF MAP 54.

Stipulation No. 79

WITHIN 30 DAYS OF THE DIVISION ISSUING A PROPOSED DECISION TO APPROVE PERMIT REVISION NO. 12, MOUNTAIN COAL COMPANY SHALL SUBMIT AN APPLICATION FOR A MINOR REVISION THAT INCLUDES UPDATED PERMIT MAPS AND TEXT THAT SHOW THE AREA ADDED TO THE PERMIT AREA IN PERMIT REVISION 12 IS ONLY THE APPROXIMATE 1,517 ACRES OF THE DRY FORK LEASE (COC-67232).

STATUS: COMPLIED WITH 7/10/07 BY SUBMITTAL OF MR-345.

Stipulation No. 80

WITHIN 80 DAYS OF THE INSTALLATION OF THE STEEL H-BEAM PILES IN THE LOWER REFUSE PILE UNDERNEATH THE COAL PROCESSING PLANT THAT WERE APPROVED IN MR-361, THE OPERATOR SHALL SUBMIT IN A MINOR REVISION UPDATED AS-BUILT DESIGNS OF THE REFUSE PILE AND THE PROCESSING PLANT SHOWING THE STEEL PILES.

STATUS: COMPLIED WITH 8/19/10 BY SUBMITTAL OF MR-367.