J. E. STOVER & ASSOCIATES, INC.

743 Horizon Court, Suite 334
GRAND JUNCTION, COLORADO 81506
PHONE: (970) 260-0802

MINE ENGINEERING
MINE RECLAMATION

CIVIL ENGINEERING
CONST. MANAGEMENT

July 27, 2023

Rob Zuber
Division of Reclamation, Mining & Safety
1313 Sherman St., Room 215
Denver, CO 80203

Re: Bowie Resources LLC, Bowie No. 1 Mine
Request for Phase III Bond Release, East Mine
Permit C-1981-038

Dear Mr. Wein:

The follow information comprises Bowie Resources LLC's application for a Phase III bond release for its Bowie No. 1 Mine.

1. Date of Request: July 27, 2023

2. Permittee: Bowie Resources LLC

3. Permit No. C-1981-038

4. Date Permit was approved:
   Initial Permanent Program Permit Issuance September 24, 1981
   Current Permit Issued May 5, 2018

5. Mine Name: Bowie No. 1 Mine

6. Phase of Bond Release Requested: Phase III

7. Number of Acres: Total: 58.84 Ac. (Reference Task No. 130)

8. Bond Company: Lexon Insurance Company

9. Bond: Number: Corporate Surety, Bond No. 1071400, $2,500,000
   Corporate Surety, Bond No. 1071399, $268,916

10. Current Total Bond Amount: $2,768,916 posted

11. Original Total Bond Amount: 1981 East Mine Bond - $1,116,500
1986 West Mine Bond - $1,025,000

12. Dollar Amount Requested for Release: $ 280,090

13. Legal Description of Area Requested: Portions of:

Township 13 South, Range 92 West, 6th P.M.

Sec. 24: S½NE¼, NW¼SE¼

14. A Map Showing the Area: Figures 1, 2 & 3 are enclosed

15. Dates Reclamation Work Performed: 2008, 2009 and 2011

16. A description of results achieved: Excerpts below are from the attached Cedar Creek report;

During 2008 partial reclamation of the Bowie No. 1 East Mine was performed. (The 2008 reclamation is a continuation of the 2001 activities in which surface structures were removed). The 2008 reclamation consisted of returning portions of the disturbed area back to approximate original contours and hydro seeding with a permanent seed mix and wood fiber mulch.

During 2009 final grading of the Bowie #1 East Mine was completed (excluding required sediment control structures). The 2009 activities which were a continuation of the 2008 activities, included the final grading and hydro seeding with an approved permanent seed mix, and mulched with a wood fiber mulch. Seed tags are attached.

During 2011, additional hydroseeding was performed. Hydroseeding consisted of an approved permanent seed mix, and was mulched with wood fiber much.

Vegetation has flourished since initial reclamation efforts in 2008 & 2009. The area surpassed the total plant cover success criterion of ≥ 90% of the Total Plant cover standard of 36% for the East Mine, 50.63% in 2022 and 54.17 in 2023. (Table 1 in attached Cedar Creek Report).

A total of 290 and 306 of trees, shrubs and subshrubs per acre were sampled in 2022 and in 2023, respectively, which surpasses the success criterion of ≥90% of 100 shrub, sub-shrub or trees per acre. (Table 1 in attached Cedar Creek Report).

With regards to diversity, the East Mine unit surpasses the required number of total native or introduced perennial herbaceous species with between 0.5% and 60.0% relative cover (≥ five species) with five in 2022 and seven in 2023 (Chart 8). The total native perennial cool-season grasses with between 0.5% and 60% relative cover (≥ three species) was achieved with three 2022 and four in 2023 (Chart 9). The total native or introduced forb species with between 0.5% and 60.0% relative cover (≥ two species) was met with two in 2022 and three in 2023 (Chart 10). And finally, the total number of native trees, shrubs, and sub-shrubs with <80% relative cover (≥ two species) was achieved with two in 2022 and four in 2023 (Chart 11).

All reclamation work has been performed in accordance with plans approved by the Division of Reclamation Mining and Safety.

17. Copies of written notice to seek release to parties identified in Rule 3.03.2(1): A Certificate of Service which documents the notices required under Rule 3.03.2(1) have been mailed is enclosed

18. Copy of newspaper advertisement: Proof of Publication of the public notice has been uploaded to the DRMS' ePermitting site.

Please call if you have any questions.

Sincerely,

Tamme Bishop

Tamme Bishop, P.E.
Project Engineer

Enclosures
1. Figures 1,2,3
2. Partial Bond Release Letter
3. Public Notice
4. Certificate of Service for Partial Bond Release Letter
5. Cedar Creek Vegetation Study
6. Bond Release Certification Statement

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MINE ENGINEERING
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CONST. MANAGEMENT

BOND RELEASE LETTER –
BOWIE NO. 1, EAST MINE

July 21, 2023

Re: Bowie Resources, LLC
P.O. Box 483
Paonia, CO 81428

Dear People:

Bowie Resources LLC, is the successor in interest to Cyprus Orchard Valley Coal Company and Colorado Westmoreland Inc's. responsibilities under Division of Reclamation, Mining and Safety, Permit No. C-1981-038. Bowie Resources LLC backfilled, graded and seeded the east mine facilities/portal area in 2008, 2009 and 2011. During the following years, vegetation has flourished. Vegetation studies were performed during the summer of 2022 and 2023 which indicates the vegetation meets the requirements of a Phase III bond release.

One provision of the Division of Reclamation, Mining and Safety's Rules is that the mine must be bonded for the estimated reclamation cost. Now that a portion of the reclamation work has been performed, Bowie Resources LLC has formerly requested a partial bond release from the Division of Reclamation, Mining and Safety. Bowie Resources LLC has a bond liability of $2,768,916 and has requested about $280,090 of that amount be released. In accordance with the Division's Rule 3.03.2(1), Bowie Resources LLC is required to send written notice of its partial bond release request to adjacent land owners, surface owners and various local governing bodies.

The area for which partial bond release is being requested is at the Bowie No. 1, East Mine, located in Delta County, approximately four (4) miles north of Paonia, CO. The east mine is located in the NW/4SE/4, SW/4NE/4 of Section 24, Township 13 South, Range 92 West, 6th P.M.

Sincerely,

Tamme Bishop

Tamme Bishop, P.E.
Project Engineer

J. E. STOVER & ASSOCIATES, INC.

743 Horizon Court, Suite 334
GRAND JUNCTION, COLORADO 81506
PHONE: (970) 260-0802

MINE ENGINEERING
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Supplemental Information

Surface and Groundwater impact analysis:

Surface water monitoring point SW-06 is located downstream of the East Mine. Review of the SW-06 data which is submitted as part of the Bowie No.1 Annual Hydrologic Review shows that there has not been a negative impact on the waters of Stevens Gulch, and the average values for laboratory parameters do not show any negative water quality trends. Further, approval of Technical Revision No. 62 provided for the approval of the removal of sediment ponds 1-4, and the gob pile pond. This revision documents that the untreated drainage from the reclaimed areas contribute less suspended solids to the streamflow outside of the permit area than adjacent non-disturbed areas.

There are no nearby groundwater monitoring points upstream or downstream of the East Mine from which to analyze data. However, since data for SW-06 shows no negative impacts to surface waters, it would lead to the conclusion that no negative impacts to the groundwater resources would be seen.

Post Mining Land Use

The Post Mining Land Use of the East Mine area is Rangeland. This designation is consistent with the historical land use of the area and the management plans of the Bureau of Land Management.

Review of collected data demonstrates success and utility of the vegetated areas especially given the vegetative ground cover and favorable results with regard to diversity and production despite wildlife grazing. The 2022 and 2023 vegetation reports indicate the ground cover of perennial plants within the reclaimed areas are comparable to adjacent undisturbed native communities and plant succession is occurring and progressing in a positive direction, indicating that plants are self-sustaining. This demonstrates the success and utility of the vegetated areas to be used for the approved post mining land use of livestock grazing and deer and elk winter habitat.

PUBLIC NOTICE

Bowie Resources LLC, P.O. Box 1488,Paonia, CO, 81428 has submitted an application for a Phase III final l bond release for the East Mine, to the Division of Reclamation, Mining and Safety for its mining permit No. C-1981-038. The mining permit was initially approved on September 24, 1981 and renewed on April 20, 2018. The current reclamation bond is $2,768,916 and is in the form of two corporate surety bonds. This permit action will release about $280,090 from the reclamation bond. The area for which bond release is being requested is at the Bowie No. 1, East Mine area. The total disturbance associated with this bond release application is 58.84 acres.

Reclamation work was performed in 2008, 2009 and 2011 at the East Mine. The East Mine is located in the NW/4SE/4, SW/4NE/4 of Section 24, Township 13 South, Range 92 West, 6th P.M. The mine facilities and portal area have been backfilled, graded to approximate original contour and hydroseeded. Vegetation has flourished and meets the permit criteria to qualify for a partial Phase II bond release.

The Bowie No. 1 Mine is located in Delta County, approximately four (4) miles north of Paonia, CO. The surface facilities, located north of the North Fork of the Gunnison River, are located in portions of Sections 23 and 24, Township 13 South Range 92 West; and Section 29, Township 13 South, Range 91 West of the 6th P.M. The areas within the mine permit area that are requested for release are located on the U.S. Geological Survey 7.5 minute Bowie and Gray Reservoir, Colorado Quadrangle maps within the following sections.

Township 13 South, Range 92 West, 6th P.M.

Sec. 2:	SE¼SE¼
Sec. 10:	Lot 14
Sec. 11:	NWS¼SE¼, NWS¼SW¼, SWS¼SW¼,
Sec. 13:	NES¼NW¼, Lots 3, 5 & 12
Sec. 14:	NES¼SE¼
Sec. 15:	Lots 3, 10 & 15
Sec. 23:	Lots 1 and 3
Sec. 24:	Lot 4, S½NE¼, NW¼SE¼

Written comments or objections to the proposed release, and a request for a public hearing or informal conference may be submitted to and additional information obtained from the Division of Reclamation, Mining and Safety, 1313 Sherman St., Room 215, Denver, Co. 80203-2273, phone (303) 866-3567. Comments, objections or requests for a public hearing or informal conference must be made within thirty (30) days of the last publication of this notice or within thirty (30) days of the completed bond release inspection, whichever is later.

CERTIFICATE OF SERVICE

BOWIE RESOURCES LLC

PARTIAL RELEASE OF BOND LIABILITY - BOWIE NO. 1 MINE

Rule 3.03.2(1) requires that notice of intention to seek release from bond be sent to adjoining property owners, surface owners, appropriate local government bodies, municipalities, regional planning commissions, boards of county commissioners, county planning agencies, sewage and water treatment authorities, and water conservancy and water conservation districts.

I hereby certify that I have served a true and correct copy of the attached partial bond release letter for adjacent landowners and local governing bodies by placing same in the U.S. Mail, first class postage prepaid, on July 21, 2023.

James Stover, P.E.

Bowie Resources LLC
P.O. Box 1488
Paonia, CO 81428

Mayor, Town of Paonia
P.O. Box 460
Paonia, CO 81428

Delta County Commissioners
Delta County Courthouse
5th & Palmer
Delta, CO 81416

Delta County Planning Department
5th & Palmer
Delta, CO 81416

Gunnison County Planning Department
Blackstock Government Center
221 N. Wisconsin St., Ste. D
Gunnison, CO 81230

Gunnison County Commissioners
Gunnison County Courthouse
200 East Virginia
Gunnison, CO 81230

Ken Nordstrom
Delta County Health Department
225 West 6th Street
Delta, CO 81416

Region 10 League for Economic
Assistance and Planning
300 North Cascade, Suite #1
Montrose, CO 81401

Robert Starr
Commissioner Irrigation Dist. 4
1167 3100 Road
Hotchkiss, CO 81419

Bureau of Land Management
Montrose District Office
2505 So. Townsend Ave.
Montrose, CO 81401

USDA- Forest Service
Paonia Ranger District
P.O. Box 1030
Paonia, CO 81428

Colorado Parks and Wildlife
2300 S Townsend Ave.
Montrose, CO 81401

Fire Mountain Canal & Reservoir Co.
P.O. Box 414
Paonia, Colorado 81428

Terror Ditch and Reservoir Company
P.O. Box 313
Paonia, CO 81428

Overland Ditch & Reservoir Company
Pete Kasper
1321 2900 Road
Hotchkiss, CO 81419

Roberts Stucker Ditch
Steve Wolcott
P.O. Box 6
Paonia, CO 81428

Oak Mesa Ditch
Grant Farnsworth
1378 4100 Road
Paonia, CO 81428

Bruce Ditch
c/o Merritt Denison
3760 J 75 Road
Paonia, CO 81428

Roatcap Owners Access Road Maintenance Association
John Egger
1552 4005 Drive
Paonia, CO 81428

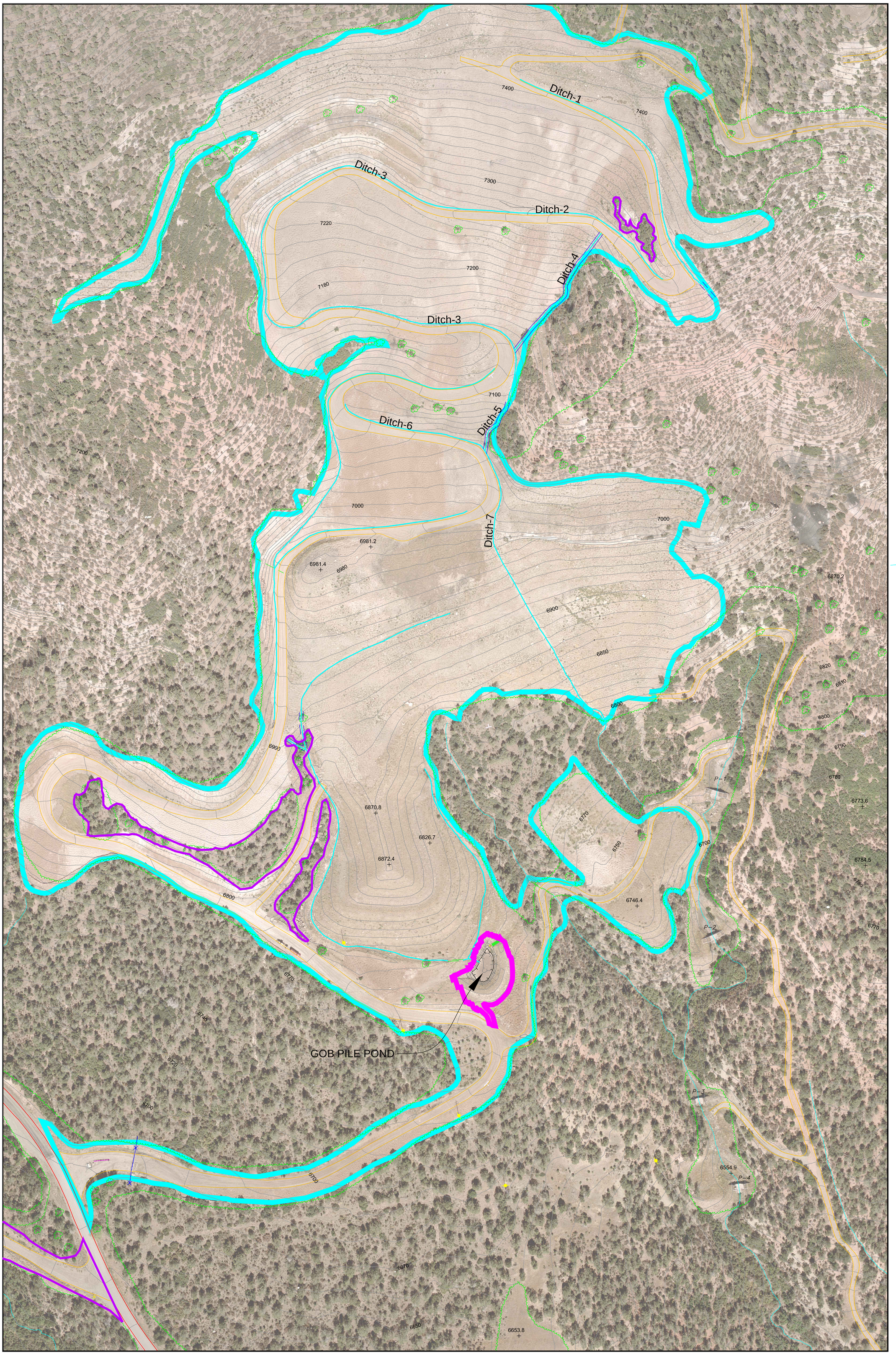
North Fork Farmers Ditch Association
Jess Campbell
1323 3750 Road
Hotchkiss, CO 81419

Stewart Ditch Company
Dee Burns
3865 J 75 Drive
Paonia, CO 81428

The Pitkin Mesa Pipe Line Company
P.O. Box 402
Paonia, CO 81428

Derby Mountain LLP
10543 3300 Road
Hotchkiss, CO 81419

Pavlisick Mining Company
P. O. Box 903
Paonia, CO 81428-0903



J. E. STOVER & ASSOCIATES
2352 N 7th ST UNIT B
Grand Jct., CO 81501

REFERENCES

REVISIONS

No.	DESCRIPTION:	BY	DATE
1.	PHASE I PARTIAL BOND RELEASE	TKB	3-7-12
2.	Areas revised after site inspection June 28 2012	TKB	7-26-12
3.	Revised areas to include most of disturbed area boundary	TKB	8-21-12
4.	Added Pond 1-4 boundaries	TKB	11-17-17
5.	Revised Gob Pond area/ROM Acreage	TKB	01-19-18
6.	PHASE III BOND RELEASE	TKB	07-27-23

LEGEND:

AREA REQUESTED FOR PHASE III RELEASE
(58.84 Ac.)
AREA EXCLUDES GOB POND AREA

N
W E
S
ONE INCH

ENGINEER'S CERTIFICATION

I hereby certify that this drawing was done by me or under my direct supervision and that all of the information presented on this drawing is true and correct to the best of my knowledge and belief.

Tammerin K Stover–Bishop Date
Colorado P.E. 43402

DESIGNED:		
DRAWN:	D.A.J.	03/15/01
CHECKED:		

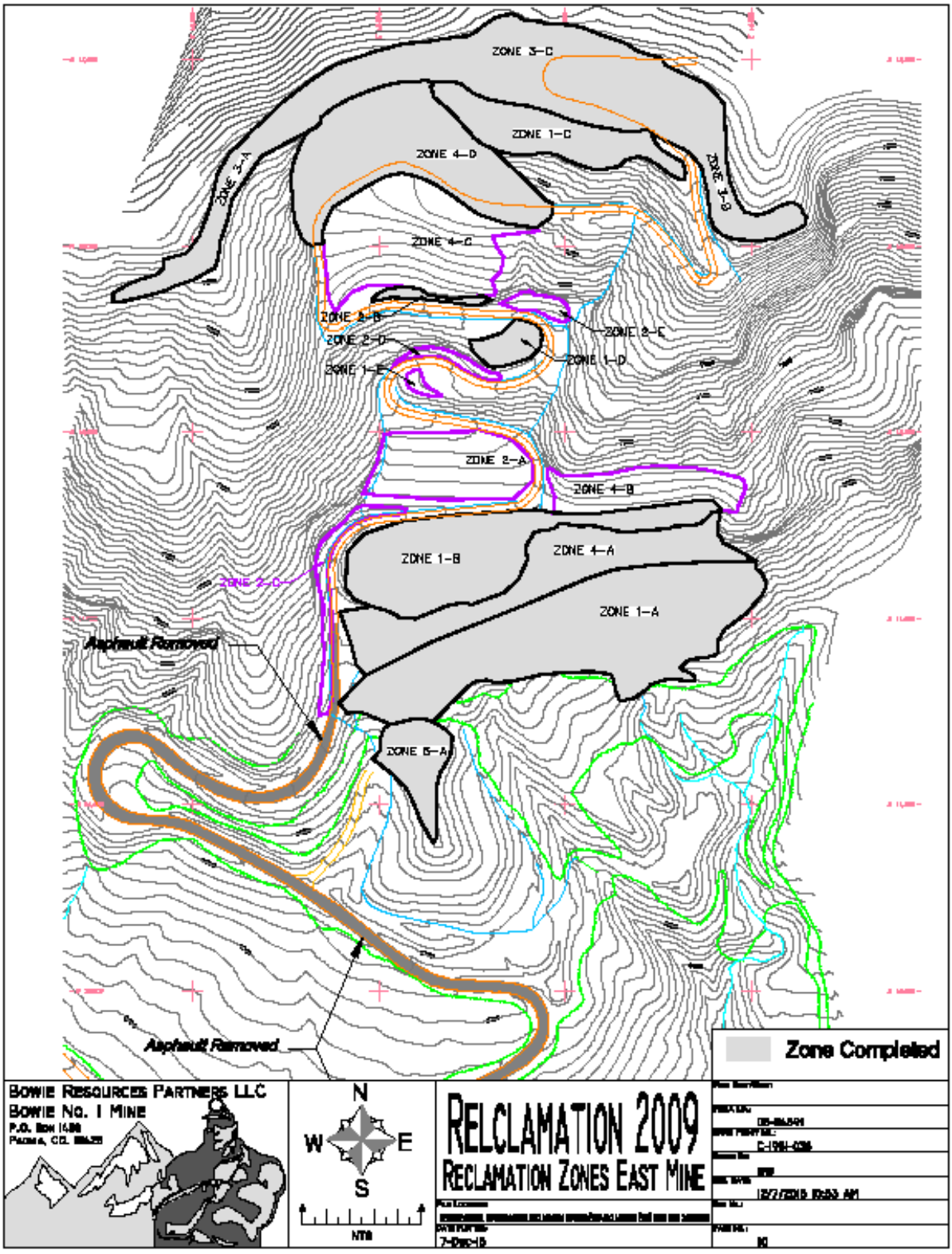
PREPARED FOR:

BOWIE RESOURCES, LLC
BOWIE NO. 1 MINE
P.O. BOX 483
PAONIA, COLORADO 81428

PROJECT: BOWIE NO. 1 MINE

TITLE: RECLAMATION MAP

DRMS I.D. No.	C - 1981 - 038	DWG. NAME:	Figure 1
SCALE:	1" = 100'		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BOWIE RESOURCES PARTNERS LLC
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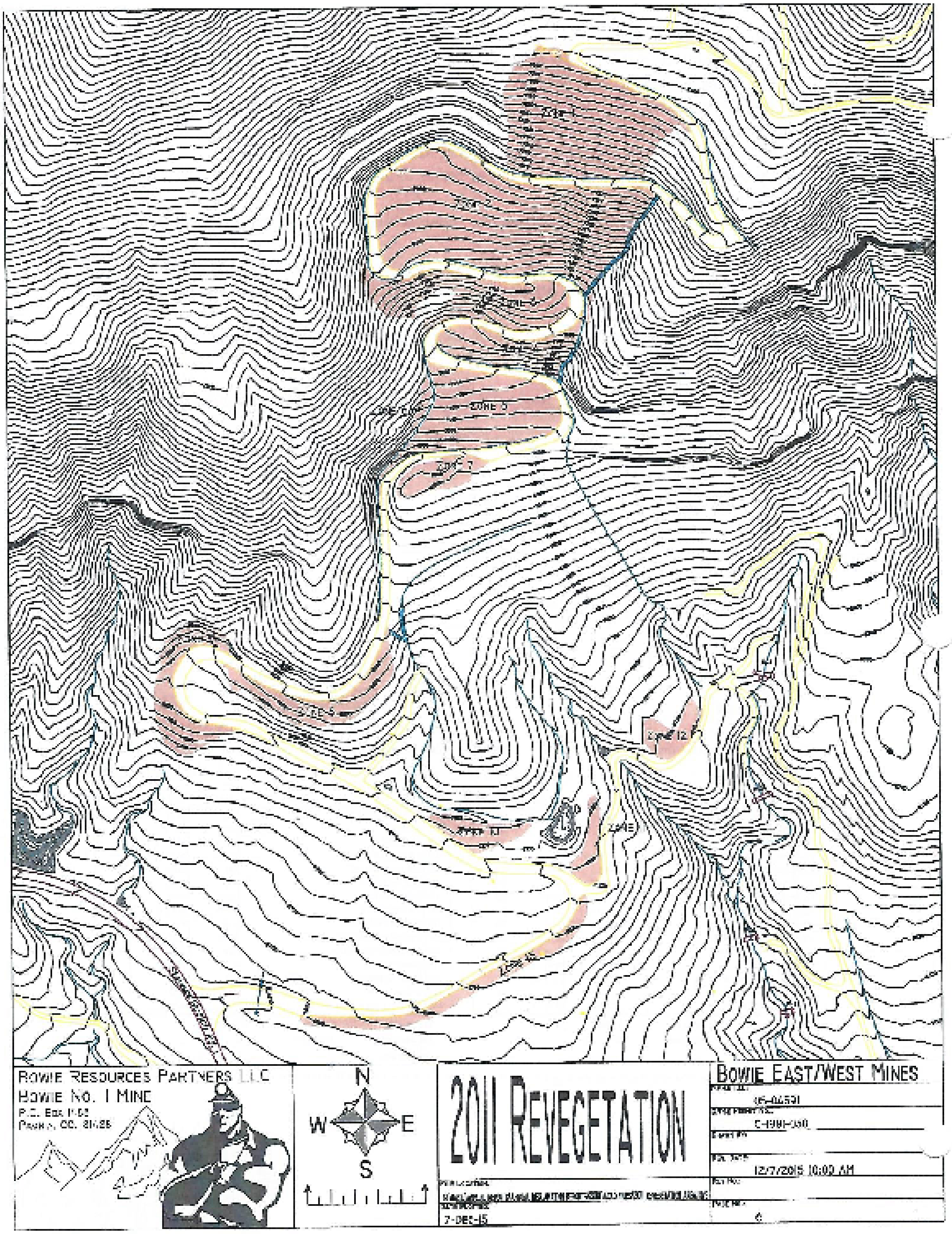
RELCLAMATION 2009
RECLAMATION ZONES EAST MINE


Bowie Resources Partners LLC
Bowie No. 1 Mine
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2011 Revegetation
Bowie East/West Mines
C-1981-038
12/7/2015 10:00 AM
7-DEC-15

Bowie Resources, LLC

Bowie #1 Mine

PHASE III BOND RELEASE EVALUATION

EAST MINE – YEARS 1 & 2

2022 & 2023

June 2023

CEDAR CREEK ASSOCIATES, INC.

EXECUTIVE SUMMARY

Cedar Creek Associates, Inc. was contracted in 2022 and 2023 by Bowie Resource, LLC to evaluate the revegetated East Mine areas at the Bowie No. 1 Mine for both years of a two-year Phase III Bond Release effort. Field studies conducted in 2022 and 2023 to evaluate revegetation efforts have shown that the target reclaimed plant communities have met the target success criterion for Phase III Bond Release (Table 1). Ground cover of desirable plants within the reclaimed areas compares favorably to established technical standards and plant succession is occurring and progressing in a positive direction, indicating that plants are self-sustaining.

Table 1 Bowie #1 - East Mine

Revegetation Success Criteria Comparisons - 2022 & 2023 (per TR-63)

		Plant Cover		Production		Woody Plant Density	
Area	*Year Sampled*	**Total Plant Cover*** (% average cover)		**Annual (Total) Herbaceous*** (pounds per acre)		**Live Trees, Shrubs, and Sub-Shrubs** (Average per acre)	
Success Criteria		**≥36%**		**≥360**		**≥90**	
East Mine	**2022**	**50.63**	**Pass**	**804**	**Pass**	**290**	**Pass**
	2023	**54.17**	**Pass**	**706**	**Pass**	**306**	**Pass**

		Diversity (Number of Species)*							
		Total Native or Introduced Perennial Herbaceous		**Total Native Perennial Cool-Season Grasses**		**Total Native or Introduced Forbs**		**Total Native Sub-Shrubs, Trees, and Shrubs**	
Area	*Year Sampled*	(Between 0.5 & 60% Relative Cover)						(<80% Rel. Cover)	
Success Criteria		**≥5**		**≥3**		**≥2**		**≥2**	
East Mine	**2022**	**5**	**Pass**	**3**	**Pass**	**2**	**Pass**	**2**	**Pass**
	2023	**7**	**Pass**	**4**	**Pass**	**3**	**Pass**	**4**	**Pass**

*Excluding noxious weeds

TABLE OF CONTENTS

In Text Maps, Tables, Charts, and Figures

BOWIE RESOURCES, LLC

Bowie No. 1 Mine – East Mine

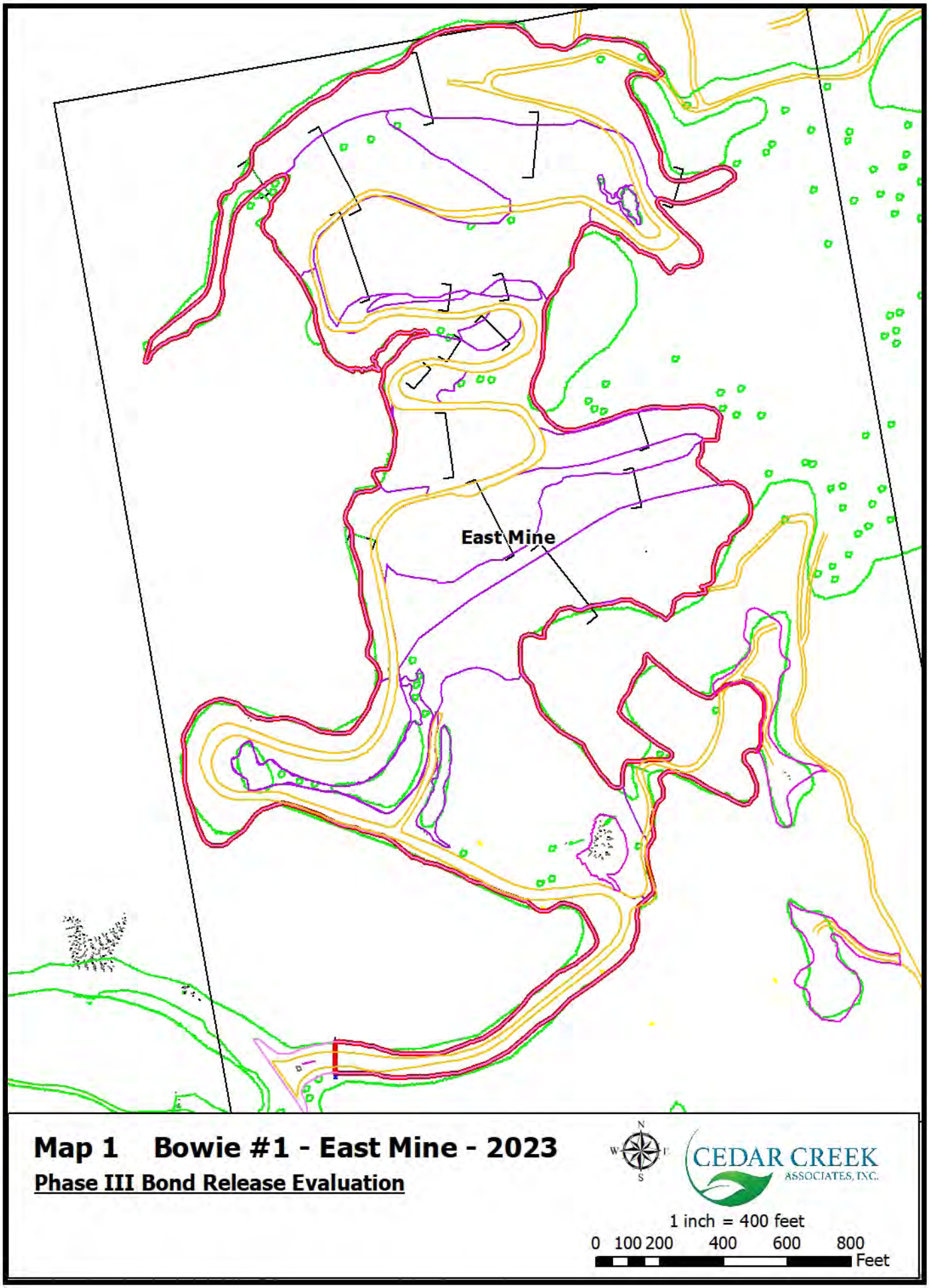
PHASE III BOND RELEASE EVALUATION REPORT

YEARS 1 & 2 – 2022 & 2023

1.0 INTRODUCTION

1.1 General

Cedar Creek Associates, Inc. (Cedar Creek) was contracted in 2022 in 2023 by Bowie Resource, LLC. (Applicant) to evaluate the East Mine revegetated area within the Bowie No. 1 Mine (Bowie No. 1, Permit No. C-1981-038) for both years of the two-year Phase III Bond Release effort. Data collection was performed in the interest of ascertaining progress toward revegetation success in accordance with Rule 3.03, Release of Performance Bonds and the approved technical revision, TR-63. The East Mine area evaluated in 2022 and 2023 consisted of approximately 59 acres of revegetation (Map 1). Results of the evaluation were compared to established technical standards in TR-63 to facilitate a comparison of success for the reclaimed areas. Field sampling for ground cover, production and woody plant density were systematically conducted within the reclaimed areas on June 23rd and 24th in 2022 and May 30th and 31st in 2023. Sampling was conducted by or under the direct supervision of Cedar Creek's Senior Reclamation Ecologist, Mr. Erik Mohr. In addition to the sampling effort, current conditions existing at the time of field work were photo documented to provide a visual demonstration of site-conditions. Nomenclature for plant taxa followed Weber and Whitman (2012) and lifeform classification regarding sub-shrubs followed Wyoming DEQ (1999). Raw data tables and photo plates are presented in Appendix A.



Map 1 Bowie #1 - East Mine - 2023

Phase III Bond Release Evaluation

1.2 Precipitation

Precipitation data presented on Table P and Charts P1 and P2 was recorded at weather stations in Paonia and Cimarron, CO. The Paonia weather station is approximately five miles south of the sample locations. However, data collection at this station ceased in 2016. Therefore, precipitation data was used from the Cimarron weather station (approximately 40 miles south of the sample locations) from 2017 through 2023 due to its proximity and similar elevation. These weather stations provide a rough comparison of long-term trends in precipitation in the region. However, the locations of both weather stations are considerably lower in elevation than the sample locations and so precipitation totals are not likely to be completely accurate. Based on these data and expressed vegetation in the reclaimed areas, precipitation totals appear to have been slightly below-average in the 12 months prior to the evaluation in June of 2022 and above-average in 12 months prior to the evaluation in late May of 2023.

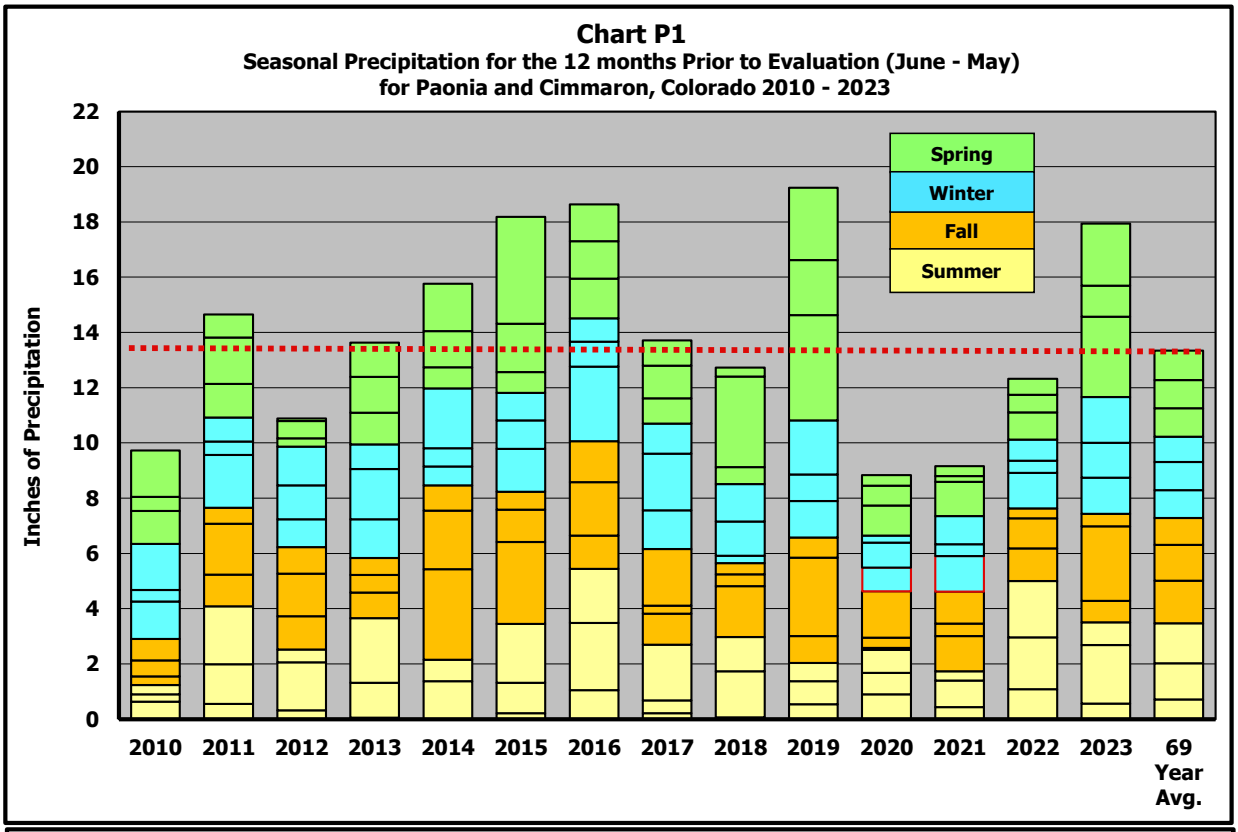
The overall average annual precipitation (Jan-Dec) for the past 68 years is 13.34 inches while monthly averages range from 0.7 in June to 1.5 inches in September (Table P). Average summer precipitation is 3.5 inches while fall, winter, and spring average 3.8, 3.0, and 3.1 inches, respectively (Charts P1 and P2). Review of the precipitation charts further reveals that growing season (spring) precipitation in the past 14 years has been variable ranging from 1.0 inches in 2012 to 8.4 inches in 2019. This variation in conditions ranging from drought to well above-average seasonal precipitation has contributed significantly to the current expression of ecological communities across the study area.

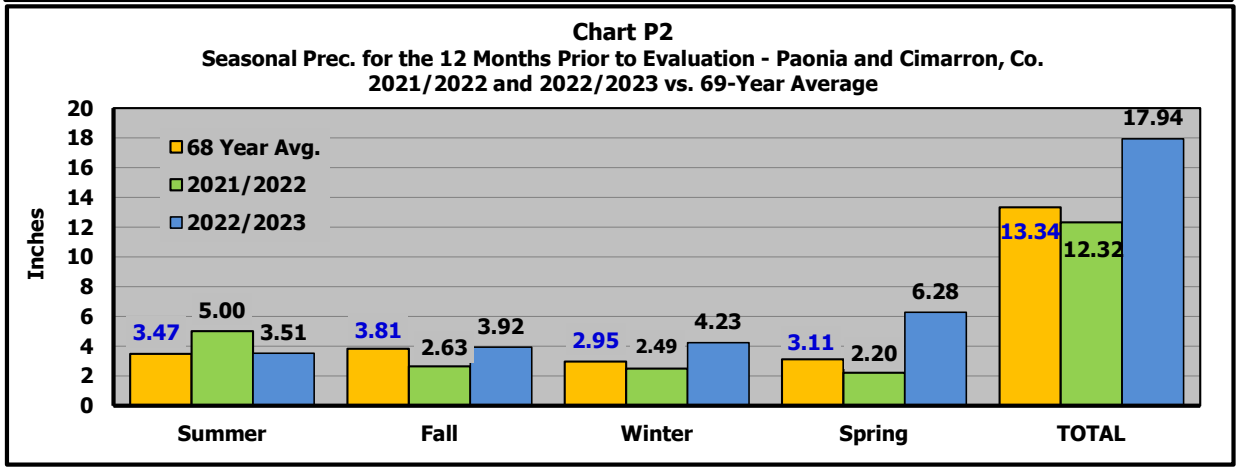
Table P - Annual Precipitation for Paonia and Cimarron, Colorado 2010 - 2023													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2010	0.42	1.66	1.20	0.51	1.68	0.55	1.44	2.09	1.15	1.84	0.58	1.91	**15.03**
2011	0.49	0.87	1.22	1.68	0.83	0.32	1.74	0.46	1.20	1.55	0.96	1.01	**12.33**
2012	1.22	1.41	0.30	0.62	0.09	0.05	1.26	2.35	0.92	0.64	0.61	1.41	**10.88**
2013	1.82	0.89	1.14	1.30	1.24	0.00	1.37	0.78	3.28	2.12	0.91	0.69	**15.54**
2014	0.66	2.16	0.77	1.31	1.71	0.21	1.11	2.13	2.96	1.17	0.65	1.56	**16.40**
2015	1.02	1.00	0.76	1.75	3.86	1.05	2.43	1.96	1.20	1.94	1.48	2.70	**21.15**
2016	0.90	0.85	1.44	1.35	1.33	0.51	0.80	1.81	1.07	1.94	1.48	2.70	**16.18**
2017	2.05	1.09	0.91	1.19	1.31	0.06	1.67	1.24	1.84	0.43	0.41	0.27	**12.47**
2018	1.23	1.36	0.61	3.28	0.33	0.54	0.83	0.66	0.98	2.84	0.72	1.33	**14.71**
2019	0.96	1.95	3.82	1.99	2.62	0.90	0.78	0.83	0.07	0.37	1.68	0.86	**16.83**
2020	0.90	0.25	1.09	0.72	0.39	0.44	0.96	0.33	1.28	0.45	1.16	1.28	**9.25**
2021	0.43	1.02	1.24	0.21	0.36	1.08	1.88	2.04	1.18	1.09	0.36	1.29	**12.18**
2022	0.44	0.76	0.98	0.64	0.58	0.56	2.12	0.83	0.77	2.70	0.45	1.31	**12.14**
2023	1.27	1.65	2.91	1.12	2.25	-	-	-	-	-	-	-	9.20
69 Year Avg.	**1.02**	**0.92**	**1.02**	**1.03**	**1.06**	**0.71**	**1.31**	**1.45**	**1.54**	**1.30**	**0.97**	**1.01**	**13.34**

Values averaged due to lack of data from weather station

Values obtained from Cimmaron, CO

* = No data available





1.3 Background and Standards for Success

The Bowie No. 1 Mine is located approximately three miles northwest of Paonia, Colorado in a semi-arid mountain ecosystem. Small tree and dense shrub vegetation communities surround the mine area and are dominated by Utah juniper (*Juniperus osteosperma*) and Gambel oak (*Quercus gambelii*). The post-mining land use of revegetation is livestock grazing, as well as deer and elk winter habitat. The original permit for Bowie No. 1 describes the sampling procedures and success standards for the original planned reclamation (Run of Mine, East Mine, and West Mine). Revised success criteria used in this Phase III evaluation are based on Technical Revision No. 63, Preliminary Adequacy Review (TR-63). The changes implemented in TR-63 are based on results of Phase II Bond Release Success monitoring conducted in 2013 (West Mine and Run of Mine) and 2016 (East Mine). The current success criteria and standards are as follows:

- Achieve a Total Plant Cover of ≥ 90% of the Total Plant Cover Standard of 60% (54%) – West Mine
- **Achieve a Total Plant Cover of ≥ 90% of the Total Plant Cover Standard of 40% (36%) – East Mine and Run of Mine.**
- Achieve annual herbaceous production levels of ≥ 90% of 450 pounds per acre (405) – West Mine.
- **Achieve annual herbaceous production levels of ≥ 90% of 400 pounds per acre (360) – East Mine and Run of Mine.**
- **Achieve a woody plant density of ≥ 90% of 100 shrub, sub-shrub or trees per acre (90).**
- **Achieve a species diversity of ≥ 5 native or introduced, perennial herbaceous species with between 0.5% and 60% relative cover.**
- **Achieve a species diversity of ≥ 3 native, cool-season perennial grass species with between 0.5% and 60% relative cover.**
- **Achieve a species diversity of ≥ 2 native or introduced perennial forb species with between 0.5% and 60% relative cover.**
- **Achieve a species diversity of ≥ 2 native shrub, tree or sub-shrub species, not exceeding a relative cover value of ≥ 80%.**

2.0 SAMPLING METHODS

2.1 Sample Site Selection / Location

A systematic procedure for sample location in the revegetated 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., 45) 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 extending along north/south and east/west lines. 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, the sample points were located in the field utilizing a handheld GPS unit.

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 indicated on Figure 1. Depending on logistics, timing, and access points to the target sampling area, the field crew would occasionally layout a set of points along coordinates in one direction and then sample them in reverse 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 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. Production quadrats were always oriented 90° to the right (clockwise) of the ground cover transect and placed one meter from the starting point so as to avoid any trampled vegetation.

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. 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. A transect of 10 meters length was extended in the direction of the next sampling location from the flagged center of each systematically located sample point. 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. A set of 10 readings was taken specifically to record hits on vegetation (by species), litter, (including standing dead), rock (>2mm), or bare soil. Hits were determined at each meter interval by activating a battery of 10 low-energy specialized lasers situated along the bar at 10 centimeter intervals

and recording the variable intercepted by each of the narrowly focused (0.02") beams (Exhibit 1). In this manner, a total of 100 intercepts per transect were recorded resulting in 1 percent cover per intercept. This methodology and instrumentation facilitates 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.

2.3 Determination of Current Annual Production

At all sample sites in the reference and reclamation areas, current annual herbaceous production was collected from a 0.5 m^2 quadrat frame placed one meter and 90º to the right (clockwise) of the ground cover transect to facilitate avoidance of vegetation trampled by investigators during sample site location (Figure 1). From within each quadrat, all above ground current annual vegetation within the vertical boundaries of the frame was clipped and bagged separately by lifeform as follows:

Perennial Grasses
Sub-Shrubs
Noxious Weeds - Grass
Perennial Forbs
Annual & Biennial Forbs
Noxious Weeds – Other

All production samples were returned to the lab for drying and weighing. Drying occurred at 105º C until a stable weight was achieved (24 hours). Samples were then weighed to the nearest 0.1 gram. Total weights for each sample were compiled and converted to pounds per acre prior to success determination.

2.4 Determination of Woody Plant Density

Woody plant density was determined in the sampling unit through the use of density belts. Age classes recorded for this protocol includes young (typically 2-3 years of age for shrubs and 2-10 years for conifers) and mature (capable of flowering and/or seed production). One 2-meter wide by 50-meter long belt transect at each sample point was surveyed in 2022 and 2023. As indicated on Figure 1, these belts were extended in the direction of the next sampling point. All woody plants rooted within the perimeter of each belt were enumerated by species. Lifeform classification regarding sub-shrubs followed Wyoming DEQ (1999).

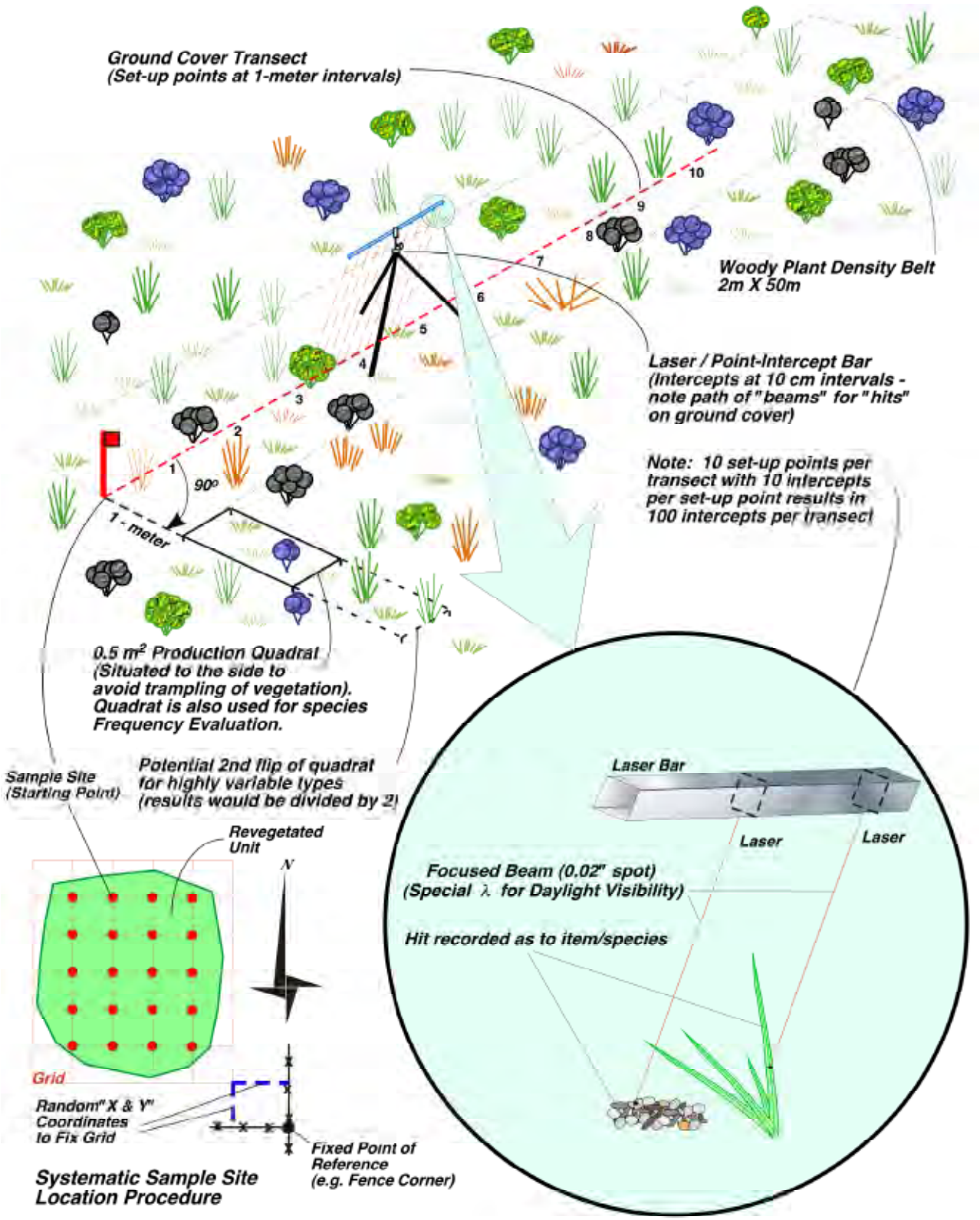


Figure 1

Sampling Procedure at a Systematic Sample Site Location

2.5 Sample Adequacy Determination

Cover, production, and woody plant density sampling within each unit was conducted using 30, 45, and 82 points, respectively. Cover and production sampling points were co-located, woody plant density sample points were laid out on a unique grid. From these preliminary efforts, sample means and standard deviations for total non-overlapping vegetation ground cover, total production, and wood plant density 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% (cover and production) or 15% (woody plant density) 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:

$$\mathbf{n_{min}} = (t^2 s^2) / (\mathbf{d}\,\bar{X})^2$$

Where:

n = the number of actual samples collected (initial size = 30, 45 or 82)

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;

d = precision (0.10 for cover and production; 0.15 for woody plant density);

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

2.6 Success Comparisons

Rule 4.15.11 (2)(a) of the Colorado Coal Regulations allows for direct comparison of cover and production values if sample adequacy is demonstrated and a minimum of 15 transects in each unit is collected (as in 2022). If adequacy is not met, various forms of null and reverse null hypothesis testing based on the mean may be employed to demonstrate success which do not require adequacy.

Rule 4.15.11 (3)(b)(i) of the Colorado Coal Regulations allows for direct comparison of woody plant density values if a minimum of 75 ≥100 m^2 transects in each unit is collected (as in 2022 and 2023).

3.0 RESULTS

Tables 1 through 4 and Charts 1 through 4 provide a summary of the 2022 and 2023 sampling efforts described above. Tabular compilations of raw data and summaries presented in Appendix A on Tables 5 through 12. Photographs of the evaluated areas are also presented in Appendix A.

A total of 39 plant species were observed within the East Mine in 2022 and 52 species in 2023 (Table 6). Ground cover within the unit in 2022 (Table 2 and Chart 1) consisted of 54.4% live vegetation, 5.7% rock, 28.0% litter, and bare ground exposure of 11.9%. In 2023, 56.3% live vegetation, 8.1% rock, 20.4% litter, and bare ground exposure of 15.3% was recorded. Total plant cover (excluding noxious weeds) averaged 50.6% in 2022 and 54.2% in 2023. Noxious weed cover averaged 3.8% in 2022 and 2.1% in 2023 and consisted entirely of cheatgrass (*Anisantha tectorum*) and bindweed (*Convolvulus arvensis*) which are List C noxious weeds in Colorado. The dominant taxa were thickspike wheatgrass (*Elymus lanceolatus*), western wheatgrass (*Pascopyrum smithii*), and alfalfa (*Medicago sativa*) with 19.5%, 11.9%, and 9.0% average cover in 2022, respectively. Similarly in 2023, thickspike wheatgrass, western wheatgrass, and alfalfa exhibited 20.4%, 13.6%, and 9.4% average cover, respectively. Total herbaceous production averaged 826 pounds per acre in 2022 and 719 pounds per acre in 2023 (Table 3 and Chart 3). Total herbaceous production excluding noxious weeds averaged 804 pounds per acre in 2022 and 706 pounds per acre in 2023. Woody plant density averaged 290 live trees, shrubs, and sub-shrubs per acre in 2022 and 306 live trees, shrubs, and sub-shrubs per acre in 2023 (Table 4 and Chart 4). Woody plants consisted primarily of Gambel oak, four-wing saltbush (*Atriplex canescens*), and antelope bitterbrush (*Purshia tridentata*) (Table 4 and Chart 4).

Table 2 Bowie #1 East Mine - Vegetation Cover - 2023

East Mine - Average Ground Cover Summary - 2022 & 2023

Percent Ground Cover Based on Point-Intercept Sampling

			Year -->	**2022**	**2023**
Grasses and Grass-likes					
N	P	*Achnatherum hymenoides*	Indian Ricegrass	0.50	0.17
X	A	*Anisantha tectorum*	Cheatgrass	3.20	1.03
I	P	*Bromus inermis*	Smooth Brome	-	0.47
N	P	*Elymus lanceolatus*	Thickspike Wheatgrass	19.53	20.43
N	P	*Elymus trachycaulus*	Slender Wheatgrass	0.10	-
N	P	*Pascopyron smithii*	Western Wheatgrass	11.93	13.57
N	P	*Pseudoroegneria spicata inerme*	Bluebunch Wheatgrass	0.13	1.77
N	P	*Poa pratensis*	Kentucky Bluegrass	-	0.13
Forbs					
N	A	*Alyssum desertorum*	Desert Alyssum	1.77	1.70
N	P	*Artemisia ludoviciana*	Louisiana Sage	-	0.13
I	P	*Astragalus cicer*	Cicer Milkvetch	4.27	3.87
X	P	*Convolvulus arvensis*	Field Bindweed	0.57	1.07
N	A	*Descurainia pinnata*	Western Tansymustard	-	0.03
I	A	*Erodium cicutarium*	Common Storks-bill	0.63	0.23
N	B	*Grindelia squarrosa*	Curlycup Gumweed	0.07	-
N	A	*Helianthus annuus*	Common Sunflower	-	0.03
N	P	*Heterotheca villosa*	Hairy Golden Aster	-	0.57
I	B	*Lactuca serriola*	Prickly Lettuce	0.03	0.17
I	P	*Medicago sativa*	Alfalfa	9.00	9.37
I	B	*Melilotus officinalis*	Yellow Sweetclover	1.47	0.17
I	P	*Scorzonera laciniatum*	Cutleaf Viper Grass	-	0.07
I	A	*Sisymbrium altissimum*	Tall Tumblemustard	0.03	0.03
I	P	*Taraxacum officinale*	Common Dandelion	-	0.03
I	B	*Tragopogon dubius*	False Salsify	0.03	0.03
Sub-Shrubs					
		None		-	-
Shrubs & Trees					
N	P	*Atriplex canescens*	Fourwing Saltbrush	0.93	0.33
N	P	*Juniperus osteosperma*	Utah Juniper	-	0.07
N	P	*Purshia tridentata*	Bitterbrush	0.20	0.63
N	P	*Rosa woodsii*	Woods' Rose	-	0.17
			Total Plant Cover	**54.40**	**56.27**
			Rock	5.70	8.07
			Litter	28.00	20.40
			Bare ground	11.90	15.27
			Total Plant Cover (excluding noxious weeds)	**50.63**	**54.17**
Summary by Lifeform:					
			Perennial Grasses	**32.20**	**36.53**
			Annual Grasses	-	-
			Perennial Forbs	**13.27**	**14.03**
			Annual and Biennial Forbs	4.03	2.40
			Noxious / Aggressive Weeds	3.77	2.10
			Sub-Shrubs	**-**	**-**
			Shrubs and Trees	**1.13**	**1.20**
Sample Adequacy Calculations:					
			Mean =	**54.40**	**56.27**
			Variance =	**38.66**	**96.48**
			n =	**30**	**30**
			n_{min} =	**2.25**	**5.24**

N - Native I - Introduced, X - Noxious

A - Annual, B - Biennial, P - Perennial

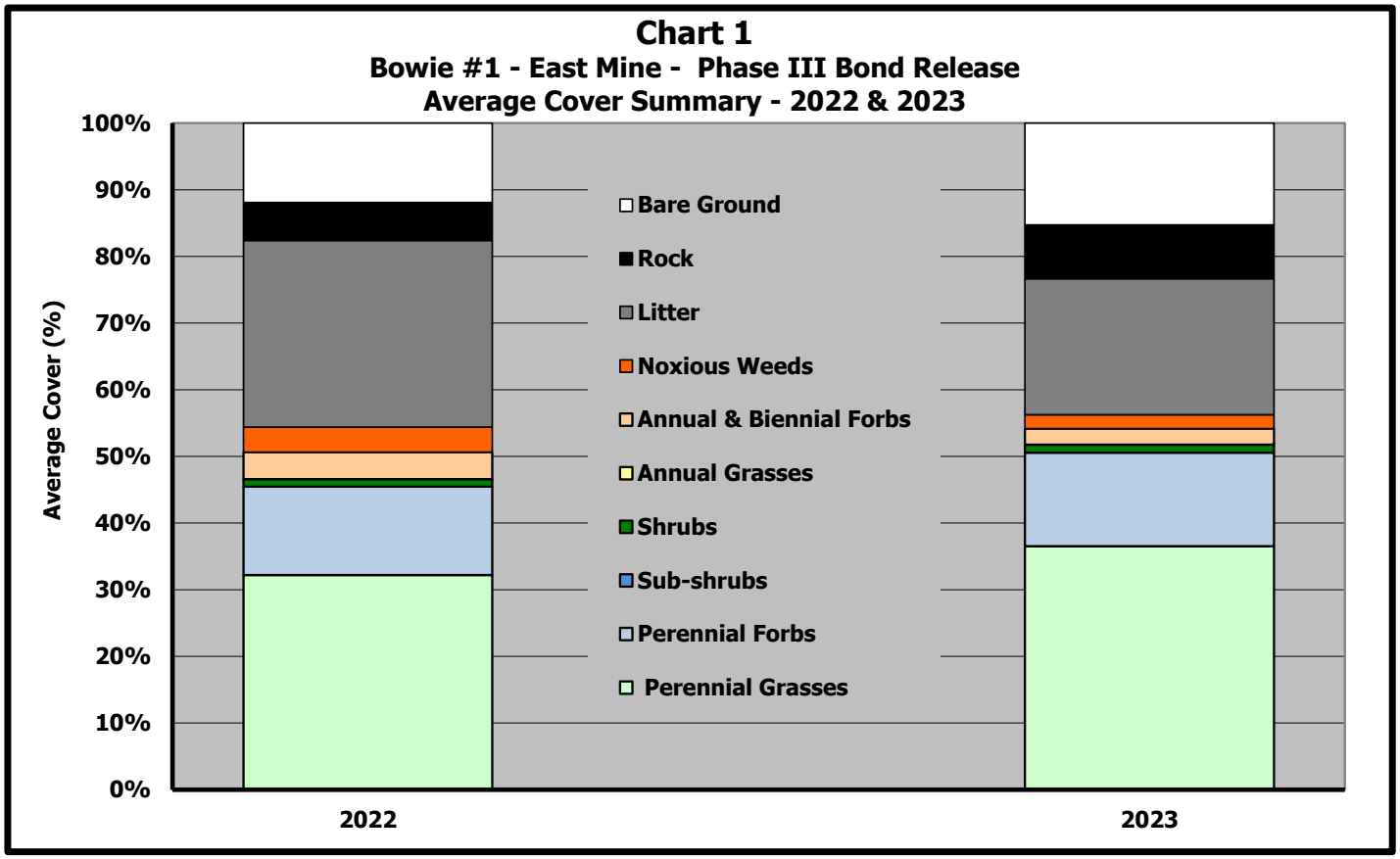


Chart 1
Bowie #1 - East Mine - Phase III Bond Release
Average Cover Summary - 2022 & 2023
Average Cover (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2022
2023
Bare Ground
Rock
Litter
Noxious Weeds
Annual & Biennial Forbs
Annual Grasses
Shrubs
Sub-shrubs
Perennial Forbs
Perennial Grasses

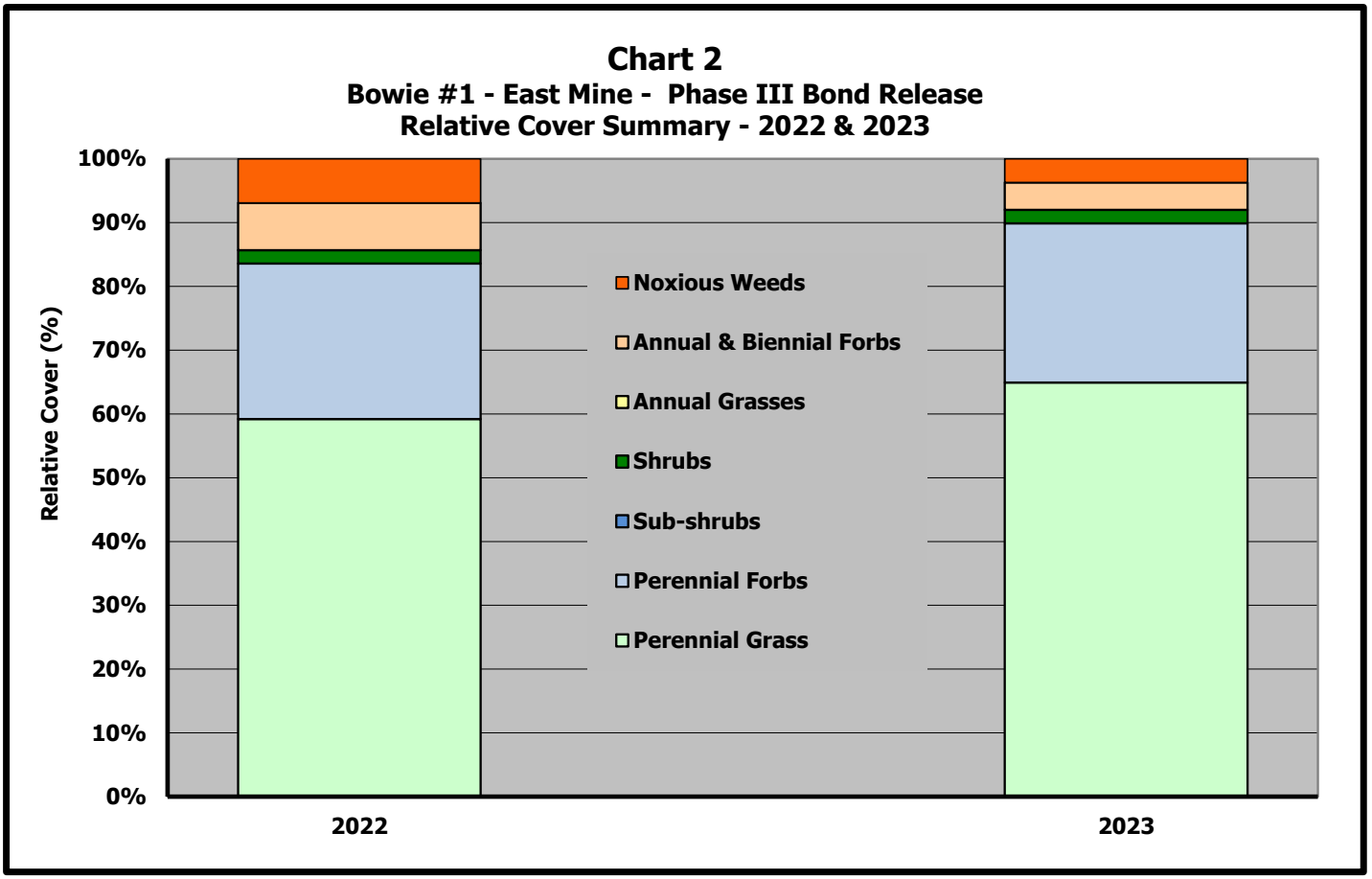


Chart 2
Bowie #1 - East Mine - Phase III Bond Release
Relative Cover Summary - 2022 & 2023
Relative Cover (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2022
2023
Noxious Weeds
Annual & Biennial Forbs
Annual Grasses
Shrubs
Sub-shrubs
Perennial Forbs
Perennial Grass

Table 3 Bowie #1 - Vegetation Production - 2023

East Mine - Summary of Vegetation Production - 2022 & 2023

Oven Dry Pounds (lbs) per Acre

Area	Year	*Perennial Grasses*	*Perennial Forbs*	*Sub-shrubs*	*Annual / Biennial Forbs*	*Noxious Weeds*		TOTAL (Excluding Noxious Weeds)	TOTAL
						Grass (cheatgrass)	*Other* (bindweed)		
East Mine	**2022**	626.7	161.7	-	15.4	13.7	8.1	**803.7**	**825.5**
	2023	562.9	115.7	-	27.1	7.6	5.4	**705.7**	**718.7**

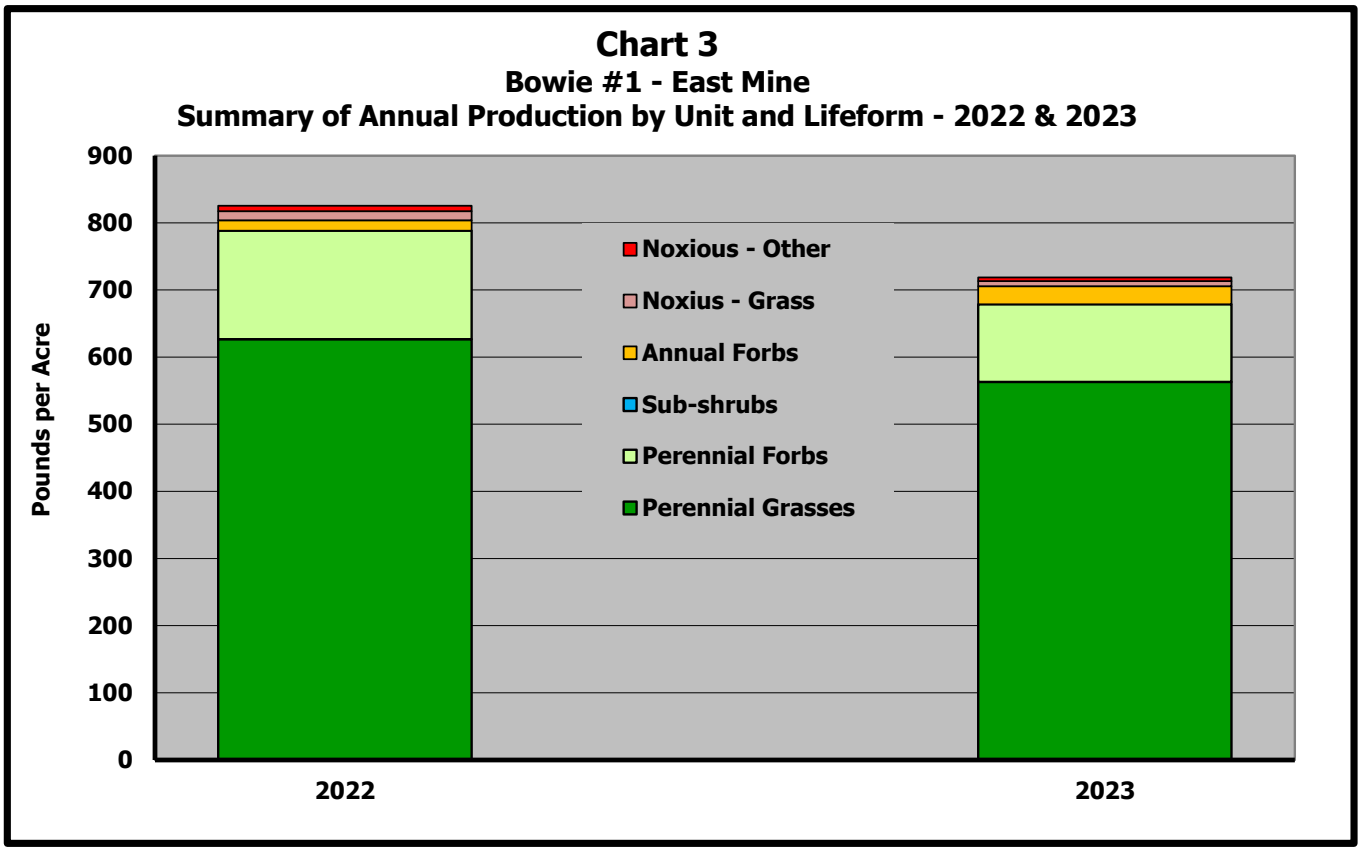
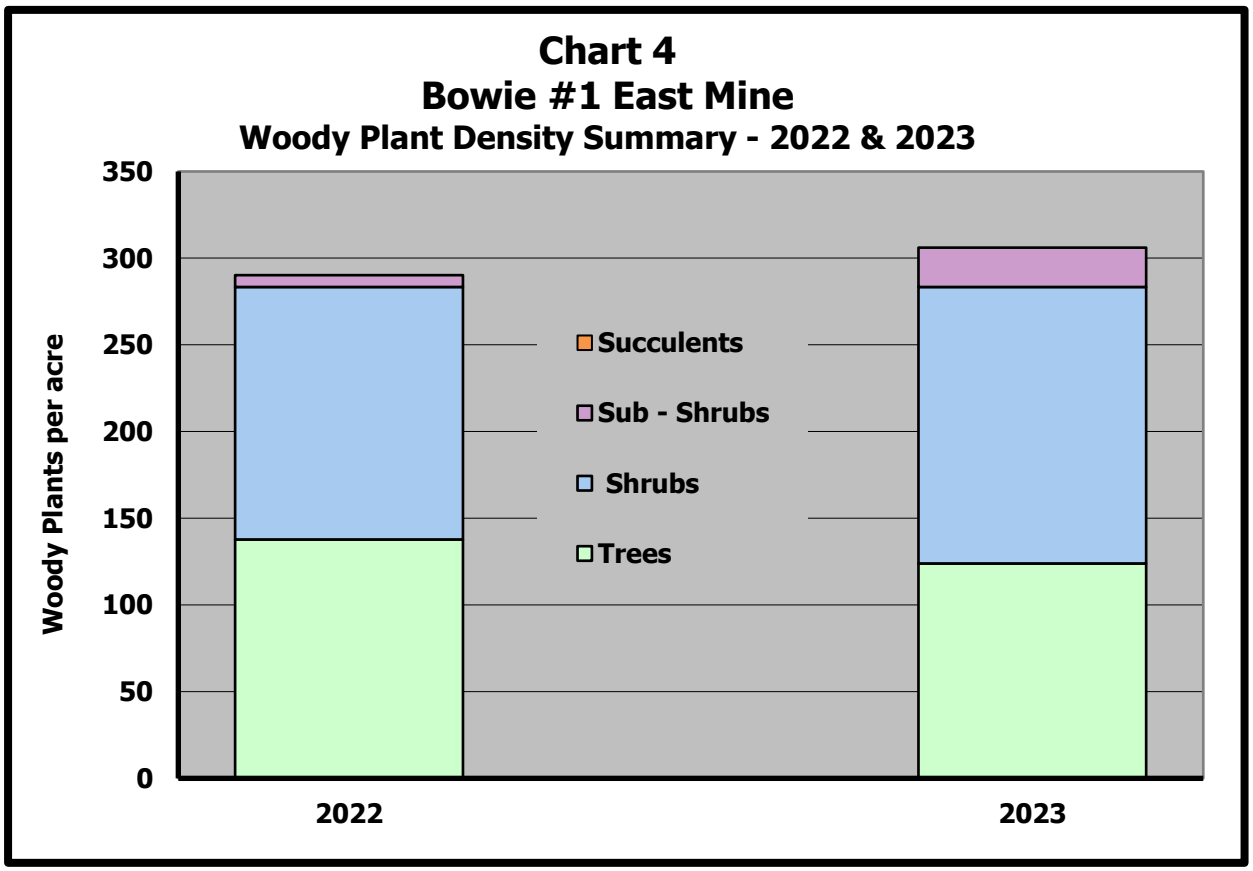


Table 4 Bowie #1 East Mine - Woody Plant Density - 2023

East Mine - Woody Plant Density Summary - 2022 & 2023

Young and Mature Plants Per Acre

Species	Lifeform	2022	2023
Amelanchier utahensis	Shrub	3.9	2.5
Atriplex canescens	Shrub	65.6	43.4
Cercocarpus montanus	Shrub	0.5	1.0
Chrysothamnus nauseosus	Shrub	17.8	16.8
Krascheninnikovia lanata	Sub-Shrub	6.9	22.7
Juniperus osteosperma	Tree	15.8	17.3
Purshia tridentata	Shrub	37.0	48.9
Quercus gambelii	Tree	121.9	106.6
Rosa woodsii	Shrub	12.8	36.5
Rhus trilobata	Shrub	5.9	9.9
Symphoricarpos rotundifolia	Shrub	2.0	0.5
Total Woody Plants per acre		**290.2**	**306.0**
Trees per acre		**137.7**	**123.9**
Shrubs per acre		**145.6**	**159.4**
Sub - Shrubs per acre		**6.9**	**22.7**
Succulents per acre		**-**	**-**



4.0 SUCCESS COMPARISON

The East Mine passed all success criteria in 2022 and 2023. The demonstration of adequacy and a minimum of 15 transects in the unit allow for a direct comparison for cover and production per Rule 4.15.11 (2)(a), while a minimum of 75 transects (n=82) for woody plant density allows for a direct comparison as per Rule 4.15.11 (3)(a) in 2022. A summary of success comparisons is provided on the following pages in Table 1 and Charts 5 through 10. Table 1 gives a quick indication of the overall success of the revegetation unit compared with the standards. Charts 5 through 10 provide a visual display of the same comparisons.

Table 1 Bowie #1 - East Mine

Revegetation Success Criteria Comparisons - 2022 & 2023 (per TR-63)

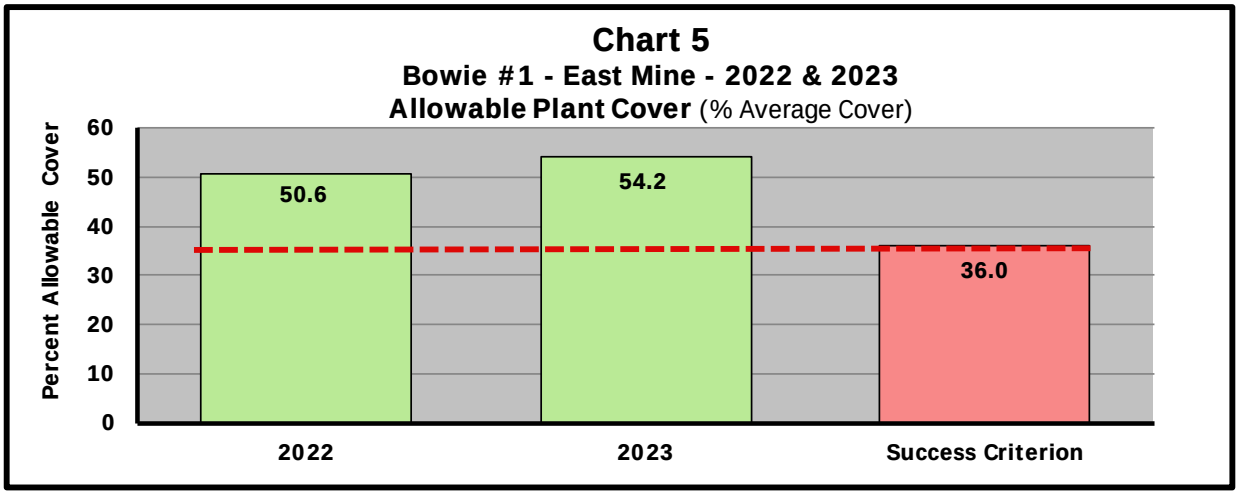
		Plant Cover		Production		Woody Plant Density	
Area	*Year Sampled*	**Total Plant Cover*** (% average cover)		**Annual (Total) Herbaceous*** (pounds per acre)		**Live Trees, Shrubs, and Sub-Shrubs** (Average per acre)	
Success Criteria		**≥36%**		**≥360**		**≥90**	
East Mine	**2022**	**50.63**	**Pass**	**804**	**Pass**	**290**	**Pass**
	2023	**54.17**	**Pass**	**706**	**Pass**	**306**	**Pass**

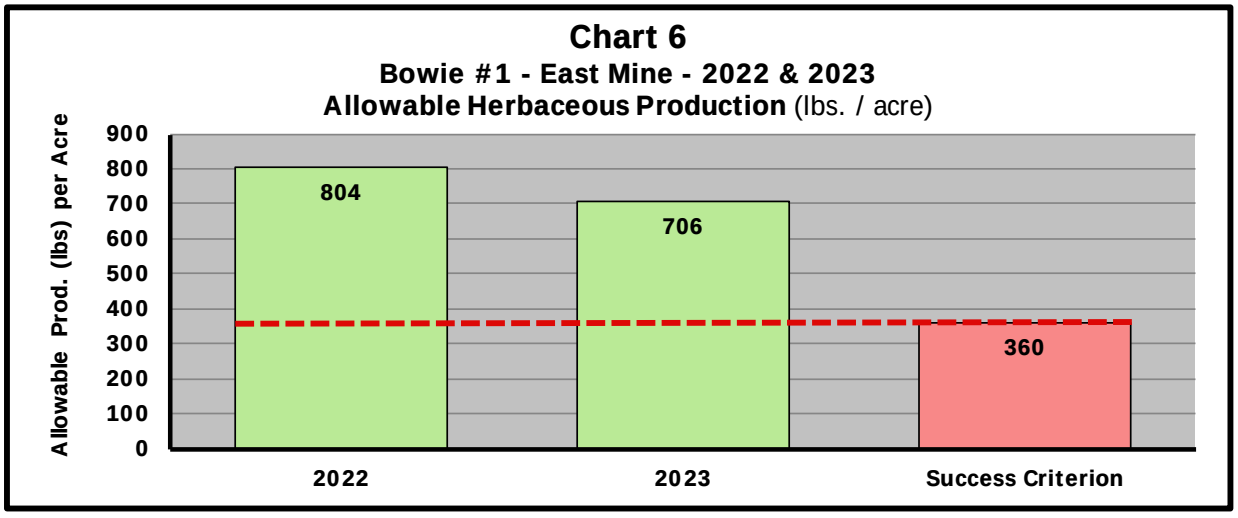
		Diversity (Number of Species)*							
		Total Native or Introduced Perennial Herbaceous		**Total Native Perennial Cool-Season Grasses**		**Total Native or Introduced Forbs**		**Total Native Sub-Shrubs, Trees, and Shrubs**	
Area	*Year Sampled*	(Between 0.5 & 60% Relative Cover)						(<80% Rel. Cover)	
Success Criteria		**≥5**		**≥3**		**≥2**		**≥2**	
East Mine	**2022**	**5**	**Pass**	**3**	**Pass**	**2**	**Pass**	**2**	**Pass**
	2023	**7**	**Pass**	**4**	**Pass**	**3**	**Pass**	**4**	**Pass**

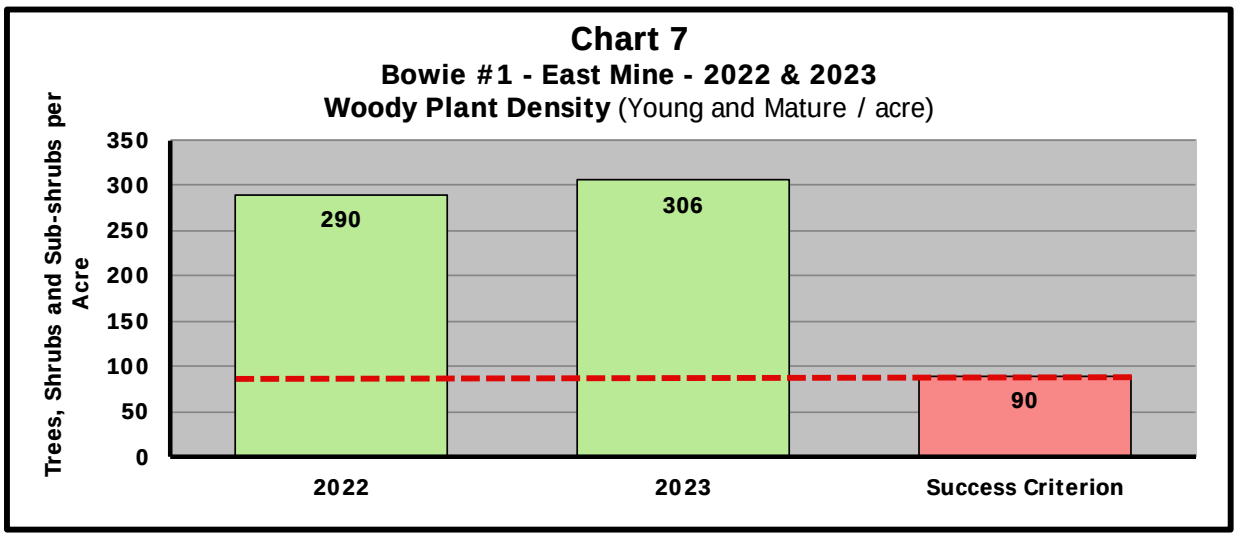
*Excluding noxious weeds

The East Mine unit surpassed the total plant cover (excluding noxious weeds) success criterion of ≥36.0% (90% of the technical standard value of 40%) with 50.6% in 2022 and 54.2 in 2023 (Chart 5). Annual and biennial cover was included in the success comparison in 2022 (7.41% relative cover) and 2023 (4.27% relative cover) since they were less than the allowable relative cover of 10% per CDRMS policy. The annual (total) herbaceous production success criterion of ≥360 pounds per acre (90% of the technical standard value of 400 pounds per acre) was surpassed with 804 pounds per acre in 2022 and 706 pounds per acre in 2023 (Chart 6). Annual and biennial production was included in the success comparison in 2022 (1.9% contribution) and 2023 (3.8% contribution) since they were less than the allowable contribution of 10% per CDRMS policy. A total of 290 and 306 trees, shrubs, and sub-shrubs per acre were sampled in

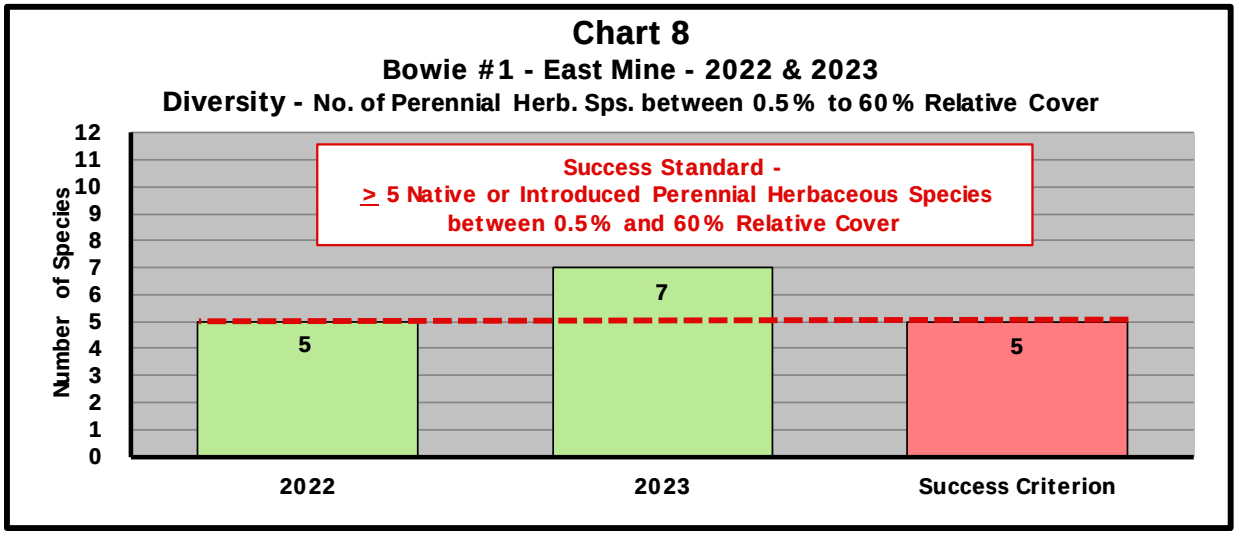
2022 and 2023, respectively which surpasses the woody plant density success criterion of 90 per acre (90% of the technical standard value of 100 woody plants per acre) (Chart 7).

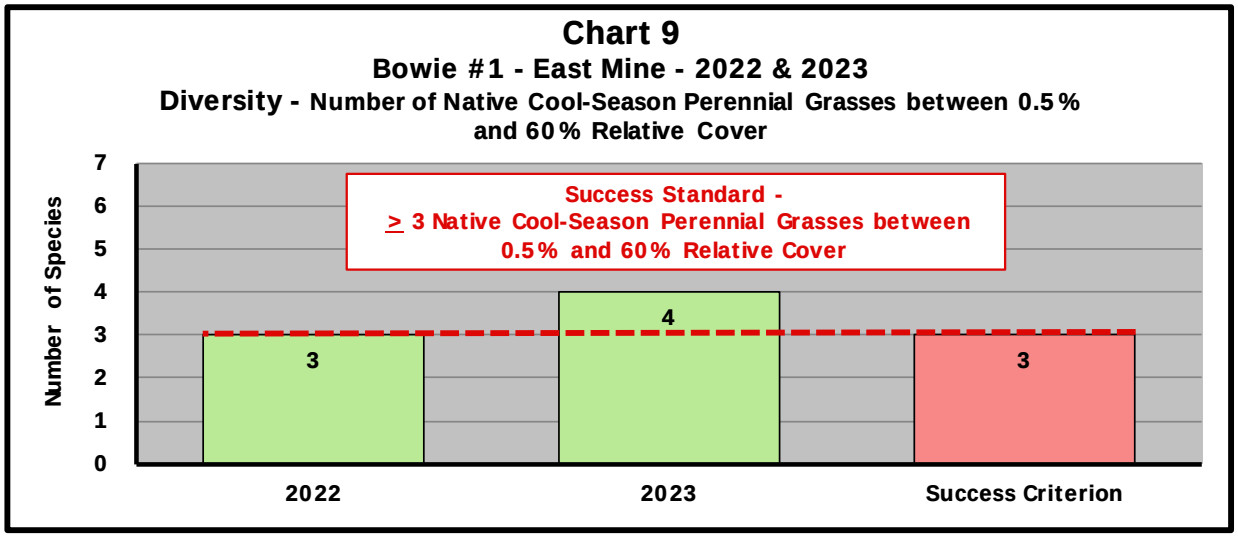


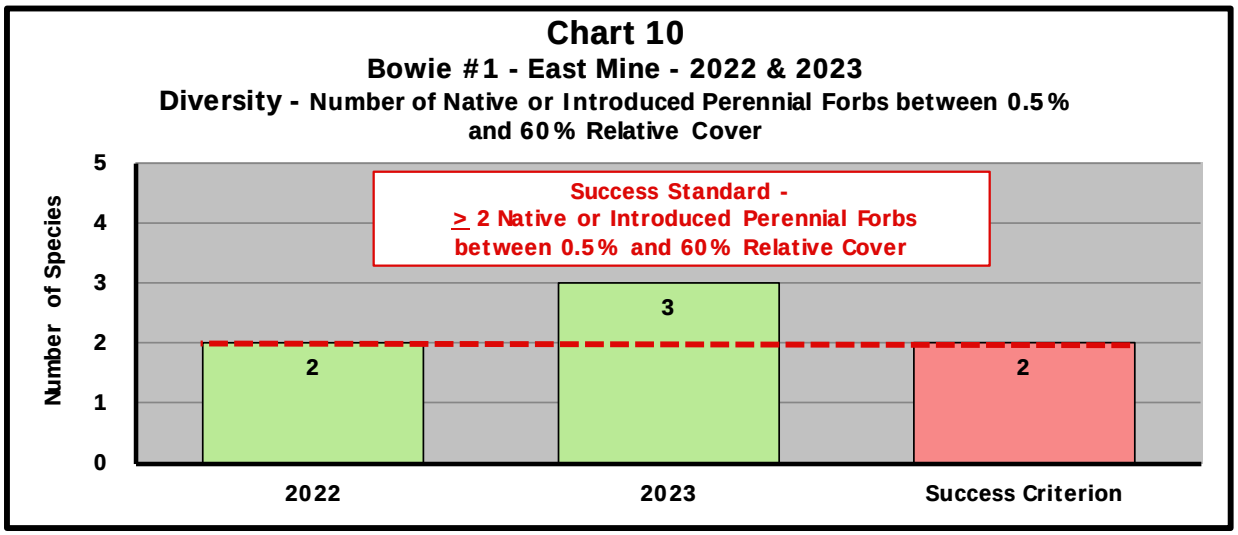


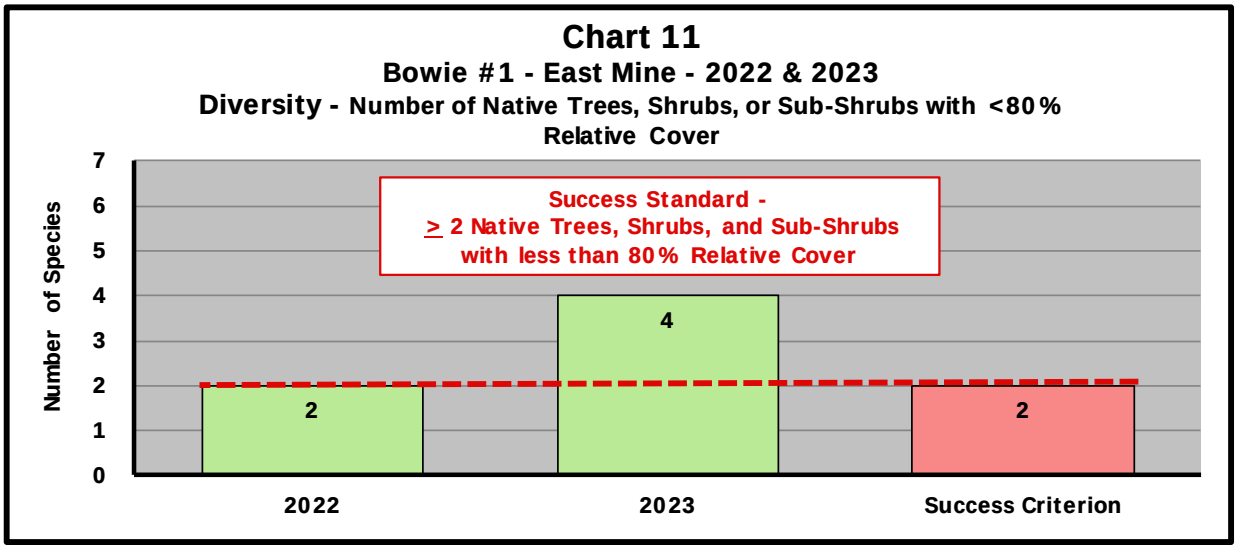


With regards to diversity, the East Mine unit met the required number of total native or introduced perennial herbaceous species with between 0.5% and 60.0% relative cover (≥five species) with five in 2022 and seven in 2023 (Chart 8). The total native perennial cool-season grasses with between 0.5% and 60.0% relative cover (≥three species) was met with three in 2022 and four in 2023 (Chart 9). The total native or introduced forb species with between 0.5% and 60.0% relative cover (≥two species) was met with two in 2022 and three in 2023 (Chart 10). And finally, the total number of native trees, shrubs, and sub-shrubs with <80% relative cover (≥two species) was met with two in 2022 and four in 2023 (Chart 11).









This review of collected data demonstrates the success and utility of the revegetated areas, especially given vegetative ground cover and favorable results with regard to diversity and production despite wildlife grazing. Inspection of Photos 1 through 8 provides visual evidence of this utility. Field studies have shown that the target reclaimed plant communities have progressed sufficiently to be ready for Phase III Bond Release. Ground cover of perennial plants within the reclaimed areas is comparable to adjacent undisturbed native communities and plant succession is occurring and progressing in a positive direction, indicating that plants are self-sustaining.

5.0 LITERATURE CITED

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Appendix A

Raw Tables, Maps and Photographs

Appendix A

Raw Tables, Maps and Photographs

Table 5 Bowie #1 East Mine - Vegetation Cover - 2023

East Mine - Relative Cover Summary - 2022 & 2023

Percent Ground Cover Based on Point-Intercept Sampling

				Year -->	2022	2023
Grasses and Grass-likes						
N	P	*Achnatherum hymenoides*	Indian Ricegrass		0.92	0.30
X	A	*Anisantha tectorum*	Cheatgrass		5.88	1.84
I	P	*Bromus inermis*	Smooth Brome		-	0.83
N	P	*Elymus lanceolatus*	Thickspike Wheatgrass		35.91	36.32
N	P	*Elymus trachycaulus*	Slender Wheatgrass		0.18	-
N	P	*Pascopyron smithii*	Western Wheatgrass		21.94	24.11
N	P	*Pseudoroegneria spicata inerme*	Bluebunch Wheatgrass		0.25	3.14
N	P	*Poa pratensis*	Kentucky Bluegrass		-	0.24
Forbs						
N	A	*Alyssum desertorum*	Desert Alyssum		3.25	3.02
N	P	*Artemisia ludoviciana*	Louisiana Sage		-	0.24
I	P	*Astragalus cicer*	Cicer Milkvetch		7.84	6.87
X	P	*Convolvulus arvensis*	Field Bindweed		1.04	1.90
N	A	*Descurainia pinnata*	Western Tansymustard		-	0.06
I	A	*Erodium cicutarium*	Common Storks-bill		1.16	0.41
N	B	*Grindelia squarrosa*	Curlycup Gumweed		0.12	-
N	A	*Helianthus annuus*	Common Sunflower		-	0.06
N	P	*Heterotheca villosa*	Hairy Golden Aster		-	1.01
I	B	*Lactuca serriola*	Prickly Lettuce		0.06	0.30
I	P	*Medicago sativa*	Alfalfa		16.54	16.65
I	B	*Melilotus officinalis*	Yellow Sweetclover		2.70	0.30
I	P	*Scorzonera laciniatum*	Cutleaf Viper Grass		-	0.12
I	A	*Sisymbrium altissimum*	Tall Tumblemustard		0.06	0.06
I	P	*Taraxacum officinale*	Common Dandelion		-	0.06
I	B	*Tragopogon dubius*	False Salsify		0.06	0.06
Sub-Shrubs						
		None			-	-
Shrubs & Trees						
N	P	*Atriplex canescens*	Fourwing Saltbrush		1.72	0.59
N	P	*Juniperus osteosperma*	Utah Juniper		-	0.12
N	P	*Purshia tridentata*	Bitterbrush		0.37	1.13
N	P	*Rosa woodsii*	Woods' Rose		-	0.30
Summary by Lifeform:						
				Perennial Grasses	**59.19**	**64.93**
				Annual Grasses	-	-
				Perennial Forbs	**24.39**	**24.94**
				Annual and Biennial Forbs	7.41	4.27
				Noxious / Aggressive Weeds	6.92	3.73
				Sub-Shrubs	**-**	**-**
				Shrubs and Trees	**2.08**	**2.13**
Species Diversity Categories †						
				Number of Perennial Species between 0.5% & 60% Rel. Cover	**5**	**7**
				Number of Native Cool-Season Per. Grasses between 0.5% & 60% Rel. Cover	**3**	**4**
				# of Nat. or Int. Perennial Forbs between 0.5% & 60% Rel. Cover	**2**	**3**
				Number of Native Trees, Shrubs, or Sub-Shrubs <80% Rel. Cover	**2**	**4**

N - Native, Nw - Warm Season, I - Introduced, X - Noxious A - Annual, B - Biennial, P - Perennial

† Diversity standards exclude invasive and noxious weed species.

Table 6 Bowie #1 East Mine - Vegetation Cover - 2023

East Mine -Species Observed - 2022 & 2023

Percent Ground Cover Based on Point-Intercept Sampling

			Year -->	**2022**	**2023**
Grasses and Grass-likes					
N	P	*Achnatherum hymenoides*	Indian Ricegrass	X	X
X	A	*Anisantha tectorum*	Cheatgrass	X	X
I	P	*Bromus inermis*	Smooth Brome		X
I	A	*Bromus japonicus*	Japanese Brome	X	X
N	P	*Elymus lanceolatus*	Thickspike Wheatgrass	X	X
N	P	*Elymus trachycaulus*	Slender Wheatgrass	X	
N	P	*Pascopyron smithii*	Western Wheatgrass	X	X
N	P	*Pseudoroegneria spicata inerme*	Bluebunch Wheatgrass	X	X
N	P	*Poa pratensis*	Kentucky Bluegrass		X
Forbs					
X	P	*Acroptilon repens*	Russian Knapweed	X	X
N	P	*Allium textile*	Prairie Onion		X
N	A	*Alyssum desertorum*	Desert Alyssum	X	X
N	A	*Androsace occidentalis*	Rock Jasmine		X
N	P	*Aster ascendens*	Creeping Aster		X
I	P	*Astragalus cicer*	Cicer Milkvetch	X	X
X	P	*Cardaria draba*	Whitetop	X	X
X	B	*Carduus nutans*	Musk Thistle	X	
N	A	*Collomia linearis*	Slenderleaf Collomia		X
X	P	*Convolvulus arvensis*	Field Bindweed	X	X
N	A	*Cryptantha watsonii*	Watson's Cryptantha		X
N	A	*Cuscuta sp.*	Dodder		X
N	A	*Descurainia pinnata*	Western Tansymustard		X
I	A	*Erodium cicutarium*	Common Storks-bill	X	X
N	P	*Eucephalus glaucus*	Blue Aster	X	
N	P	*Galium aparine*	Cleavers		X
N	A	*Gayophytum ramosissimum*	Groundsmoke		X
N	B	*Grindelia squarrosa*	Curlycup Gumweed	X	X
N	A	*Helianthus annuus*	Common Sunflower		X
N	P	*Heterotheca villosa*	Hairy Golden Aster	X	X
I	B	*Lactuca serriola*	Prickly Lettuce	X	X
N	P	*Linum lewisii*	Lewis Flax		X
I	P	*Medicago sativa*	Alfalfa	X	X
I	B	*Melilotus officinalis*	Yellow Sweetclover	X	X
N	P	*Penstemom strictus*	Rocky Mountain Penstemom	X	X
I	P	*Rumex crispus*	Dock	X	X
I	P	*Sanguisorba minor*	Small Burnet		X
I	P	*Scorzonera laciniatum*	Cutleaf Viper Grass	X	X
I	A	*Sisymbrium altissimum*	Tall Tumblemustard	X	X
N	P	*Sphaeralcea coccinea*	Scarlet Globemallow	X	X
I	P	*Taraxacum officinale*	Common Dandelion		X
I	B	*Tragopogon dubius*	False Salsify	X	X
I	B	*Verbascum thapsus*	Mullein		X
Sub-Shrubs					
N	P	*Krascheninnikovia lanata*	Winterfat	X	X
Shrubs & Trees					
N	P	*Amelanchier utahensis*	Utah Serviceberry	X	X
N	P	*Atriplex canescens*	Fourwing Saltbrush	X	X
N	P	*Cercocarpus montanus*	Mountain Mahogany	X	X
N	P	*Chrysothamnus nauseosus*	Rubber Rabbitbrush	X	X
N	P	*Juniperus osteosperma*	Utah Juniper	X	X
N	P	*Opuntia polyachantha*	Plains Prickly-pear	X	X
N	P	*Purshia tridentata*	Bitterbrush	X	X
N	P	*Quercus gambelii*	Gambel Oak	X	X
N	P	*Rhus trilobata*	Skunkbush Sumac	X	X
N	P	*Rosa woodsii*	Woods' Rose	X	X
N	P	*Symphoricarpos rotundifolia*	Snowberry	X	X
I	P	*Ulmus pumila*	Siberian Elm	X	X
Total Counts by Lifeform			**Perennial Grasses**	**5**	**6**
			Annual Grass	1	1
			Perennial Forbs	**8**	**13**
			Annual / Biennial Forbs	7	15
			Noxious Weeds	4	5
			Sub-shrubs	**1**	**1**
			Shrubs & Trees	**12**	**12**
Total Count by Origin			**Native**	**23**	**33**
			Introduced	10	14
			Noxious Weeds	6	5
			Total Species Encountered	**39**	**52**

N - Native, I - Introduced, X - Noxious

A - Annual, B - Biennial, P - Perennial

Table 7 Bowie #1 East Mine - Vegetation Cover -- 2022

East Mine - 2022

Raw Data

Percent Ground Cover Based on Point-Intercept Sampling

			Transect No.——>	1	2	4	5	7	8	10	11	13	14	16	17	19	20	22	23	25	26	28	29	31	32	34	35	37	38	40	41	43	44	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes																																				
N	P	*Achnatherum hymenoides*	Indian Ricegrass					6	5										4															**0.50**	**0.92**	**10**
X	A	*Anisantha tectorum*	Cheatgrass	3	5	5			14	16	7	3	3	5	3			12	4		4	2	4	2	2						2			**3.20**	**5.88**	**60**
N	P	*Elymus lanceolatus*	Thickspike Wheatgrass	21	10	21	16	5			16	19	13	20	29	7	36	18	12	18	27	12		4	26	40	37	32		43	41	30	33	**19.53**	**35.91**	**87**
N	P	*Elymus trachycaulus*	Slender Wheatgrass																			3												**0.10**	**0.18**	**3**
N	P	*Pascopyron smithii*	Western Wheatgrass	17	15	5		15		7	2	4	12	7		31	6	31	24	12		20	31	38	12		5	3	45	10			6	**11.93**	**21.94**	**77**
N	P	*Pseudoroegneria spicata*	Bluebunch Wheatgrass																														4	**0.13**	**0.25**	**3**
Forbs																																				
N	A	*Alyssum desertorum*	Desert Alyssum		1	1	1	6	2	2	4		2	8		2	5	1	3	2		1	4					2	5			1		**1.77**	**3.25**	**63**
I	P	*Astragalus cicer*	Cicer Milkvetch	1		13	22									10	6		2	14	7	7	13		20				1		12			**4.27**	**7.84**	**43**
X	P	*Convolvulus arvensis*	Field Bindweed				1		3	1			3	2	1				2						1	3								**0.57**	**1.04**	**30**
I	A	*Erodium cicutarium*	Common Storks-bill												12	4		1				2												**0.63**	**1.16**	**13**
N	B	*Grindelia squarrosa*	Curlycup Gumweed							2																								**0.07**	**0.12**	**3**
I	B	*Lactuca serriola*	Prickly Lettuce				1																											**0.03**	**0.06**	**3**
I	P	*Medicago sativa*	Alfalfa		20	9	25	18	30	12	26	27	20	5	12				7	7		6	6				6	12	4	3			15	**9.00**	**16.54**	**67**
I	B	*Melilotus officinalis*	Yellow Sweetclover			2				13	5	2		10						5	2										5			**1.47**	**2.70**	**27**
I	A	*Sisymbrium altissimum*	Tall Tumblemustard						1																									**0.03**	**0.06**	**3**
I	B	*Tragopogon dubius*	False Salsify																													1		**0.03**	**0.06**	**3**
Sub-Shrubs																																				
		None																																**0.00**	**0.00**	**0**
Shrubs & Trees																																				
N	P	*Atriplex canescens*	Fourwing Saltbrush		4																											24		**0.93**	**1.72**	**7**
N	P	*Purshia tridentata*	Bitterbrush						6																									**0.20**	**0.37**	**3**
																																		Mean		
		Total Plant Cover		**42**	**55**	**56**	**66**	**50**	**61**	**53**	**60**	**55**	**53**	**57**	**57**	**54**	**53**	**63**	**58**	**58**	**40**	**53**	**58**	**44**	**61**	**43**	**48**	**49**	**55**	**56**	**58**	**58**	**58**	**54.40**		
		Rock		20	10	14	0	7	4	3	0	5	5	3	4	3	12	5	2	3	17	3	2	0	5	3	3	10	7	4	5	9	3	**5.70**		
		Litter		27	26	15	30	14	33	6	28	25	13	24	21	27	24	32	34	27	35	35	32	33	32	49	36	31	30	37	31	20	33	**28.00**		
		Bare ground		11	9	15	4	29	2	38	12	15	29	16	18	16	11	0	6	12	8	9	8	23	2	5	13	10	8	3	6	13	6	**11.90**		
		Total Plant Cover (Exc. Noxious Weeds)		**39**	**50**	**51**	**65**	**50**	**44**	**36**	**53**	**52**	**47**	**50**	**53**	**54**	**53**	**51**	**52**	**58**	**36**	**51**	**54**	**42**	**58**	**40**	**48**	**49**	**55**	**56**	**58**	**56**	**58**	**50.63**		
		Sampling Adequacy Calculations		**n = 30**					**t = 1.311**					**Variance = 38.66**					**n_{min} = 2.25**																		

Table 8 Bowie #1 East Mine - Vegetation Cover -- 2023

East Mine - 2023

Raw Data

Percent Ground Cover Based on Point-Intercept Sampling

				Transect No.——>	1	2	4	5	7	8	10	11	13	14	16	17	19	20	22	23	25	26	28	29	31	32	34	35	37	38	40	41	43	44	Average Cover	Relative Cover	Freq.
Grasses and Grass-likes																																					
N	P	*Achnatherum hymenoides*	Indian Ricegrass									3															2								**0.17**	**0.30**	**7**
X	A	*Anisantha tectorum*	Cheatgrass			1		3				1	1	2		2				1	2	2	7	1		1	3	3			1				**1.03**	**1.84**	**50**
I	P	*Bromus inermis*	Smooth Brome		2																										12			**0.47**	**0.83**	**7**
N	P	*Elymus lanceolatus*	Thickspike Wheatgrass		5	26	21	5	17		33		18	25	16	35	29	27	5	18	10		20	40	36	7	22	13	31	48	23	33	50	**20.43**	**36.32**	**87**
N	P	*Pascopyron smithii*	Western Wheatgrass	21	29	6	7	11	4	30	6	5	11	12	7	10		9	47	34	27	21	24	4	12	26			6	10	17	6	5	**13.57**	**24.11**	**90**
N	P	*Pseudoroegneria spicata inerme*	Bluebunch Wheatgrass																					4		3	8	33				5		**1.77**	**3.14**	**17**
N	P	*Poa pratensis*	Kentucky Bluegrass	1				2	1																									**0.13**	**0.24**	**10**
Forbs																																				
N	A	*Alyssum desertorum*	Desert Alyssum	7	3			2	1	1		5	5			3	2	1	5	1	2	2	1	5		3	1		1					**1.70**	**3.02**	**63**
N	P	*Artemisia ludoviciana*	Louisiana Sage						4																									**0.13**	**0.24**	**3**
I	P	*Astragalus cicer*	Cicer Milkvetch		3	24	4							11	18						22	23	1									10		**3.87**	**6.87**	**30**
X	P	*Convolvulus arvensis*	Field Bindweed	3			3	2				5		3		8	2		1							1	2					2		**1.07**	**1.90**	**37**
N	A	*Descurainia pinnata*	Western Tansymustard																			1												**0.03**	**0.06**	**3**
I	A	*Erodium cicutarium*	Common Storks-bill																							3				4				**0.23**	**0.41**	**7**
N	A	*Helianthus annuus*	Common Sunflower													1																		**0.03**	**0.06**	**3**
N	P	*Heterotheca villosa*	Hairy Golden Aster							8	9																							**0.57**	**1.01**	**7**
I	B	*Lactuca serriola*	Prickly Lettuce		4							1																						**0.17**	**0.30**	**7**
I	P	*Medicago sativa*	Alfalfa	8		1	36	26	45	12	12	31	13		11		3		8	6	1	3	14		4		7	1	13	8	17	1		**9.37**	**16.65**	**77**
I	B	*Melilotus officinalis*	Yellow Sweetclover					3				2																						**0.17**	**0.30**	**7**
I	P	*Scorzonera laciniatum*	Cutleaf Viper Grass					1										1																**0.07**	**0.12**	**7**
I	A	*Sisymbrium altissimum*	Tall Tumblemustard					1																										**0.03**	**0.06**	**3**
I	P	*Taraxacum officinale*	Common Dandelion					1																										**0.03**	**0.06**	**3**
I	B	*Tragopogon dubius*	False Salsify			1																												**0.03**	**0.06**	**3**
Sub-Shrubs																																				
		none																																**0.00**	**0.00**	**0**
Shrubs & Trees																																				
N	P	*Atriplex canescens*	Fourwing Saltbrush																														10	**0.33**	**0.59**	**3**
N	P	*Juniperus osteosperma*	Utah Juniper																													2		**0.07**	**0.12**	**3**
N	P	*Purshia tridentata*	Bitterbrush																			12					7							**0.63**	**1.13**	**7**
N	P	*Rosa woodsii*	Woods' Rose		5																													**0.17**	**0.30**	**3**
																																		Mean		
		Total Plant Cover		**40**	**51**	**59**	**71**	**57**	**72**	**51**	**60**	**53**	**48**	**53**	**52**	**59**	**36**	**38**	**67**	**61**	**64**	**69**	**61**	**53**	**53**	**46**	**45**	**54**	**51**	**71**	**69**	**59**	**65**	**56.27**		
		Rock		15	1	2	2	5	8	20	21	6	13	6	11	8	9	9	5	1	10	11	3	6	5	14	22	10	8	2	3	2	4	**8.07**		
		Litter		18	28	31	16	13	18	18	19	13	15	18	11	9	20	31	15	29	21	15	28	13	30	26	15	15	17	24	27	34	25	**20.40**		
		Bare ground		27	20	8	11	25	2	11	0	28	24	23	26	24	35	22	13	9	5	5	8	28	12	14	18	21	24	3	1	5	6	**15.27**		
		Total Plant Cover (Exc. Noxious Weeds)		**37**	**51**	**58**	**68**	**52**	**72**	**51**	**60**	**47**	**47**	**48**	**52**	**49**	**34**	**38**	**65**	**59**	**62**	**62**	**60**	**53**	**52**	**42**	**40**	**54**	**51**	**70**	**69**	**57**	**65**	**54.17**		
		Sampling Adequacy Calculations			**n = 30**					t **= 1.311**					**Variance = 96.48**								n_{min} **=**	**5.24**												

Table 9 Bowie #1 East Mine - Vegetation Production - 2022

East Mine

Raw Data

Oven Dry Weight (grams per 1/2 square meter)

Sample No.	*Perennial Grasses*	*Perennial Forbs*	*Sub-shrubs*	*Annual / Biennial Forbs*	*Noxious Weeds*		TOTAL	
					Grass (cheatgrass)	*Other* (bindweed)	g/0.5m^2	lbs / ac
1	24.6			0.5	0.8		**25.9**	**461.4**
2	16.2			0.6	0.1		**16.9**	**301.1**
3	39.2			0.6	1.2	4.7	**45.7**	**814.1**
4	12.5	8.9		0.7	0.6	1.0	**23.7**	**422.2**
5	13.8			0.3	4.4	0.3	**18.8**	**334.9**
6	43.5	34.7		0.5			**78.7**	**1,402.0**
7	7.5			8.1	0.1		**15.7**	**279.7**
8	2.1	49.7		2.7	1.5	5.1	**61.1**	**1,088.4**
9	44.6			0.3	0.1	0.2	**45.2**	**805.2**
10	17.0	0.6		2.0	0.2	0.8	**20.6**	**367.0**
11	22.8			1.0	1.8		**25.6**	**456.0**
12	59.7	52.8			0.3		**112.8**	**2,009.4**
13	0.8	97.2		0.2	2.6		**100.8**	**1,795.7**
14	56.0			0.3	2.4	0.2	**58.9**	**1,049.2**
15		65.2		0.6	2.1	0.8	**68.7**	**1,223.8**
16	32.4			0.4	1.3	0.1	**34.2**	**609.2**
17	99.0			0.5	0.3	5.4	**105.2**	**1,874.0**
18	24.0			0.2	0.1		**24.3**	**432.9**
19	26.7			0.9	1.1		**28.7**	**511.3**
20	41.7			5.8	0.8		**48.3**	**860.4**
21	28.0			0.3	0.2		**28.5**	**507.7**
22	34.0			0.7	1.3		**36.0**	**641.3**
23	5.0	16.1		2.0	2.9		**26.0**	**463.2**
24	29.6	5.9		0.2	0.2		**35.9**	**639.5**
25	51.1			1.4	0.9		**53.4**	**951.3**
26	24.4			0.8	1.7		**26.9**	**479.2**
27	40.7	18.5		0.2	0.3		**59.7**	**1,063.5**
28	46.5	2.4		0.4	0.5		**49.8**	**887.1**
29	38.6			0.9	0.5		**40.0**	**712.6**
30	59.6			0.6	2.2		**62.4**	**1,111.6**
31	44.1			0.4	0.2		**44.7**	**796.3**
32	37.1			0.2	0.3		**37.6**	**669.8**
33	33.6	2.8		1.2	1.0		**38.6**	**687.6**
34	57.1			0.3	0.3	0.7	**58.4**	**1,040.3**
35	38.5			0.6			**39.1**	**696.5**
36	65.7	14.0		0.1			**79.8**	**1,421.6**
37	43.3			0.6			**43.9**	**782.0**
38	33.1			0.4			**33.5**	**596.8**
39	44.1	6.5				0.3	**50.9**	**906.7**
40	55.2					0.1	**55.3**	**985.1**
41	18.2			0.3		0.1	**18.6**	**331.3**
42	50.3			0.4	0.1	0.5	**51.3**	**913.9**
43	54.4			0.2	0.1		**54.7**	**974.4**
44	34.1	8.6		0.4			**43.1**	**767.8**
45	32.6	24.5			0.1	0.1	**57.3**	**1,020.7**
Average	**35.2**	**9.1**	**0.0**	**0.9**	**0.8**	**0.5**	**46.3**	**825.5**

Sampling Adequacy: **t = 1.301** **var. = 520.321**

n= 45 **Mean = 46.34** **n_{min} = 41.022**

Table 10 Bowie #1 East Mine - Vegetation Production - 2023

East Mine

Raw Data — **Oven Dry Weight (grams per 1/2 square meter)**

Sample No.	*Perennial Grasses*	*Perennial Forbs*	*Sub-shrubs*	*Annual / Biennial Forbs*	*Noxious Weeds*		TOTAL	
					Grass (cheatgrass)	*Other* (bindweed)	g/0.5m^2	lbs / ac
1	32.0	9.5		2.8	0.6		**44.9**	**799.8**
2	24.8	21.6		2.1	0.7		**49.2**	**876.4**
3	36.6	20.0			1.1	0.3	**58.0**	**1,033.2**
4	26.8	32.2		0.3			**59.3**	**1,056.4**
5	27.4	12.5			0.1	1.2	**41.2**	**733.9**
6	45.3			1.5			**46.8**	**833.7**
7	33.3	7.2			0.3	0.4	**41.2**	**733.9**
8	24.3	9.8		1.3	0.1		**35.5**	**632.4**
9	23.9	14.0		0.4			**38.3**	**682.3**
10	28.4	24.6		0.4	0.8		**54.2**	**965.5**
11	25.7	19.0		0.6			**45.3**	**807.0**
12	50.3	10.5					**60.8**	**1,083.1**
13	25.6			0.1		5.3	**31.0**	**552.2**
14	31.1			7.6	5.8		**44.5**	**792.7**
15	23.4	15.3			0.1	0.5	**39.3**	**700.1**
16	20.7						**20.7**	**368.7**
17	22.9			2.3	0.2		**25.4**	**452.5**
18	24.7			2.1			**26.8**	**477.4**
19	13.1			7.5	4.5	2.6	**27.7**	**493.4**
20	22.9						**22.9**	**407.9**
21	20.2			1.3	2.3	3.3	**27.1**	**482.8**
22	9.1			2.1			**11.2**	**199.5**
23	11.6			1.8	0.5		**13.9**	**247.6**
24	15.4			2.6			**18.0**	**320.7**
25	25.0			1.5			**26.5**	**472.1**
26	14.0	13.6		2.1			**29.7**	**529.1**
27	33.4			8.6	0.3		**42.3**	**753.5**
28	19.8			3.0	0.8		**23.6**	**420.4**
29	27.1			2.3			**29.4**	**523.7**
30	84.4	12.7		0.6			**97.7**	**1,740.4**
31	42.2			0.5			**42.7**	**760.7**
32	53.7						**53.7**	**956.6**
33	31.0			0.7			**31.7**	**564.7**
34	37.1	1.1			1.0		**39.2**	**698.3**
35	34.0	12.8					**46.8**	**833.7**
36	32.4						**32.4**	**577.2**
37	52.3			0.9			**53.2**	**947.7**
38	48.9						**48.9**	**871.1**
39	59.3						**59.3**	**1,056.4**
40	35.2	1.9		2.2			**39.3**	**700.1**
41	37.0	4.0					**41.0**	**730.4**
42	31.3	28.7		2.9			**62.9**	**1,120.5**
43	43.8						**43.8**	**780.3**
44	28.0	15.7		6.0			**49.7**	**885.4**
45	32.5	5.6		0.3			**38.4**	**684.1**
Average	**31.6**	**6.5**	**0.0**	**1.5**	**0.4**	**0.3**	**40.3**	**718.7**

Sampling Adequacy: **t = 1.301** **var. = 241.740**

n= 45 **Mean = 40.34** **n_{min} = 25.145**

Table 11 Bowie #1 East Mine - Woody Plant Density - 2022

East Mine - 2022

Raw Data

Young and Mature Plants per 2m x 50m Belt Transect

	Amelanchier utahensis	Atriplex canescens	Cercocarpus montanus	Chrysothamnus nauseosus	Krascheninnikovia lanata	Juniperus osteosperma	Purshia tridentata	Quercus gambelii	Rosa woodsii	Rhus trilobata	Symphoricarpos rotundifolia	**Total** (per transect)	**Total** (per acre)
	Shrub	Shrub	Shrub	Shrub	Sub-Shrub	Tree	Shrub	Tree	Shrub	Shrub	Shrub		
1	1	1					1					3	121
2		8										8	324
3		18										18	728
4				26			39					65	2,630
5	2					2	4	35				43	1,740
6		3		1		1						5	202
7	2							15				17	688
8								3				3	121
9		2										2	81
10		6										6	243
11						3		46				49	1,983
12				1			7					8	324
13		1							1			2	81
14								7				7	283
15		4		1		8		27				40	1,618
16		4					1					5	202
17		1				6	4	13				24	971
18		3										3	121
19		4										4	162
20		7										7	283
21				7	1		1					9	364
22		4										4	162
23		1	1			2		38				42	1,699
24						1						1	40
25												0	0
26						2		24				26	1,052
27		2				5		17				24	971
28		1										1	40
29									1			1	40
30		1						10				11	445
31		1										1	40
32		1							3			4	162
33		1								1		2	81
34		1										1	40
35		4										4	162
36		4										4	162
37		8					3					11	445
38		2					2					4	162
39		1							1			2	81
40												0	0
41												0	0
42							2					2	81
43												0	0
44		1										1	40
45		2					2					4	162
46					1				2			3	121
47		1			6		2					9	364
48		5					1		2			8	324
49	3				5				1			9	364
50		3										3	121
51		1			1							2	81
52												0	0
53												0	0
54								1				1	40
55							1					1	40
56		1										1	40
57		1				1						2	81
58										1		1	40
59						1						1	40
60		1									3	4	162
61												0	0
62								2				2	81
63												0	0
64		1							1			2	81
65												0	0
66		7							5	7		19	769
67		3										3	121
68		1										1	40
69												0	0
70		1										1	40
71		1										1	40
72								9			1	10	405
73												0	0
74												0	0
75												0	0
76							5		5	2		12	486
77		6										6	243
78									1	1		2	81
79		2							2			4	162
80												0	0
81												0	0
82		1							1			2	81
Total Count	8	133	1	36	14	32	75	247	26	12	4	588	
Per Acre	**3.9**	**65.6**	**0.5**	**17.8**	**6.9**	**15.8**	**37.0**	**121.9**	**12.8**	**5.9**	**2.0**	**290.2**	

Sample Adequancy Calculations	**mean = 290.18**	**var. = 238997.6**	
	t = 1.664	**n= 82**	**n_{min} = 785.80**

Table 12 Bowie #1 East Mine - Woody Plant Density - 2023

East Mine - 2023

Raw Data

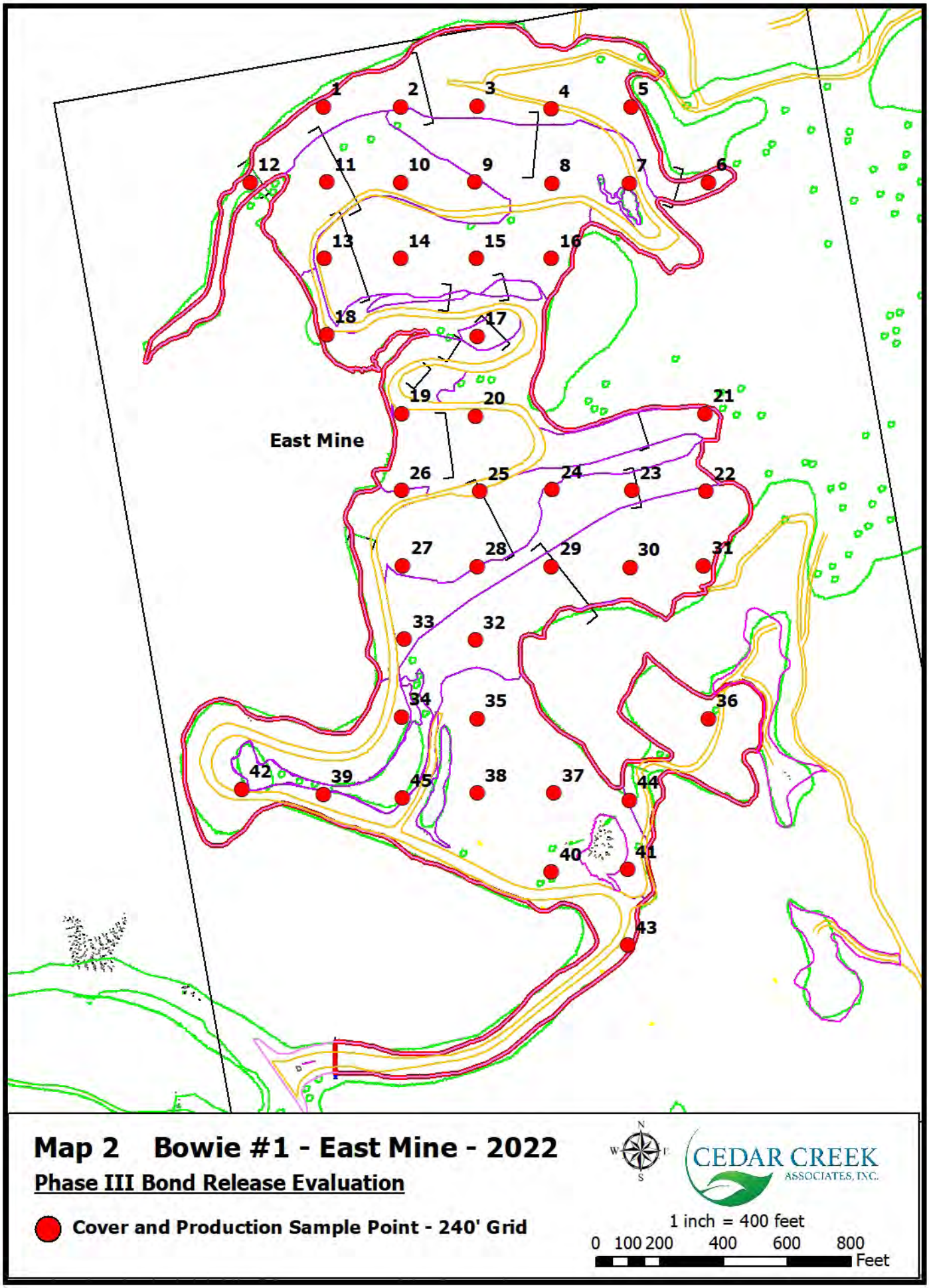
Young and Mature Plants per 2m x 50m Belt Transect

	Amelanchier utahensis	Atriplex canescens	Cercocarpus montanus	Chrysothamnus nauseosus	Krascheninnikovia lanata	Juniperus osteosperma	Purshia tridentata	Quercus gambelii	Rosa woodsii	Rhus trilobata	Symphoricarpos rotundifolia	**Total** (per transect)	**Total** (per acre)
	Shrub	Shrub	Shrub	Shrub	Sub-Shrub	Tree	Shrub	Tree	Shrub	Shrub	Shrub		
1		1									1	2	81
2								1				1	40
3		9										9	364
4		6				1	1					8	324
5				3		1				1		5	202
6				19	3	1	29					52	2,104
7				10			18					28	1,133
8		5										5	202
9		1										1	40
10							7	12				19	769
11						1						1	40
12		3										3	121
13		3					2					5	202
14				1		5	1	7				14	566
15						10		22				32	1,295
16				1		4		18				23	931
17						3		32				35	1,416
18			1			2		23				26	1,052
19												0	0
20			1				1	13				15	607
21	1	6					3					10	405
22		3				2						5	202
23								2				2	81
24							7	15				22	890
25												0	0
26						3	3	34				40	1,618
27		3			1							4	162
28		1										1	40
29		2										2	81
30							1		1			2	81
31							1					1	40
32		2										2	81
33		1										1	40
34		2						21				23	931
35		6			2							8	324
36												0	0
37							2		1			3	121
38							2		1	1		4	162
39					2		4		1			7	283
40		1			12							13	526
41						1						1	40
42												0	0
43		1					4					5	202
44												0	0
45												0	0
46							2					2	81
47					1		5		2			8	324
48	4						1					5	202
49					14							14	566
50												0	0
51												0	0
52												0	0
53								2	2			4	162
54												0	0
55		6						4				10	405
56					1			3				4	162
57								4	3			7	283
58												0	0
59									2			2	81
60												0	0
61									4			4	162
62		3					1					4	162
63		2				1	1			1		5	202
64		1						2				3	121
65												0	0
66												0	0
67												0	0
68												0	0
69									1			1	40
70							1		6	9		16	647
71		8							4	4		16	647
72					4				1			5	202
73					6				1			7	283
74		4										4	162
75												0	0
76							2	1		1		4	162
77									8			8	324
78									5			5	202
79		4							8			12	486
80		1							2			3	121
81		3							21	3		27	1,092
82												0	0
Total Count	5	88	2	34	46	35	99	216	74	20	1	620	
Per Acre	**2.5**	**43.4**	**1.0**	**16.8**	**22.7**	**17.3**	**48.9**	**106.6**	**36.5**	**9.9**	**0.5**	**306.0**	

Sample Adequancy Calculations

mean = 305.97 **var. = 172010.3**

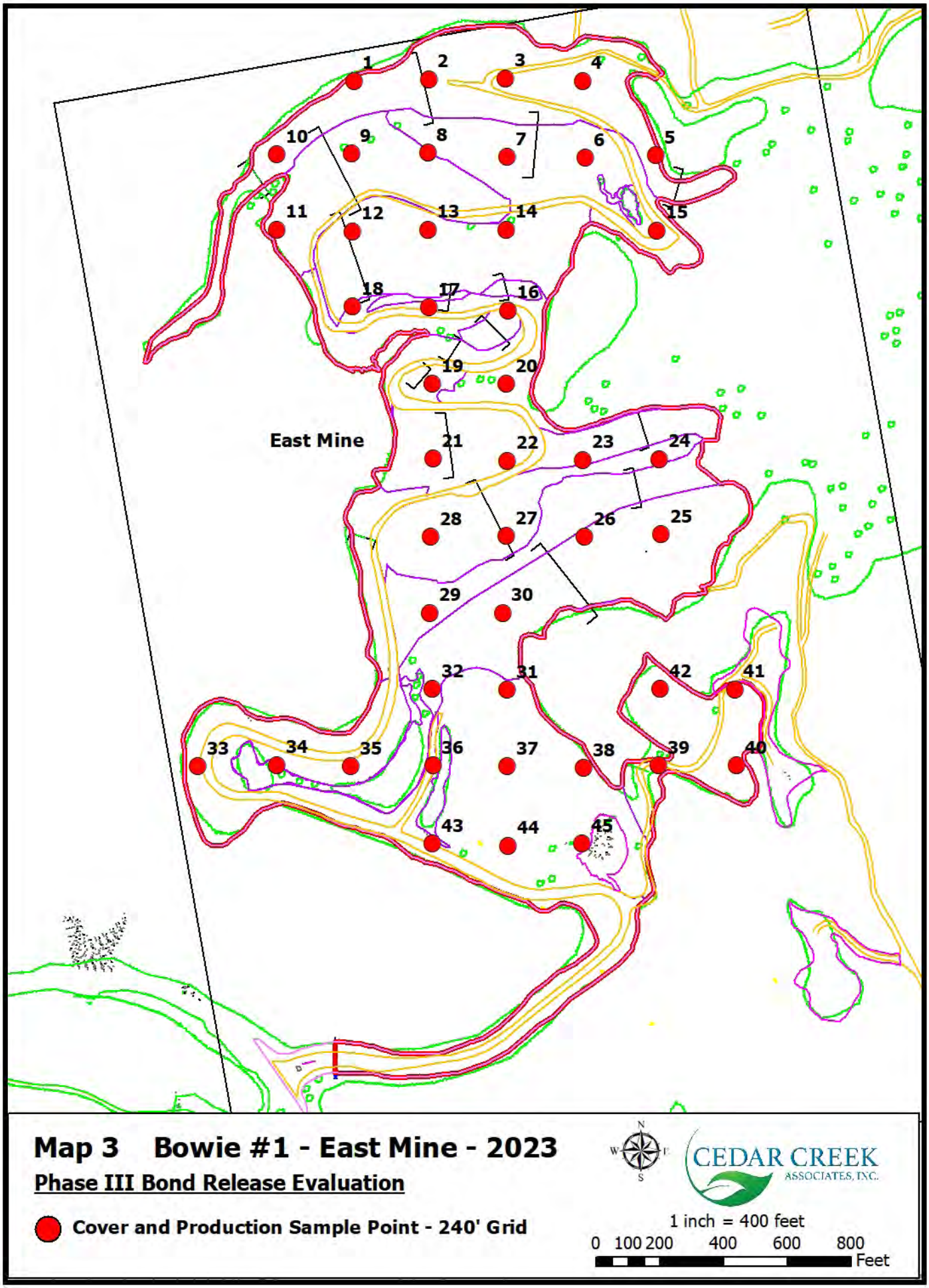
t = 1.664 **n= 82** **n_{min} = 508.68**



Map 2 Bowie #1 - East Mine - 2022

Phase III Bond Release Evaluation

Cover and Production Sample Point - 240' Grid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East Mine
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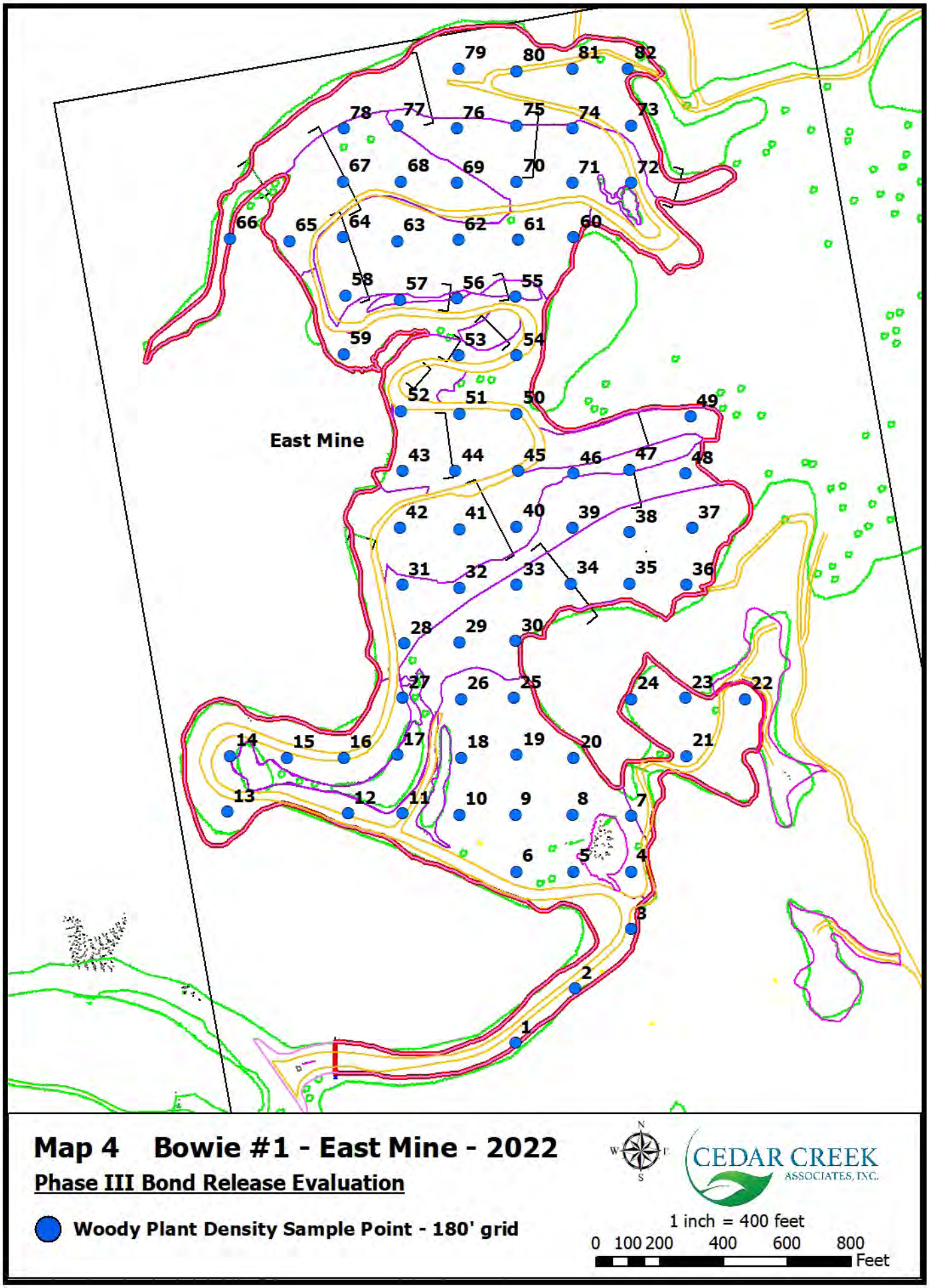
Map 3 Bowie #1 - East Mine - 2023
Phase III Bond Release Evaluation
Cover and Production Sample Point - 240' Grid
N
W
E
S
CEDAR CREEK
ASSOCIATES, INC.
1 inch = 400 feet
0 100 200 400 600 800
Feet



Map 4 Bowie #1 - East Mine - 2022

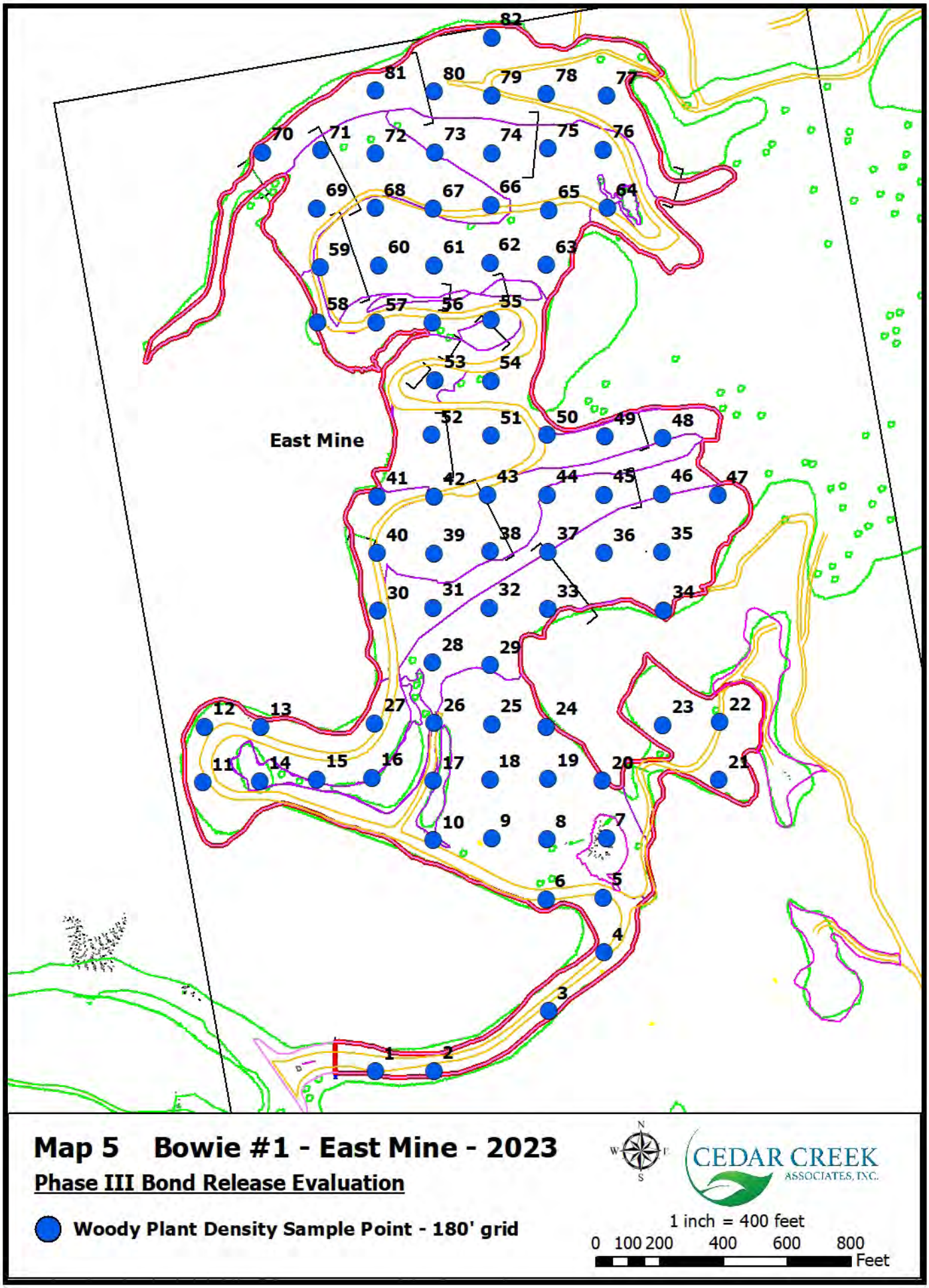
Phase III Bond Release Evaluation

Woody Plant Density Sample Point - 180' grid

CEDAR CREEK ASSOCIATES, INC.

1 inch = 400 feet

0 100 200 400 600 800 Feet



Map 5 Bowie #1 - East Mine - 2023

Phase III Bond Release Evaluation

● **Woody Plant Density Sample Point - 180' grid**

N W E S

CEDAR CREEK ASSOCIATES, INC.

1 inch = 400 feet

0 100 200 400 600 800 Feet

Photo 1: Bowie #1 – East Mine - 2022

Photo 2: Bowie #1 – East Mine - 2022

Photo 3: Bowie #1 – East Mine – 2022

Photo 4: Bowie #1 – East Mine – 2022

Photo 5: Bowie #1 – East Mine – 2023

Photo 6: Bowie #1 – East Mine - 2023

Photo 7: Bowie #1 – East Mine – 2023

Photo 8: Bowie #1 – East Mine - 2023

Certification Statement

I, Basil Bear, hereby certify that all applicable reclamation activities performed at the Bowie No. 1 Mine, mining permit C-1981-038, have been accomplished in accordance with the requirements of the Act, the rules and the approved reclamation program.

Basil Bear

Subscribed and sworn to or affirmed before me this 18th day of May, 2022 in the County of Delta, State of Colorado.

Signature of Notary

My Commission expires: Feb 14, 2027

HEATHER M MCJUNKIN
Notary Public
State of Colorado
Notary ID # 20234005975
My Commission Expires 02-14-2027