TRI-STATE

January 20, 2022

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
Phase II and III Bond Release Application (SL-03)

Dear Mrs. Binns:

Tri-State Generation and Transmission Association, Inc. (Tri-State) is the parent company to Elk Ridge Mining and Reclamation, LLC, New Horizon North Mine. Therefore, Tri-State is submitting a Phase II and III Bond Release Application denoted as SL-03 on behalf of the New Horizon North Mine. The New Horizon North Mine operates under Permit No. C-2010-089.

The SL-03 bond release application is applying for Phase II bond release on 118.6 acres and Phase III bond release on approximately 3.7 acres at the New Horizon North Mine. It is requested that through this application the Division calculates the reduction in bond liability for the area included in this application.

If you have any questions about the enclosed bond release application, please contact Tony Tennyson at (970) 824-1232 or ttennyson@tristategt.org.

Sincerely,

DocuSigned by:
Chris Gilbreath
D250C711D0BF450...

Chris Gilbreath
Senior Manager
Remediation and Reclamation

CG:TT:der

Enclosure

Cc: Tony Tennyson (via email)
C.F. 11.1 - G474-11.3(21)c-9

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

New Horizon North Mine
Permit No. C-2010-089

Application for Phase II and III Performance Bond Release

SL-03

Table of Contents

List of Appendices

List of Maps

I. General

Elk Ridge Mining and Reclamation LLC, New Horizon North Mine, Permit No. C-2010-089, is submitting this application for Phase II and III performance bond release. New Horizon North Mine is requesting that a total of 118.6 acres be Phase II released, and 3.7 acres be Phase III released with this application.

The current bond amount for the New Horizon North Mine is $2,617,883.57, and the New Horizon Mine currently holds a surety bond in the amount of $2,617,883.57. With this application, New Horizon Mine is requesting relinquishment of 25% of the bond held for the Phase II parcels, and 100% of the bond held for the Phase III parcels.

II. Summary Information

A. General Location Description

The 118.6 acres requested for Phase II, and the 3.7 acres requested for Phase III are located within Montrose County, Colorado and are generally descripted as:

Township 47 North, Range 16 West of the 6th P.M., New Mexico Principal Meridian County of Montrose, State of Colorado

Section 25 – SW¼ and the NW¼ S½

Please refer to Maps 1 for the exact locations being applied for all phases of bond release.

B. Public Notice

Pursuant to the Rules and Regulation of the Colorado Mined Land Reclamation Board published August 1980, and pursuant to the Colorado Surface Coal Mining Reclamation Act 34-33-101, et seq., notice is hereby given of the filing of an application for Phase II and III Bond Release of a portion of the New Horizon North Mine site. The application is denoted as SL-03 and pertains to the New Horizon North Mine, Permit No. C-2010-089 (issued June 20, 2012) by Elk Ridge Mining and Reclamation, LLC, P. O. Box 628, Nucla, Colorado 81424, filed with the Colorado Division of Reclamation, Mining and Safety (CDRMS), Colorado Department of Natural Resources, 1313 Sherman Street, Room 215, Denver, Colorado 80203.

The Phase II bond release areas applied for, contains areas reclaimed to dryland and irrigated pasture from 2017-2019, and totals 118.6 acres. The Phase III bond release area applied for is reclaimed sediment control structure, it was reclaimed in 2017, and totals 3.7 acres. The work to reclaim the proposed bond release areas including topsoiling and seeding the areas with the approved seed mixtures. All areas being applied for bond release are consistent with the requirements of the New Horizon North Mine permit for proper topsoil replacement thickness and revegetation success that supports the post mine land use. The areas being applied for bond release are shown on Map 1 within the application. Listed below is a general legal description of these areas:

Township 47 North, Range 16 West of the 6th P.M. New Mexico Principal Meridian, County of Montrose, State of Colorado

Section 25 – SW¼ and the NW¼ S½

The New Horizon North Mine currently holds a surety bond in the amount of $2,617,883.57, which covers the above listed areas. The New Horizon North Mine will be requesting relinquishment of 25% of the bond held for the Phase II parcels, and 100% of the bond held for the Phase III parcels being applied for under this application.

A copy of the bond release application is on file at the Montrose County Courthouse Annex, 300 Main Street, Nucla, Colorado and the Colorado Division of Reclamation Mining and Safety at Department of Natural Resources, 1313 Sherman Street, Room 215, Denver, Colorado 80203.

Written comments, objections, and requests for a public hearing or informal conference concerning this bond release application should be addressed to the Colorado Division of Reclamation Mining and Safety, Department of Natural Resources, 1313 Sherman Street, Room 215, Denver, Colorado 80203.

Comments must be filed within thirty (30) days from the last date of this publication, or within thirty (30) days of the completed inspection by the CDRMS, whichever is later.

C. Written Notifications

Prior to filing this request for bond release with the Division, the required parties have been notified. Copies of the letters and are included herein as Appendix A.

Federal	Board of County Commissioners
Natural Resource Conservation Service 40785 CO State Highway 145 P. O. Box 29 Norwood, CO 81423-0488	Montrose County Board of County Commissioners 317 South 2nd Street Montrose, CO 81401

Regional Planning Commissions	Sewage and Water Treatment Authorities
Montrose County Planning Department Montrose County Courthouse 317 South 2nd Street Montrose, CO 81401	City of Nucla/Nucla Sanitation District P. O. Box 219 Nucla, CO 81424

Water Conservancy & Water Conservation Districts	Irrigation Water Control
Colorado River Water Conservation District P. O. Box 1120 Glenwood Springs, CO 81602	Colorado Cooperative Ditch Company P. O. Box 231 Nucla, CO 81424

Surface Land Owners	
Garvey & Co., LLC P.O. Box 555 Nucla, CO 81424	

Adjoining Surface Owners	
Elk Ridge Mining and Reclamation, LLC[1] P.O. Box 628 Nucla, Colorado 81424	Garvey Bros. Land & Cattle, LLC P.O. Box 555 Nucla, CO 81424
Richards & Richards, LLC P.O. Box 608 Nucla, CO 81424	Roger & Tina Carver P.O. Box 293 Nucla, CO 81424
Donna Nygren P.O. Box 102 Nucla, CO 81424	Montrose County 317 South 2nd Street Nucla, CO 81401
Stan & Tommy Garvey P.O. Box 555 Nucla, CO 81424	

[1]Elk Ridge Mining and Reclamation, LLC is the mine permittee and surface landowner. A letter was not sent to Elk Ridge Mining and Reclamation, LLC since it is the applicant also.

III. Phase II Summary of Reclamation and Management

A. General Description

As shown on Map 1, two types of post mine land use reclamation areas are being requested for bond release. The larger area is comprised irrigated pasture, and the smaller areas are dryland pasture areas. The work completed to develop both types of reclamation included regrading to the approved post-mining topography, installation of the 2nd Park Lateral Pipe, installation of the center pivot, topsoil replacement, and seeding with the approved seed mix corresponding to the targeted post mine land use. The irrigated pasture area consists of 88.3 acres, and the dryland pasture areas total 30.3 acres. Of the 30.3 acres of dryland pasture reclamation, 3.7 acres which are located to the north of the permit area as shown on Map 1 is a reclaimed sediment control structure (ditch).

Phase I bond release has been granted on all parcels being applied for Phase II. It should be noted that acreages applied for Phase II bond release may not correspond to topsoil and seeded acreages presented in annual reclamation reports.

B. Topsoil Replacement

Typically, when an operator applies for Phase II bond release, the bond release application will include topsoil replacement depths and sample locations. As part of the bond release inspection for a specific application for Phase II, the Division will dig holes to verify the topsoil replacement depths provided in the application against what is required in the permit. Since a large portion of the reclamation at the New Horizon North Mine is irrigated pasture, the Division wanted to verify topsoil depths as topsoil was replaced (occurred in 2018). This was conducted to prevent damage to the alfalfa crop by avoiding digging holes in the irrigated pasture area after the alfalfa crop was well established. Therefore, included in Appendix B are three inspection reports from the Division's inspections of New Horizon North Mine form 2018. Each inspection report documents and verifies topsoil replacement depths for both the dryland pasture and irrigated pasture reclamation areas being applied for bond released under this SL-03 application.

C. Revegetation Success Demonstration

Pursuant to Rule 4.15.8(3), Phase II bond liability release will be considered acceptable if the vegetative establishment on the reclaimed land meets the requirement of 90% herbaceous cover of the reference area standard with 90% statistical confidence. Please see Appendix C for information addressing revegetation establishment and sample locations.

D. Erosion Control

Any rills and gullies that has occurred during the initial years of revegetation have been mitigated when they occurred. Typically, this has been limited in areal extent and has occurred from irrigation runoff the center pivot on the irrigated pasture field. Successful revegetation

establishment as demonstrated in this Phase II bond release application continues to assist these reclamation areas to remain erosional stable.

E. Sedimentology

In accordance with Rule 3.03.3(b), bond liability release cannot be granted until the applicant demonstrates that the existing revegetated area will result in equivalent or lesser sediment contributions to surface runoff when compared with pre-mining levels as determined by baseline data. Please see Appendix C, which documents the sediment contributions for the areas being applied for Phase II bond release.

IV. Phase III Summary of Reclamation and Management

A. General Description

The 3.7 acres being applied for Phase III bond release under this application was reclaimed in 2017. As shown on Map 1, the area requested for bond release is a reclaimed sediment control structure, formerly a ditch that routed surface water runoff from mining areas to Pond 002. The ditch as been reclaimed to dryland pasture as required. The ten-year minimum bond liability period is not required for a sediment control structure as described in Rule 3.03.1(5); therefore, New Horizon North Mine can apply for Phase III bond release when Rule 3.03.1(5) is met. Please refer to Section C below.

B. Topsoil Replacement

The 3.7 acre reclamation area being applied for Phase III bond release had Bench 1 (subsoil) placed into the ditch bottom. Then, topsoil was placed over the backfilled and regraded ditch and blended into the surrounding terrain as required by Rule 3.03.1(5).

C. Revegetation Success Demonstration

For a reclaimed sediment control structure, Rule 3.03.1(5) states, “Vegetative cover must be adequate to control erosion and similar to the reclaimed area or surrounding undisturbed area.” A vegetation cover analysis for the 3.7 acres being applied for Phase III bond release is presented in Appendix C.

D. Post-Mining Land Use

The post-mining land use for the area applied for is dryland pasture. The reclamation unit has been planted and seeded as dryland pasture accordingly.

E. Surface and Groundwater Impact Analysis

An analysis pertaining to surface and groundwater impacts is not applicable to a reclaimed sediment control structure.

IV. Notarized Statement

Pursuant to Rule 3.03.2(1)(e) each bond release application is required to provide a notarized statement that the reclamation activities have been accomplished in accordance with the requirements of the act and the approved reclamation plan.

I, Chris Gilbreath, Senior Manager Remediation and Reclamation, Tri-State Generation and Transmission Association, Inc., hereby certify that the information contained within this application is correct and true to the best of my knowledge.

Signed: _____
Name: Chris Gilbreath
Title: Senior Manager Remediation and Reclamation
Tri-State Generation and Transmission Association, Inc.

State of Colorado

County of Adams

The foregoing instrument was acknowledged before me this 20TH day of January 2022 by Chris Gilbreath, as the Senior Manager Remediation and Reclamation of Tri-State Generation and Transmission Association, Inc., a Colorado cooperative corporation, on behalf of the corporation.

_____
Notary Public
Print Name: DIANE E. ROBINSON

Witness my hand and official seal
My commission expires:
Dec. 4, 2024

Diane E Robinson
Notary Public
State of Colorado
Notary ID 20034022307
My Commission Expires December 4, 2024

Appendix A

Bond Release Notification Letters

TRI-STATE

January 18, 2022

Montrose County
317 South 2nd Street
Montrose, CO 81401

RE: New Horizon North Mine
Permit No. C-2010-089
Notice of Intent to Seek Phase II and III Bond Release

To whom it may concern:

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Elk Ridge Mining and Reclamation, LLC, New Horizon North Mine. Therefore, Tri-State on behalf of the New Horizon North Mine is notifying you that New Horizon North Mine is submitting an application for Phase II and III performance bond release on areas reclaimed from 2017 to 2019. This application for Phase II and III bond release, when submitted, will be denoted as SL-03.

This written notice is sent to you pursuant to Colorado Division of Reclamation, Mining and Safety (CDRMS) Rule 3.03.2(1). Prior to filing a request for the bond release, New Horizon North Mine must send written notices of intention to seek bond release to you as an adjacent surface landowner to the bond release application area. Additionally, enclosed please find a copy of the Public Notice, which will be published in the San Miguel Basin Forum in the near future.

If you should have any questions regarding this letter of notice for the SL-03 bond release application, please contact Tony Tennyson at your convenience at (970) 326-3560.

Sincerely,

DocuSigned by:
Chris Gilbreath
D250C711D0BF450...

Chris Gilbreath
Senior Manager
Remediation and Reclamation

CG:TT:der

Enclosure

Cc: Tony Tennyson (via email)
Janet Binns (w/o attachments)
C.F. 11.1 - G474-11.3(21)c-9

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

TRI-STATE

January 18, 2022

Mr. and Mrs. Roger and Tina Carver
P. O. Box 293
Nucla, CO 81424

RE: New Horizon North Mine
Permit No. C-2010-089
Notice of Intent to Seek Phase II and III Bond Release

Dear. Mr. and Mrs. Roger and Tina Carver,

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Elk Ridge Mining and Reclamation, LLC, New Horizon North Mine. Therefore, Tri-State on behalf of the New Horizon North Mine is notifying you that New Horizon North Mine is submitting an application for Phase II and III performance bond release on areas reclaimed from 2017 to 2019. This application for Phase II and III bond release, when submitted, will be denoted as SL-03.

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Sincerely,

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Chris Gilbreath
D250C711D0BF450...

Chris Gilbreath
Senior Manager
Remediation and Reclamation

CG:TT:der

Enclosure

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Janet Binns (w/o attachments)
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TRI-STATE

January 18, 2022

Colorado Cooperative Ditch Company
P. O. Box 231
Nucla, CO 81424

RE: New Horizon North Mine
Permit No. C-2010-089
Notice of Intent to Seek Phase II and III Bond Release

To Whom It May Concern,

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Elk Ridge Mining and Reclamation, LLC, New Horizon North Mine. Therefore, Tri-State on behalf of the New Horizon North Mine is notifying you that New Horizon North Mine is submitting an application for Phase II and III performance bond release on areas reclaimed from 2017 to 2019. This application for Phase II and III bond release, when submitted, will be denoted as SL-03.

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TRI-STATE

January 18, 2022

Colorado River Water Conservation District
P.O. Box 1120
Glenwood Springs, CO 81602

RE: New Horizon North Mine
Permit No. C-2010-089
Notice of Intent to Seek Phase II and III Bond Release

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TRI-STATE

January 18, 2022

Garvey Bros. Land & Cattle, LLC
P. O. Box 555
Nucla, CO 81424

RE: New Horizon North Mine
Permit No. C-2010-089
Notice of Intent to Seek Phase II and III Bond Release

To Whom It May Concern,

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Elk Ridge Mining and Reclamation, LLC, New Horizon North Mine. Therefore, Tri-State on behalf of the New Horizon North Mine is notifying you that New Horizon North Mine is submitting an application for Phase II and III performance bond release on areas reclaimed from 2017 to 2019. This application for Phase II and III bond release, when submitted, will be denoted as SL-03.

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January 18, 2022

Garvey & Company, LLC
P. O. Box 555
Nucla, CO 81424

RE: New Horizon North Mine
Permit No. C-2010-089
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Enclosure

Cc: Tony Tennyson (via email)
Janet Binns (w/o attachments)
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TRI-STATE

January 18, 2022

Stan & Tommy Garvey
P. O. Box 555
Nucla, CO 81424

RE: New Horizon North Mine
Permit No. C-2010-089
Notice of Intent to Seek Phase II and III Bond Release

Dear Stan and Tommy,

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January 18, 2022

Montrose County Board of County Commissioners
317 South 2nd Street
Montrose, CO 81401

RE: New Horizon North Mine
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January 18, 2022

Montrose County Planning Department
Montrose County Courthouse
317 South 2nd Street
Montrose, CO 81401

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January 18, 2022

Natural Resource Conservation Service
40785 CO State Highway 145
P. O. Box 29
Norwood, CO 81423-0488

RE: New Horizon North Mine
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January 18, 2022

City of Nucla/Nucla Sanitation District
P. O. Box 219
Nucla, CO 81424

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Remediation and Reclamation

CG:TT:der

Enclosure

Cc: Tony Tennyson (via email)
Janet Binns (w/o attachments)
C.F. 11.1 - G474-11.3(21)c-9

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

TRI-STATE

January 18, 2022

Ms. Donna Nygren
P. O. Box 293
Nucla, CO 81424

RE: New Horizon North Mine
Permit No. C-2010-089
Notice of Intent to Seek Phase II and III Bond Release

Dear Ms. Nygren,

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Elk Ridge Mining and Reclamation, LLC, New Horizon North Mine. Therefore, Tri-State on behalf of the New Horizon North Mine is notifying you that New Horizon North Mine is submitting an application for Phase II and III performance bond release on areas reclaimed from 2017 to 2019. This application for Phase II and III bond release, when submitted, will be denoted as SL-03.

This written notice is sent to you pursuant to Colorado Division of Reclamation, Mining and Safety (CDRMS) Rule 3.03.2(1). Prior to filing a request for the bond release, New Horizon North Mine must send written notices of intention to seek bond release to you as an adjacent surface landowner to the bond release application area. Additionally, enclosed please find a copy of the Public Notice, which will be published in the San Miguel Basin Forum in the near future.

If you should have any questions regarding this letter of notice for the SL-03 bond release application, please contact Tony Tennyson at your convenience at (970) 326-3560.

Sincerely,

DocuSigned by:
Chris Gilbreath
D250C711D0BF450...

Chris Gilbreath
Senior Manager
Remediation and Reclamation

CG:TT:der

Enclosure

Cc: Tony Tennyson (via email)
Janet Binns (w/o attachments)
C.F. 11.1 - G474-11.3(21)c-9

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

TRI-STATE

January 18, 2022

Richards & Richards, LLC
P. O. Box 608
Nucla, CO 81424

RE: New Horizon North Mine
Permit No. C-2010-089
Notice of Intent to Seek Phase II and III Bond Release

To Whom It May Concern,

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Elk Ridge Mining and Reclamation, LLC, New Horizon North Mine. Therefore, Tri-State on behalf of the New Horizon North Mine is notifying you that New Horizon North Mine is submitting an application for Phase II and III performance bond release on areas reclaimed from 2017 to 2019. This application for Phase II and III bond release, when submitted, will be denoted as SL-03.

This written notice is sent to you pursuant to Colorado Division of Reclamation, Mining and Safety (CDRMS) Rule 3.03.2(1). Prior to filing a request for the bond release, New Horizon North Mine must send written notices of intention to seek bond release to you as an adjacent surface landowner to the bond release application area. Additionally, enclosed please find a copy of the Public Notice, which will be published in the San Miguel Basin Forum in the near future.

If you should have any questions regarding this letter of notice for the SL-03 bond release application, please contact Tony Tennyson at your convenience at (970) 326-3560.

Sincerely,

DocuSigned by:
Chris Gilbreath
D250C711D0BF450...

Chris Gilbreath
Senior Manager
Remediation and Reclamation

CG:TT:der

Enclosure

Cc: Tony Tennyson (via email)
Janet Binns (w/o attachments)
C.F. 11.1 - G474-11.3(21)c-9

P.O. BOX 33695
DENVER, CO 80233-0695
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Appendix B

CDRMS Inspection Reports with Topsoil Verification Depths

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

1313 Sherman Street, Room 215, Denver, CO 80203 P 303.866.3567 F 303.832.8106 http://mining.state.co.us

PERMIT INFORMATION

Permit Number: C-2010-089 **Mine Name:** New Horizon North Mine **Operator:** Elk Ridge Mining and Reclamation, LLC **Operator Address:** Mr. Tony Tennyson 5731 State Highway 13 Meeker, CO 81641	**County:** Montrose **Operation Type:** Surface **Permit Status:** Active **Ownership:** Private **Operator Representative Present:** Frank Ferris and Tom Fry
Operator Representative Signature: (Field Issuance Only)	

INSPECTION INFORMATION

Inspection Start Date: July 18, 2018 **Inspection Start Time:** 11:00 **Inspection End Date:** July 18, 2018 **Inspection End Time:** 16:00	**Inspection Type:** Coal Partial Inspection **Inspection Reason:** Normal I&E Program **Weather:** Clear
Joint Inspection Agency: None	**Joint Inspection Contacts:**
Post Inspection Agency: None	**Post Inspection Contacts:**

Inspector(s): Brock F. Bowles	**Inspector's Signature:**	**Signature Date:** July 25, 2018

Inspection Topic Summary
NOTE: **Y**=Inspected **N**=Not Inspected **R**=Comments Noted **V**=Violation Issued **NA**=Not Applicable

N - Air Resource Protection
N - Availability of Records
R - Backfill & Grading
N - Excess Spoil and Dev. Waste
N - Explosives
N - Fish & Wildlife
R - Hydrologic Balance
R - Gen. Compliance With Mine Plan
N - Other
N - Processing Waste
N - Roads
N - Reclamation Success
N - Revegetation
N - Subsidence
N - Slides and Other Damage
N - Support Facilities On-site
N - Signs and Markers
N - Support Facilities Not On-site
N - Special Categories Of Mining
R - Topsoil

COMMENTS

This was a partial inspection of the New Horizon North Mine conducted by Brock Bowles of CDRMS. Frank Ferris of ERMR was present for the entire inspection. The weather conditions were partly cloudy and the temperature was approximately 90F.

BACKFILL and GRADING – Rule 4.14
Contemporaneous Reclamation 4.14.1; Approximate Original Contour 4.14.2; Highwall Elimination 4.14.1(2)(f); Steep Slopes 4.14.2, 4.27; Handling of Acid and Toxic Materials 4.14.3; Stabilization of Rills and Gullies 4.14.6:

The remaining part of the pit has been backfilled and graded.

HYDROLOGIC BALANCE - Rule 4.05
Drainage Control 4.05.1, 4.05.2, 4.05.3; Siltation Structures 4.05.5, 4.05.6; Discharge Structures 4.05.7, 4.05.10; Diversions 4.05.4; Effluent Limits 4.05.2; Ground Water Monitoring 4.05.13; Surface Water Monitoring 4.05.13; Drainage – Acid and Toxic Materials 4.05.8; Impoundments 4.05.6, 4.05.9; Stream Buffer Zones 4.05.18:

Pond 1 contained water but was not discharging. The embankment appeared to be stable and the discharge structures were clear of obstructions.

Pond 2 contained water but was not discharging. The embankment appeared to be stable. The inlet structures were in good condition and the spill ways were free of obstructions.

GENERAL MINE PLAN COMPLIANCE:

The center pivot irrigation structure has been erected (photo 1). The landowner, Dustin Garvey (photo 2), was digging up the underground water line so it can be attached to the center pivot. The electrical lines have not been installed yet.

TOPSOIL – Rule 4.06
Removal 4.06.2; Substitute Materials 4.06.4(4); Storage and Protection 4.06.3; Redistribution 4.06.4:

Topsoil was being ripped by the road grader in the area where the last of the pit was backfilled. Topsoil was being spread by haul truck and dozer on the roadway leading to the former pit area.

Number of Partial Inspection this Fiscal Year: 1
Number of Complete Inspections this Fiscal Year: 0

Topsoil depths were verified in four more locations where the topsoil has been final graded. The four new locations are TS29 (16"), TS23 (23"), TS22 (24") and TS8 (30"). See the attached map for all sample locations and measured depths. The topsoil sample points are in a 500 foot grid formation. Point TS29 was moved approximately 200 feet south because it landed in an undisturbed area.

Topsoil was replaced up to the undisturbed area and was graded to match the approximate original contour of the surrounding area (photo 3).

Topsoil pile 4 ring ditch was in good condition.

ENFORCEMENT ACTIONS/COMPLIANCE

No enforcement actions were initiated as a result of this inspection, nor are any pending.

PHOTOGRAPHS

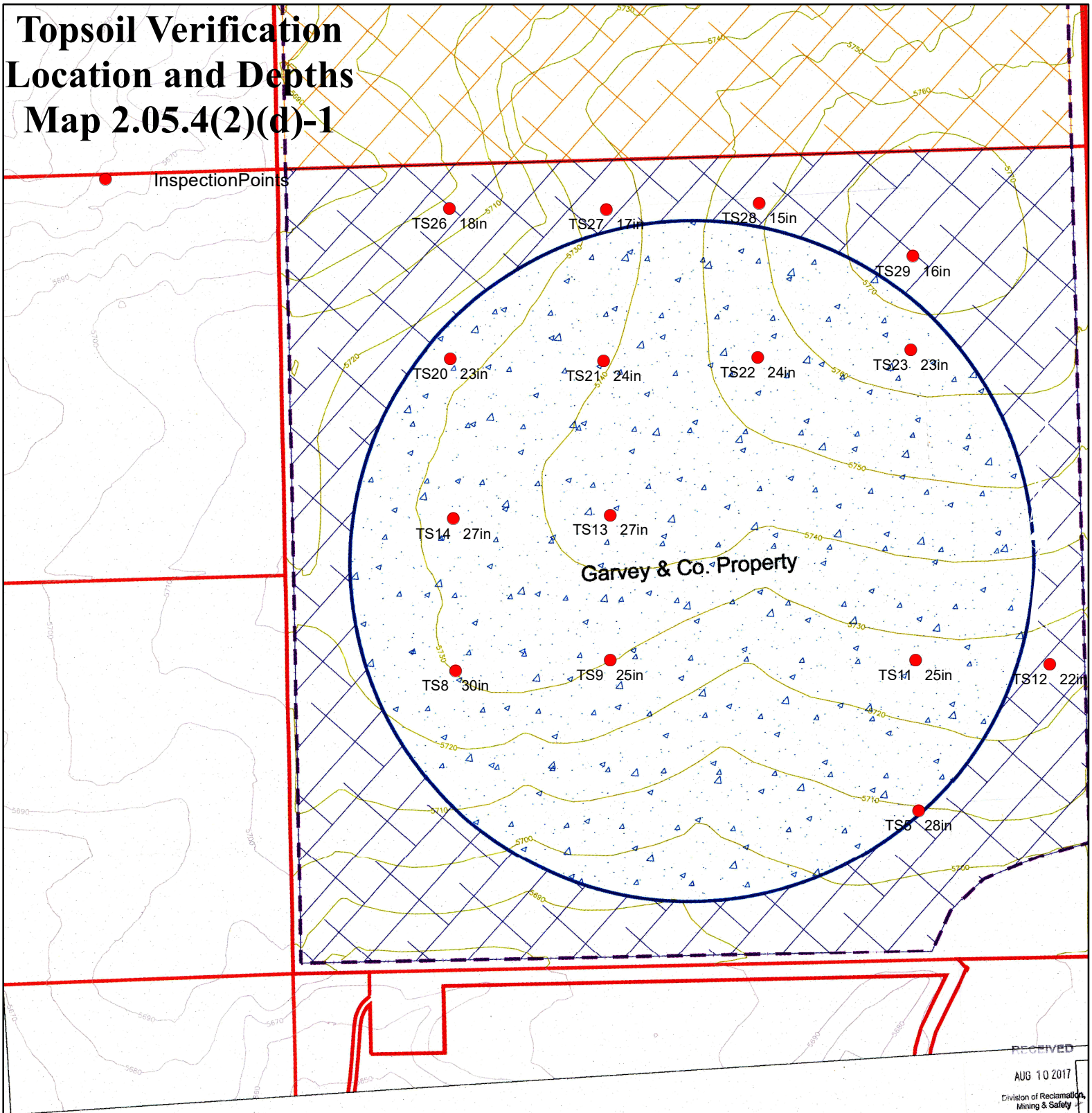
Photo 1 – Center Pivot Irrigation Structure

Photo 2 – The Black Underground Water Line

Photo 3 – Topsoil Replacement Next to Undisturbed Area

Number of Partial Inspection this Fiscal Year: 1
Number of Complete Inspections this Fiscal Year: 0

Topsoil Verification Location and Depths Map 2.05.4(2)(d)-1



RECEIVED
AUG 10 2017
Division of Reclamation, Mining & Safety

LEGEND

- PERMIT BOUNDARY
- DISTURBANCE BOUNDARY
- PROPERTY BOUNDARY
- POST-MINE CONTOURS
- DRYLAND PASTURE (GARVEY & CO.) MINIMUM TOPSOIL THICKNESS - 1.2 FEET
- IRRIGATED PASTURE (GARVEY & CO.) MINIMUM TOPSOIL THICKNESS: 1.8 FEET
- DRYLAND PASTURE (ERMR - MEEHAN) MINIMUM TOPSOIL THICKNESS - 1.2 FEET
- DRYLAND PASTURE (GLASIER) MINIMUM TOPSOIL THICKNESS - 2.0 FEET
- DELINEATED WETLANDS

N W E S

200' 0 200' 400'

CONTOUR INTERVAL 10 FT.
POST MINE TOPOGRAPHY

COLORADO LICENSED JASON S. STOREY 48092 PROFESSIONAL ENGINEER

JASON S. STOREY
P.E. No. 48092
08/09/2017
DATE

ENGINEER'S CERTIFICATION

I, Jason S. Storey, hereby certify that this map has been reviewed by me and is true and correct to the best of my knowledge and information, relying on information supplied by experts employed by New Horizon Mine and that I am a Professional Engineer licensed in Colorado as required by the provisions of C.R.S. 12-25-101 through C.R.S. 12-25-119. IN WITNESS WHEREOF I have hereunder set my hand and affixed my seal.

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

1313 Sherman Street, Room 215, Denver, CO 80203 P 303.866.3567 F 303.832.8106 http://mining.state.co.us

PERMIT INFORMATION

Permit Number: C-2010-089 **Mine Name:** New Horizon North Mine **Operator:** Elk Ridge Mining and Reclamation, LLC **Operator Address:** Mr. Tony Tennyson 5731 State Highway 13 Meeker, CO 81641	**County:** Montrose **Operation Type:** Surface **Permit Status:** Active **Ownership:** Private **Operator Representative Present:** Frank Ferris and Tom Fry
Operator Representative Signature: (Field Issuance Only)	

INSPECTION INFORMATION

Inspection Start Date: September 20, 2018 **Inspection Start Time:** 08:00 **Inspection End Date:** September 20, 2018 **Inspection End Time:** 12:00	**Inspection Type:** Coal Complete Inspection **Inspection Reason:** Normal I&E Program **Weather:** Cloudy
Joint Inspection Agency: None	**Joint Inspection Contacts:**
Post Inspection Agency: None	**Post Inspection Contacts:**
Inspector(s): Brock F. Bowles	**Inspector's Signature:** **Signature Date:**  September 27, 2018

Inspection Topic Summary
NOTE: **Y**=Inspected **N**=Not Inspected **R**=Comments Noted **V**=Violation Issued **NA**=Not Applicable

N - Air Resource Protection
R - Availability of Records
N - Backfill & Grading
N - Excess Spoil and Dev. Waste
N - Explosives
N - Fish & Wildlife
R - Hydrologic Balance
N - Gen. Compliance With Mine Plan
N - Other
N - Processing Waste
N - Roads
N - Reclamation Success
N - Revegetation
N - Subsidence
N - Slides and Other Damage
N - Support Facilities On-site
R - Signs and Markers
N - Support Facilities Not On-site
N - Special Categories Of Mining
R - Topsoil

COMMENTS

This was a complete inspection of the New Horizon North Mine conducted by Brock Bowles of CDRMS. Frank Ferris and Tom Fry of ERMR was present for the entire inspection. The weather conditions were cloudy. The ground was dry and the temperature was approximately 75F.

AVAILABILITY OF RECORDS – Rule 5.02.4(1):

All required records were on file and available for review at the mine office. No problems were noted with the records review. Please see the availability of records checklist at the end of this report.

HYDROLOGIC BALANCE - Rule 4.05
Drainage Control 4.05.1, 4.05.2, 4.05.3; Siltation Structures 4.05.5, 4.05.6; Discharge Structures 4.05.7, 4.05.10; Diversions 4.05.4; Effluent Limits 4.05.2; Ground Water Monitoring 4.05.13; Surface Water Monitoring 4.05.13; Drainage – Acid and Toxic Materials 4.05.8; Impoundments 4.05.6, 4.05.9; Stream Buffer Zones 4.05.18:

Pond 1 contained water but was not discharging. The pond was being reconfigured to the specification outlined in TR17 (photo 1). The discharge structure and flume were free of obstructions. The east and west ditches were free of obstructions and in good condition.

Pond 2 did not contain water. The pond was being reconfigured to the specifications outlined in TR17 (photo 2). The discharge structure and emergency spillway were free of obstructions.

The portable pump located at pond NH1 was in a spill containment device (photo 3).

SIGNS AND MARKERS – Rule 4.02:

Mine entrance signs were in place at all entrance points with the required information (photo 4).

The permit boundary signs were in place around pond NH1 and along the access road.

TOPSOIL – Rule 4.06
Removal 4.06.2; Substitute Materials 4.06.4(4); Storage and Protection 4.06.3; Redistribution 4.06.4:

Number of Partial Inspection this Fiscal Year: 2
Number of Complete Inspections this Fiscal Year: 1

Topsoil signs and ring ditches were in place on the topsoil stockpiles.

Topsoil depths were verified in four more locations where the topsoil has been final graded. The four new locations are TS3 (28”), TS4 (28”), TS10 (27”) and TS16 (26”). The topsoil sample points are in a 500 foot grid formation. See the attached map for sample locations and measured depths of all topsoil depth verification sites. Site TS15 was mislabeled as TS13 in previous reports. It has been corrected in this report but the measured depth is still correct

ENFORCEMENT ACTIONS/COMPLIANCE

No enforcement actions were initiated as a result of this inspection, nor are any pending.

PHOTOGRAPHS

Photo 1 – Pond 1

Photo 2 – Pond 2

Photo 3 – Pump in Spill Containment

Photo 4 – Mine Entrance Signs

Number of Partial Inspection this Fiscal Year: 2
Number of Complete Inspections this Fiscal Year: 1

AVAILABILITY OF RECORDS

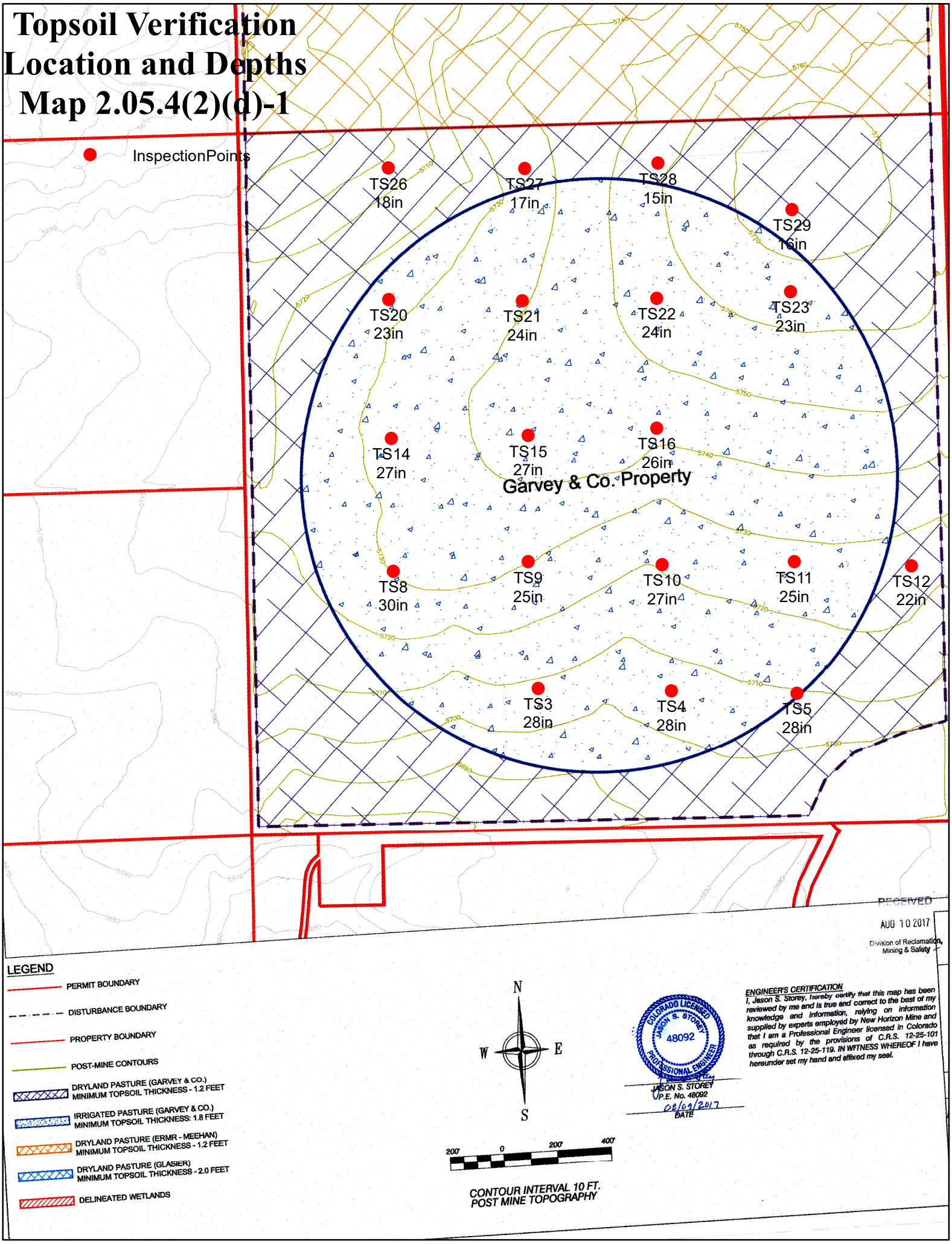
PERMIT RECORDS	
DRMS Permit	X – 2022
Permit Application w/Revisions	X
Findings Document	X – RN1
Insurance Certificate	X – 8/2019
Bond Document	X
Phased Bond Release Documents/Findings	NA
Air Emission Permits	X
County Special Use Permits	X
UG Mining Landowner Notification	NA
Subsidence Monitoring Reports	NA
Subsidence Monitoring Data	NA
Rill & Gully Survey	NA
Vegetation Monitoring Data	NA
Specific Variance Approvals	NA
Annual Reclamation Reports	X – 2017
Midterm Review Documents	X – MT1
DRMS/OSM Inspection Reports/Enforcement Actions (3 Years)	X – 8/2018
Transfers/Succession of Operator	X
Temporary Cessation Notification	NA
Reclamation Cost Estimate	X – RN1
CERTIFICATIONS	
Pond Certifications	X
Annual Certifications for Impoundments	X – 10/2017
Fill Certifications for Excess Spoil or Underground Development Waste	NA
• Quarterly Inspections	NA
• Compaction Testing	NA
• Final Certification	NA
Coal Processing Waste Banks	NA
Haul Road Certifications	X
Access Road Certifications	NA

HYDROLOGIC RECORDS	
NPDES Permit	X
NPDES Records	X
Stormwater Management Plan	X
SPCC Plan	X
MSHA Pond Inspections	NA
State Engineer's Pond Inspection	NA
Quarterly Pond Inspections	X – 2ND 2018
Annual Hydrology Reports	X – 2017
• Ground Water Monitoring	X
• Surface Water Monitoring	X
• Spring & Seep Monitoring	X
• Mine Water Discharge Monitoring	X
• Mine Inflow Study	NA
• Water Consumption Records	X
Well Permits	X
BLASTING RECORDS	
Blasting Publication	NA
Blasting Records (3 years)	X
ATFE Explosives Permit	NA
Blasting Variances	NA
Pre-Blast Surveys	X
ADDITIONAL RECORDS (specify)	

COMMENTS:

Number of Partial Inspection this Fiscal Year: 2
Number of Complete Inspections this Fiscal Year: 1

Topsoil Verification Location and Depths Map 2.05.4(2)(d)-1



LEGEND

- PERMIT BOUNDARY
- DISTURBANCE BOUNDARY
- PROPERTY BOUNDARY
- POST-MINE CONTOURS
- DRYLAND PASTURE (GARVEY & CO.) MINIMUM TOPSOIL THICKNESS - 1.2 FEET
- IRRIGATED PASTURE (GARVEY & CO.) MINIMUM TOPSOIL THICKNESS: 1.8 FEET
- DRYLAND PASTURE (ERMR - MEEHAN) MINIMUM TOPSOIL THICKNESS - 1.2 FEET
- DRYLAND PASTURE (GLASIER) MINIMUM TOPSOIL THICKNESS - 2.0 FEET
- DELINEATED WETLANDS

N
W E
S

200' 0 200' 400'

CONTOUR INTERVAL 10 FT.
POST MINE TOPOGRAPHY

COLORADO LICENSED
JASON S. STOREY
48092
PROFESSIONAL ENGINEER

JASON S. STOREY
P.E. No. 48092
08/09/2017
DATE

ENGINEER'S CERTIFICATION
I, Jason S. Storey, hereby certify that this map has been reviewed by me and is true and correct to the best of my knowledge and information, relying on information supplied by experts employed by New Horizon Mine and that I am a Professional Engineer licensed in Colorado as required by the provisions of C.R.S. 12-25-101 through C.R.S. 12-25-119. IN WITNESS WHEREOF I have hereunder set my hand and affixed my seal.

RECEIVED
AUG 10 2017
Division of Reclamation, Mining & Safety

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

1313 Sherman Street, Room 215, Denver, CO 80203 P 303.866.3567 F 303.832.8106 http://mining.state.co.us

PERMIT INFORMATION

Permit Number: C-2010-089 **Mine Name:** New Horizon North Mine **Operator:** Elk Ridge Mining and Reclamation, LLC **Operator Address:** Mr. Tony Tennyson 5731 State Highway 13 Meeker, CO 81641	**County:** Montrose **Operation Type:** Surface **Permit Status:** Active **Ownership:** Private **Operator Representative Present:** Tom Fry
Operator Representative Signature: (Field Issuance Only)	

INSPECTION INFORMATION

Inspection Start Date: March 13, 2018 **Inspection Start Time:** 14:00 **Inspection End Date:** March 14, 2018 **Inspection End Time:** 14:00	**Inspection Type:** Coal Complete Inspection **Inspection Reason:** Normal I&E Program **Weather:** Clear
Joint Inspection Agency: None	**Joint Inspection Contacts:**
Post Inspection Agency: None	**Post Inspection Contacts:**
Inspector(s): Brock F. Bowles	**Inspector's Signature:** **Signature Date:**  March 22, 2018

Inspection Topic Summary
NOTE: **Y**=Inspected **N**=Not Inspected **R**=Comments Noted **V**=Violation Issued **NA**=Not Applicable

R - Air Resource Protection
R - Availability of Records
R - Backfill & Grading
N - Excess Spoil and Dev. Waste
N - Explosives
N - Fish & Wildlife
R - Hydrologic Balance
N - Gen. Compliance With Mine Plan
N - Other
N - Processing Waste
N - Roads
N - Reclamation Success
R - Revegetation
N - Subsidence
N - Slides and Other Damage
N - Support Facilities On-site
R - Signs and Markers
N - Support Facilities Not On-site
N - Special Categories Of Mining
R - Topsoil

COMMENTS

This was a complete inspection of the New Horizon North Mine conducted by Brock Bowles of CDRMS. Tom Fry of ERMR was present for the entire inspection. The weather conditions were mostly sunny. The ground was dry and the temperature was approximately 55F.

AIR RESOURCE PROTECTION – Rule 4.17:

The in pit roads were being watered to control dust.

AVAILABILITY OF RECORDS – Rule 5.02.4(1):

All required records were on file and available for review at the mine office. No problems were noted with the records review. Please see the availability of records checklist at the end of this report.

BACKFILL and GRADING – Rule 4.14
Contemporaneous Reclamation 4.14.1; Approximate Original Contour 4.14.2; Highwall Elimination 4.14.1(2)(f); Steep Slopes 4.14.2, 4.27; Handling of Acid and Toxic Materials 4.14.3; Stabilization of Rills and Gullies 4.14.6:

The main pit continued to be back filled (photo 1).

The subsoil in the area where topsoil piles 1 & 2 were formerly located, was being shaped to its final configuration.

A subsoil pile was being created northwest of Pond 1. This soil is being set aside for backfill for Pond 1.

HYDROLOGIC BALANCE - Rule 4.05
Drainage Control 4.05.1, 4.05.2, 4.05.3; Siltation Structures 4.05.5, 4.05.6; Discharge Structures 4.05.7, 4.05.10; Diversions 4.05.4; Effluent Limits 4.05.2; Ground Water Monitoring 4.05.13; Surface Water Monitoring 4.05.13; Drainage – Acid and Toxic Materials 4.05.8; Impoundments 4.05.6, 4.05.9; Stream Buffer Zones 4.05.18:

The water pump at Pond NH1 was in operation and in a spill containment pan.

Pond 1 contained water but was not discharging (photo 2). The primary and emergency spillways and discharge

Number of Partial Inspection this Fiscal Year: 6
Number of Complete Inspections this Fiscal Year: 3

areas were clear of obstructions. The embankment appeared to be stable. The east (photo 3) and west ditches were in good condition with no obstructions.

Pond 2 did not contain water. The primary and emergency spillways and discharge areas (photo 4) were clear of obstructions. The embankment appeared to be stable. The south and east ditches were in good condition.

REVEGETATION – Rule 4.15
Vegetative Cover; Timing:

The reclaimed section of the Pond 2 east ditch was planted last spring. Not many plants have sprouted since it was planted. The erosion wattles were in place and there were no signs of soil movement.

SIGNS AND MARKERS – Rule 4.02:

The stream buffer zone signs were in place along Meehan Draw (photo 5).

The permit boundary signs were in place along the NH1 Pond road, the south perimeter, equipment corridor, AA Rd, 26 Rd, Z Rd and 2650 Rd.

Mine entrance signs were in place at all entrance locations.

TOPSOIL – Rule 4.06
Removal 4.06.2; Substitute Materials 4.06.4(4); Storage and Protection 4.06.3; Redistribution 4.06.4:

Topsoil piles 1 and 2 were in the process of being relocated north of their current location as depicted on Map 2.05.4(2)(d)-2. Moving the topsoil piles allows for the subsoil to be backfilled to its final topography. Ring ditches were in place around all topsoil piles (photo 6). The topsoil signs were in place (photo 7).

Topsoil was spread on areas of the mine that were finished backfilling and grading. Most of the areas that have been topsoiled up to this point are on the Garvey property and have a post mine land use of dryland pasture and irrigated pasture/cropland. Alfalfa will be planted on the irrigated areas and harvested several times during a year. In future bond release inspections, topsoil depths will have to be verified, which requires digging holes in the soil at regular intervals. In an effort to prevent damage to the alfalfa crop during bond release inspections, topsoil depths will be verified during the monthly inspections over the next several months before seeding occurs.

Soils samples locations are on a 500 foot grid, or 1 sample every 5.75 acres (see attached map). The grid was created by ERMR and is the same grid location that will report soil depths in the Annual Reclamation Report. A soil sample auger was used to dig each hole and the handle was used as a ground level reference (photo 8). Seven samples were taken during this inspection. Each location is labeled with a name code and the recorded depth in inches.

Topsoil samples TS26, TS27 and TS28 are located in dryland pasture. The required depth for the dryland areas is 14.4 inches and each hole exceeded the depth with 18”, 17” and 15” respectively. Topsoil samples TS20, TS21, TS14 and TS13 are located in irrigated pasture/cropland. The required depth for the irrigated areas is 21.6 inches

Number of Partial Inspection this Fiscal Year: 6
Number of Complete Inspections this Fiscal Year: 3

and each hole exceeded the depth with 23", 24", 27" and 27" respectively.

ENFORCEMENT ACTIONS/COMPLIANCE

No enforcement actions were initiated as a result of this inspection, nor are any pending.

PHOTOGRAPHS

Photo 1 – Main Pit Backfilling

Photo 2 – Pond 1 Primary Discharge

Photo 3 – East Ditch North of Coal Entrance

Photo 4 – Pond 2 Discharge Point

Number of Partial Inspection this Fiscal Year: 6
Number of Complete Inspections this Fiscal Year: 3

Photo 5 – Sign in Meehan Draw

Photo 6 – Topsoil Ring Ditch

Photo 7 – Progresso Topsoil Pile

Photo 8 – Topsoil Depth Verification, TS13

Number of Partial Inspection this Fiscal Year: 6
Number of Complete Inspections this Fiscal Year: 3

AVAILABILITY OF RECORDS

PERMIT RECORDS	
DRMS Permit	X
Permit Application w/Revisions	X
Findings Document	X- RN1
Insurance Certificate	X- 8/2018
Bond Document	X- 3/2015
Phased Bond Release Documents/Findings	NA
Air Emission Permits	X- 6/2017
County Special Use Permits	X
UG Mining Landowner Notification	NA
Subsidence Monitoring Reports	NA
Subsidence Monitoring Data	NA
Rill & Gully Survey	NA
Vegetation Monitoring Data	NA
Specific Variance Approvals	NA
Annual Reclamation Reports	X- 2017
Midterm Review Documents	X- MT1
DRMS/OSM Inspection Reports/Enforcement Actions (3 Years)	X
Transfers/Succession of Operator	X
Temporary Cessation Notification	NA
Reclamation Cost Estimate	X- RN1
CERTIFICATIONS	
Pond Certifications	X
Annual Certifications for Impoundments	X- 2017
Fill Certifications for Excess Spoil or Underground Development Waste	NA
• Quarterly Inspections	NA
• Compaction Testing	NA
• Final Certification	NA
Coal Processing Waste Banks	NA
Haul Road Certifications	X
Access Road Certifications	NA

HYDROLOGIC RECORDS	
NPDES Permit	X
NPDES Records	X
Stormwater Management Plan	X
SPCC Plan	X
MSHA Pond Inspections	NA
State Engineer's Pond Inspection	NA
Quarterly Pond Inspections	X
Annual Hydrology Reports	X
• Ground Water Monitoring	X-
• Surface Water Monitoring	X
• Spring & Seep Monitoring	X
• Mine Water Discharge Monitoring	X
• Mine Inflow Study	NA
• Water Consumption Records	X
Well Permits	X

BLASTING RECORDS	
Blasting Publication	NA
Blasting Records (3 years)	X
ATFE Explosives Permit	NA
Blasting Variances	NA
Pre-Blast Surveys	X

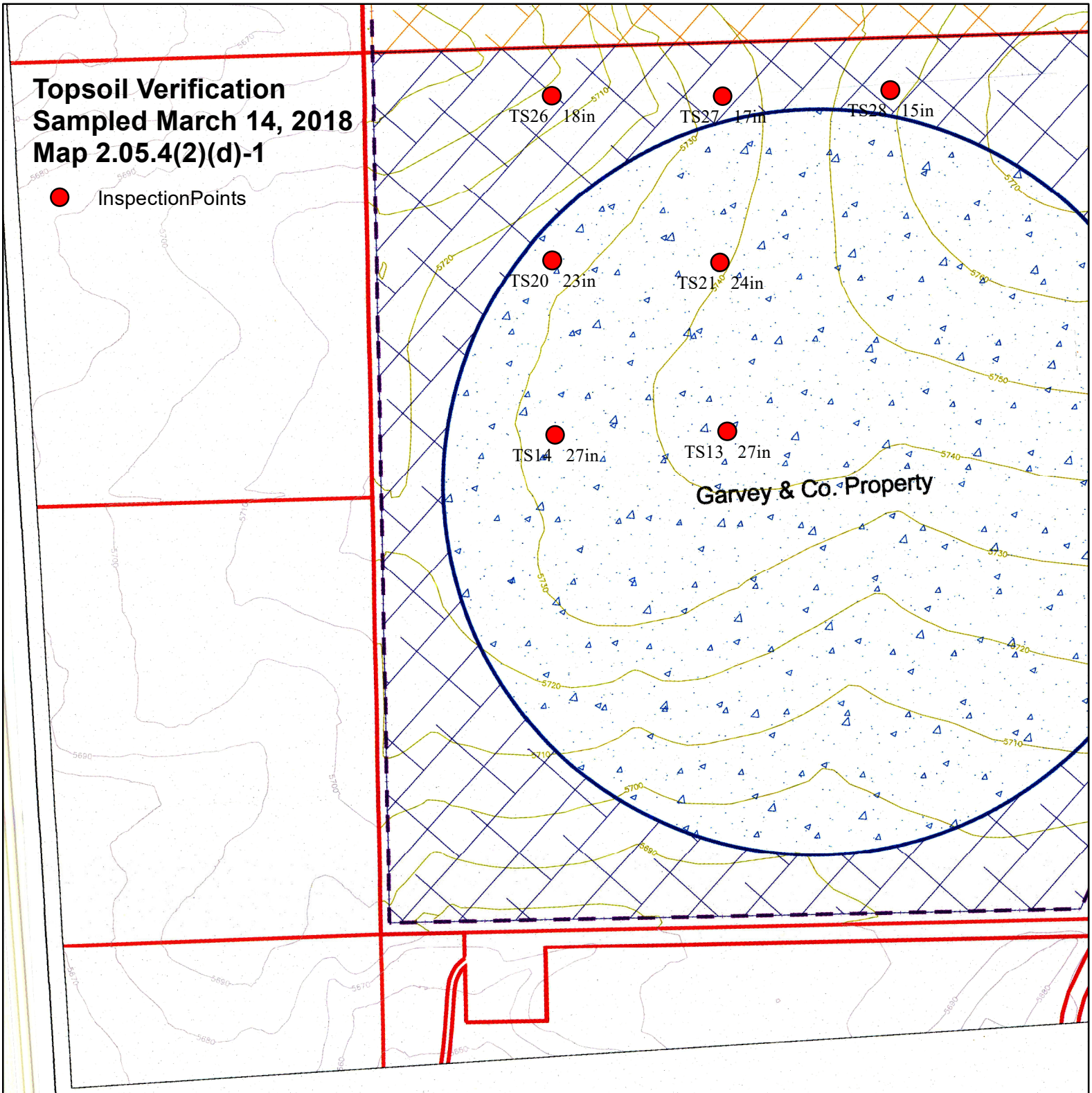
ADDITIONAL RECORDS (specify)	

COMMENTS:

Number of Partial Inspection this Fiscal Year: 6
Number of Complete Inspections this Fiscal Year: 3

Topsoil Verification
Sampled March 14, 2018
Map 2.05.4(2)(d)-1

InspectionPoints



LEGEND

- PERMIT BOUNDARY
- DISTURBANCE BOUNDARY
- PROPERTY BOUNDARY
- POST-MINE CONTOURS
- DRYLAND PASTURE (GARVEY & CO.) MINIMUM TOPSOIL THICKNESS - 1.2 FEET
- IRRIGATED PASTURE (GARVEY & CO.) MINIMUM TOPSOIL THICKNESS: 1.8 FEET
- DRYLAND PASTURE (ERMR - MEEHAN) MINIMUM TOPSOIL THICKNESS - 1.2 FEET
- DRYLAND PASTURE (GLASIER) MINIMUM TOPSOIL THICKNESS - 2.0 FEET
- DELINEATED WETLANDS

N W E S

200' 0 200' 400'

CONTOUR INTERVAL 10 FT.
POST MINE TOPOGRAPHY

COLORADO LICENSED JASON S. STOREY 48092 PROFESSIONAL ENGINEER

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JASON S. STOREY
P.E. No. 48092
08/09/2017
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Appendix C

2021 Phase II Revegetation Evaluation Report

2021 Phase II Revegetation Evaluation Report

NEW HORIZON NORTH MINE

PERMIT NO. C-2010-089

January, 2022

Prepared by:

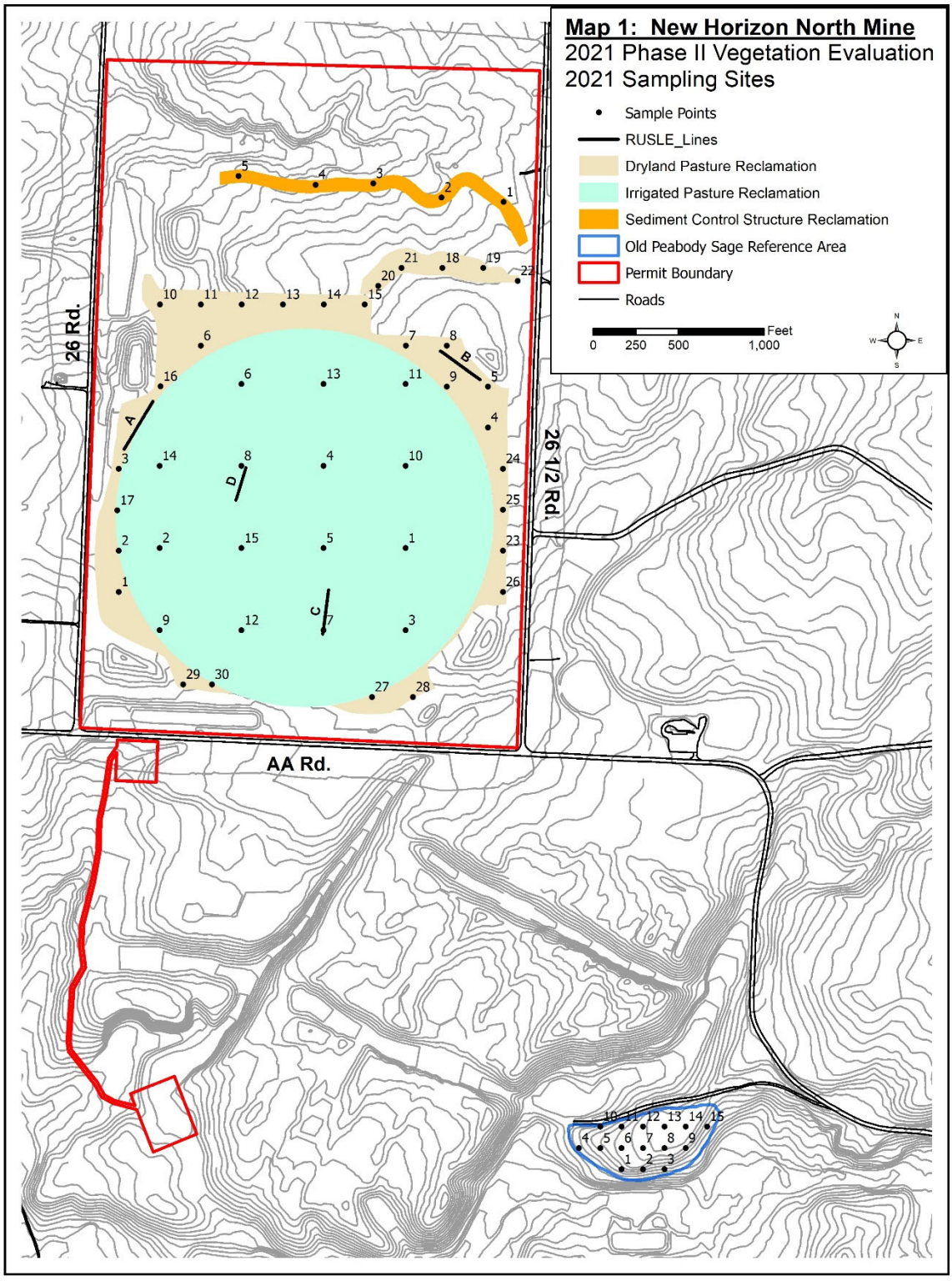
TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 General

Cedar Creek Associates, Inc. (Cedar Creek) was contracted in 2021 by New Horizon North Mine (NHN) to evaluate selected revegetated units for Phase II bond release. In addition, the Old Peabody Sage Reference Area (Dryland Pasture Reference Area) was sampled to provide cover comparison values to facilitate an evaluation of success for the dryland pasture reclaimed units. Data collection was performed in accordance with Permit Section 2.05.4(2)(e) and Colorado Division of Minerals and Geology's Regulations of the Colorado Mined Land Reclamation Board for Coal Mining (Section 4.15). Sampling on Phase II Revegetation and associated Reference Areas occurred June 9-11, 2021, by or under the direct supervision of Cedar Creek's Senior Reclamation Ecologist, Mr. Jesse Dillon. The sample points for Dryland Pasture and Irrigated Pasture Phase II Bond Release and reference areas evaluated in 2021 are provided on Map 1.

Field sampling for the directly measurable variable of ground cover was systematically conducted across the entire Phase II bond release lands and reference areas. Statistical comparisons for each reclamation area were made against each unit's assigned reference area. All statistical procedures followed were those approved per Permit Section 2.05.4(2)(e). Evaluated areas were sampled to meet or exceed the minimal sample size as established by the Permit and meet statistical adequacy for pertinent variables.


Map 1: New Horizon North Mine
2021 Phase II Vegetation Evaluation
2021 Sampling Sites
Sample Points
RUSLE_Lines
Dryland Pasture Reclamation
Irrigated Pasture Reclamation
Sediment Control Structure Reclamation
Old Peabody Sage Reference Area
Permit Boundary
Roads
0 250 500 1,000 Feet
N
W
E
S
26 Rd.
26 1/2 Rd.
AA Rd.
A
B
C
D

1.2 Background

NHN's Phase II revegetated lands are comprised of 118.7 acres from three types of target post-mine land uses, including Dryland Pasture, Irrigated Pasture, and Sediment Control Structure reclamation areas. The post-mining land use of Dryland Pasture has a goal of providing reasonably productive forage for livestock during semi-arid conditions without the need for irrigation. The Dryland Pasture area standards will be based on the Old Peabody Sage Reference Area. The Dryland Pasture areas are comprised of 26.7 acres across four revegetated units, which were seeded between 2017 and 2020.

The Irrigated Pasture areas are comprised of 88.3 acres from one revegetated unit, which was seeded in 2019 with the post-mining land use of Irrigated Pasture/Cropland. Sampling was conducted prior to the first cut harvest of the reclaimed fields. The success criterion for the Irrigated Pasture area is a technical standard.

The Sediment Control Structure is 3.7 acres and was seeded in 2017. Rule 3.03.1(5) of the regulations state that release of bond coverage for liability associated with temporary drainage and sediment control facilities including impoundments and conveying systems can be achieved when vegetative cover is adequate to control erosion and similar to the reclaimed area or surrounding undisturbed area. Reclaimed temporary drainage control facilities shall not be subject to the extended liability period of 3.02.3(2) or the bond release criteria of 3.03.1(2). The regulations do not require a quantitative evaluation of revegetation performance, but one is provided in this report.

The following revegetation units at NHN are included in this Phase II bond release application:

Targeted Post-Mine Land Use	Units	Acres	Seeding Year
Sediment Control Structure	NHN-001	3.7	2017
Dryland Pasture	NHN-002	26.7	2017
	NHN-003		2018
	NHN-005		2019
	NHN-006		2020
Irrigated Pasture	NHN-004	88.3	2019

1.3 Success Standards

According to NHN's permit section 2.05.4(2)(e), revegetation success will be assessed against performance standards for 1) vegetative ground cover and 2) sedimentology.

1. Vegetative Ground Cover Standard

For the Dryland Pasture reclamation areas, revegetation will be deemed adequate if average perennial cover at the reclaimed site is equal to or greater than 90% of the perennial cover mean exhibited by the Dryland Pasture Reference Area.

For the Irrigated Pasture reclaimed area, revegetation will be deemed adequate if average perennial cover at the reclaimed site is not less than 90% of the approved standard (average perennial cover from the three baseline years).

2. Sedimentology

For Dryland Pasture and Irrigated Pasture revegetated lands, demonstration that completed revegetation and grading in the Phase II Bond Release areas have achieved erosion control at least equal to pre-mining levels.

2.0 SAMPLING METHODOLOGY

2.1 Sample Site Selection/Location

A systematic procedure for sample location in the reclaimed and reference units occurred in the following stepwise manner. First, a fixed point of reference was selected for the unit to facilitate location of the systematic grid in the field. Second, a systematic grid of appropriate dimensions was selected to provide a reasonable number of coordinate intersections (e.g., 30) that could then be used for the set of sample sites. Third, a scaled representation of the grid was overlain on a computer-generated map of the target unit. Fourth, the initial placement of this grid was implemented by selection of two random numbers (an X and Y distance) used for locating the first coordinate from the fixed point of reference, thereby making the effort unbiased. Fifth, where an excess number of potential sample points (grid intersections) were indicated by overlain maps, the excess points were randomly chosen for elimination. (If later determined that additional samples would be needed, the eliminated potential sample sites would be added back in reverse order until enough samples could be collected.) Sixth, utilizing a GPS, the sample points were located in the field.

Once a selected grid point was located in the field, ground cover sampling transects were always oriented in the direction of the next site to be physically sampled to further limit any potential bias while facilitating sampling efficiency. This orientation protocol is shown on Figure 1. Depending on logistics, timing, and access points to the target sampling area, the field crew may or may not collect data from sampling points in chronological order. However, orientation protocol was always maintained (i.e., in the direction of the next point to be physically sampled). If the boundary of an area or permanent feature within the area was encountered before reaching the full length of a transect, the orientation of the transect was turned 90° in the appropriate direction so the transect could be completed. In this manner, boundary transects were retained entirely within the target unit by "bouncing" off the boundaries. The orientation protocol dramatically reduces the chances of this happening.

2.2 Determination of Ground Cover

Ground cover at each sample point was evaluated in accordance with Rule 4.15.11(1)(a)(i) utilizing the point-intercept methodology as illustrated on Figure 1. Ground cover transects were implemented at every sample point in the Phase II Areas and the reference areas for the 2021 evaluation efforts. As indicated on this figure, Cedar Creek utilizes state-of-the-art instrumentation it has pioneered to facilitate much more rapid and accurate collection of data. At each sampling location, a transect of 10 meters length was extended in the direction of the next sampling location. At each one-meter interval along the transect, a "laser point bar" was situated parallel to, and approximately 4.5 to 5.0 feet vertically above the ground surface. The laser point bar activates a battery of 10 low-energy specialized lasers situated along the bar at 10-centimeter intervals. Each of the narrowly focused (0.02-inch diameter) laser beams (Figure 1) are oriented to land along the transect and each intercept (hit) is recorded. At each meter, a set of 10 readings was taken specifically to record hits on vegetation (by species), litter (including standing dead), rock (inorganic material >2mm), or bare soil. In this manner, a total of 100 intercepts per transect were recorded resulting in 1 percent cover per intercept. This methodology and instrumentation facilitate the collection of the most unbiased, repeatable, and precise ground cover data possible. To facilitate diversity calculations, second hits were recorded when an overstory shrub stratum was present. However, these second hits were not included in the determination of ground cover. Plant material produced in the 2021 growing season which was still attached to the plant was considered as living plant material whereas all plant material produced in prior years, which was dead, or which had fallen to the ground was considered to be litter.

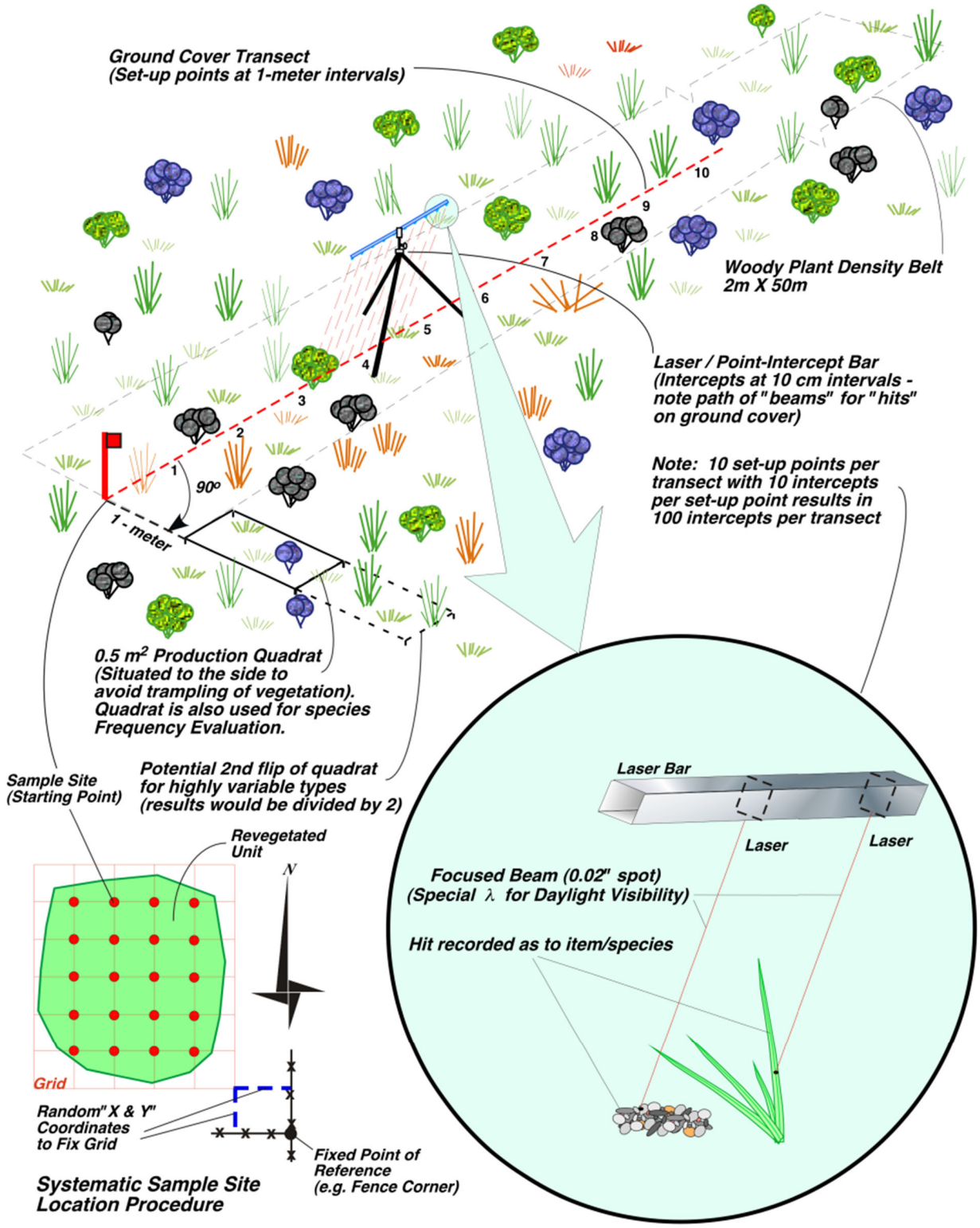


Figure 1

Sampling Procedure at a Systematic Sample Site Location

2.3 Sample Adequacy Determination

Sampling within each unit (Reference Area or Phase II Bond Release areas) was conducted to a minimum of 15 samples. From these preliminary efforts, sample means and standard deviations for total non-overlapping vegetation ground cover were calculated. The Cochran formula (below) for determining sample adequacy was used to calculate $\mathbf{n_{min}}$, whereby the population is estimated to within 10% of the true mean (μ) with 90% confidence.

When the inequality ($\mathbf{n_{min}} \leq \mathbf{n}$) is true, sampling is deemed adequate; and $\mathbf{n_{min}}$ is determined as follows:

$$\mathbf{n_{min}} = (t^2 s^2) / (0.1 \bar{x})^2$$

where: n = the number of actual samples collected

t = the value from the one-tailed t distribution for 90% confidence with n-1 degrees of freedom;

s^2 = the variance of the estimate as calculated from the initial samples;

$\bar{x}$ = the mean of the estimate as calculated from the initial samples.

If the initial samples do not provide a suitable estimate of the mean (i.e., the inequality is false), a reverse null success evaluation which does not require adequacy would be employed (Rule 4.15.11 (2)(c)).

2.4 Vegetation Success Evaluation

Success evaluations involve a direct comparison and, where necessary, statistical testing (using a reverse null test) of the ground cover parameter. In the case of ground cover in the dryland pasture bond release areas, comparisons are made against reference area data of the same year. In the case of ground cover in the irrigated pasture bond release areas, comparisons are made against a technical standard.

The reverse null formula is:

$$t_c = \frac{\bar{x} - Q}{S_{\bar{x}}}$$

Where:

$\bar{x}$ = Average perennial cover

Q = 90% of standard

$S_{\bar{x}}$ = Standard error of mean [s/$\sqrt{n}$]

S = Sample standard deviation

n = Sample size

t_c = Calculated t value

t_t = Table t value

2.5 Sedimentology Evaluation

The purpose of the sedimentology evaluation is to demonstrate that the completed revegetation and grading in the Phase II Bond Release Areas has achieved erosion control at least equal to pre-mining levels as required in Rule 4.15.1 (2) (b) and suspended solids delivered to streamflow outside the permit area will not exceed pre-mining levels as required under Rule 3.03.1 (3) (b). The methodology used is the Revised Universal Soil Loss Equation (RUSLE) using site-specific soil and vegetation data along with slope measurements comparing the Bond Release Area and associated reference areas.

RUSLE was used to calculate predicted annual sediment erosion in tons/acre/year based on the equation:

A (soil loss in tons/acre/year) **= R•K•L•S•C•P**

Where:
A = predicted erosion in tons/acre/year
R = erosivity index of local rainfall
K = soil erodibility actor
LS = length/slope factor
C = vegetative cover factor
P = management practice factor

Representative slopes for Phase II Bond Release Areas were selected to calculate predicted soil loss in in tons/acre/year. For this analysis, no adjustment was made for sediment delivery ratio, rather it has been conservatively assumed that all soil eroded off the natural surface or the reclaimed mine areas would eventually report to receiving streams even though it is likely that some sediment will become trapped on site before reaching a stream. The following discussion provides the basis for selection of each factor.

Erosivity Index R

This factor is mapped by USDA NRCS, it represents a combination of the rainfall intensity and duration which are recognized as major factors in dislodging soil particles The value for the NHN Mine area is 17.

Soil Erodibility Factor K

This is an empirical factor with values published by USDA NRCS for mapped soils throughout the United States. The Soil Survey of San Miguel Area, Colorado, Parts of Dolores, Montrose, and San Miguel Counties shows the following mapped soils in the Phase II Bond Release Areas. The K Factors were determined using the soil survey.

K Factor for New Horizon North Mine					
Dryland Pasture			**Irrigated Pasture**		
Soil	**Symbol**	**K Factor**	**Soil**	**Symbol**	**K Factor**
Nyswonger silty clay loam	71	0.28	Nyswonger silty clay loam	71	0.28
Pinon-Progresso loams	77	0.32	Pinon-Progresso loams	77	0.32
Progresso loam	81	0.32	Progresso loam	81	0.32
Progresso loam	82	0.32			
Average		**0.31**	**Average**		**0.31**

Length Slope Factor LS

Representative slope lines were draped onto the pre-mining and post-mining topography in AutoCAD to provide slope lengths and gradients (Map 1). The table below presents the LS Factors calculated for each slope using RUSLE 1.06c.

LS Factor for New Horizon North Mine								
	Dryland Pasture				Irrigated Pasture			
	Pre-Mining		Post-Mining		Pre-Mining		Post-Mining	
	Slope A	Slope B	Slope A	Slope B	Slope C	Slope D	Slope C	Slope D
Gradient (%)	1.3	0.2	0.2	0.0	6.1	0.8	6.2	0.5
Length (ft)	325	286	325	286	259	198	259	198
LS-Factor	**0.184**	**0.052**	**0.052**	**0.030**	**0.839**	**0.120**	**0.853**	**0.086**

Vegetative Cover Factor C

Data collected from reference areas (which represent pre-mining conditions) and Phase II evaluations (post-mining) were used to determine C Factors. The table below presents the C Factors calculated using RUSLE 1.06c for each vegetation community and timeframe along with the inputs used to derive those results.

C Factor for New Horizon North Mine				
Area	Dryland Pasture		Irrigated Pasture	
Parameter	Pre-Mining (Ref Area)	Post-Mining (Revegetation)	Pre-Mining (Ref Area)	Post-Mining (Revegetation)
Canopy Cover (%)	15.73	20.00	82.73	97.80
Rock Cover (%)	26.73	0.77	0.00	0.07
Litter Cover (%)	28.20	27.77	15.47	1.67
Fall Height (ft)	0.5	0.5	0.5	0.5
Effective Root Mass (lbs/ac)	472	600	2482	2934
Roughness (Index)	0.8	1.1	0.8	1.1
Land Use (Index)	4	4	4	4
C-Factor	**0.0626**	**0.0942**	**0.0192**	**0.0060**

Conservation Practice Factor P

This factor quantifies conservation practices employed at New Horizon. A default value of 1.0 was used pre-mining conditions and 0.50 was used on post-mining sites, where contouring occurs.

3.0 RESULTS

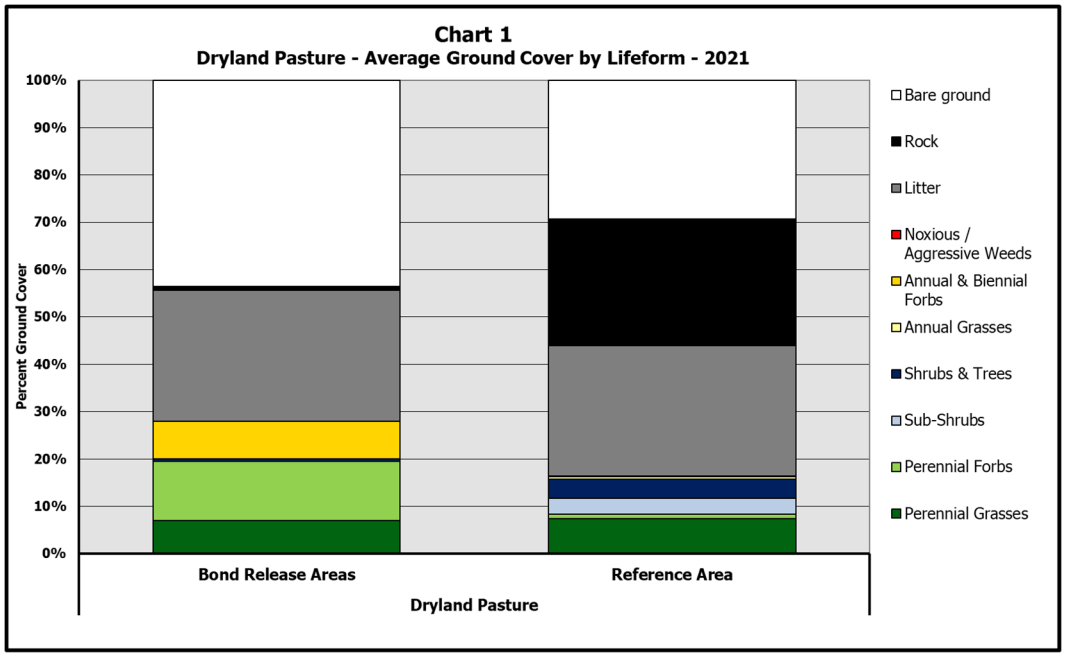
3.1 Dryland Pasture – Vegetation Results

3.1.1 Dryland Pasture Phase II Bond Release Areas

A total of 14 plant species were encountered within the Dryland Pasture Phase II Bond Release Areas evaluated in 2021. Species consisted of 5 grass taxa, 8 forbs, 0 sub-shrubs, and 1 shrub, succulent, or tree (Table 1). Ground cover in the Dryland Pasture Phase II Bond Release areas (Chart 1 and Table 1) consisted of 27.93% live vegetation, 0.77% rock, 27.77% litter, and bare ground exposure of 43.53%. Perennial cover across the unit averaged 20.00% (71.60% relative cover), with annual and biennial cover averaging 7.93% absolute cover (28.40% relative cover). No noxious weed cover was encountered. The dominant taxa were comprised of several species with similar cover, namely forage kochia (*Bassia prostrata*), alfalfa, prickly Russian thistle (*Salsola tragus*), and Russian wildrye (*Elymus junceus*) with 7.07%, 5.37%, 5.00%, and 4.27% average cover.

3.1.2 Old Peabody Sage Reference Area

A total of 15 plant species were encountered within the Old Peabody Sagebrush Reference Area evaluated in 2021. Species consisted of 7 grass taxa, 2 forb, 1 sub-shrub and 5 shrubs, succulents, or trees (Table 1). Ground cover in the Old Peabody Sage Reference Area (Chart 1 and Table 1) consisted of 16.40% live vegetation, 26.73% rock, 27.53% litter, and bare ground exposure of 29.33%. Perennial cover across the unit averaged 15.73% (95.93% relative cover), with annual and biennial cover averaging 0.67% absolute cover (4.07% relative cover). No noxious weed cover was encountered. Dominant taxa were broom snakeweed (*Gutierrezia sarothrae*), needle and thread (*Hesperostipa comata*), big sagebrush (*Artemisia tridentata*), and James' Galleta (*Hilaria jamesii*) with 3.27%, 2.53%, 2.40%, and 2.33% average cover, respectively.



3.2 Dryland Pasture – Sedimentology Results

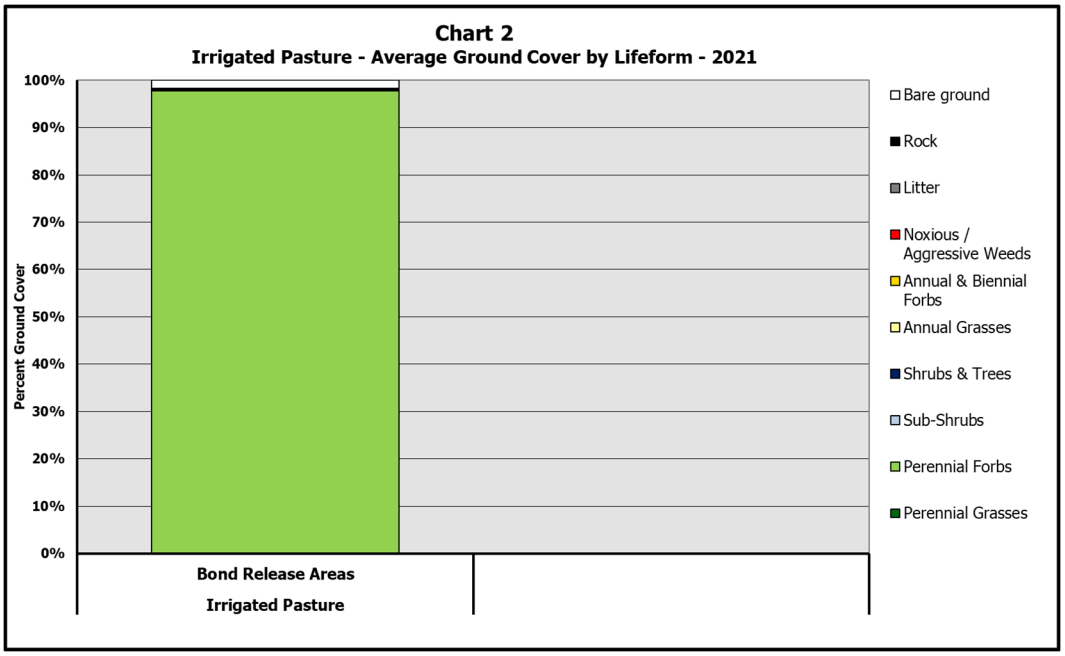
The table below presents the predicted soil loss in tons/acre/year for two representative slopes from the Dryland Pasture Phase II Bond Release Area for pre-mining and post-mining evaluations. The pre-mining representative slopes exhibited 0.061 and 0.017 tons/acre/year of predicted soil loss. In comparison, the post-mining representative slopes exhibited 0.013 and 0.007 tons/acre/year of predicted soil loss.

A (soil loss in tons/acre/year) **for Dryland Pasture**				
Area / Parameter	**Pre-Mining**		**Post-Mining**	
	Slope A	**Slope B**	**Slope A**	**Slope B**
R - Factor	17		17	
K - Factor	0.310		0.310	
LS - Factor	0.184	0.052	0.052	0.030
C - Factor	0.0626		0.0942	
P - Factor	1.000		0.500	
A (soil loss in tons /acre/year)	**0.061**	**0.017**	**0.013**	**0.007**

3.3 Irrigated Pasture – Vegetation Results

3.3.1 Irrigated Pasture Phase II Bond Release Areas

A total of 4 plant species were encountered within the Irrigated Pasture Phase II Bond Release Areas evaluated in 2021. Species consisted of 0 grass taxa, 4 forbs, 0 sub-shrubs, and 0 shrubs, succulents, or trees (Table 1). Ground cover in the Irrigated Pasture Phase II Bond Release area (Chart 2 and Table 1) consisted of 98.07% live vegetation, 0.07% rock, 0.20% litter, and bare ground exposure of 1.67%. Perennial cover across the unit averaged 97.80% (99.73% relative cover), with annual and biennial cover averaging 0.27% absolute cover (0.27% relative cover). No noxious weed cover was encountered. The dominant taxa was alfalfa with 97.27% average cover.



3.4 Irrigated Pasture – Sedimentology Results

The table below presents the predicted soil loss in tons/acre/year for two representative slopes from the Irrigated Pasture Phase II Bond Release Area for pre-mining and post-mining evaluations. The pre-mining representative slopes exhibited 0.084 and 0.012 tons/acre/year of predicted soil loss. In comparison, the post-mining representative slopes exhibited 0.027 and 0.003 tons/acre/year of predicted soil loss.

A (soil loss in tons/acre/year) **for Irrigated Pasture**				
Area / Parameter	**Pre-Mining**		**Post-Mining**	
	Slope C	**Slope D**	**Slope C**	**Slope D**
R - Factor	17		17	
K - Factor	0.307		0.307	
LS - Factor	0.839	0.120	0.853	0.086
C - Factor	0.0192		0.0060	
P - Factor	1.000		0.500	
A (soil loss in tons /acre/year)	**0.084**	**0.012**	**0.013**	**0.001**

Table 1 New Horizon North - Vegetation Cover - 2021

Monitoring Average Cover Summary

				Post-Mining Vegetation/Land Use Type -->	Dryland Pasture		Irrigated Pasture
				Unit ——>	Bond Release Areas	Reference Area	Bond Release Areas
Grasses and Grass-likes							
N	P	*Agropyron cristatum*	Crested Wheatgrass		1.97	-	-
N	P	*Agropyron smithii*	Western Wheatgrass		0.73	-	-
N	P	*Aristida purpurea*	Purple Threeawn		-	0.13	-
N	P	*Bouteloua gracilis*	Blue Grama		-	2.13	-
I	P	*Bromus biebersteinii*	Meadow Brome		0.03	-	-
I	A	*Bromus tectorum*	Cheatgrass		0.10	0.60	-
I	P	*Elymus junceus*	Russian Wildrye		4.27	-	-
N	P	*Hesperostipa comata*	Needle and Thread		-	2.53	-
N	P	*Hilaria jamesii*	James' Galleta		-	2.33	-
N	P	*Oryzopsis hymenoides*	Indian Ricegrass		-	0.27	-
N	P	*Sporobolus cryptandrus*	Sand Dropseed		-	0.07	-
Forbs							
I	P	*Bassia prostrata*	Forage Kochia		7.07	-	-
I	A	*Bassia scoparia*	Burningbush		2.33	-	-
I	P	*Convolvulus arvensis*	Field Bindweed		0.03	-	0.53
I	A	*Camelina microcarpa*	Littlepod False Flax		0.10	-	-
I	B	*Erodium cicutarium*	Redstem Stork's Bill		0.37	-	-
N	A	*Helianthus annuus*	Common Sunflower		0.03	-	-
I	A	*Lappula redowski*	Stickseed		-	0.07	-
I	P	*Medicago sativa*	Alfalfa		5.37	-	97.27
I	B	*Melilotus officinalis*	Sweetclover		-	-	0.13
I	A	*Salsola tragus*	Prickly Russian Thistle		5.00	-	-
I	A	*Sisymbrium altissimum*	Tumble Mustard		-	-	0.13
N	P	*Sphaeralcea coccinea*	Scarlet Globemallow		-	0.93	-
Sub-Shrubs							
N	P	*Gutierrezia sarothrae*	Broom Snakeweed		-	3.27	-
Shrubs & Trees							
N	P	*Artemisia tridentata*	Big Sagebrush		-	2.40	-
N	P	*Atriplex canescens*	Four-wing Saltbush		0.53	0.80	-
N	P	*Eriogonum sp.*	Buckwheat		-	0.07	-
N	P	*Juniperus osteosperma*	Utah Juniper		-	0.27	-
N	P	*Opuntia polyacantha*	Plains Pricklypear		-	0.53	-
				Total Plant Cover	**27.93**	**16.40**	**98.07**
				Rock	0.77	26.73	0.07
				Litter	27.77	27.53	0.20
				Bare ground	43.53	29.33	1.67
				Desirable Perennial Cover (Excluding Noxious Weeds)	**20.00**	**15.73**	**97.80**
Summary by Lifeform:							
				Perennial Grasses	**7.00**	**7.47**	**-**
				Annual Grasses	0.10	0.60	-
				Perennial Forbs	**12.47**	**0.93**	**97.80**
				Annual & Biennial Forbs	7.83	0.07	0.27
				Noxious / Aggressive Weeds	-	-	-
				Sub-Shrubs	-	3.27	**-**
				Shrubs & Trees	**0.53**	**4.07**	**-**
Sample Adequacy Calculations							
				Mean=	27.93	16.40	98.07
				Variance=	316.89	21.83	5.35
				n=	30	15	15
				n_{min}=	69.85	14.68	0.10

N=Native, I=Introduced, A=Annual, B=Biennial, P=Perennial, X=Noxious

3.5 Sediment Control Structure – Vegetation Results

The Sediment Control Structure (Unit NHN-001) was evaluated with 5 transects. Ground cover in the Sediment Control Structure (Table 2) averaged of 27.40% live vegetation, 0.40% rock, 32.60% litter, and bare ground exposure of 39.60%. Perennial cover across the unit averaged 19.00%, with annual and biennial cover averaging 8.40% absolute cover. No noxious weeds cover was encountered. Dominant taxa were four-wing saltbush (*Atriplex canescens*) and Russian wildrye with 12.80% and 6.20% average cover, respectively.

Table 2 New Horizon - Vegetation Cover - 2021

Sediment Control Structure (NHN-001)

Percent Ground Cover Based on Point-Intercept Sampling

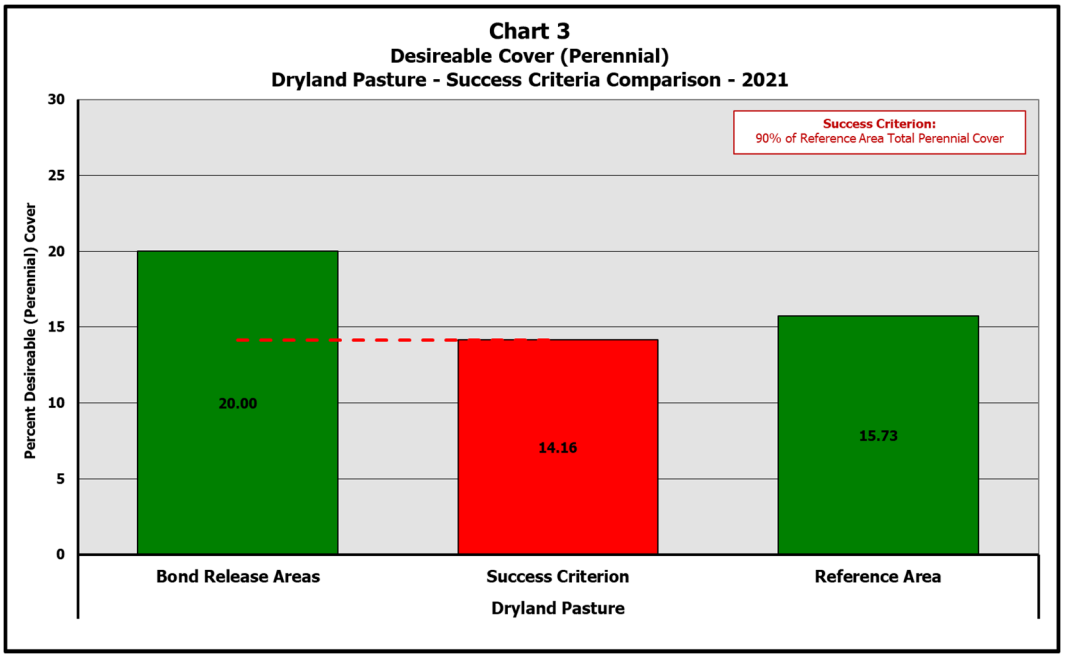
				Transect No.—>	1	2	3	4	5	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes												
I	P	*Elymus junceus*	Russian Wildrye		10	5	2	9	5	**6.20**	**22.63**	**25**
Forbs												
I	A	*Bassia scoparia*	Burningbush		2	4	6	3	19	**6.80**	**24.82**	**25**
I	A	*Salsola tragus*	Prickly Russian Thistle			2	6			**1.60**	**5.84**	**10**
Sub-Shrubs												
		None								**0.00**	**0.00**	**0**
Shrubs & Trees												
N	P	*Atriplex canescens*	Four-wing Saltbush		14	8	10	19	13	**12.80**	**46.72**	**25**
											Mean	
				Total Plant Cover	**26**	**19**	**24**	**31**	**37**		**27.40**	
				Rock	1				1		**0.40**	
				Litter	39	38	33	41	12		**32.60**	
				Bare ground	34	43	43	28	50		**39.60**	
Total Perennial Cover (Excluding Noxious Weeds)					**24**	**13**	**12**	**28**	**18**		**19.00**	
Sample Adequacy Calculations					**t= 1.53**		**n = 5**					
					v = 47.30		**n_{min} = 14.81**					

N=Native, I=Introduced, X=Noxious A=Annual, B=Biennial, P=Perennial

4.0 SUCCESS COMPARISON

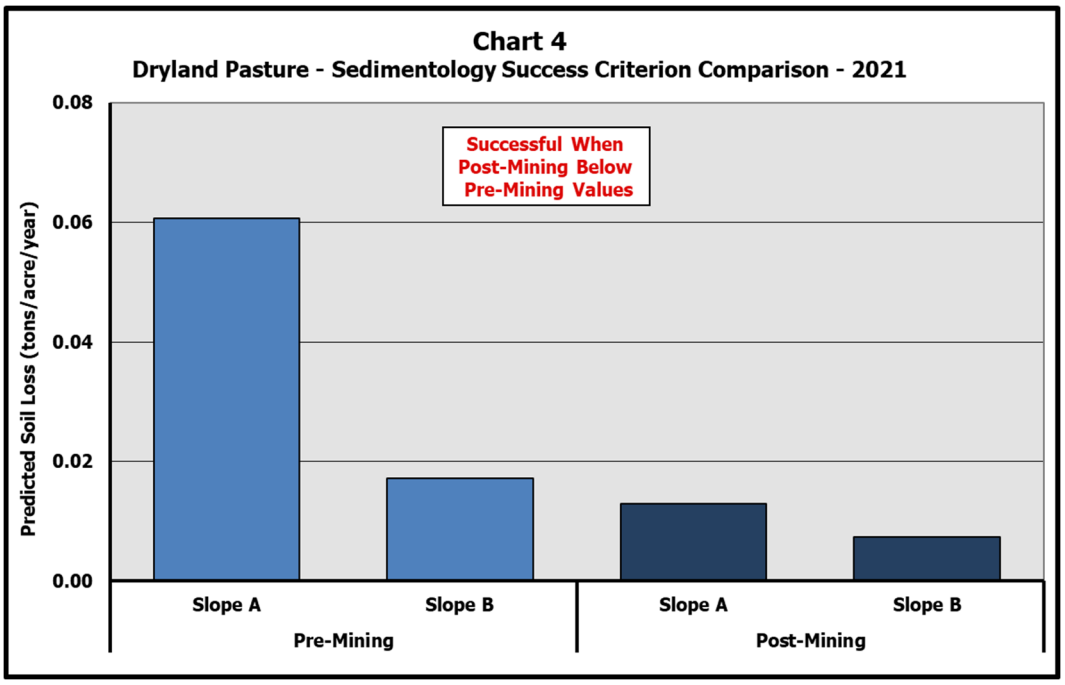
4.1 Dryland Pasture

Sample adequacy was not demonstrated with a minimum of 30 transects in the bond release Area (Sample Adequacy Table presented above) so success for perennial cover is demonstrated by use of the "reverse" null hypothesis per Rule 4.15.11 (2)(c). Chart 3 displays the results from ground cover sampling and reveals that the Dryland Pasture Phase II Bond Release areas exceeds the reference area comparison with 20.00% perennial cover versus the 14.16% perennial cover standard (90% of 15.73%).



The null hypothesis being tested is that the bond release areas mean is less than or equal to 90% of the standard. Since t_c (1.855) is greater than 1-tailed t table value (0.845) for alpha error probability of 0.20, with (n-1) degrees of freedom, then the hypothesis is rejected, and revegetation is deemed successful.

Chart 4 displays the results from sedimentology analysis and reveals that the Dryland Pasture Phase II Bond Release Area post-mining evaluation exhibits less predicted erosion than the pre-mining evaluation with 0.061 and 0.017 tons/acre/year versus 0.013 and 0.007 tons/acre/year.



4.2 Irrigated Pasture

The demonstration of adequacy and a minimum of 15 transects in the bond release Area (Sample Adequacy Table presented above) allow for a direct comparison for perennial cover per Rule 4.15.11 (2)(a). Chart 5 displays the results from ground cover sampling and reveals that the Irrigated Pasture Phase II Bond Release area exceeds the reference area comparison with 97.80% perennial cover versus the 82.84% perennial cover standard (90% of 92.04%).

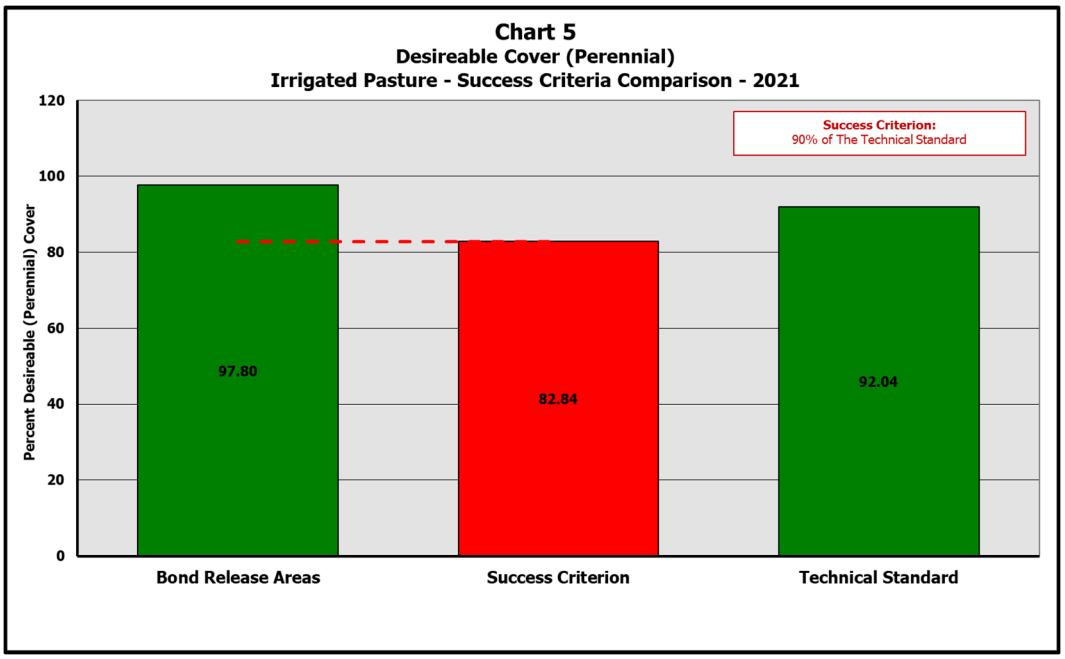
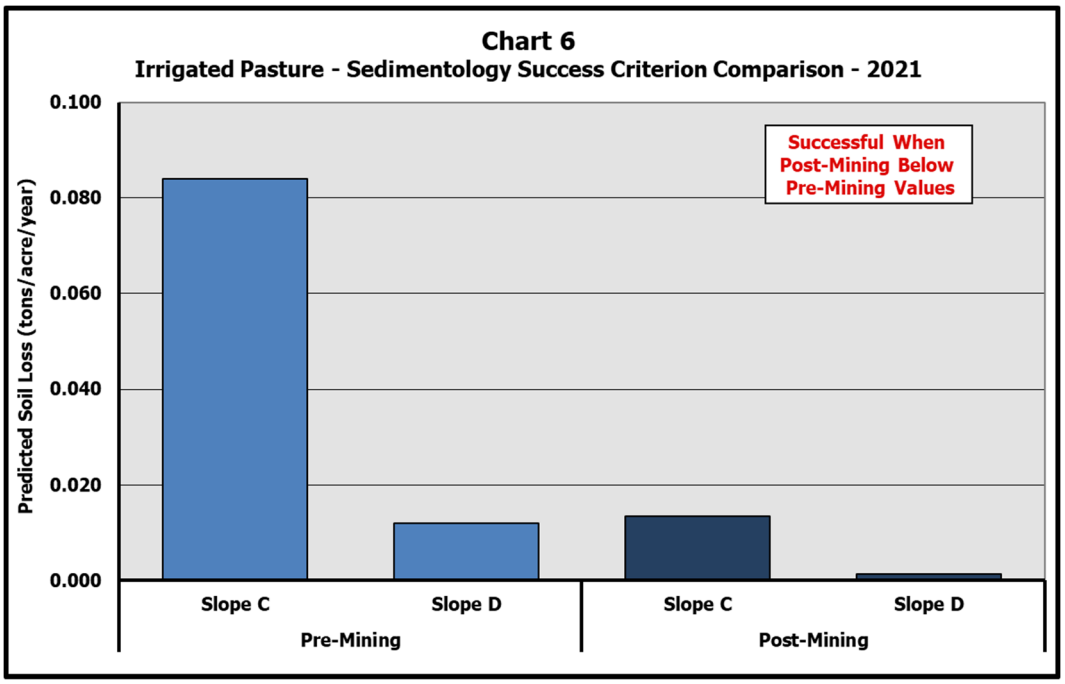


Chart 6 displays the results from sedimentology analysis and reveals that the Irrigated Pasture Phase II Bond Release Area post-mining evaluation exhibits less predicted erosion than the pre-mining evaluation with 0.084 and 0.012 tons/acre/year versus 0.013 and 0.001 tons/acre/year.



4.3 Sediment Control Structure

While a formal success evaluation was not undertaken as it is not required by Rule 3.03.1(5), the revegetation performance of the Sediment Control Structure is outperforming the Dryland Pasture Reference Area. The revegetation of the Sediment Control Structure exhibits 19.00% perennial ground cover compared with 15.73% perennial ground cover. This level of ground cover offers significant surface protection from both rain splash and overland flow erosion potential in dryland systems. The plant roots from the established perennial vegetation also stabilize soils on the slopes.

5.0 REFERENCES

New Horizon North Mine. Permit Number C-2010-089. Section 2.05.4.

Weber, W.A. and Wittman, R.C., 1996. Colorado Flora: Western Slope - Revised Edition. University Press of Colorado. 496 p

Appendix A
Raw Data Tables

Table A1 New Horizon North - Vegetation Cover - 2021

Dryland Pasture Phase II

Percent Ground Cover Based on Point-Intercept Sampling

			Transect No.—>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes																																				
N	P	*Agropyron cristatum*	Crested Wheatgrass		1				1				2			1										2	8		5			39		**1.97**	**7.04**	**27**
N	P	*Agropyron smithii*	Western Wheatgrass						6	1																12				1			2	**0.73**	**2.63**	**17**
I	P	*Bromus biebersteinii*	Meadow Brome																							1								**0.03**	**0.12**	**3**
I	A	*Bromus tectorum*	Cheatgrass					1																		2								**0.10**	**0.36**	**7**
I	P	*Elymus junceus*	Russian Wildrye						5	12	4		2	7	14	8	10	13	1						2		18			2	18	8	4	**4.27**	**15.27**	**53**
Forbs																																				
I	P	*Bassia prostrata*	Forage Kochia	31	27	35		16	10		3	16	11	2	8				25	25												1		2	**7.07**	**25.30**	**47**
I	A	*Bassia scoparia*	Burningbush		1	1									1	2	2				7	5			4	2		2		11	22	1	9	**2.33**	**8.35**	**47**
I	P	*Convolvulus arvensis*	Field Bindweed																														1	**0.03**	**0.12**	**3**
I	A	*Camelina microcarpa*	Littlepod False Flax					1				2																						**0.10**	**0.36**	**7**
I	B	*Erodium cicutarium*	Redstem Stork's Bill																								6			4		1		**0.37**	**1.31**	**10**
N	A	*Helianthus annuus*	Common Sunflower																										1					**0.03**	**0.12**	**3**
I	P	*Medicago sativa*	Alfalfa						6																	31	9		65	24	1		25	**5.37**	**19.21**	**23**
I	A	*Salsola tragus*	Prickly Russian Thistle				18	11		1	4	3			1		1				3	3	16	9	7	6	23	31		12		1		**5.00**	**17.90**	**57**
Shrubs & Trees																																				
N	P	*Atriplex canescens*	Four-wing Saltbush	6		1													6												3			**0.53**	**1.91**	**13**
																																		Mean		
			Total Plant Cover	**37**	**29**	**37**	**18**	**29**	**28**	**14**	**11**	**21**	**15**	**9**	**24**	**11**	**13**	**13**	**32**	**25**	**10**	**8**	**16**	**9**	**13**	**56**	**64**	**33**	**71**	**54**	**45**	**50**	**43**	**27.93**		
			Rock		1	1	1	1	2	1	1	1	2	3			3		2									2			1	1		**0.77**		
			Litter	51	37	36	26	40	38	27	47	37	29	36	36	33	28	26	23	40	23	45	25	12	20	22	20	8	9	11	21	6	21	**27.77**		
			Bare ground	12	33	26	55	30	32	58	41	41	54	52	40	56	56	61	43	35	67	47	59	79	67	22	16	57	20	35	33	43	36	**43.53**		
			Total Perennial Cover (Excluding Noxious Weeds)	**37**	**28**	**36**	**0**	**16**	**28**	**13**	**7**	**16**	**15**	**9**	**22**	**9**	**10**	**13**	**32**	**25**	**0**	**0**	**0**	**0**	**2**	**46**	**35**	**0**	**70**	**27**	**23**	**47**	**34**	**20.00**		

Sample Adequacy Calculations

Plant Cover Mean = 27.93 **t= 1.31** **n = 30**

Variance = 316.89 **n_{min} = 69.85**

N=Native, I=Introduced A=Annual, B=Biennial, P=Perennial, X=Noxious

Table A2 New Horizon North - Vegetation Cover - 2021

Dryland Pasture Reference Area

Percent Ground Cover Based on Point-Intercept Sampling

		Transect No.——>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes																				
N	P	*Aristida purpurea*	Purple Threeawn										2					**0.13**	**0.81**	**7**
N	P	*Bouteloua gracilis*	Blue Grama				3	5	2	3	8	1	4	3	2	1		**2.13**	**13.01**	**67**
I	A	*Bromus tectorum*	Cheatgrass						1								8	**0.60**	**3.66**	**13**
N	P	*Hesperostipa comata*	Needle and Thread				3	3				8	8	8	8			**2.53**	**15.45**	**40**
N	P	*Hilaria jamesii*	James' Galleta	8	2	6	2	8	1	2	1					4	1	**2.33**	**14.23**	**67**
N	P	*Oryzopsis hymenoides*	Indian Ricegrass	1	1					1	1							**0.27**	**1.63**	**27**
N	P	*Sporobolus cryptandrus*	Sand Dropseed			1												**0.07**	**0.41**	**7**
Forbs																				
I	A	*Lappula redowski*	Stickseed														1	**0.07**	**0.41**	**7**
N	P	*Sphaeralcea coccinea*	Scarlet Globemallow					2	2	3	1	2			3	1		**0.93**	**5.69**	**47**
Sub-Shrubs																				
N	P	*Gutierrezia sarothrae*	Broom Snakeweed	4	2	2	10	1	2	4	4	8	1	5	2		1	3	**3.27**	**19.92**	**93**
Shrubs & Trees																				
N	P	*Artemisia tridentata*	Big Sagebrush	7			1		2	4	1	2	4			8	7		**2.40**	**14.63**	**60**
N	P	*Atriplex canescens*	Four-wing Saltbush														7	5	**0.80**	**4.88**	**13**
N	P	*Eriogonum sp.*	Buckwheat										1						**0.07**	**0.41**	**7**
N	P	*Juniperus osteosperma*	Utah Juniper															4	**0.27**	**1.63**	**7**
N	P	*Opuntia polyacantha*	Plains Pricklypear					1			3				4				**0.53**	**3.25**	**20**
																			Mean	
		Total Plant Cover	**20**	**5**	**9**	**13**	**18**	**15**	**17**	**14**	**20**	**15**	**19**	**20**	**19**	**20**	**22**		**16.40**	
		Rock	54	75	49	37	48	10	4	34	17	23	16	2		19	13		**26.73**	
		Litter	17	10	29	22	27	33	38	29	39	14	26	40	36	21	32		**27.53**	
		Bare ground	9	10	13	28	7	42	41	23	24	48	39	38	45	40	33		**29.33**	
		Total Perennial Cover (Excluding Noxious Weeds)	**20**	**5**	**9**	**13**	**18**	**15**	**16**	**14**	**20**	**15**	**19**	**20**	**19**	**20**	**13**		**15.73**	

Sample Adequacy Calculations	**Plant Cover Mean = 16.40**	**t= 1.35**	**n = 15**
	Variance = 21.83		**n_{min} = 14.68**

N=Native, I=Introduced A=Annual, B=Biennial, P=Perennial, X=Noxious

Table A3 New Horizon North - Vegetation Cover - 2021

Irrigated Pasture Phase II

Percent Ground Cover Based on Point-Intercept Sampling

			Transect No.—>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Average Cover	Relative Cover	Freq.
Forbs																					
I	P	*Convolvulus arvensis*	Field Bindwed		1			2	1			4							**0.53**	**0.54**	**27**
I	P	*Medicago sativa*	Alfalfa	100	99	100	99	96	92	98	100	89	100	99	98	97	95	97	**97.27**	**99.18**	**100**
I	B	*Melilotus officinalis*	Sweetclover						1	1									**0.13**	**0.14**	**13**
I	A	*Sisymbrium altissimum*	Tumble Mustard													2			**0.13**	**0.14**	**7**
																			Mean		
			Total Plant Cover	**100**	**100**	**100**	**99**	**98**	**94**	**99**	**100**	**93**	**100**	**99**	**98**	**99**	**95**	**97**	**98.07**		
			Rock							1									**0.07**		
			Litter						2			1							**0.20**		
			Bare ground				1	2	4			6		1	2	1	5	3	**1.67**		
			Total Perennial Cover (Excluding Noxious Weeds)	**100**	**100**	**100**	**99**	**98**	**93**	**98**	**100**	**93**	**100**	**99**	**98**	**97**	**95**	**97**	**97.80**		

Sample Adequacy Calculations	**Plant Cover Mean = 98.07**	**t= 1.35**	**n = 15**
	Variance = 5.35		**n_{min} = 0.10**

N=Native, I=Introduced A=Annual, B=Biennial, P=Perennial, X=Noxious