TRI-STATE

December 15, 2021

Submitted via email to janet.binns@state.co.us

Mrs. Janet Binns
Environmental Protection Specialist
Colorado Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215
Denver, CO 80203

RE: New Horizon North Mine
Permit No. C-2010-089
Permit Renewal No. 2 (RN-02)

Dear Mrs. Binns:

Elk Ridge Mining and Reclamation, LLC (Elk Ridge) operates the New Horizon North Mine. Tri-State Generation and Transmission Association, Inc. (Tri-State) is the parent company of Elk Ridge. The New Horizon North Mine operates under Colorado Division of Reclamation, Mining and Safety (CDRMS) Permit No. C-2010-089. Therefore, Tri-State on behalf of Elk Ridge is submitting the enclosed application for a permit renewal (RN-02) for the New Horizon North Mine.

For a permit renewal application to be deemed completed in accordance with C.R.S. 34-33-109(7) , the applicant must submit the information required on the application form, a copy of the newspaper notice, evidence of liability insurance for the proposed period of the renewal, and five reproducible copies of the permit renewal with original signatures. Each of these requirements is addressed as follows:

- The enclosed application form and permit renewal materials addresses the minimum requirements of the application. Sections of the permit to mine that are still applicable and were not needed to be reanalyzed have not been submitted. For example, Section 2.05.4(2)(e) Revegetation was still applicable for current reclamation efforts and was not addressed accordingly.
- A copy of the proposed newspaper publication has been included as required.
- Liability insurance for New Horizon North Mine is contained within Attachment 2.03.9-1 in the permit. The liability insurance currently included in this attachment in the permit is valid through August 1, 2022; therefore, the requirement to included liability insurance in the permit renewal has already been complied with.
- This enclosed permit renewal application is being submitted electronically to the Division as is required. Paper copies (five are required) with original signatures does not currently met the standards the Division requires for submittals. This language on the permit renewal application form is dated and Tri-State would recommend that the Division

P.O. BOX 33695
DENVER, CO 80233-0695
303-452-6111
WWW.TRISTATE.COOP

revise this requirement to address current submittal requirements on the permit application for accordingly.

RN-02 also updates several maps to reflect the current permit boundary that was reduced during the previous permit term; furthermore, these same maps have been revised for additionally clarity. The RN-02 permit renewal application includes a change sheet to assist the Division in understanding which permit materials have been addressed, and to ease incorporation of these materials in the permit document.

The reclamation cost estimate is contained within Section 3.02.2 of the permit, and the current reclamation cost estimate is for the previous permit term. Once the Division issues a revised reclamation cost estimate for the next permit term, it will need to be included into Section 3.02.2 prior to finalization of this permit renewal application.

If you have any questions about the enclosed permit renewal, please contact Tony Tennyson at (970) 326-3560 or ttennyson@tristategt.org.

Sincerely,

DocuSigned by:
Chris Gilbreath
D250C711D0BF450...

Chris Gilbreath
Senior Manager
Remediation and Reclamation

CG:TT:der

Enclosures

cc: Tony Tennyson (via email)
G474-11.3(21)c-2

COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY
1313 Sherman Street, Room 215, Denver, Colorado 80203, (303) 866-3567

APPLICATION FORM
RENEWAL OF A VALID, EXISTING PERMIT
TO CONDUCT MINING IN COLORADO

This form is an application for successive renewal of a valid, existing permit to conduct surface or underground mining and reclamation activities or other surface coal mining and reclamation operations in Colorado pursuant to C.R.S. 34-33-101, *et seq.* This application form is designed to revise and update the application form currently included in your permit application. The right of successive renewal applies only to lands and activity which were permitted during the previous term. Extensions of the permit area and significant new activity within the permit area are subject to the review procedures applicable to new permit applications, in accordance with Rule 2.08.5(1)(c) and 2.08.4.

For a renewal application to be deemed complete by the Division pursuant to C.R.S. 34-33-109(7), an applicant must submit: (1) all information as specified on this application form; (2) a copy of the newspaper notice; (3) evidence that a liability insurance policy will be provided for the proposed period of renewal; and (4) five reproducible copies of the permit renewal application with original signatures.

For federal mines, a copy of the renewal application must be submitted to all agencies on the federal agency mailing list at the same time the application is submitted to the Division, and proof of distribution must be submitted to the Division. Copies of renewal pages modified during the review process must be distributed in the same manner, along with proof of distribution. Proof of distribution must be submitted prior to implementation of the renewal.

GENERAL OPERATION INFORMATION

Type or print clearly the appropriate information as listed below. Supplemental sheets may be used as necessary. Such sheets must be attached to the form and referenced or keyed to the numbers on the form.

1. Permittee: Elk Ridge Mining and Reclamation, LLC

2. Name of Operation: New Horizon North Mine

3. Permit Number (same as current permit number): C - 2010- 089

4. Type of Revision: R N Renewal Number: 02

5. Application Submittal Date: 12 / 15 / 2021

6. Correspondence Information

APPLICANT/OPERATOR (Name, Address and Phone of Name to be used on Permit)

Individual's Name: Barbara Walz
Company Name: Tri-State Generation & Transmission Assoc., Inc.
Street: 1100 West 116th Avenue
City: Westminster
State: Colorado, 80234
Telephone: (303) 254-3184

PERMITTING CONTACT (If different from Applicant/Operator above)

Individual's Name: Chris Gilbreath
Company Name: Tri-State Generation & Transmission Assoc., Inc.
Street: 1100 West 116th Avenue
City: Westminster
State: Colorado, 80234
Telephone: (303) 254-3291

INSPECTION CONTACT (If different from Applicant/Operator above)

Individual's Name: Tony Tennyson
Company Name: Tri-State Generation & Transmission Assoc., Inc.
Street: 1100 West 116th Avenue
City: Westminster
State: Colorado, 80234
Telephone: (970) 326-3560

7. Location Information: The center of the operation lies in -

County: Montrose
USGS Quadrangle: Nucla
Principal Meridian (check one): ☐ 6th (Colorado) ☑ 10th (New Mexico) ☐ Ute
Township (Write number and check direction): 47 ☑ North ☐ South
Range (Write number and check direction): 16 ☐ East ☑ West
Section: 25 Quarter Section (Check one): ☐ NE ☑ NW ☐ SE ☐ SW
Quarter-Quarter Section (Check one): ☐ NE ☐ NW ☐ SE ☑ SW
Longitude (Write number): 108 Degrees (102-110) 35 Minutes (0-60)
14.0 Seconds (0.00-60.0)
Latitude (Write number): 38 Degrees (37-41) 17 Minutes (0-60)
57.12 Seconds (0.00-60.0)

General Description (Miles and direction from nearest town and approximate elevation):
The New Horizon North Mine (Permit No. C-2010-089) is 2.7 miles northwest of the town of Nucla, CO at an elevation of approximately 5,680' msl.

(Not for DP Entry)

	Permitted	Actual	Proposed
8. Mineral ownership: Indicate currently permitted acreage for each			
Federal: 0 acres	0	0	0
State: 0 acres	0	0	0
Private: 234.8 acres	234.8	234.6	0
Indian: 0 acres	0	0	0
9. Surface ownership: Indicate currently permitted acreage for each			
Federal: 0 acres	0	0	0
State: 0 acres	0	0	0
Private: 234.6 acres	234.8	234.6	0
Indian: 0 acres	0	0	0
10. Affected area (in acres)	157.1	157.1	0
11. Disturbed area (in acres)	157.1	157.1	0
12. Acreage of area reclaimed in previous permit term	120.8	120.8	0
A. Backfilled and graded	N/A	83	N/A
B. Retopsoiled	N/A	120.8	N/A
C. Reseeded	N/A	120.8	N/A
13. Acreage for which bond has been released			
A. 60 percent	N/A	120.2	N/A
B. 85 percent	N/A	0	N/A
C. 100 percent	N/A	0	N/A
14. Renewal Term Requested (Years)	N/A	N/A	5

Note: If the application contains proposed (new) acreage, then a permit revision application form must also be completed for those acreages.

15. Type of Mine (Check one): ☐ Underground ☑ Surface
☐ Combined Surface and Underground
☐ Loadout ☐ Other

16. Current Permit Status (Check one): ☐ Active ☐ Temporary Cessation
☐ Permanent Cessation (Reclamation Only) ☑ Inactive/Phase II Bond Release
☐ Suspended

17. Current Estimated Life of Mine (in years): 0

APPLICATION REQUIREMENTS

Type or clearly print the appropriate original or revised page number(s) of the permit application in the spaces below. Where a map has been used to supplement or clarify the narrative, indicate in the space provided where the appropriate map(s) may be found in the application. The asterisk (*) denotes sections where maps are required.

Each application for permit renewal must provide appropriate information which minimally addresses each of the following requirements. The narrative should describe the conditions which have been encountered during the previous permit term, and analyze how those conditions compare with those anticipated in the original permit application. These narratives should be submitted as revised pages.

In cases where any item is not applicable, the applicant should so specify.

		Location in Application	
	INFORMATION CATEGORY	**NARRATIVE**	**MAPS**
2.03.4	Identification of Interests	2.03	2.03.4-1. 2.03.4-2
2.03.5	Compliance Information	2.03	N/A
2.03.6	Rights of Entry and Operation Information	2.03	N/A
2.03.7	Relationship to Areas Designated Unsuitable for Mining	2.03	N/A
2.03.8	Permit Term Information	2.03	N/A
2.03.9	Personal Injury and Property Damage Information	2.03.9-1	N/A
2.08.5	Bonding Information	3.02.2	N/A
2.03.10	Identification of Other Licenses and Permits	2.03	N/A
2.03.12	Newspaper Advertisement (Submit a copy of the proposed newspaper advertisement)	2.03.12-1	N/A
2.04.3	Site Description and Land Use Information	2.04.4	*Land Use 2.04(2)(a)
2.04.4	Cultural and Historic Resource Information	2.04.4	2.04.4
2.04.5	General Description of Hydrology and Geology	2.04.5	*Geology, surface and ground water systems of the permit, adjacent and general area 2.04.5(1)

		Location in Application	
INFORMATION CATEGORY		**NARRATIVE**	**MAPS**
2.04.6	Geology Description	2.04.6	*Geology of the permit area 2.04.6(1)(a) or 2.04.6(2)(a)
2.04.7(1)	Ground Water Information	2.04.7	*Hydrology 2.04.7(4)
2.04.7(2)	Surface Water Information	2.04.7	*Hydrology 2.04.7(4)
2.04.7(3)	Alternative Water Supply Information	2.05.6(3)	N/A
2.04.8	Climatological Information	2.04.8	N/A
2.04.9	Soils Resource Information	2.04.9	*Soils 2.04.9(1)(c)
2.04.10	Vegetation Information	2.04.10	*Vegetation 2.04.10(1)
2.04.11	Fish and Wildlife Resources Information	2.04.11	2.04.11-1
2.04.12	Prime Farmland Investigation	2.04.12	2.04.9-1
2.05.2	Operation Plan: Estimated Area for Life of Operation	2.05.2	N/A
2.05.3	Operation Plan: Permit Area	2.05.3	*Operation Plan 2.05.3
2.05.3(1)	Production Methods and Equipment	2.05.3	N/A
2.05.3(2)	Operation Description	2.05.3	N/A
2.05.3(3)	Mine Facilities	2.05.3(3)	2.05.3(3)-1 and 2
2.05.3(4)	Ponds, Impoundments and Diversions	2.05.3(4)	2.05.3(4)-1, -6, -7, -8, -9, and -11
2.05.3(5)	Topsoil (removal and storage)	2.05.4(2)(d)	2.05.4(2)(d)-2
2.05.3(6)	Overburden	2.05.4(2)(d)	2.05.4(2)(d)-2
2.05.3(7)	Coal Handling Structures	N/A	N/A
2.05.3(8)	Coal Processing Waste and Non-Coal Processing Waste	N/A	N/A
2.05.3(9)	Return of Coal Processing Waste to Abandoned Workings	N/A	N/A
2.05.4	Reclamation Plan	2.05.4	2.05.4-1, 2.05.5-1

		Location in Application	
	INFORMATION CATEGORY	**NARRATIVE**	**MAPS**
2.05.4(2)(a)	Timetables	2.05.4	N/A
2.05.4(2)(b)	Reclamation Cost Estimates	3.02.2	N/A
2.05.4(2)(c)	Backfilling and Grading	2.05.4(2)(c)	*Post-mining topography 2.05.4(2)(c)
2.05.4(2)(d)	Topsoil (Redistribution)	2.05.4(2)(d)	2.05.4(2)(d)-1
2.05.4(2)(e)	Revegetation	2.05.4(2)(e)	2.05.5-1
2.05.4(2)(f)	Disposal of Debris, Acid-Forming and Toxic-Forming Materials	2.05.4(2)(f)	N/A
2.05.4(2)(g)	Sealing or Managing Mine Openings, Exploration Holes, Other Boreholes or Wells	2.05.6(3)(b)(v)	N/A
2.05.5	Post-Mining Land Uses	2.05.5	*Post-Mining Land Use 2.05.5(1)(c) or (2)(c)
2.05.6	Mitigation of the Impacts of Mining Operations	2.05.6	N/A
2.05.6(1)	Air Pollution Control Plan	Attachment 2.05.6(1)-1	N/A
2.05.6(2)	Fish and Wildlife Plan	2.05.6(2)	2.05.6(2)-1
2.05.6(3)	Protection of the Hydrologic Balance	2.06.6(3)	N/A
2.05.6(4)	Protection of Public Parks and Historic Places	N/A	N/A
2.05.6(5)	Surface Mining Near Underground Mining	N/A	N/A
2.05.6(6)	Subsidence Survey, Subsidence Monitoring and Subsidence Control Plan	N/A	N/A
2.06	Special Categories of Mining	N/A	N/A
2.06.8	Alluvial Valley Floors (If not applicable, demonstrate why)	2.06.8	*Reconnaissance Level AVF Investigation 2.06.8(5)(b)
	Additional Information the Applicant May Wish to Submit	2.04.13, 4.05.18	4.05.18-1

To the best of my knowledge, all the information presented in this application is true and correct.

BY: DocuSigned by: Chris Gilbreath D250C711D0BF450...

TITLE: Senior Manager Remediation and Reclamation

(Signature by Individual Legally Authorized to Bind the Operator to this Application)

PUBLIC NOTICE

Elk Ridge Mining and Reclamation, LLC, P.O. Box 628, Nucla, CO 81424 has submitted an application for Renewal of a Valid, Existing Permit to Conduct Mining in Colorado to the Division of Reclamation, Mining and Safety for its New Horizon North Mine, Permit No. C-2010-089.

The New Horizon North Mine office is located at 27646 West 5th Street, P.O. Box 628, Nucla, Colorado. The permit area contains tracts of land located in Section 25 and Section 36, Township 47 North, Range 16 West of the New Mexico Principal Meridian, Montrose County, Colorado being more particularly described as follows:

The West ½ of Section 25, T. 47 N. R. 16 W. of the New Mexico Principal Meridian, containing 230.1 acres more or less, and within the West ½ of Section 36, T. 47 N. R. 16 W. of the New Mexico Principal Meridian, containing 4.7 acres more or less. In total the New Horizon North permit boundary contains 234.8 acres more or less.

The above mentioned tracts of land are shown on USGS 7.5 minute Nucla Quadrangle map.

A copy of the complete renewal application is available for public inspection at the Montrose County Courthouse Annex, Nucla, Colorado. Written comments or objections to the application may be submitted to the Division of Reclamation, Mining and Safety, Room 215, 1313 Sherman Street, Denver, Colorado 80203, Telephone (303) 866-3567. Written comments and objections must be received by the Division of Reclamation, Mining and Safety within 30 days after the last publication of this notice.

Reclamation activities are proposed to occur within 100' of the outside right-of-way of public roads. A public hearing, for the purpose of determining whether the interests of the public and affected landowners will be protected, may be requested by contacting the Division in writing within 30 days of the last day of last publication of the notice. If requested, such hearing would be held in Nucla, the locality of the proposed mining operation.

SECTION 2.03
LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Table of Contents

List of Maps

List of Appendices

Appendix 2.03.6-1	Tri-State Board Resolution Name Change Western Fuels, Colorado, a Limited Liability Company to Elk Ridge Mining and Reclamation, LLC
Appendix 2.03.6-1(a)	Memorandum of Surface Lease and Purchase Agreement dated August 7, 2009 between Garvey & Co. and Western Fuels-Colorado, and a letter dated October 6, 2010 informing WFC of the name change of Garvey & Co. to Garvey & Co. LLC
Appendix 2.03.6-1(b)	Memorandum of Escrow Purchase Agreement dated June 27, 1978 between Donald J. Rice & Marianna Rice and Peabody Coal Company, and Addendum to Escrow Purchase Agreement dated February 10, 1992 between Donald J. Rice & Marianna Rice and Peabody Coal Company transferring the assets to Western Fuels-Colorado
Appendix 2.03.6-1(c)	Correction Special Warranty Deed dated November 8, 1995 from San Miguel Power Association to Western Fuels- Colorado
Appendix 2.03.6-1(d)	Warranty Deed between Thomas M. Meehan & Peggy Jo Meehan and Western Fuels-Colorado
Appendix 2.03.6-1(f)	Quitclaim Deed dated October 16, 2002 from San Miguel Power Association to Western Fuels-Colorado
Appendix 2.03.8-1	Legal Description - New Horizon North Permit Boundary
Appendix 2.03.9-1	Personal Property and Property Damage Insurance
Appendix 2.03.12-1	Newspaper Advertisement

Legal, Financial, Compliance and Related Information

The New Horizon North Mine (NHN) area is located in the W ½ of Section 25, Township 47 North, Range 16 West of the New Mexico Principal Meridian. A significant portion of the mine permit area corresponds to an area previously permitted by Peabody Coal Company (PCC), in connection with a permit application submitted in April 1980 and approved in May 1993 as Permit No. C-1981-008. Other portions of the NHN permit area were permitted and mined prior to 1973 as a portion of the Navajo and Nucla strip mines which were mined by the Edna Coal Company starting in 1958 and subsequently by PCC until 1992.

PCC submitted an application for the Nucla Mine in April 1981 and Permit No. C-1981-008 was issued by the Colorado Mined Land Reclamation Division in May 1983. The separate Nucla East Mine was incorporated into the permit in 1989. In 1992, the mining permit was transferred to Western Fuels-Colorado (now Elk Ridge Mining and Reclamation, LLC) and the two permit areas were renamed the New Horizon 1 (NH1) and New Horizon 2 (NH2) Mines. All mining at NH1 (formerly the Nucla Mine) was completed by PCC while mining at NH2 (formerly Nucla East) has been conducted solely by Elk Ridge Mining and Reclamation, LLC (Elk Ridge). Map 2.04.3-2 delineates areas previously mined, including "pre-law" disturbance.

The statements below are intended to address the requirements of Section 2.03 of the regulations of the State of Colorado Mined Land Reclamation Board.

2.03.4(2)(a) Identification of Permit Applicant

Elk Ridge Mining and Reclamation, LLC
P.O. Box 33695
Denver, CO 80233
(303) 452-6111
Employer I.D. 84-1195998

Note: On May 11, 2016 Elk Ridge Mining and Reclamation, LLC took over ownership of the New Horizon North Mine (Permit No. C-2010-089) from Western Fuels-Colorado, A Limited Liability Company. Other sections of this permit document, maps, figures, attachments, or leases may refer to Western Fuels-Colorado, a Limited Liability Company, Western-Fuels-Colorado, Western Fuels, or WFC. From May 11, 2016 forward these references actually refer to Elk Ridge Mining and Reclamation, LLC. Please see Appendix 2.03.6-1 for a copy of the Tri-State Board Resolution approving the name change from WFC to Elk Ridge.

2.03.4(2)(b) Applicant's Resident Agent

Ken Reif, Senior Vice President, General Counsel
Tri-State Generation and Transmission Association, Inc.
P.O. Box 33695
Denver, CO 80233
(303) 452-6111
Employer I.D. 84-0464189

2.03.4(2)(c) Person who will pay abandoned mine reclamation fee:

New Horizon North Mine
P.O. Box 628
Nucla, CO 81424
(970) 864-2165
Employer I.D. 84-1195998

2.03.4(3)(a) Person controlling the Applicant

Owner of Applicant: Tri-State Generation and Transmission Association, Inc. -100%

Tri-State Generation and Transmission Association, Inc. (Tri-State) is the sole owner and single member of Elk Ridge Mining and Reclamation, LLC (Elk Ridge). Effective as of December 2018, Elk Ridge became a member-managed limited liability company by Tri-State. The management of operations and affairs of Elk Ridge, commencing in December 2018, are determined by Tri-State's Board of Directors. As of December 1, 2021, the following are the current officers and directors of Tri-State and the date such director began on the Tri-State's Board of Directors:

President & Chairman:
Tim Rabon
9 Piedra Road
Alamogordo, NM 88310
Begin Date: April 2014

Vice Chairman:
Don Keairns
P.O. Box 1189
La Veta, CO 81055
Begin Date: April 2012

Secretary:
Julie Kilty
P.O. Box 40
La Grange, WY 82221
Begin Date: January 2013

Treasurer:
Stuart Morgan
9720 Road 54
Dalton, NE 69131
Begin Date: May 2007

Assistant Secretary:
Scott Wolfe
6628 County Road 101 N
Monte Vista, CO 81144
Begin Date: June 2008

Assistant Secretary:
Matt Brown
1287 Owl Creek Road
Thermopolis, WY 82443
Begin Date: April 2010

Wayne Connell
Star Route 1, Box 30
Mountainair, NM 87036
Begin Date: July 2000

Jack Finnerty
P.O. Box 186
Wheatland, WY 82201
Begin Date: April 1988

Robert Bledsoe
P.O. Box 435
Hugo, CO 80821
Begin Date: July 1998

Leo Brekel
Route 1, 9373 County Rd. 81
Fleming, CO 80728
Begin Date: March 2003

Phillip Zochol
1552 County Road 54
Alliance, NE 69301
Begin Date: December 2013

Darryl Sullivan
HC 30 Box 20
Monticello, NM 87939
Begin Date: December 2013

Peggy Ruble
P.O. Box 123
Cody, WY 82414
Begin Date: April 2017

Leroy Anaya
905 Liles Street
Socorro, NM 87801
Begin Date: May 2018

Roger Schenk
26237 Highway 63
Akron, CO 80720
Begin Date: April 2019

William Wilson
P.O. Box 476
Harrison, NE 69346
Begin Date: October 2019

Shawn Turner
76465 Highway 61
Grant, NE 69140
Begin Date: April 2015

Rick Gordon
P.O. Box 518
Simla, CO 80835
Begin Date: November 1994

Claudio Romero
HC 77, Box 62
Seboyeta, NM 87014
Begin Date: June 2001

Carl Trick II
P.O. Box 15
Cowdrey, CO 80434
Begin Date: September 2012

Ron Hilkey
200 County Road 43
Meeker, CO 81641
Begin Date: March 2014

Stan Propp
290017 Main Road
Minatare, NE 69356
Begin Date: April 2015

Kohler McInnis
343 Lower Road
Durango, CO 81303
Begin Date: May 2020

Mark Daily
1388 County Road 8
Gunnison, CO 81230
Begin Date: May 2018

Charles Abel II
12510 W County Road 270
Nathrop, CO 81236
Begin Date: April 2019

Brian McCormick
5128 Mt. St. Vrain Ave.
Frederick, CO 80504
Begin Date: January 2020

Thaine Michie
4164 Arrowhead Road
La Porte, CO 80535
Begin Date: March 2009

Hal Keeler
4555 Solana Drive SE
Deming, NM 88030
Begin Date: July 2000

Ralph Hilyard
60870 County Road 13
Mitchell, NE 69357
Begin Date: April 2002

Jerry Burnett
P.O. Box 4
Hereford, CO 80732
Begin Date: November 2013

Lawrence Brase
P.O. Box 671
Lamar, CO 81052
Begin Date: April 2018

Robert Baca
HC 74 Box 451
Pecos, NM 87552
Begin Date: June 2016

Steve Rendon
P.O. Box 354
Chama, NM 87520
Begin Date: October 2017

Joel Gilbert
P.O. Box 369
Clayton, NM 88415
Begin Date: August 2018

Gary Shaw
HC 74, Box 25
Mills, NM 87730
Begin Date: July 2019

Randy Graff
46 Sunset Lane
Fort Morgan, CO 80701
Begin Date: April 2020

William Bridges
P.O. Box 671
Cowley, WY 82420
Begin Date: June 2020

Kevin Cooney
P.O. Box 4132
Telluride, CO 81435
Begin Date: June 2020

Clay Thompson
1742 State Highway 230
Laramie, WY 82070
Begin Date: July 2020

Lucas Bear
32770 Pioneer Road
Merriman, NE 63218
Begin Date: August 2020

Jerry Fetterman
P.O. Box 253
Yellow Jacket, CO 81335
Begin Date: October 2020

Bruce Duran
59 County Road 84B
Santa Fe, NM 87506
Begin Date: August 2021

As of December 1, 2021, the following are the past directors of Tri-State during the time that Elk Ridge was a member-managed limited liability company by Tri-State (effective as of December 2018) and the date such director began and ended on the Tri-State's Board of Directors:

Rick Newman
4711 Gamble Gulch Road
Blackhawk, CO 80422
Begin Date: January 2012
Date Ended: April 2019

Charles Soehner
38566 County Road 13
Wray, CO 80758
Begin Date: April 1991
Date Ended: April 2019

Don Schutz
P.O. Box 280
Wagon Mound, NM 87752
Begin Date: August 2015
Date Ended: July 2019

Jack Hammond
P.O. Box 26
Lance Creek, WY 82222
Begin Date: January 2005
Date Ended: October 2019

James Vigesaa
14505 Watkins Mile Road
Brighton, CO 80603
Begin Date: April 2019
Date Ended: November 2019

Tim Erickson
742 Canyon Lane
Lochbuie, CO 80603
Begin Date: November 2019
Date Ended: January 2020

Richard Kildow
10691 Road 73
Bayard, NE 69334
Begin Date: January 2, 2020
Date Ended: January 24, 2020

Brian Schlagel
15645 Headlight Road
Strasburg, CO 80136
Begin Date: May 2005
Date Ended: April 2020

Kirsten Skeehan
119 Meadowbrook Pl.
Pagosa Springs, CO 81147
Begin Date: May 2018
Date Ended: May 2020

Jack Sibold
50 Ridgview Lane
Ridgway, CO 81432
Begin Date: June 2014
Date Ended: June 2020

Don Russell
P.O. Box 349
Basin, WY 82410
Begin Date: April 2012
Date Ended: June 2020

Kyle Martinez
11925 6300 Road
Montrose, CO 81401
Begin Date: June 2017
Date Ended: June 2020

Gary Fuchser
2253 610th Road
Gordon, NE 69343
Begin Date: August 2013
Date Ended: July 2020

Richard Clifton
P.O. Box 174
Centennial, WY 82055
Begin Date: June 2009
Date Ended: July 2020

Chance Briscoe
1300 Maple Street
Chadron, NE 69337
Begin Date: July 2020
Date Ended: August 2020

William Mollenkopf
13840 Road 29
Dolores, CO 81323
Begin Date: June 2009
Date Ended: October 2020

Lucas Cordova
P.O. Box 11
Espanola, NM 87532
Begin Date: August 2013
Date Ended: August 2021

Donald Kaufman
P.O. Box 569
Westcliffe, CO 81252
Begin Date: June 2015
Date Ended: April 2019

Prior to Elk Ridge becoming a member-managed limited liability company by Tri-State (effective as of December 2018), Elk Ridge was a manager-managed limited liability company by a Board of Managers. The Board of Managers of Elk Ridge from 2016 through December 2018 were:

President
Jack Finnerty
P.O. Box 186
Wheatland, WY 82201

Vice President
Rick Gordon
P.O. Box 518
Simla, CO 80835

Treasurer
Wayne Connell
Star Route 1, Box 30
Mountainair, NM 87036

Secretary
Charles Soehner
38566 County Road 13
Wray, CO 80758

Assistant Secretary
Thaine Michie
4164 Arrowhead Road
La Porte, CO 80535

2.03.4(3)(b) Relationship of the controlling persons to the applicant:

Tri-State Generation and Transmission Association (Tri-State) is the sole owner Elk Ridge Mining and Reclamation, LLC, New Horizon North Mine.

2.03.4(3)(c) The title of the person's position and the date position was assumed

Refer to Section 2.03.4(3)(a)

2.03.4(3)(d) Not Applicable

2.03.4(3)(e) Not Applicable

2.03.4(4)(a) Other mining operations controlled by persons associated with Applicant:

Western Fuels - Wyoming, Inc.
12050 N. Pecos Street
Westminster, CO 80234
(303) 255-5807
Name of Operation - Dry Fork Mine
Employer ID 52-1619390
Wyoming DEQ Permit No. 599-T6
MSHA No.: 48-01429

Elk Ridge Mining and Reclamation, LLC
P.O. Box 628
Nucla, CO 81424
(970) 864-2165

Name of Operation - New Horizon Mine
Employer I.D. 84-1195998
Colorado DRMS Permit Number C-1981-008
MSHA No.: 05-00299

Colowyo Coal Company L.P.
5731 State Highway 13
Meeker, CO 81641
(970) 824-1532
Name of Operation - Colowyo Mine
Employer I.D. 84-0705078
Colorado DRMS Permit Number C-1981-019
MSHA No.: 05-02962

Trapper Mine
25910 S Highway 13
P.O. Box 187
Craig, CO 81625
Employer I.D. 94-2785879
Colorado DRMS Permit Number C-1981-010
MSHA No.: 05-02838

2.03.4(4)(b) Not applicable

2.03.4(5) Information provided under 2.03.4(1) through (4) will be reviewed and updated or corrected as necessary.

2.03.4(6)(a) Legal or Equitable Owners of Record of Surface Coal to be Mined

Surface Ownership (Numbers correspond to designations on Map 2.03.4-1)

6. Garvey & Co. LLC
P.O. Box 555
Nucla, Colorado 81424

12. Elk Ridge Mining & Reclamation, LLC
New Horizon Mine
P.O. Box 628
Nucla, CO 81424

Coal Ownership (Numbers correspond to designations on Map 2.03.4-2)

6. Elk Ridge Mining & Reclamation, LLC
New Horizon Mine
P.O. Box 628
Nucla, CO 81424

With overriding royalty to:
Don & Marianna Rice
1601 Doe Run Drive
Craig, CO 81625

12. Elk Ridge Mining and Reclamation, LLC
New Horizon Mine
P.O. Box 628
Nucla, CO 81424

2.03.4(6)(b) Holders of Record of any Leasehold

Surface Leaseholder (See nos. 6 and 56 in Map 2.03.4-1)

Elk Ridge Mining and Reclamation, LLC
P.O. Box 33695
Denver, Colorado 80233

Coal (Minerals, Oil & Gas Leaseholders (See no. 56 in Map 2.03.4-2)

Elk Ridge Mining and Reclamation, LLC
P.O. Box 33695
Denver, Colorado 80233

2.03.4(6)(c) Real Estate Contract

Elk Ridge purchased the surface and coal held by Joe and Peggy Meehan. A copy of the Meehan deed can be found in Appendix 2.03.6-1(d).

2.03.4(7) Names and Addresses of Contiguous Owners to the Permit Boundary for the Surface, Coal, Oil and Gas.

See Maps 2.03.4-1 and 2.03.4-2 (numbers correspond those on Maps)

Surface Ownership

2.	Montrose County 161 South Townsend Avenue Montrose, CO 81401
6.	Garvey & Co., LLC P.O. Box 555 Nucla, Colorado 81424
7.	Garvey Bros. Land & Cattle, LLC P.O. Box 555 Nucla, Colorado 81424
11.	Donna Nygren P.O. Box 102 Nucla, Colorado 81424
12.	Elk Ridge Mining & Reclamation, LLC New Horizon Mine P.O. Box 628 Nucla, CO 81424
14.	Stanley & Tommy Garvey P.O. Box 555 Nucla, Colorado 81424
47.	Marla Fritzlen P.O. Box 82 Nucla, CO 81424
48.	Patsy Tucker Family Revocable Trust P.O. Box 826 Nucla, Colorado 81424
51.	Roger Borcherdt Separate Property Trust 710 Bair Island Road #410 Redwood City, CA 94063
53.	Roger & Tina Carver P.O. Box 293 Nucla, Colorado 81424
56.	George & Kathy Glasier P.O. Box 98 Nucla, Colorado 81424
58.	Richards & Richards, LLC P.O. Box 608 Nucla, Colorado 81424
59.	Michael Burke P.O. Box 917

Nucla, CO 81424

64. Charles & Katherine Zunich
P.O. Box 73
Nucla, CO 81424

65. Kenneth Bortles
P.O. Box 97
Nucla, CO 81424

67. D.H. & S.C. Chiles Trust
P.O. Box 340
Nucla, CO 81424

Oil, Gas and Minerals Ownership (see owners above for addresses not listed)

7. Garvey Bros Land & Cattle, LLC
10. Donald & Marinna Rice and Jacqueline Blinn
11. Donna Nygren
12. Elk Ridge Mining & Reclamation, LLC
13. San Miguel Power Association
14. Puderbaugh (1/2 Interest), Piel (1/2 Interest)
47. Marla Fritzlen
48. Donald & Marinna Rice (1/2 Interest)
51. Roger Borcherdt Separate Property Trust
53. Roger & Tina Carver
56. George & Kathy Glasier
58. Richards & Richards, LLC
59. Michael Burke
64. Charles & Katherine Zunich
65. Bortles (2/3 Interest), Ubel (1/3 Interest)
67. David & Sylvia Chiles

2.03.4(8) Name of Mine. MSHA ID.

The name of the mine is New Horizon North Mine. The MSHA ID is 05-00299.

2.03.4(9) Interest in contiguous Lands

Maps 2.03.4-1 and 2.03.4-2 show the areas contiguous to the permit boundary

owned by the applicant.

2.03.5 Compliance Information

The applicant, any subsidiary, affiliate, or persons controlled by or under common control with the applicant have not had a Federal or State mining permit suspended or revoked in the last five years or forfeited a mining bond or similar security. Neither the New Horizon North Mine nor any other operations identified in Section 2.03.4(4)(a) have received violations in the past three years.

2.03.6 Right of Entry and Operation Information

The area to be mined consists of three parcels located in the W ½ of Section 25, bounded by Montrose County Roads 2600, 2650, and AA. The permit area also includes corridors for a pond flume, water pump and light use road.

2.03.6-1 Appendix 2.03.6-1(a) through 2.03.6-1(f) at the end of this section gives the following information to evidence right of entry for mining:

1. Appendix 2.03.6-1(a). Memorandum of Surface Lease and Purchase Agreement dated August 7, 2009 between Garvey & Co., a Colorado General Partnership and Western Fuels-Colorado, a Limited Liability Company. The lease pertains to the surface at SW1/4, Section 25, T47N, R16W, NMPM. The lease gives WFC right to enter and mine the property. Garvey & Co. has subsequently changed the name to Garvey & Co. LLC. A letter informing of the change is attached behind the lease agreement.

2. Appendix 2.03.6-1(b). This Appendix includes two documents; (1) Memorandum of Escrow Purchase Agreement dated June 27, 1978 between Donald J. Rice and Marianna Rice ("Sellers") and Peabody Coal Company ("Buyer"). Under this agreement Sellers sold to Buyer their rights to coal under W1/2SW1/4, Section 25, T47N, R16W, NMPM and (2) Addendum to Escrow Purchase Agreement between Donald J. Rice and Marianna Rice ("Sellers") and Peabody Coal Company ("Buyer") dated 10th day of February, 1992 where Peabody, with Sellers' consent, transferred its rights to the assets to Western Fuels-Colorado, A Limited Liability Company.

3. Appendix 2.03.6-1(c). Correction Special Warranty Deed dated November 8, 1995 from San Miguel Power Association to WFC for the property at E1/2SW1/4, Section 25, T47N, R16W, NMPM.

4. Appendix 2.03.6-1(d). Warranty Deed between Thomas M. Meehan & Peggy Jo Meehan and Western Fuels-Colorado, LLC

5. Appendix 2.03.6-1(f). Quitclaim Deed dated 16th day of October, 2002 between San Miguel Power Association, Inc. (SMPA) and Western Fuels-Colorado. Under this agreement SMPA sold to WFC the property in NW1/4 and W1/2NE1/4, Section 36, T47N, R16W, NMPM.

   None of the above referenced rights is the subject of pending litigation.

2.03.6-2 Severance of Minerals Estate

The surface and the minerals are owned separately in SW1/4 of Section 25, Garvey & Co. LLC owns the surface. NHN right of entry for this surface is given in Appendix 2.03.6-1(a). The coal under this surface is owned by NHN as evidenced in Appendix 2.03.6-1(b) and 2.03.6-1(c).

2.03.7 Relationship to Areas Designated Unsuitable for Mining

2.03.7(1) Unsuitable Designation Status

A determination was made under the criteria set forth in Section 7.05 that no lands be designated unsuitable for mining at NHN. Furthermore, no Alluvial Valley Floors exists in the mine area or the potentially affected area associated with NHN. NHN is unaware of the availability of any information which indicates that any portion of NHN property has been or is under consideration or study for designation as land unsuitable for mining.

2.03.7(2) Legal and Financial Commitments

Not applicable.

2.03.7(3) Ownership Waivers

Mining activities are proposed to occur within 300 feet of a dwelling west of the permit boundary on the Garvey Bros. Land & Cattle Co. property. However, since

this is an unoccupied dwelling, no waiver is required.

2.03.8 Permit Term Information

NHN began mine development in 2012. Mining of coal began in mid-2013 and mining concluded in in 2017. The total area within the mine permit is 234.6 acres.

2.03.9 Personal Injury and Property Damage Insurance Information

This information is included as Appendix 2.03.9-1.

2.03.10 Identification of Other Licenses & Permits Pertinent to Surface Coal Mining

FEDERAL

Mine Safety and Health Administration (MSHA)
2nd Street, Building 25, E-18, Denver, CO 80225
Mine I.D. Number: 05-00299
Effective: May 17, 1993

U.S. Army Corps of Engineers (USACOE)
West Regulatory Branch, 400 Rood Ave., Room 224, Grand Junction, CO 81501
Nationwide Permit Number: NWP 21 Surface Mining Activities
Effective: February 27, 2014

Federal Communications Commission (FCC)
1270 Fairfield Road, Gettysburg, PA 17325
NHN has a frequency of 151.775 MHz and a call sign of WPGP927.
Effective: February 22, 1995

STATE

Colorado Division of Reclamation, Mining and Safety (DRMS)
1313 Sherman Street, Room 215, Denver, CO 80203
Mining and Reclamation Permit No. C-2010-089
Effective: June 20, 2012

CO Dept. of Public Health and Environment-Air Pollution Control Division
4300 Cherry Creek Drive South, Denver, CO 80246
Air Pollution Permit No. 10MO2275F
Effective: February 11, 2015

CO Dept. of Public Health and Environment-Water Quality Control Division

4300 Cherry Creek Drive South, Denver, CO 80246
NPDES Permit No. COG-850062
Effective: May 10, 2011

CO Division of Water Resources-State Engineer's Office (SEO)
1313 Sherman Street, Room 821, Denver, CO 80203
Water Augmentation Plan Case No. 10CW208
Effective: August 6, 2013
Water Well Permit No. 76890-F
Effective: December 10, 2012

COUNTY
Montrose County Board of County Commissioners
317 South 2nd Street, Montrose, CO 81401
Special Use Permit No. SU-10-0020
Effective: April 4, 2011

2.03.11 Locations of Public Offices for filing of Application

1. Colorado Division of Reclamation, Mining and Safety
   1313 Sherman Street, Room 215
   Denver, Colorado 80203

2. Montrose County Courthouse Annex
   300 Main Street
   Nucla, Colorado 81424

2.03.12 Newspaper Advertisement and Proof of Publication

A copy of the newspaper advertisement can be found in Appendix 2.03.12-1.

SECTION 2.04.3
SITE DESCRIPTION AND LAND USE INFORMATION

Table of Contents

List of Tables

List of Maps

Site Description and Land Use Information

General and Historical Land Uses within the New Horizon North Mine Permit Area

The lands adjacent to the Nucla area were utilized by Native Americans for thousands of years before settlers arrived in the late 1890's. Initial settlement was primarily focused on livestock grazing operations which took advantage of the large tracts of native grazing land found in this area. The town of Nucla was formally settled around 1900, but it was not until 1910 when the Colorado Cooperative (CC) Irrigation Ditch was completed that extensive settlement into First and Second Parks commenced. The CC Ditch which resulted in water being diverted from the San Miguel River to this area was the first viable agricultural-based operation in this immediate area. Those lands which are beyond the irrigated acreage of the CC Ditch continued to be used for grazing. In recent years, these native rangelands have become the center of big game hunting operations which have occurred as a result of this area being declared as a "trophy" elk and deer hunting area by the Colorado Parks and Wildlife.

The uranium bearing ore carnotite was discovered in the area in 1898 and uranium mining commenced as a major industry in the area. Mining of carnotite declined about 1923, the mining of vanadium, which is found in close geological association with carnotite, and which is used as a hardening agent in the production of steel became an important industry and this emphasis continued through World War II. With the development of the nuclear bomb and nuclear power, the mining of uranium again soared and boomed during the 1950's, 1960's and 1970's. The demand for uranium saw a significant decline in the early 1980's and the uranium mill at Uravan was dismantled and the town, which was once the largest town in western Montrose County, was removed and/or destroyed.

Currently, agriculture and seasonal tourism associated primarily with big game hunting are the primary land uses in the Nucla Area. The uranium industry is in the bottom of one of its "roller coaster rides" and the UMETCO mill at Uravan is essentially nothing but a local memory. Energy Fuels, another uranium producer is attempting to construct a new mill to the west of area in the Paradox Valley, but this effort appears to be moving very slowly. The few uranium mines that historically operated in the area appear to largely shut down at the present time.

Coal mining operations commenced on a very small scale in the early part of the 1900's where numerous small "wagon box" mines were opened up by individuals who supplied the limited local demand. In 1958, Edna Coal Company opened a small strip mine, called the Navajo Mine, in the area to the south of the NHN Mine and north of Tuttle Draw. Coal from this mine was primarily utilized in a small coal fired power plant located in Nucla. In September 1963, Peabody Coal Company (PCC) purchased the mine and renamed it the Nucla Mine and operated it until 1983 when the power plant was temporarily deactivated. The mine was placed into an

inactive status in 1988. Tri-State Generation & Transmission purchased the power plant and reconstructed the power plant using a new boiler technology called the recirculating fluidized type power plant. Associated with the reconstruction of the power plant, Elk Ridge Mining and Reclamation, a subsidiary of Tri-State purchased the Nucla Mine in 1992 and renamed it the New Horizon Mine. Most of the existing New Horizon Mine operations are located to the west of the town of Nucla, and to the south of the old Navajo and Nucla Mine sites, and south of the NHN permit area.

Portions of the NHN Mine area have been disturbed by previous mining activities conducted by PCC. PCC submitted an application for the Nucla Mine in April 1981, and in May 1983, Permit No. C-008-81 was issued by the Colorado Mined Land Reclamation Division. The February 1, 1980 aerial photography submitted with the PCC permit application shows that portion of the south east area of the Rice tract, north of AA Rd, was already mined by this time. Subsequent aerial photography dated April 19, 1986 shows that the southern area of this tract was largely mined out at that time. Another aerial photograph dated August 1993 shows that the entire area associated with the NH1 Mine Area had been reclaimed. It appears that some grading with the existing drainage swale had just been finished. The swale flows largely across the south central portion of this site.

PCC later incorporated the geographically separate Nucla East Mine into the permit in 1989. In 1992, the mining permit (C-1981-008) was transferred to Elk Ridge Mining and Reclamation, and the two permit areas were renamed the New Horizon 1 (NH1) and New Horizon 2 (NH2) Mines. All mining at NH1 (formerly the Nucla Mine) was completed by PCC, while mining at NH2 (formerly Nucla East Mine) has been conducted solely by Elk Ridge Mining and Reclamation. The remaining 103.42 acres of the NH1 Mine, also known as the Rice tract, was incorporated into the NHN Mine permit prior to bond release of NH1. Map 2.04.3-2, Mining Operations Pre-Law and Post-Law delineates areas previously mined, including “pre-law” disturbance, NH1 and NH2 permit area boundaries and areas of previous coal extraction within these permit boundaries.

Recent Changes in Land Uses within the New Horizon North Mine Permit Area

Excellent background information on the Glasier and Elk Ridge-Meehan properties was obtained from Mr. Preston Carver, who has leased these two properties since 1984. He reported his management experiences and shared information relative to the irrigation, cropping and grazing uses the Carver Ranches have had on these properties. Additional valuable information was obtained from Mr. Rex Case, who lives just to the east of the northeast corner of the Glasier Property. His Grandfather Nygren was an original homesteader of a large portion of this site and Mr. Case has been intimately familiar with this site for near 60 years. Mr. Ron Carver, another current neighbor of the property married a daughter of the previous owner of the Glasier

Property and lived for years on what is now the Glasier Property. In addition, former New Horizon employees Lance Wade and Ross Gubka, who both began working for New Horizon in 1992, were also consulted.

Consultation was also made with Mr. Jim Boyd former NRCS District Conservationist, in Norwood, regarding the historic involvement of the NRCS with respect to the management of these properties. Mr. Dean Stindt, who was formerly the NRCS District Conservationist with the NRCS also in Norwood and worked there for almost 10 years before Mr. Boyd took his place. In addition to these discussions, the NRCS aerial photography taken in 2005, 2006, 2008 and 2009 as well as earlier aerial photographs assisted in the consultations.

In the long term, there appears to have been a rather pronounced decrease in the level of management since Mr. Carl Mitchell sold his property and moved off the site nearly 13 years ago, on what is now the Glasier property. Similarly, during the ownership of Mr. Jack Smith, father of Mrs. Thomas Meehan, there was decidedly more intensive irrigation of this property while he lived on the property. It appears that there have been significantly less intensive levels of management on both the Glasier and Elk Ridge-Meehan properties than what is experienced on the Garvey property where the owners essentially live on the land. Mr. Preston Carver reports that since he has leased the Glasier and Elk Ridge-Meehan property in 1984, it has essentially had the same level of management. Given the fact that on both the Glasier and Elk Ridge-Meehan property there has been a significant invasion of Prairie Dogs into what was historically irrigated pasture and given the size and number of these burrows, as well as the type of vegetation now growing on these sites, it can be concluded that there have been no dramatic changes in management direction within the past five years on either the Glasier or Elk Ridge-Meehan property as reported by Mr. Carver and the others consulted. Based upon our experience with the site starting in October of 2008, and examination of this information, we conclude that there have been no changes in land use on these properties in the past five years.

Existing Land Uses within the New Horizon North Mine Permit Area

According to the existing Land Use definitions found in Section 1.04.71, the current DRMS regulations contain a total of ten accepted land use categories which include: Cropland, Pastureland, Rangeland, Forestry, Residential, Industrial or Commercial, Recreation, Fish and Wildlife Habitat, Developed Water Resources and Undeveloped land. These definitions follow those originally promulgated by the federal Office of Surface Mining (OSM). On 30 August 2006 (*see Federal Register vol 71, number 160 pages 51683-51706)*, the OSM formally revised the definition of "rangeland" changing it to "grazingland" and making associated changes in the revegetation success criteria associated with this land use. The DRMS has submitted a request to the OSM to change their definition of "rangeland" to comply with the OSM category of "grazingland" but to date, no approval of this change has been issued.

Given the obvious regulatory certainty that "rangeland" will be dropped and "grazingland" added in its place, in two consultation meetings held with the DRMS personnel, NHN was directed to prepare the Land Use information in this permit application as if the OSM definition has been approved in the Colorado regulatory program. Accordingly, this discussion does not contain a discussion of "rangeland" and the accepted OSM definition of "grazingland" as has been proposed in the new DRMS regulation is used in its place.

As are shown on Map 2.04.3-1, New Horizon North Mine Land Use Map, a total of four of these land use categories occur with the NHN Permit Area. These include Grazingland, Pastureland, Residential and Developed Water Resources. A brief discussion of each of these land use categories is presented below.

Grazingland. This land use category is the largest land use category found in the NHN Mine Area. There are five different "Grazingland" land use sub-categories on this site which include: Grazingland-Reclamation (GL-REC), Grazingland-Sagebrush (GL-SB), Grazingland-Subirrigated (GL-SI), Grazingland-Reclaimed Spoil (GL-RECS) and Grazingland-Drainage Channel (GL-DC).

Grazingland-Reclamation (GL-REC) occupies that portion of the original NH1 Mine, mined by PCC between about 1978 and 1983, and is found on the southern end of the NHN Mine Area. The mining and reclamation on this site were almost totally performed under the standards of the federal "Surface Mining and Reclamation Act of 1978," which resulted in the establishment of the federal Office of Surface Mining (OSM) and the corresponding Colorado Division of Minerals and Geology, now called the Division of Reclamation, Mining and Safety (DRMS). These regulations required that the topsoil be salvaged before mining, with the site being regraded to approximate original contour (AOC) following mining, the replacement of the salvaged topsoil and the planting of the site to a dryland pasture seed mixture. Grazingland-Reclamation occupies a

Grazingland-Sagebrush (GL-SB) is the next most common land use subcategory found on this site. This type occupies large tracts on the north and east portion of the original NH1 Mine site and covers extensive portions of the northern portion of this site, especially to the north of Meehan Draw and includes most of the western portions of the Glasier Property. While this type is dominated by native vegetation, principally Basin Big Sagebrush, it has been used extensively over the years as a winter feeding ground and grazing area and the native vegetation is in a relatively poor ecological condition class. This land use subcategory on the north side of Meehan Draw has extensive piles of old baling twine, indicating extensive and heavy feeding of wintering livestock on these sites.

Grazingland-Subirrigated (GL-SI) occupies large portions of the lowest sites associated with Meehan Draw and Glasier Draw, which crosses the northwest portion of the Glasier Property (outside the permit area). This type corresponds to the U.S. Army Corps of Engineers definition of wetlands in that these areas are dominated by vegetation adapted to growing in saturated soil conditions. This land use type is dominated by native vegetation and occurs primarily as a byproduct of the extensive amount of flood irrigation which occurs in this area. The tail waters from the irrigated fields up slope of this site flow down the depressional bottoms and result in large areas of wetland vegetation which have become established by sub-irrigation and flood irrigation of these low-lying areas.

Grazingland-Reclaimed Spoil (GL-RECS) occurs south and outside of the NHN permit area. This area is distinguished from the previously mentioned Grazingland-Reclamation (GL-REC) land use designation, by the fact that no topsoil was salvaged from this mine area and the area is almost totally dominated by regraded spoil. The vegetation which has become established is primarily a result of voluntary reclamation efforts performed by the previous mine owners and Abandoned Mine Land (AML) Reclamation efforts conducted by the DRMS. Vegetatively this site is largely dominated by shrubs, whereas the Grazingland-Reclamation (GL-REC) consists primarily of a grass dominated vegetation type.

Pastureland. This land use category is the second largest land use category found in the NHN. There are three different "Pastureland" land use subcategories on this site which include: Irrigated Pasture (PLI), Dryland Pasture (PLD) and Intensively Managed Irrigated Pasture (PL-IMIP).

Irrigated Pasture (PLI) occurs in the areas which have been within the past five years have been irrigated on a regular basis on this site. In this evaluation, areas which were determined to be up slope of the existing irrigation ditches, even although dominated by similar plant species were not considered to be irrigated pasture. Those areas which appear to have been irrigated decades ago that contain ditches, which have not been maintained and which have cement head gates that are now essentially mounts of eroded concrete, and which now largely consist of Prairie Dog colonies, were not considered to be irrigated. The existing extent of irrigated pasture on this tract was closely examined in the fall of the 2008 and throughout the summer of 2009 to identify those areas currently being irrigated as well as those which have within the past five years been irrigated.

Dryland Pasture (PLD) occurs in the areas, which within the past five years have been unirrigated on a regular basis on this site. In this evaluation, areas which were determined to be Dryland Pasture (PLD) were based upon a careful examination of the status of the vegetation growth and the operational condition of the irrigation ditches. Even although dominated by

similar plant species, these areas were not considered to be irrigated pasture. Similarly, those areas which appear to have been irrigated decades ago, and which contain ditches that have not been maintained and have cement head gates which are now essentially mounts of eroded concrete, were not considered to be irrigated. The existing extent of Dryland Pasture (PLD) on this tract was closely examined in the fall of the 2008 and throughout the summer of 2009 to identify those areas which are not currently being irrigated.

Intensively Managed Irrigated Pasture (PL-IMIP) is located on the western portion of the Garvey property and is differentiated from the regular Irrigated Pasture by the fact that this site receives significantly higher levels of management with respect to the irrigation waters being moved twice a day and that regular application of fertilization is normally practiced as a husbandry practice on these areas whereas the other Irrigated Pasture locations receive significantly less management.

Residential. This land use category ranks as the second smallest land use category found in the NHN Mine Area.. There are three different "Residential" land use subcategories on this site which include: Residential/Agricultural (RS), Roads (RD), and Road Disturbance (RD-DIS). A brief discussion of each of these "Residential" land use subcategories follows.

Residential/Agricultural (RS) land use subcategory occurs in connection with the existing residences and agricultural buildings and facilities on the Garvey and Elk Ridge-Meehan Property as well as the recently removed residences on the Glasier Property. In addition, we have included the "support facilities" associated with these residences in the form of the access roads as a part of this category. The existing trailer house and recently removed trailer house on the Glasier Property are also included in this figure since they have been removed within the past five years. The existing corrals and associated fenced enclosures as well as agricultural buildings on the Elk Ridge-Meehan Property and fenced stack yard on the Glasier Property are included in this land use subcategory. This land use subcategory occupies an area of approximately 3.47 acres and accounts for nearly 1.1 percent of the permit area.

Roads (RD) land use subcategory occurs in connection with the surface of three paved roads, Montrose County Road AA located on the south side, Montrose County Road 26.00 located on the west side and Montrose County Road 26.50 located on the east side of the NHN Mine Permit Boundary. In additional, included is the unpaved Montrose Road Z, located on the north side of the mine area. These roads are included within the "Residential" land use category because they are "support facilities" that occur in this area almost exclusively to support the local residences found in this immediate area. This land use subcategory occupies an area of approximately 8.21 acres and accounts for nearly 2.5 percent of the permit area.

Developed Water Resources (DWR). This land use category ranks as the smallest of the four DRMS land use categories found in the NHN Mine Area. Included in this land use category is the surface area of the Second Park Lateral Ditch and the livestock ponds found within the NHN Mine Area.

Land Capability and Productivity

Yields of crops and pasture for the undisturbed soil types mapped by the NRCS within the NHN Mine Permit Area are summarized in the NRCS soils survey described in response to Section 2.04.9. According to the existing NRCS soils mapping of the site, there are seven identified NRCS soils mapping units found on this site. These include soils mapping units, 10, 71, 77, 78, 81, 82 and 88 (see Map 2.04.9-1, New Horizon North Mine NRCS Soils Map). Crop and pasture yield data are presented in the soils survey for four of these soils mapping units, that being soils map units 10, 71, 81 and 82. The reported yields under high levels of management for five different crops and pasture types grown on these soil types are presented in Table 2.04.3-1, NRCS Land Capability & Yields per Acre of Crops and Pasture.

Forage production yields for the undisturbed soil types mapped by the NRCS within the NHN Mine Permit Area are summarized in the NRCS soil's survey described in response to Section 2.04.9. Crop and pasture yield data are presented in the soil's survey for six of these soils mapping units, that being soils map units 10, 71, 77, 78, 81 and 82. The reported yields under high levels of management for native vegetation on these soil types are presented in Table 2.04.3-2, NRCS Land Capability & Yields per Acre by Ecological Sites.

Table 2.04.3-1, NRCS Land Capability & Yields per Acre of Crops and Pasture

Soils Map Unit	Ecological Site	Grass Hay	Alfalfa Hay	Barley	Corn Silage	Oats
10	Aquolls	4.5 tons/ac*	-	-	-	-
71	Nyswonger	-	5.5 tons/ac	95 bus/ac	25 tons/ac	100 bus/ac
81 and 82	Progresso	4.5 tons/ac	5.5 tons/ac	100 bus/ac	20 tons/ac	80 bus/ac

*Grass Hay yields are for non-irrigated conditions, all other yields are for irrigated conditions.

Table 2.04.3-2, NRCS Land Capability & Yields Per Acre by Ecological Sites

Soils Map Unit	Soils Phase	Ecological Site	Forage Production (Dry Weight #/acre)		
			Kind of Precipitation Year		
			Unfavorable	Normal	Favorable
10	Aquolls	Salt Meadow	1,500	2,000	2,500
71	Nyswonger	Foothill Swale	2,000	2,500	3,000
77 and 78	Pinon	Pinyon - Juniper	100	300	500
77 and 78	Progresso	Semi Desert Loam	400	600	800

77 and 78	Ustic Torriorthents	Pinyon - Juniper	100	300	500
81and 82	Progresso	Semi Desert Loam	400	600	800

All of the lands within the NHN Mine Permit Area are subjected to grazing. According to discussions with Mr. Joe Garvey, the Garvey Brothers put 90 two-year-old heifers on their property on 20 November 2008 and removed them on 10 January. On 1 January 2009 they put 200 mother cows on their lands and they were removed on 10 February. On 10 February they put 90 head of yearly calves on their land and they stayed until 2 March 2009, when they were removed. Exact dates from previous years were not available with respect to the numbers and dates, cattle were brought onto their land, but Mr. Garvey reports that they have operated using a similar management practice ever since they obtained the property nearly twenty years ago.

On the Glasier and Elk Ridge-Meehan properties, Mr. Preston Carver reports that they typically move their cattle from Third Park to this site usually around the middle of December and leave them on this site until about the end of March. In the fall of 2008, they moved 28 cows, three horses and one crippled bull onto the property during the fourth week of November 2008 and they stayed on the property until the end of March 2009. He states that this stocking rate was similar to what they have done in past years.

With respect to fertilization, Mr. Joe Garvey reports that on 13 March 2009 they applied 250 pounds per acre of 18-46-0 fertilizer containing one half urea. He says that in most years they apply a similar level of fertilizer; however, in some years, as was the case in 2008, fertilizer was so expensive that they did not apply any supplemental fertilizer.

The Garvey's harvested hay off their property during the third week of June 2009. Mr. Stan Garvey reported that they harvested a total of 127 bales. A total of 45 bales came off the northern most parcel of their land north of the irrigation ditch, 66 bales off the parcel to the south of the irrigation ditch and a total of 16 bales came off the southern most piece of ground, immediately to the west of the brick house. They did not weight their bales, but Mr. Garvey estimates that the bales averaged 1,500 pounds of dry weight per bale.

The extent of the area harvested for hay on the Garvey property is shown on Map 2.04.3-1, New Horizon North Mine Land Use Map. Given the areas of these three tracts, the harvested hay yields equaled 5,931, 5,779 and 3,347 pounds or 2.97, 2.89 and 1.68 tons per acre of partially air dried material per acre on these three parcels respectively. This equates to an average yield of 5,339 pounds or 2.67 tons per acre. Mr. Garvey could not remember the number of bales harvested in previous years but believed that it was similar to these yields.

The normal cutting practice for harvesting hay on the Glasier, Elk Ridge-Meehan and Garvey properties is to harvest only one cutting of hay and leave the regrowth as forage for winter

grazing. Mr. Preston Carver, reports that since he has leased the Glasier and Elk Ridge-Meehan properties, he has never once harvested a second cutting of hay. With respect to Garvey property, both Mr. Joe Garvey and Mr. Stan Garvey report that they normally do not harvest a second cutting of hay and it is unusual for them to do so. However, in August 2009, an area of approximately 3.66 acres in the middle Garvey field was cut for hay. This cutting yielded five bales which translates into approximately 2,049 pounds or 1.02 tons per acre.

Mr. Preston Carver reports that in 2009 for the Glasier and Elk Ridge-Meehan properties, they harvested a total of 48 bales round bales of hay which averaged 1,200 pounds per bale. The extent of the area harvested for hay on the Glasier and Elk Ridge-Meehan property is shown on Map 2.04.3-1, New Horizon North Mine Land Use Map. Given the areas of these two tracts, the harvested hay yields equaled 1,534 and 2,793 pounds or 0.77 and 1.40 tons per acre of partially air dried material per acre on these two sites. Mr. Carver reported that in 2008, they harvested a total of 55 bales off these two parcels, but could not remember how many bales came off the separate parcels. He expressed the opinion that the harvested hay yields on both the Glasier and Elk Ridge-Meehan properties had been within a similar range since he first leased these properties in 1984.

Land Use Classification under Local Law

According to the Montrose County Zoning Resolution and accompanying maps found on the Montrose County website (http://www.montrose.co.us/Documentview.aspx?DID=614 and http://www.montrose.co.us/Documentview.aspx?DID=627) all of the lands within the NHN Mine Permit Area fall within the current definition of General Agricultural District "A."

According to Colorado taxation law and regulations, the taxation records of lands within Colorado, are to be taxed based upon the methods found in the ***Assessor's Reference Library***, which requires Montrose County to tax all lands based upon the examination of aerial photographs, and NRCS production guidelines where lands are classified based upon productivity and yield. Examination of the Montrose County Assessor's Tax records found at their website located at http://eagleweb.montrosecounty.net/eagleassessor/taxweb/account.jsp, reveals that Elk Ridge and Garvey parcels have been delineated into nine different land uses as shown in Table 2.04.3-3 New Horizon North Mine Area, Montrose County Assessor's Abstract Codes.

Table 2.04.3-3, New Horizon North Mine: Montrose County Assessor's Abstract Codes

Land Parcel	Land Taxation Abstract Codes (Acres)								
	5-III	5-IV	Dry-GR VII-A	Dry-GR VII-B	Dry-GR VII-D	GR/I.P. -VF	Waste	MDW -Hay VC	MDW-Hay VE

Elk Ridge	15	16	10	-	30	-	-	-	9
Garvey-W	15	22	-	-	-	25	18	-	-
Garvey-E	20	10	8	-	-	-	28	-	14
Total	**62**	**53**	**18**	**56**	**30**	**25**	**46**	**5**	**25**

According to the Montrose County Assessor's website, these nine land taxation codes have been defined as follows: 5-III, Irrigated Land - Agricultural; 5-IV, Irrigated Land - Agricultural; Dry-GR VII-A, Dryland Grazing Land - Agricultural; Dry-GR VII-B, Dry Grazing Land - Agricultural; Dry-GR VII-D, Dry Grazing Land - Agricultural; ; GR/I.P. - VF, Grazing Land - Irrigated Pasture; Waste, ; MDW-Hay VC, Meadow Hay Land - Agricultural; and, MDW-Hay VE, Meadow Hay Land - Agricultural. Discussions with Ms. Teri Warner, the Agricultural Appraiser in Montrose County Assessor's Office reveals the land codes are defined as follows:

Land codes 5-III and 5-IV means that these lands are located in the western end of Montrose County and correspond to irrigated lands and are essentially identical with the Meadow Hay classifications described later on. Yields of 5-III are given as 2.25 tons of hay per acre or 115 bushels of corn per acre and yields of 5-IV are given as 2.00 tons of hay per acre or 105 bushels of corn per acre. Livestock carrying capacities are not reported for these land codes.

Land codes Dry–GR VII-A, Dry-GR VII-B, and Dry-GR VII-D correspond to dryland grazing lands. The productivity of these lands is 20 acres, 50 acres and 70 acres per animal unit (AU), respectively. Land code GR/I.P.-VF corresponds to irrigated grazing lands with production levels of 0.75 tons of hay per acre when harvested or 1.88 Animal Units (AU) per acre when grazed.

Land codes' MDW-Hay VC and MDW-Hay VE correspond to irrigated Meadow Hay with yields of 2.00 tons and 5.00 Animal Unit Months (AUM's) and 1.75 tons per acre and 4.38 AUM's per acre, respectively. The Waste land code corresponds to the lowest production level available and is equal to 80 acres per AU.

Previously Mined Lands

Significant portions of the NHN Mine Permit Area have been disturbed by previous coal mining activities. For example, the extent of the previous mining area, corresponding to the southernmost 65.55 acres and most of the 4.42 acres within the equipment corridor shown on Map 2.04.3-1, New Horizon North Mine Land Use Map, have been disturbed by prior mining activities. New Horizon does not have any old PCC or Edna Coal Company maps in their files documenting when the previous mining activities on these lands were conducted. The Edna Coal Company opened the Navajo Mine in 1958 on lands located on the north side of Tuttle Draw, to the south of County Road AA and to the west of County Road 27.00. It is not known where the original workings of the Navajo Mine were located; however, examination of an NRCS 1973

aerial photograph shows that the mine workings in this area commenced near the crop line of the north fork of Tuttle Draw and extended in a southwest to northeast direction and moved from the east toward the west. This photograph shows that all of the lands associated with the southern portion of the permit boundary area have been disturbed by mining prior to 1973.

Lands with the boundaries of the old NH1 Mine, now corresponds to the previously mined portion of the NHN Mine Permit Area to the north of County Road AA, show no mining disturbance in this 1973 aerial photograph. However, examination of the NH1 Mine Permit maps reveals that based upon the "Premining Vegetation Types" map of the NH1 mine, and the Archeological Map based upon aerial mapping taken on 21 February 1980, there was one excavated mine pit located in the extreme southeast corner of the site and additional surface disturbance up to and including the realigned County Road AA which extended west of the existing County Z50 Road. According to another aerial photograph in the PCC Nucla Mine Permit based flown on 19 April 1986, the entire NH1 Mine area had been disturbed by mining with the active highwall being located just to the north of the middle of the existing reclamation tract. Another aerial photograph taken in 1989, shows that the western mine pit of the NH1 Mine was largely backfilled and that mining on the eastern pit was nearing the extent of where the current highwall subsidence highwall crack in the area where the NH1 reclamation is located. Examination of a 1993 aerial photograph taken by New Horizon, shows that the entire NH1 Mine had been completely backfilled to grade, topsoiled and that there was just a small amount of grading work near the existing drainage channel near the center of NH1 Mine area. Discussions with Mr. Ross Gubka, Chief Engineer, who started working at the New Horizon Mine in 1992, confirms that New Horizon had to do a small amount of regrading shortly after he arrived to establish positive flow across all of the old PCC reclamation at the NH1 Mine. All reclamation efforts at this site appear to have been completed in 1993.

Examination of these aerial photographs clearly establishes the previous mined areas were mined using a small dragline. Further discussions with Mr. Joe Garvey, reveals that the majority of the mining at the NH1 site was mined using scrapers and dozers. All of this mining was conducted to extract coal from the lower Dakota coal seam. The extent of coal which was removed is shown on Map 2.04.3-1, New Horizon North Mine Land Use Map as those areas corresponding to the areas shown as GL-REC, which pertains to those lands mined and reclaimed at the NH1 mine and as 7.09 acres of GL-RECS, which pertains to those areas of regraded spoil and in some areas a minor amount of subsoil was applied. Prior to the mining of the areas in the NH1 Mine and for those areas mined in the equipment corridor, the land use prior to mining was grazingland, dryland pasture and with minor amounts of irrigated pasture.

The existing land uses as they correlate to vegetation types on adjacent areas are shown on Map-2.04.10-2, New Horizon North Mine Adjacent Area Vegetation Map. The vegetation types and land uses on the areas adjacent to the NHN Mine site are very similar to those found within the

NHN Mine permit area. The existing wildlife habitat types are also shown on this map and also on Map 2.04.11-1, New Horizon North Mine Wildlife Map. Since none of the areas outside of the mine permit boundary will be affected or impacted by the mining activities, there is no need to show additional environmental resources of this area.

A detailed description of all of the land uses in the areas adjacent to the NHN Mine are found on Map 2.04.3-1, New Horizon North Mine Land Use Map which covers all of the adjacent areas located within approximately one half mile of the NHN Mine Permit Area. A tabular summary of land uses within the NHN Mine Permit Area and within the adjacent areas are also found on this map. Examination of these numbers reveals that existing land uses within the NHN Mine Permit Area and those on the adjacent areas are similar. As are discussed previously in this narrative, consultation with the Montrose County Planning Department and Assessor's office resulted in our being informed that they had no mapping showing local land use designations in this area. Therefore, no comparisons can be made with our land use information and that used by Montrose County.

SECTION 2.04.9
SOILS RESOURCE INFORMATION
TABLE OF CONTENTS

LIST OF TABLES

LIST OF MAPS

LIST OF APPENDICES

Range in Characteristics

These soils are extremely variable in characteristics. The depth to shale ranges from 10 to 60 inches or more. The particle-size control section is 15 to 35 percent rock fragments, and the clay content is 27 to 60 percent.

A horizon: The hue is 7.5YR, 2.5YR, 2.5Y, 10YR. The texture is bouldery clay loam, stony loam, bouldery sandy loam, very gravelly clay loam, or clay loam.

C horizon: The hue is 2.5YR, 2.5Y, 5Y, 5YR. The texture is cobbly clay loam, silty clay loam, clay or clay loam.

NRCS SOILS SURVEY PHYSICAL AND CHEMICAL PROPERTIES

The typical ranges of the physical properties of these seven soils mapping units as found in the NRCS ***Soils Survey*** are found in Table 2.04.9-4, NRCS Physical Properties of the Soils. The typical ranges of the chemical properties of these seven soils mapping units as found in the NRCS ***Soils Survey*** are found in Table 2.04.9-5, NRCS Chemical Properties of the Soils.

NEW HORIZON 2008 SOILS SURVEY

In November of 2008, a total of 183 backhoe pits were dug in a systematic pattern as shown on Map 2.04.9-2, New Horizon North Mine-Soils Map. At each of these soils pits, the backhoe dug down to the depth of bedrock, or just below this layer and a formal soil pedon description was taken at each test pit. The form used to record the soil pedon information at each soil test pit is the United States Forest Service ***SOILS FIELD FORM FOR PEDON DESCRIPTION***. This form was used in lieu of the NRCS form, because it allows for coarse fragments to be broken down into four different size categories instead of the one category found on the NRCS form. At each soil test pit the depth of each diagnostic soil horizon was measured, the dry and moist color recorded, the presence of soils pores, root categories, field texture determined, soil structure determined by the feel method, soil consistence in terms of dry, moist, wet and plasticity determined, the presence of clay films determined, the coarse fragments recorded in terms of fine gravels, coarse gravels, cobbles and stones. Notations were also made on the boundary conditions of each soil horizon. Copies of these 183 backhoe soils pedon descriptions are found in Appendix 2.04.9-1, Soils Pedon Descriptions. Each soils test pit was then photographed, duplicate samples were collected in one gallon plastic bags for laboratory analysis, the exposed soil horizons photographed and then backfilled. As directed by the DRMS, copies of the photographs of most of the soils backhoe test pit are found in Appendix 2.04.9-2. Soils Test Pit Photographs. Due to a computer mistake, the photographs of the soils test pits from the Garvey Property were accidentally deleted from the computer after they were downloaded from the digital camera and were lost. One of the major purposes for this soils testing program was to identify the depth of salvage topsoil at each soils test pit location.

As directed by the DRMS in consultation meetings in Grand Junction, the physical and chemical properties of each soil type were subject to the topsoil suitability criteria recommended by the DRMS, that being the Wyoming Department of Environmental Quality Topsoil Suitability Guideline. With respect to coarse fragment content, which was found to be the most limiting criteria for these soils the DRMS directed that for one lift topsoil salvage operations, such as are proposed herein, coarse fragment content could not exceed 20 percent. The locations of all soils test pits were delineated using a Trimble Model Geo XH Global Positioning System, which typically as a real time accuracy of less than on meter and inserted into the detailed two foot contour interval map generated for this project.

In addition to the formal soil backhoe test pits, a total of 174 soil pits, were dug with a shovel in connection with the formal wetland delineation which was conducted on this site to satisfy the wetland delineation requirements of the U.S. Army Corps of Engineers (COE). The locations of these wetland soil test pits are shown on Map 2.04.9-2, New Horizon North Mine-Soils. According to the requirements of the COE, as found in the 1987 ***Corps of Engineers Wetlands Delineation Manual*** and the recent supplement entitled ***Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region*** issued in 2005, at each wetland sample plot a soil pit typically, 18 to 20 inches in depth was dug and various soils parameters recorded. Typically at a depth immediately below the bottom of the A horizon or at a depth of 10 inches the soils were analyzed for field texture, matrix color, the presence of redox features, the presence of hydric soils indicators as well as the type and depth of restrictive layer if determined at each wetland sample plot locations. This information was recorded on the ***WETLAND DETERMINATION FORM - Arid West Region*** form issued by the COE and is included in the 404 Permit application submitted to the COE. In this soils investigation a total of 35 of the wetland sample plots resulted in a measured depth of the restrictive layer or the depth of potentially salvageable topsoil. This pertinent information is presented on Map 2.04.9-2, New Horizon North Mine-Soils Map.

Due to the level of intensity used in the NHN soil survey effort, it was possible to further refine the NRCS mapping shown on Map 2.04.9-1, New Horizon North Mine-NRCS Soils Map. The refinements made to the NRCS soils mapping are found on Map 2.04.9-2, New Horizon North Mine-Soils Map. These changes included the modification of the NRCS soils mapping unit 10, Aquolls, 0 to 3 percent slopes. A careful analysis of the original NRCS mapping reveals several areas along the north side of Meehan Draw where this mapping unit was mapped as being present on areas containing upwards of 60 percent slopes. This error is probably due to the fact that the NRCS field personnel did not have the benefit of having detailed two foot contour interval topographic mapping when they mapped the soil boundaries on these areas. Another error in the NRCS soils mapping had to do with their delineation of soils mapping unit 71, Nyswonger silty clay loam, 1 to 4 percent slopes being presence on this site. This soils mapping

materials in the B horizon of the Pinon soils, at depths of greater than 6 inches, the Progresso soils at depths of greater than 24 inches, and the Orthents soils at depths of greater than one inch were classified as being classified as being of "poor" quality. Increased coarse fragment content was always found in association with increased calcium carbonate equivalent.

The single most limiting parameter of these soils materials was determined to be their coarse fragment content. According to directions provided by the DRMS, coarse fragment contents in excess of 20 percent are "unsuitable" for use as a single lift material, during the topsoiling removal and respreading. According to the data presented in Table 2.04.9-6, Chemical and Physical Properties of NHN Mine Soils, the Progresso soils often have coarse fragment contents in excess of 20 percent. According to the NRCS ***Soils Survey Manual,*** a sample of nearly 300 pounds is typically needed for accurate sieve analysis of coarse fragment content. Logistically, it is impossible to collect such samples, therefore the coarse fragment contents reported in the soils pedon descriptions found in Appendix 2.04.9-1, Soils Pedon Descriptions are the most useful information available.

PRESENT AND POTENTIAL PRODUCTIVITY OF THE SOILS

The present and potential productivity of these soils as reported by the NRCS in the ***Soil Survey of San Miguel Area, Colorado - Parts of Dolores, Montrose and San Miguel Counties*** is found in permit section 2.04.3, Site Description and Land Use Information. The results of the vegetation monitoring completed in connection with this permitting effort are presented in permit Section 2.04.10, Vegetation Information.

List of Tables

Tables for Section 2.04.10 are located in Appendix 2.04.10

List of Maps

List of Appendices

A detailed delineation of the vegetation types found within the NHN Permit Area is shown on Map 2.04.10-1, Permit Area Vegetation Map. This map shows the extent of all vegetation types to be affected by the mine facilities area, as well as the location of each vegetation transect location used to evaluate plant cover, herbaceous production as well as shrub density. The vegetation boundaries of all lands located within one-half mile of the NHN Mine permit area are shown on Map 2.04.10-1.

Prior to commencing the field sampling efforts and during the preparation of this baseline vegetation monitoring report, the vegetation sampling requirements found in Rule 4.15.11 of the DRMS regulations were carefully reviewed and discussed with DRMS regarding the sampling methods and data analysis methods to be used. Agreement on the sampling methodology used in this evaluation as well as a proper understanding of the recently enacted regulatory amendments was obtained from the DRMS prior to initiating field sampling. In this evaluation, the vegetation parameters of production, plant cover, species diversity and shrub density were sampled. It is anticipated that these vegetation sampling efforts will be ultimately useful in revegetation success evaluations with respect to plant cover, herbaceous forage production, species diversity, and shrub density.

Transect Locations

To ensure that all of the areas within each corresponding pre-disturbance vegetation area or reference area being evaluated had an equal chance of being sampled, each vegetation type, consisting often of multiple polygons, was treated as a single sample unit and a totally randomized sampling effort was implemented. Utilizing the vegetation maps, the extreme north, south, east and west boundaries of each vegetation site sampled were converted to the 1983 Colorado State Plane South Zone (NAD 83) coordinate system. Given the typical real-time accuracy of GPS, of plus or minus one meter, all of the vegetation boundaries and sample transect locations were field located at a sub-meter accuracy.

Once the boundaries of the vegetation disturbance areas or reference area were identified, then using a specially prepared computer program which generates random coordinates, the potential transect location coordinates were identified. These coordinates were then entered into the GPS unit and the transect location starting points were identified in the field. At each transect location starting point, the transect direction was determined by selecting a random direction based on the degrees of the compass (0 to 360^{O}). Once the transect orientation was determined, then the 50-meter tape was laid out across the site. All transects were kept within the sample unit boundaries. In situations where the transect placement resulted in the transect alignment crossing a sample unit boundary, the transect line was backed up for that portion of which crossed the boundary

Reclamation; Big Sagebrush; Irrigated Pasture; Dryland Pasture; Intensively Managed Irrigated Pasture; and Wetlands. The "minor communities," which do not need any vegetation sampling include: Roads; Disturbed Road Right of Way; Reclaimed Spoil; Residential / Agricultural Disturbance; Livestock Ponds; Irrigation Ditch and Drainage Channels.

With respect to the need for quantitative vegetation surveys on the previously mined lands within the equipment corridor, NHN was informed by DRMS, that a qualitative description of the vegetation resources in this area will be sufficient as long as the equipment corridor area does not excess five acres.

A detailed vegetation map of all of the lands located with one half mile of the NHN permit area is presented on Map 2.04.10-1.

Field Sampling Dates

The entire field data collected in this vegetation sampling effort was collected between October 2008 and September 2009. At the time of the field sampling, all of the plants were actively growing and it is believed that the sampling was performed close to the period of optimum plant growth, when the plant cover and production were near their peak.

A total of 129 plant species were identified in the 158 cover and the 105 shrub density transects sampled in this evaluation. A list of all of the plant species encountered in the field sampling efforts in this evaluation are presented in Table 2.04.10- 1.

Vegetation Mapping

All of the different vegetation types within the NHN permit area were initially delineated by using either a Trimble Model Pro XRS or a Trimble Model Geo XH global positioning system. These units have a real time accuracy of plus or minus one meter and once the data are post processed typically have an accuracy of less than one decimeter. Walking in the field, the boundaries of each vegetation type were delineated by walking either a line or an area feature wherein the boundary of each vegetation type was delineated. For those areas dominated by wetland vegetation and which are potential jurisdictional wetlands covered by the U.S. Army Corps of Engineers (Corps) jurisdiction, these areas were delineated using the wetland delineations standards used by the Corps. The wetland areas were formally delineated using approximately 14,000 plastic wire pin flags. As required by the Corps, these wetland boundary stakes were then surveyed in using the GPS units described above.

PRIME FARMLAND INVESTIGATION

The soils mapping performed by the Natural Resources Conservation Service (NRCS) within the boundaries of the New Horizon North Mine (NHN) permit are found on Map 2.04.9-1. The map provides a total of seven different NRCS soils mapping units occurring within the NHN permit area. One of these soils mapping units; 71, Nyswonger silty clay loam, is designated by the NRCS as prime farmland if irrigated. Please refer to Map 2.04.9-1 for the location of the area investigated as prime farmland.

As provided in Appendix 2.04.12-1 the NRCS has determined that this area is not prime farmland as the area was not historically managed as cropland, lacked sufficient water for proper irrigation, species present are native rangeland species, and the current landowner has also verbally confirmed this determination.

TABLE OF CONTENTS
SECTION 2.05.3
OPERATION PLAN

LIST OF MAPS

OPERATION PLAN

Introduction

This section describes the historical mining activities that were used at the New Horizon North (NHN) Mine from 2013-2017. NHN is now in the final stages of reclamation.

2.05.3(1) Production Methods and Equipment

NHN employed surface coal mining with a truck-shovel fleet when it was operational.

2.05.3(2) Detailed Operation Description

The primary coal seam that was recovered was the Lower Dakota seam; however, the Upper Dakota seam was also recovered if it was thick enough and of sufficient quality. Mining cuts were generally east-west orientation and progress northward.

NHN excavation was performed by dozers, loaders, trucks, and a shovel. The sequence was to first remove topsoil with dozers, a shovel, and loaders loading trucks which took the material to designated stockpiles or to regraded area behind the pit for reclamation. Soft upper overburden was removed by a shovel or loader and trucks and taken to a designated stockpile or to the pit for backfilling. If the material was taken to the pit for backfilling, dozers regrade the spoil overburden to approved post mining topography. The lower overburden was usually cast blasted where approximately 25% of the overburden was casted into its final position in the backfill. The remaining shot overburden was then either pushed with dozers into its final position in the backfill or loaded with a shovel or loader and taken to a designated stockpile or placed behind the pit for backfilling. The exposed coal was loaded either from the pit or stockpiles into over-the-road haul trucks which took the coal to the nearby Nucla Station power plant operated by Tri-State Generation and Transmission (Tri-State). A cross section of the typical pit is shown on Map 2.05.3-1.

Mining occurred south of Meehan Draw, and a cut mining method was used to develop the pits. The cuts varied in length and width according to conditions encountered. Cut lengths approached 2,200 feet and the cut widths varied from 100 to 120 feet. A bottom pit width of 120 feet was the maximum that will be used. The exposed coal portion of the bottom of the pit was also generally 120 feet wide. Since this operation used the graded spoil as a base for the overburden truck traffic, no ungraded spoils remained behind the pit.

Mining generally progressed south to north with the long axis of the pits generally east to west. The overburden was placed or pushed into an adjacent or nearby mined out pit cut except for the initial cut where topsoil and overburden was placed adjacent to the pit onto land designated as an overburden stockpile. This stockpiles was located in southern portion of the permit area. This topsoil and overburden used to reclaim the last cut, but was also used to backfill when the mine ceased operation. During overburden removal operations, some selective handling of material may

was performed based on chemical and physical core data contained in Section 2.04.6, and discussions presented in Section 2.05.4(2)(d).

After the upper coal seam was removed, the parting material composed of alternating layers of sandstone, shale or clay was be removed. Partings and interburden material ranged in thickness from a few tenths of a foot to approximately 12 feet. The thinner partings were removed by loader or dozer and hauled or pushed into an adjacent mined out pit. The thicker partings and interburden were dozed into a mined out pit or excavated by the shovel and trucks and hauled to a mined out pit. After the overburden or parting was removed above each individual coal seam, a dozer, loader or motor grader cleaned off any overburden or parting material remaining on top of the coal. Dozers were used to rip or break up the coal as necessary prior to loading. Once a truck was loaded, the coal was transported off permit approximately eight miles to the power station.

The Colorado Cooperative Company's Ditch (Second Park Lateral) was temporarily diverted into a large HPDE pipeline to facilitate mining the area of the permit where the current ditch cross the permit area. Once mining and reclamation activities were complete the Second Park Lateral was reconstructed in an HDPE pipeline in the same location as the pre-mine ditch.

2.05.3(3) Mine Facilities
Please see a separate section devoted for 2.05.3(3) Mine Facilities.

2.05.3(4) Ponds, Impoundments, Other Treatment Facilities and Diversions
Please see a separate section devoted for 2.05.3(4) Ponds, Impoundments, Other Treatment Facilities and Diversions.

2.05.3(5) Topsoil
Please see Section 2.05.4(2)(d) Overburden and Topsoil Handling for a discussion of Topsoil as required by 2.05.3(5).

2.05.3(6) Overburden
Please see Section 2.05.4(2)(c) Backfilling and Grading for a discussion of overburden as required by 2.05.3(6).

2.05.3(7) Coal Handling Structures
No coal crushing or processing occurred at NHN.

2.05.3(8) Coal Mine Waste and Non-Coal Processing Wastes
There were not any coal processing facilities at the NHN permit area.

TABLE OF CONTENTS
SECTION 2.05.3(3)
MINE FACILITIES

LIST OF MAPS

LIST OF APPENDICES

MINE FACILITIES

Introduction

This section contains a description of the structures current used at the New Horizon North Mine (NHN) to facilitate final reclamation activities.

Support Facilities

Buildings

There are no longer any buildings located at the NHN Mine Facilities area. Map 2.05.3(3)-1 Facilities Map shows the location of the remaining structures.

Domestic Water:

A well has been installed at the NHN Mine as shown on Map 2.05.3(3)-1. The surface landowner (Garvey & Co.) has requested the well be retained as a permanent structure. A copy of this request has been included in Appendix 2.05.5-1.

Support Facilities and Utility Installations

The surface landowner (Garvey & Co.) has requested the power poles with lights located within the Facilities Area be retained as permanent structures. A copy of this request has been included in Appendix 2.05.5-1.

Surface and Subsurface Man-Made Features

Map 2.05.3(3)-2 shows surface and subsurface man-made features within, passing through, or passing over the permit area. Topsoil and overburden stockpiles information is provided in Section 2.05.4. The 2nd Park Lateral Irrigation Pipeline location is shown on Map 2.04.7-9.

Culverts

Appendix 2.5.3(3)-1 includes culvert designs for culverts C-1 and C-13. The location of C-1 and C-13 are shown on Map 2.05.3(4)-7.

Transportation Facilities

Haul Roads

No haul roads exist at NHN.

NHN requested Montrose County for a waiver to disturb within 100 feet of the County right-of-way. Montrose County has given such a waiver limiting the disturbance to within 25 feet of rights-of-way as a part of the Special Use Permit.

Access Roads

No access roads exist at NHN.

Light-Use Roads

Several light-use roads exist at NHN. These roads were established directly adjacent to reclamation areas and were areas that were disturbed when active mining was occurring at NHN. They are used to maintain access to the primary sediment control structures, and support access to the irrigated pasture reclamation areas to conduct farming activities. These light-use roads will be completely reclaimed and revegetated when the primary sediment control structures are reclaimed. The light-use roads will be used by pick-ups, light-duty service trucks, and farming equipment.

County Roads

Reclamation activities will be conducted within 100 feet of the outside right-of-way of current public roads.

TABLE OF CONTENTS
SECTION 2.05.4
RECLAMATION PLAN

LIST OF TABLES

Reclamation Plan

Introduction

This section describes the reclamation plan for the New Horizon North (NHN) Mine.

Section 2.05.4(2)(a) Reclamation Time Table

Table 2.05.4(2)(a)-1 presents the remaining reclamation time table. Historical details of this backfilling and grading are provided in Section 2.05.4(2)(c), topsoiling is described in Section 2.05.4(2)(d), and revegetated is discussed in Section 2.05.4(2)(e).

Section 2.05.4(2)(b) Performance Bond for Mine Reclamation

Please see Section 3.02.2 for the current bond liability.

Section 2.05.4(2)(c) Backfilling and Grading

Please see a separate section devoted to this topic.

Section 2.05.4(2)(d) Topsoil Redistribution

Please see a separate section devoted to this topic

Section 2.05.4(2)(e) Revegetation

Please see a separate section devoted to this topic

Section 2.05.4(2)(f) Disposal of Debris and Materials Constituting Fire Hazards

Please see a separate section devoted to this topic

Section 2.05.4(2)(f) Air Pollution Control and Water Discharge Permits

A copy of the most recently approved air pollution control permit is included in Appendix 2.05.6(1)-1. A copy of the water discharge permit is on file at the New Horizon Mine office and available for review at the Division's request.

Table 2.05.4(2)(a)-1
Reclamation Time Table

Activity	Year
Reclaim Sediment Ponds and Conveyance Ditches	2022 - 2024

Table of Contents
Section 2.05.4(2)(C)
Backfill and Grading

Backfilling and Grading

This section addresses the requirements of Rules 2.05.3(6), 2.05.4(2)(c) and 4.14.

Backfilling Methods

Mining and backfilling operations at the New Horizon North (NHN) Mine were performed concurrently. A combination of cast blasting and shovel loaded trucks removed the overburden and parting materials then hauled the material to a previously mined area to be backfilled. Refer to Map 2.05.3-1 Typical Cross-Section of Mining and Reclamation for an illustration of the backfilling methods utilized at NHN. Along the crop line in the NHN Mine area, some box cut overburden material was initially temporarily stockpiled outside of the area mined. This box cut material was stockpiled in the south of the permit area and has been fully used to backfill all mined areas. Map 2.05.4-1 provides the post mine topography for the disturbance area. Backfilled material was placed to minimize effects on post-mining vegetation and ground water, minimize off-site impacts and is supports the approved post-mining land use.

General Grading Requirements

Dozers were utilized for grading of overburden, Bench 1 and topsoil at NHN as illustrated on Map 2.05.3-1 Typical Cross-Section of Mining and Reclamation.

Disposal of Excess Spoil

No excess spoil material exists at NHN.

Post-Mining Topography

Map 2.05.4-1 provides the post-mining topography which is similar to the existing topography. Cross-section locations and typical cross-sections through the mining areas are also shown on this map. These cross sections show original and postmining ground elevations.

Slides and Other Damage

NHN does not anticipate any problems with slides during reclamation activities.

Postmining Drainage Channels

No postmining drainage channels will be constructed at NHN.

TABLE OF CONTENTS
SECTION 2.05.4(2)(d)
OVERBURDEN AND TOPSOIL HANDLING PLAN

List of Tables

Overburden and Topsoil Handling Plan

Introduction

This section outlines New Horizon North Mine's (NHN) plan for removal, storage and redistribution of topsoil and overburden to meet the requirement of Section 2.05.3(5), 2.05.4(2)(d) and 4.06 for the NHN permit application. The plan addresses those reclamation activities that are conducted during and immediately after backfilling and grading but prior to revegetation. The objectives of the plan are to reconstruct plant growth and aquifer mediums that are consistent with the postmining land uses. The plan also describes the procedural aspects of removal, storage and distribution of topsoil and weathered overburden (Bench 1) and testing of Bench 1.

Overburden and Bench 1 Handling Plan

The description of overburden and interburden characteristics and acid and toxic forming materials for NHN Mine are presented in Section 2.04.6. Weathered overburden, also called Bench 1 or free dig material (herein will be referred to as Bench 1), was mined separately from the other unweathered overburden materials (herein will be referred to as overburden). The Bench 1 material was typically comprised of unconsolidated material and was mined in a single bench. It was then hauled and placed on top of the backfilled overburden. All of the Bench 1 was placed immediately below the topsoil in all areas. Bench 1 in its natural state, typical varied from about 20 to 30 feet in thickness within the permit area (see Maps 2.04.6-4 and 2.04.6-5), but was thinner under small drainages where it had been eroded.

During the reclamation process, Bench 1 was used to cap all overburden and the carbonaceous remnants of mining the upper and lower Dakota coal seams. The cap of Bench 1 reduces the potential of leachates and runoff from entering the ground water system or discharging into the surface water system.

Prior to topsoil replacement, Bench 1 was scarified by deep ripping on the contour at least 24 inches on 24 inch centers to reduce excessive compaction, prevent potential slippage zones, reduce erosion, and improve water and air movement and root growth across the Bench 1/overburden interface.

Overburden Spoil Compactibility and Erodibility

Determining the compaction potential of the overburden backfill material was important to assess postmining conditions including: hydraulic conductivity, revegetation success, landscape stability and equipment traffic. Unsuitable clay textures were identified in two thin clay beds located in the uppermost overburden in the NHN permit area (see Section 2.04.6, Stratigraphy, Cross Sections A-A', Map 2.04.6-4). These clay beds occurred about 60 to 65 feet above the top of the lower Dakota seam and only existed in the southern part of the mineable area where the overburden (above the lower Dakota seam) was at least 60 to 90 ft. thick. Map 2.04.6-3, the lower Dakota

Overburden Thickness Map, shows the area that had sufficient overburden to contain the clay beds. These clay beds were mined in the area where the overburden was the thickest. When these two clay lenses were being excavated during mining, they were thoroughly mixed with coarser textured overburden materials. The mixing and dilution process was accomplished in the backfill by: 1) the overburden shovel was digging a full face through the clay beds, and 2) the haul trucks with the diluted clay beds which were mixed and diluted during mining dumped their load along a dump face which resulted in significant additional mixing and diluting of the clayey materials. After this process, the concentration of the high clay material was minimal and compactability of the regraded overburden was negligible. Where the clay beds were below the overburden zone they were handled as less suitable material along with the rest of the overburden and were buried in the backfill prior to placement of Bench 1.

Bench 1 Monitoring Program

To document the suitability of the Bench 1 as potential rooting material, a Bench 1 sampling and analysis program will be implemented. A life of mine sampling grid has been established on 500 foot centers and each sampling location on the grid corresponds to a letter/number combination. Using this grid interval, each sampling location represents an area of about 5.7 acres in size. A minimum of four feet of Bench 1 will be sampled prior to topsoil replacement with a hydraulic soil sampler, a bucket auger, or other suitable equipment. Two representative samples, each representing a two-foot depth increment will be collected. The vertical sampling increments will be 0.0 to 2.0 feet and 2.0 to 4.0 feet. Bench 1 suitability parameters are presented on Table 2.05.4(2)(d)-1 and the results will be presented annually in the Annual Reclamation Report.

Table 2.05.4(2)(d)-1 Criteria for Evaluating Bench 1 Suitability

PARAMETER	SUITABLITY
pH	Between 6.1 and 8.5
Neutralization Potential Ratio (NPR)	≥ 2
Course Fragment Content (%)	≤ 20
Sodium Absorption Ratio (SAR)	≤ 15
Electrical Conductivity (mmhos/cm)	≤ 6
Carbonate (%)	≤ 20
Selenium (ppm) [1]	≤ 1
Texture	All soil textures except: s, ls, sc, sic, c

[1]This value for selenium was chosen based on guidance from Dave Dearstyne of NRCS and recent data that other states are using. Mr. Dearstyne is currently working extensively (2008) with the Selenium Task Force on the western slope and is very knowledgeable about this issue. Mr. Dearstyne noted that there is no concern for selenium unless Mancos shale strata are being placed near the surface. At the NHN Mine, no Mancos shale has been encountered in the overburden. Also, all tests of water soluble selenium in the pre-mine soil survey of NHN Mine show all values less than 0.1 ppm. Mr. Dearstyne believes a threshold suitability level of 0.2 ppm in the topsoil material and 1.0 ppm in the subsoil material is adequate. These are the levels proposed.

Unsuitable Bench 1 Backfill Mitigation Plan

If the results of the sampling indicate that one or more of the unsuitable levels are reached, the Division will be contacted. Also at that juncture, NHN will resample the area to determine the

extent of the unsuitable Bench 1. If the problem area is greater than one acre in size it will be necessary to remove or cap the area. If only the lower sample Bench 1 failed, then only two feet of Bench 1 will be added to the area and resampled. If both samples (0-2' & 2'-4') failed where the postmining land use is Dryland Pasture, any area over one acre will be capped with four feet of suitable material. For areas that have a postmining land use of Irrigated Pasture/Cropland the problem area will be excavated to a depth of four feet, and four feet of suitable Bench 1 will be placed within the excavated area.

Topsoil Management Plan

The NHN Mine topsoil management plan is based upon the detailed topsoil survey contained in Section 2.04.9 and has been developed to ensure the most suitable topsoil materials within the disturbance area are salvaged. The topsoil management plan evaluates the topsoil resources and describes salvage depths and techniques, storage, redistribution and maintenance or testing procedures necessary to restore the disturbed areas to the desired postmining land use.

Evaluation of Topsoil Resources

The topsoil resources found in the NHN Mine permit area are shown on Map 2.04.9-3: Topsoil Salvage Map and are typical of topsoil found in the semi-arid Colorado Plateau Physiographic Province, Canyon Land Section. A total of eleven different topsoil mapping units were delineated in the survey performed on the NHN Mine Area. Five of these topsoil mapping units lack salvageable topsoil and include livestock ponds, roads, drainage channel, soils mapping unit 78UT (5 to 30 percent slopes), and soils mapping unit RO (40 to 90 percent slopes). These areas lack salvageable topsoil either because the topsoil has already been removed or they contain coarse fragment contents which are too high for use as a plant growth medium. The area of these five topsoil mapping units which lack salvageable topsoil is 5.39 acres.

The average stripping thickness for the combined horizons is depicted in the table found on Map 2.04.9-3: Topsoil Salvage Map. The table on this map shows the average areas and volumes obtained from each soil mapping unit sampled. See Map 2.05.4(2)(d)-2: Topsoil and Overburden Stockpile Locations for locations of the Progresso and mixed topsoil piles. The volumes of each stockpile are included in the Annual Reclamation Report and will be updated on an annual basis.

As shown on Map 2.04.9-3: Topsoil Salvage Map, there are a total of six topsoil mapping units containing salvageable topsoil. These include topsoil mapping unit 81 PRO, unit 77PIN, unit REC, unit 82 PRO, unit 78PIN, and unit Aquolls.

Topsoil Salvage Depths

All topsoil has been salvaged at New Horizon North Mine.

Topsoil Stripping

Before any area at the NHN Mine site other than a topsoil stockpile, light use access road, shallow drainage ditches, power line corridors and other small area exemption areas are disturbed, the suitable topsoil material was be removed. Suitable topsoil was salvaged from all significant disturbance areas including sediment ponds (includes pond area, embankment and spillway), mining activities, spoil stockpiles, haul roads, access roads, mining areas, facilities area and diversion ditches, which extended below the depth of salvageable topsoil. Prior to topsoil removal, vegetation which was too large for incorporation into the topsoil was scraped away, placed in the pit, or utilized on Dryland Pasture reclamation areas as habitat. The remaining vegetation was incorporated into the topsoil to help increase organic matter levels.

Since the topsoil map is an estimation based on field data and the salvage depths vary according to the actual topsoil depths observed during topsoil stripping, all topsoil was salvaged to maximize postmining vegetation production. Structural damage can occur to topsoil if they are salvaged while saturated. Therefore, topsoil salvage equipment was generally limited to the drier areas. Wet areas were dewatered and allowed to dry prior to salvage.

During the preparation of the initial boxcut area, the existing topsoil materials were salvaged in a single lift and hauled to a designated topsoil. During the normal mining sequence as operations advance and there is sufficient graded area behind the pit for reclamation, topsoil was removed and direct hauled from the advanced stripping areas to the graded areas behind the pit.

On the Garvey property, the Irrigated Pasture/Cropland (IPC) areas corresponding to the more productive Progresso topsoil and REC topsoil were salvaged separately and stockpiled separately.

With respect to the ERMR-Meehan property south of Meehan Draw, all of the topsoil materials which are largely Progresso with inclusions of Pinon topsoil were salvaged and stockpiled together.

Topsoil Storage

Stockpiled topsoil was selectively placed on a stable surface area within the permit area and are protected from wind and water erosion. The protection measures will be accomplished by an effective cover of non-noxious, quick growing annual and perennial vegetation. A self-contained ditch or berm will be constructed around the perimeter of the stockpile to prevent loss of the topsoil resource. As soon as practical after topsoil is no longer being moved to or from a stockpile, NHN will seed the pile with Seedmix #3 as presented in Section 2.05.4(2)(e): Revegetation. A topsoil sign will be placed at the toe of the pile as required by rule.

Topsoil Replacement

Topsoil has been replaced on disturbance areas except the primary sediment control structures. Final reclamation of the sediment control structures is anticipated to occur in 2022 or 2023. Map 2.05.4(2)(d)-1 provides the anticipated thickness of all topsoil replacement at NHN.

Disposal of Materials Constituting a Fire Hazard

No significant acid-forming or toxic-forming materials existed within the overburden, soil, or coal seams mined at the New Horizon North Mine (NHN). Therefore, NHN did not undertake any special handling procedures as described in Rule 4.14.3. A detailed description of the chemical characteristics of soils and overburden materials is presented in Sections 2.04.6 and 2.04.9.

TABLE OF CONTENTS
SECTION 2.05.5
POSTMINING LAND USE

APPENDICES

POSTMINING LAND USE

Introduction

This section addresses the requirements of Rules 2.05.5 Postmining Land Uses and 4.16.3 Alternative Land Uses for areas affected by surface mining at New Horizon North (NHN) Mine.

Pre-Mining Land Use Summary

A detailed description and accompanying pre-mining land use map is found in Section 2.04.3 and on Map 2.04.3-1 NHN Mine Land Use Map. In this discussion of postmining land uses, only the current land use definitions found in Rule 1.04 are used. The extent of these pre-disturbance land use categories is shown on Map 2.04.3-1. This analysis shows there were a total of four pre-mining land use categories, further broken down into 13 subcategories corresponding to DRMS land use categories within the areas corresponding to the NHN permit area.

Land use and baseline vegetation studies (Sections 2.04.3 and 2.04.10) conducted during Fall 2008 and Summer 2009 as well as interviews with current landowners, other local operators, area residents and local governmental officials, show that the dominate pre-mining land use can be described as agricultural based largely on the availability of irrigation water and current level of management. Vegetation types such as Wetland are present as a result of irrigation in the area and used and managed in a fashion that is essentially identical to Irrigated Pasture/Cropland. Baseline studies also show that Wetland and Irrigated Pasture/Cropland plant communities are very similar in vegetative composition and are often used interchangeably depending on landowners' needs. After several years of production as Irrigated Pasture/Cropland and/or following the abandonment of irrigation, the Irrigated Pasture/Cropland areas become dried out and become dominated by more invasive dryland species such as Russian Knapweed (*Centaurea repens)*, Quackgrass (*Agropyron repens)*, Western Wheatgrass (*Agropyron smithii)* and Buckhorn plantain (*Plantago lanceolata*). The most intensively managed areas (due to regular applications of fertilizer and water) on the NHN permit area correspond to the Irrigated Pasture/Cropland areas found on the Garvey Property.

All areas are used as Pastureland or Grazingland during other periods in the year, especially as winter feeding areas based on surface landowners' needs. Other than farmsteads, facilities and a small abandoned orchard, the natural vegetation on the balance of the disturbance area consists of Sagebrush. These Sagebrush areas are not irrigated and are typically located upslope of the irrigation ditches, where it is impractical to irrigate. As indicated in the existing land use description in Section 2.04.3 and vegetation description in Section 2.04.10, the postmining land use will be similar to the pre-mining land use. The postmining land use will be primarily agricultural in nature consisting of improved Dryland Pasture and/or Irrigated Pasture/Cropland where sufficient irrigation water is available and where such level of management is consistent with landowners' wishes.

Postmining Land Use - By Property

The postmining land uses for the NHN permit area are shown on Map 2.05.5-1 Postmining Land Use. Comparing information between Maps 2.04.3-1 and 2.05.5-1, most of the existing land uses found within the NHN permit area will be reclaimed to similar plant communities and land uses.

ERMR-Meehan Property

On the ERMR-Meehan property, land uses include; conversion of "Grazingland-Big Sagebrush" (GL-SB) to Dryland Pasture, conversion of "Residential/Agricultural Disturbance" (RS) to Dryland Pasture and areas classified as "Pastureland-Irrigated" (PLI) converted to Dryland Pasture. As shown on Map 2.05.5-1 Postmining Land Use, all of the ERMR-Meehan property within the permit area has a postmining land use of Dryland Pasture.

Garvey Property

On the Garvey property, land uses include; conversion of "Grazingland-Big Sagebrush" (GL-SB) to Dryland Pasture, conversion of existing "Pastureland-Dryland" (PLD) and Irrigation Canal to Irrigated Pasture/Cropland, for "Grazingland-Subirrigated" (GL-SI) to be converted to Irrigated Pasture/Cropland and for the conversion of "Grazingland-Subirrigated" (GL-SI), located east of the existing Second Park Lateral Ditch to be reclaimed as Dryland Pasture. These areas were originally considered Dryland Pasture but over the years have become "Grazingland-Subirrigated" (GL-SI) due to landowners' desire to irrigate this area. Also, "Residential/Agricultural Disturbance" and "Roads" areas (RS & RD) are to be converted to Irrigated Pasture/Cropland. As shown on Map 2.05.5-1 Postmining Land Use, the Garvey Property within the permit area has a postmining land use of Irrigated Pasture/Cropland and Dryland Pasture .

Per the landowners' request, 1.0 feet of Progresso topsoil will be placed on 0.8 feet of mixed topsoil in Irrigated Pasture/Cropland areas and 1.2 feet of mixed topsoil will be placed in Dryland Pasture areas. This is consistent with information provided in Appendix 2.05.5-1 Letters from Landowners Consenting to Proposed Postmining Land Use and Map 2.05.4(2)(d)-1 Reclaimed Topsoil Thickness.

Postmining Land Use - General

The primary reason landowners requested that NHN make these changes from Grazingland-Big Sagebrush and Irrigated Pasture/Cropland to Dryland Pasture has to do with the successful reclamation efforts on the Rice Tract. According to vegetation data presented Section 2.04.10, the existing Sagebrush plant communities are producing on average 123.3 pounds of air dry forage per acre. The average forage production on the existing Dryland Pasture on this site averages 348.6 pounds of air dry forage per acre. While on the reclaimed portions of the Rice Tract, the current average forage production is 845.0 pounds of air dry forage per acre. When placed into the context of a landowner, the forage production from the reclaimed sites is 6.85

times more than they are currently getting from their Sagebrush lands and 2.83 times more than they are currently averaging from their Dryland Pasture. Since DRMS regulations require that lands disturbed by mining be reclaimed to their highest potential uses consistent with the surface owners' plans, NHN will comply with the landowners' wishes. Due to landowners' wishes on the ERMR-Meehan and Garvey Properties, the existing Sagebrush vegetation will be reclaimed to an improved Dryland Pasture. Dryland Pasture was chosen as the primary postmining vegetation type due to the landowners' wishes to improve the agricultural potential of their lands and in order to encourage "prompt establishment of vegetative cover and recovery of productivity levels compatible with the approved postmining land use" (Rule 4.15.1(2)).

Irrigated Pasture/Cropland will be established on areas identified as corresponding to these vegetation and land use types described in Sections 2.04.3 and 2.04.10 baseline land use and vegetation studies. The various plans for backfilling, grading and topsoil redistribution (Sections 2.05.4(2)(c) and (d)) will provide the basis for the potential productivity of the reclaimed lands. Upon meeting successful revegetation requirements for the Irrigated Pasture/Cropland and release of NHN's regulatory liability, these lands may be converted by the landowners to other vegetation or land use types based upon the desires of the surface owners. Successful revegetation of Dryland Pasture and Irrigated Pasture/Cropland will ensure that the reclaimed lands are capable of supporting the highest possible uses they were capable of supporting before mining. Letters from the original landowners within the NHN Mine permit area (Thomas Meehan and Stan Garvey) approving the postmining land uses are provided in Appendix 2.05.5-1. However, ERMR has since purchase the Meehan property from Thomas Meehan. Therefore, the Meehan landowner letter is provided in Appendix 2.05.5-1 for historic reference.

On the ERMR-Meehan property, the previous landowner Thomas Meehan requested that the Irrigated Pasture/Cropland be reclaimed to Dryland Pasture and the current landowner ERMR concurs with this request. As documented in Section 2.04.3, there have been declines in the amount of Irrigated Pasture/Cropland on this property as the land has been sold and either through the sale of the water rights or the absence of an owner living on the property. On the Garvey property, due to abundant water rights and the fact they have previously lived on the land, there will be no conversion of Irrigated Pasture/Cropland to dryland pasture. NHN acknowledges that since the current Montrose County land use classification of "General Agricultural District A" does not distinguish between irrigated and dryland pasture land uses, the conversion of Irrigated Pasture/Cropland to Dryland Pasture will be consistent with adjacent land use patterns and trends as well as the policies of Montrose County. Conversion of Irrigated Pasture/Cropland areas to Dryland Pasture will not present an actual or probable hazard to public health or safety, nor will it result in an actual or probable threat of water flow diminution or pollution contrary to any state or federal laws, policies or regulations. Such a conversion will not alter or result in any unreasonable delays in reclamation and will not have adverse impacts on

fish, wildlife, related environmental values, or any of the habitats associated with threatened or endangered species.

As required by Rule 4.16.3(6) with respect to alternative land uses, the reclamation of the current Irrigated Pasture/Cropland land uses to similar land uses "would require continuous maintenance" and "sufficient water" both of which the landowner on the ERMR-Meehan property is unable to provide. Since they are unable to provide these inputs, it is impossible for NHN to reclaim these disturbed lands to their current land uses. NHN believes the reclamation of these current Irrigated Pasture/Cropland land use areas to Dryland Pasture is consistent with Rule 4.16.1, which require that the lands disturbed by mining be reclaimed "to conditions that are capable of supporting the uses which they are capable of supporting before any mining" or "to higher or better uses . . ." Given the absence of water it is impossible to reclaim these lands to their pre-disturbance capability. It is important to point out that reclamation of these lands to Dryland Pasture is not as described by the Dryland Pasture vegetation and land use type which is currently producing an average of 348.6 pounds of air-dry forage per acre but instead will be similar to that associated with the Dryland Pasture reclamation found on the Rice Tract, where the vegetation baseline studies described in Section 2.04.10 document an average of 845.0 pounds of air-dry forage is currently being produced. NHN acknowledges this forage production level is less than the current average of 3,285.3 pounds of air-dry forage per acre being produced on the Irrigated Pasture/Cropland vegetation type and land use type, but this is not a realistic goal since water is not available on all of these areas.

SECTION 2.06.8
ALLUVIAL VALLEY FLOOR
TABLE OF CONTENTS

List of Appendices

to the non-conformity of the topographic characteristics, the several days spent performing the wetland survey of this site reveals that the area of Tuttle Draw in the vicinity of the proposed equipment corridor crossing does not consist of alluvial geologic materials, and hence cannot be considered to meet the definition of an AVF.

The extent of all areas which have historically been flood irrigated is identified on Map 2.04.3-1 - Land Use Map. The extent of all areas corresponding to different agricultural activities, including flood irrigated lands, pasture lands, undeveloped rangelands are found shown on Map 2.04.3-1 - Land Use Map and are addressed in the discussion of land use found in Section 2.04.3. Detailed site specific measurements of vegetation productivity of these corresponding land uses by soils map unit are found in Section 2.04.9 and in the discussion of vegetation found in Section 2.04.10. As discussed in these sections, there has never been any historic flood irrigation in the Tuttle Draw equipment corridor crossing area.

With respect to the potential for subirrigation in the floodplain of the areas along Tuttle Draw, it can be concluded that more detailed vegetation information and wetland mapping of these areas, obtained in connection with the environmental studies performed in connection with this permit application have better addressed the potential for agricultural development of this site. The vegetation characteristics of this site are found in the narrative found in Section 2.04.10 - Vegetation Information and on Map 2.04.10-1 Vegetation Map. A preliminary discussion of the wetland information is found in the discussion of wetlands found in 2.05.6(2) and on Map 2.05.6(2)-1 Wetland Map.

With respect to the potential of future agricultural development in the Tuttle Draw area, the following discussion is appropriate. According to the report by Hardaway and others (1977b), the areas along the floodplain in the bottom of Tuttle Draw would not meet the current AVF criteria for a number of reasons. Firstly, many of the floodplain areas are less then 15 meters wide, making it impracticable to develop such areas. These authors conclude that “these narrower valleys are not essential to agricultural operations.” Since the bottom of Tuttle Draw contains a very narrow riparian fringe, it is NHN’s opinion that this area would not meet the “size criteria “ of an AVF found at 2.06.8(3) as it would be operationally unrealistic and economically impossible to develop and farm such a small, narrow strip of land.

Determination of Bond Amount - Reclamation Cost Estimate (RCE)

The reclamation cost estimate (RCE) for the New Horizon North Mine is calculated by the Colorado Division of Reclamation Mining and Safety. In accordance with Rule 2.05.4(2)(b), the RCE for the permit term is attached below.