Bowie Resources, LLC.

Bowie #1 Mine
East Mine

Phase II Bond Release
Revegetation Evaluation Report
2016

OCTOBER 2016

CEDAR CREEK ASSOCIATES, INC.
5586 Overhill Dr.
Fort Collins, Colorado 80526
(970) 223-0775
www.cedarcreekassociatesinc.com

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PHASE II BOND RELEASE EVALUATION REPORT - 2016

1.0 INTRODUCTION

1.1 General

Cedar Creek Associates, Inc. (Cedar Creek) was contracted in 2016 by J. E. Stover and Associates, Inc. on behalf of Bowie Resources, LLC. to evaluate one revegetated area, East Mine, of the Bowie #1 Mine for Phase II Bond Release. Data collection was performed in the interest of ascertaining progress toward revegetation success in general accordance with Rule 3.03, Release of Performance Bonds. The location of the reclaimed area and sample points are provided on Map 1. Field sampling for the directly measurable variable of ground cover was systematically conducted on June 30th, 2016 as the vegetation was reaching its peak production period. Field efforts in 2016 were conducted by Cedar Creek's Senior Plant Ecologist, Mr. Erik M. Mohr; and Range Ecologist, Mr. Scott Benton. Raw data tables and photographs are presented at the end of the document.

1.2 Precipitation

Precipitation data presented on Table P and Charts P1 and P2 was recorded at a weather station (Paonia, CO) that is approximately 3 miles southeast of the mine. This weather station is nearest to the site and provides a rough comparison of long-term trends in precipitation in the region. However, the location of this weather station is considerably lower in elevation and so precipitation totals are not likely to be completely accurate. Therefore, precipitation data is not presented, but only used for a discussion on precipitation trends. Based on this data and current vegetation in the reclaimed areas, precipitation totals appear to have been above average for the Bowie #1 Mine in 12 months preceding evaluation in June 2016.

1.3 Background, Success Standards, and Evaluation

Information regarding dates of reclamation earthwork activities and seeding dates should be provided in other supporting documents.

The bond release success standards for the eventual release of reclaimed areas at the Bowie #1 Mine are based on vegetation cover, annual herbaceous production, and woody plant density values of reclaimed areas compared with the success criteria. Diversity, production and woody plant density success

Map 1

Bowie #1 Mine - 2016

East Mine

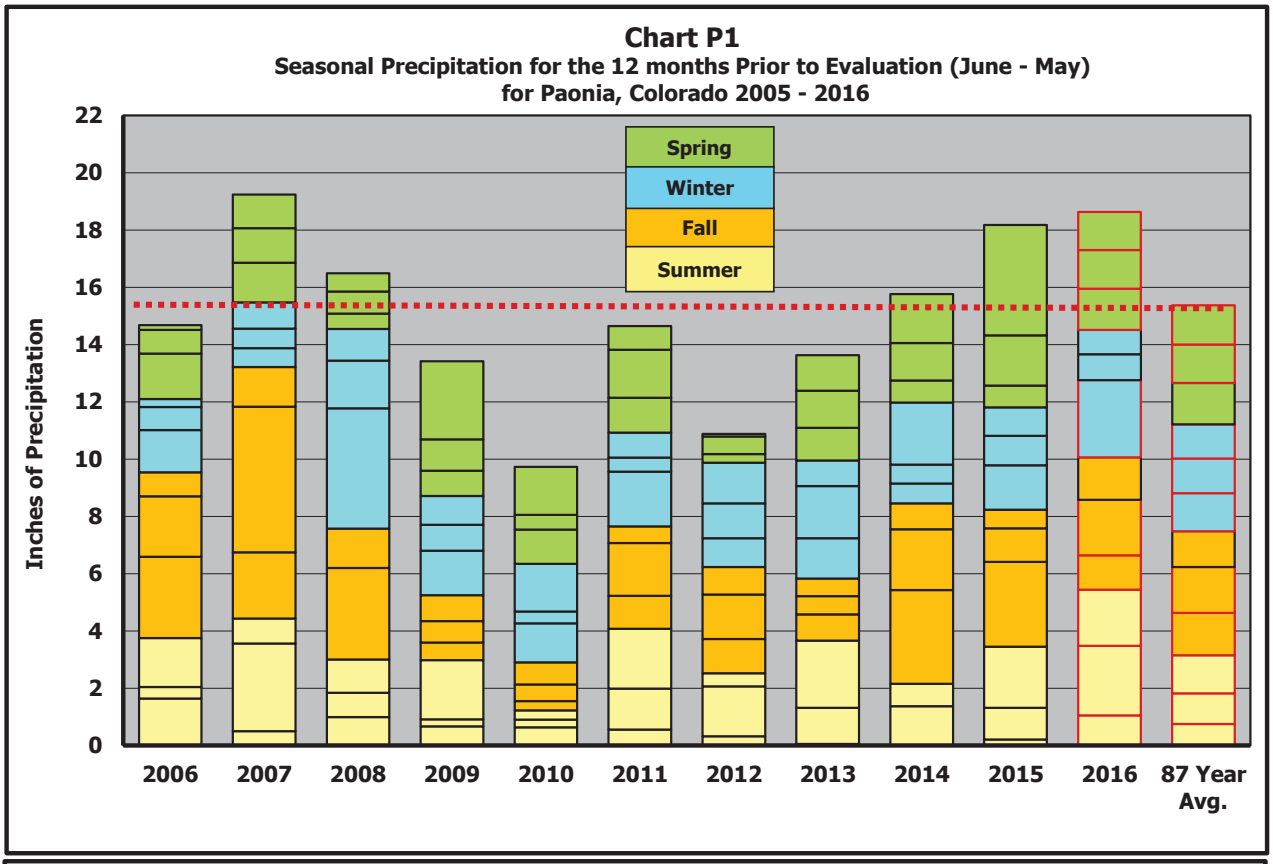
Vegetation Sample Point Locations - 275' x 275' Grid

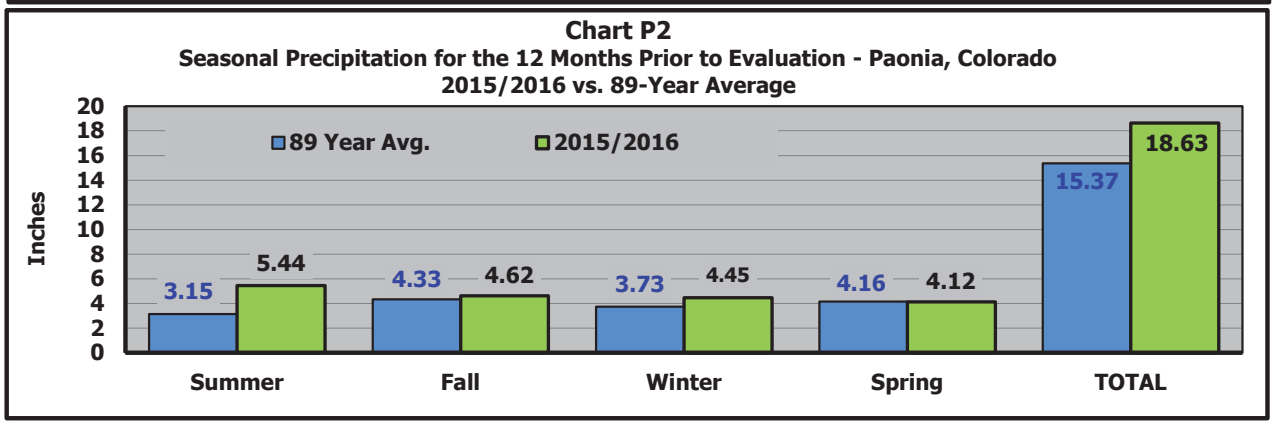
N
W E
S

0 125 250 500 750 1,000
Feet

Table P - Annual Precipitation for Paonia, Colorado 2005 - 2016													
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
2005	2.05	1.38	1.93	1.37	1.22	1.64	0.40	1.71	2.84	2.11	0.84	1.47	**18.96**
2006	0.81	0.28	1.58	0.83	0.17	0.50	3.06	0.87	2.32	5.08	1.39	0.65	**17.54**
2007	0.68	0.92	1.39	1.20	1.18	0.99	0.85	1.16	3.20	1.37	0.00	4.20	**17.14**
2008	1.67	1.10	0.54	0.77	0.64	0.67	0.24	2.07	0.62	0.74	0.91	1.55	**11.52**
2009	0.91	1.00	0.89	1.09	2.73	0.63	0.27	0.33	0.32	0.58	0.77	1.36	**10.88**
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	-	-	-	10.06
89 Year Avg.	**1.20**	**1.19**	**1.44**	**1.35**	**1.41**	**0.74**	**1.09**	**1.34**	**1.51**	**1.60**	**1.24**	**1.34**	**15.63**

Red Values indicate average values due to lack of data from weather station





comparisons are applicable only to Phase III Bond Release and thus are not discussed in this Phase II Bond Release evaluation. Noxious weed cover may not count towards vegetation success standards. A determination regarding noxious weed status is based on the Delta County noxious weed list.

Success criteria for **Phase II Bond Release** are as follows:

- For the East Mine Unit, Phase II Bond Release requirements state that Total Plant Cover must exceed 40%. The Total Plant Cover may not include noxious weeds, and annual and biennial species cover is limited (see discussion below).

Success criteria for **Phase III Bond Release** in the East Mine unit are as follows:

- Achieve a Total Plant Cover greater than 40%.
- Achieve a woody plant density of between 800 and 1,000 stems per acre.
- Achieve annual herbaceous production levels of ≥ 90% of 400 pounds per acre (360).
- Achieve a species diversity of ≥ 5 native, perennial herbaceous species (4 native cool season grasses and one native forb) with between 3% and 60% relative cover. The five species combined will not exceed 90% relative cover or production.
- Achieve a species diversity of ≥ 2 native shrub species, not exceeding a relative cover value of ≥ 80%.

Success evaluations involve a direct comparison and, where necessary, statistical testing of the ground cover parameter. A total of perennial, biennial and annual (non-noxious) vegetation cover is stated as the approved success standard, however there is a limitation to the amount of annual and biennial cover that can be included in this total. According to guidance provided by CDRMS, annuals and biennials can only contribute 10% relative cover to the comparison. Implementation of this method initially requires noxious weeds to be removed from total cover. Next, annual and biennial absolute cover must be converted into relative cover. Any annual and biennial cover exceeding 10% relative cover must be removed from the total cover data set. The result of this calculation is absolute perennial cover with 10% allowable relative cover of annual and biennial vegetation. The resulting data can then be used in a direct comparison against a standard.

In 2016, Cedar Creek was able to make direct comparisons between the Phase II sampling effort and standard (because of statistically adequate sampling), thus a standard statistical t-test was not required.

2.0 METHODOLOGY FOR VEGETATION SAMPLING

2.1 Sample Site Selection / Location

The sample layout protocol for revegetation evaluations in 2016 largely followed Colorado Division of Reclamation, Mining, and Safety (CDRMS) approved procedures developed by Cedar Creek to provide unbiased, representative, and cost-effective data for evaluation of revegetation. These procedures are designed to better account for the heterogeneous expression of vegetation within the various reclaimed areas while precluding bias in the sample site selection process. By design, the procedure is initiated randomly, and thereafter, samples are located in a systematic manner, along grid coordinates spaced at fixed distances (e.g. 275 ft., as demonstrated in Figure 1 and/or Map 1). In this manner, representation from across the entire reclaimed area is forced rather than risking the chance that significant pockets (or seedings) are entirely missed, or overemphasized as often happens with simple random sampling.

The systematic procedure for sample location in the revegetated areas 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 area 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, utilizing a mobile Garmin GPS unit, 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 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 the area was encountered before reaching the full length of a transect, the orientation of the transect was turned 90^{o} 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.

2.2 Determination of Ground Cover

Ground cover at each sample point was determined 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, standing dead, rock (>2mm), or bare soil. Hits were determined at each meter interval by activating 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 (Figure 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. Identification and nomenclature of plant species follows Colorado Flora: Western Slope (Weber and Wittman, 1996).

2.3 Sample Adequacy Determination

Sampling within each unit was conducted to 30 samples for Phase II area sampling. From these preliminary efforts, sample means and standard deviations for total non-overlapping vegetation ground cover were calculated. For non-monitoring applications, the typical procedure is that sampling continues until an adequate sample, $\mathbf{n_{min}}$, has been collected in accordance with the Cochran formula (below) for determining sample adequacy, whereby the population is estimated to within 10% of the true mean (μ) with 90% confidence.

** Lasers utilized for this instrument are state-of-the-art and of specialized design to emit a unique electro-magnetic wavelength visible under full sunlight, a condition previously not possible with portable low-energy lasers.

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 (initial size = 30)

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), additional samples would be collected until the inequality ($\mathbf{n_{min}} \leq \mathbf{n}$) becomes true.

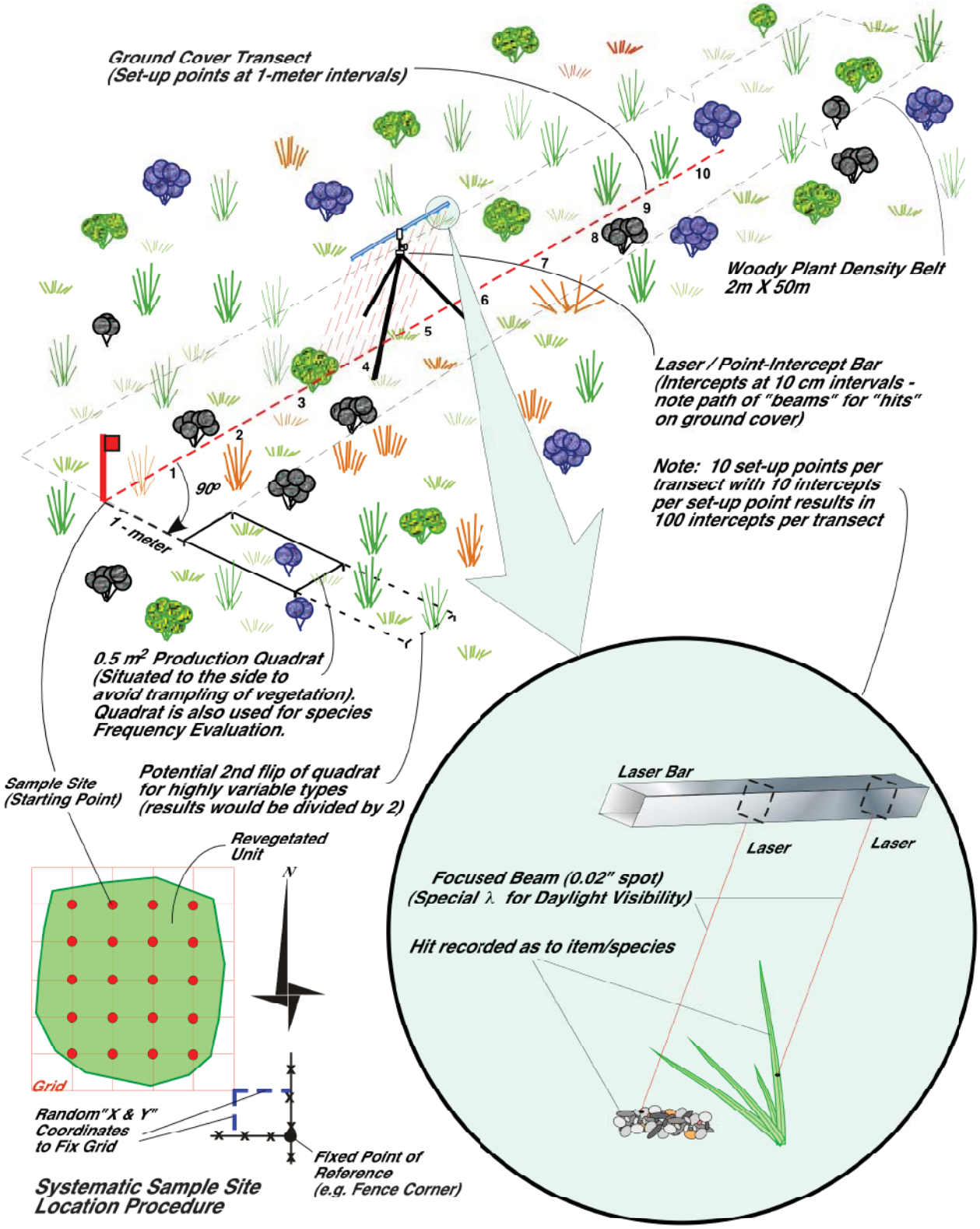


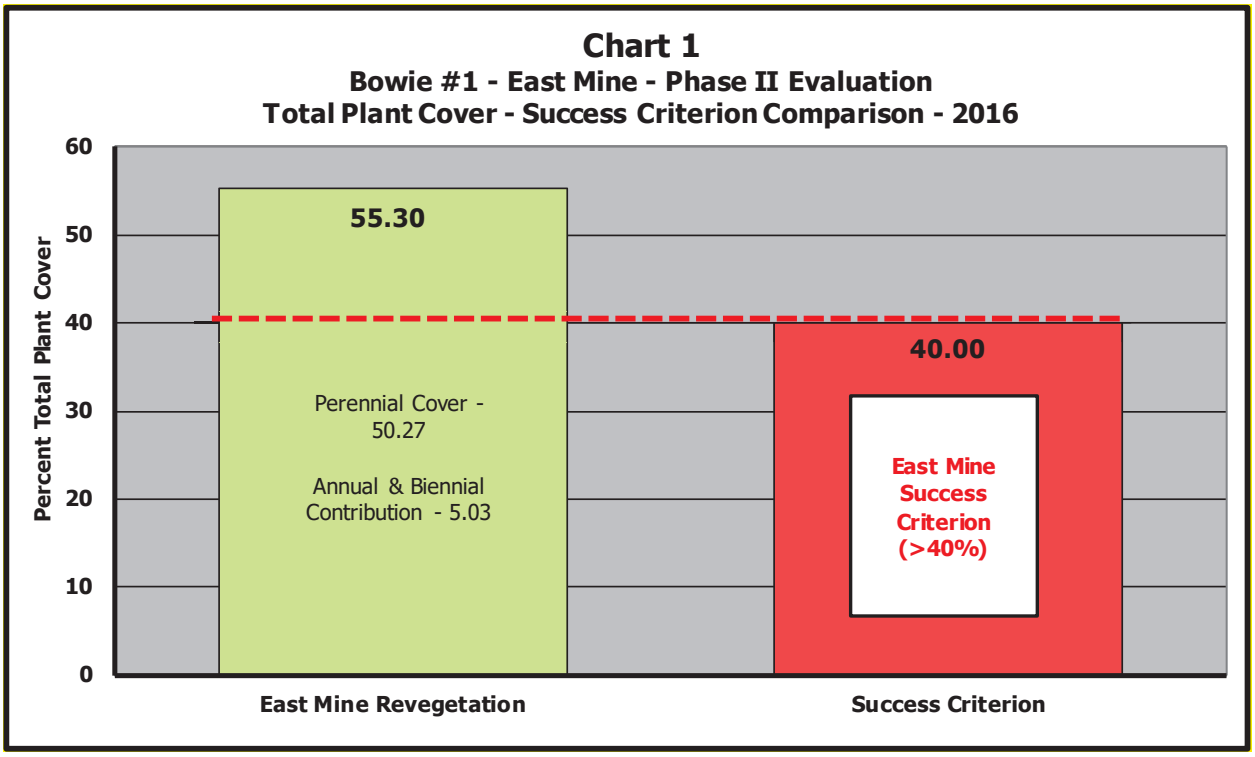
Figure 1

Sampling Procedure at a Systematic Sample Site Location

3.0 RESULTS

3.1 Summary

The revegetation evaluated for Phase II Monitoring comprised approximately 59 acres. A total of 40 plant taxa were observed within the revegetation area evaluated in 2016. These species included 12 grass taxa, 22 forbs, 2 sub-shrub, and 4 shrubs (Table 1). With regard to the Phase II Bond Release success standard, the East Mine's total perennial cover of 50.27% with an additional 5.03% contributed from annual and biennial cover (equates to the maximum of 10% relative cover allowable) equates to a Total Plant Cover of 55.34% (Chart 1). This value comfortably exceeds the success criterion of 40% Total Plant Cover.



3.2 East Mine Revegetation

The East Mine Unit is approximately 59 acres in extent (Map 1). Ground cover consisted of 66.5% live vegetation, 6.3% rock, 17.1% litter, and bare soil exposure of 10.2% (Table 2). Perennial species exhibited an average cover of 50.3% and a relative cover of 75.6%. Annual and biennial species exhibited an average cover of 11.3% and a relative cover of 17.1%. Noxious weeds exhibited average cover of 4.9%, and a relative cover of 7.3%. Found in relatively small quantities were the state-listed noxious

weeds, cheatgrass (*Anisantha tectorum*), whitetop (*Cardaria draba*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), and field bindweed (*Convovulus arvensis*). In addition, the ubiquitous, invasive species Japanese brome (*Bromus japonicus*) was also present in small quantities. Dominant taxa were thickspike wheatgrass (*Elymus lanceolatus var. l.*), cicer milkvetch (*Astragalus cicer*), and alfalfa (*Medicago sativa*) with an average cover of 21.0%, 10.9%, and 10.7% respectively. With regard to diversity, the East Mine unit exhibited a total of four perennial herbaceous species with between 3% and 60% relative cover, two of which were native cool-season perennial grasses. A total of six native shrubs were observed, although none were intercepted.

4.0 CONCLUSIONS

Chart 1 exhibits the results from the direct comparison made between the East Mine Phase II Monitoring area and the Success Criterion. Total Plant Cover (excluding noxious weeds) for the East Mine was 55.3%.

For the East Mine Unit, the Total Plant Cover Standard is greater than 40%. **Therefore, the East Mine Unit (55.3% plant cover) is greater than the success criterion (40%), resulting in the conclusion that the area sampled for Phase II Monitoring could readily pass the ground cover requirement for Phase II Bond Release.**

This review of collected data demonstrates the success and utility of the Revegetated Areas, especially given the levels of vegetative ground cover and favorable results with regard to diversity and vegetation cover. Overall, the area appears to be able to surpass Phase II bond release requirements and is capable of supporting post-mining land uses. The existence of a few noxious weeds should (and has) triggered managerial action to establish control of these undesirable populations.

5.0 LITERATURE CITED

Colorado Division of Mined Land Reclamation. 1990. *Guideline for Management of Noxious Weeds on Coal Mine Permit Areas*.

Colorado Division of Minerals and Geology. 1995. *Guideline Regarding Selected Coal Mine Bond Release Issues.*

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

Table 1 Bowie #1 - East Mine - Phase II - 2016

Observed Species

		Grasses and Grass-likes	*Synonyms*	Common Name
N	P	*Achnatherum hymenoides*	*Orozopsis hymenoides*	Indian Ricegrass
NxW	A	*Anisantha tectorum*	*Bromus tectorum*	Cheatgrass
I	A	*Bromus japonicus*		Japanese Brome
N	P	*Bromus marginatus*		Mountain Brome
I	P	*Dactylis glomerata*		Orchardgrass
N	P	*Elymus lanceolatus var. lanceolatus*	*Agropyron dasystachyum*	Thickspike Wheatgrass
N	P	*Elymus trachycaulus*	*Agropyron trachycaulum*	Slender Wheatgrass
N	P	*Pascopyron smithii*	*Agropyron smithii*	Western Wheatgrass
N	P	*Poa agassizensis / Poa pratensis*	*Poa pratensis ssp. pratensis*	Bluegrass
N	P	*Poa secunda*	*Poa sandbergii*	Sandberg's Bluegrass
N	P	*Pseudoroegneria spicatum spicatum*	*Agropyron spicatum spicatum*	Bluebunch Wheatgrass
I	P	*Thinopyrum intermedium*	*Agropyron trichophorum*	Intermediate Wheatgrass
		Forbs		
I	A	*Alyssum desertorum*		Desert Alyssum
I	P	*Astragalus cicer*		Cicer Milkvetch
NxW	P	*Cardaria draba*		Whitetop
NxW	P	*Cirsium arvense*	*Breea arvense*	Canada Thistle
NxW	P	*Cirsium vulgare*		Bull Thistle
NxW	P	*Convolvulus arvensis*		Bindweed
N	P	*Cuscuta sp.*		Dodder
I	A	*Erodium cicutarium*		Redstem Stork's bill
N	A	*Gayophytum ramosissimum*		Groundsmoke
N	B	*Grindelia squarrosa*		Curlycup Gumweed
N	P	*Heterotheca villosa*		Hairy False Golden Aster
I	B	*Lactuca serriola*		Prickly Lettuce
N	P	*Linum lewisii*		Lewis Flax
N	B	*Machaeranthera canescens*		Hoary Aster
I	P	*Medicago sativa*		Alfalfa
I	B	*Melilotus alba*		White Sweetclover
I	B	*Melilotus officinalis*		Sweetclover
N	P	*Penstemon strictus*		Rocky Mountain Penstemon
I	P	*Rumex crispus*		Curly Dock
I	P	*Sanguisorba minor*		Small Burnet
N	P	*Spharalcea coccinea*		Scarlet Globemallow
I	P	*Taraxicum officinale*		Dandelion
		Trees, Shrubs, and Sub-Shrubs		
N	S	*Atriplex canescens*		Fourwing Saltbush
N	SS	*Krascheninnikovia lanata*	*Ceratoides lanata*	Winterfat
N	SS	*Lepidium montanum*		Mountain Pepperweed
N	S	*Purshia tridentata*		Bitterbrush
N	S	*Quercus gambelii*		Scrub Oak
N	S	*Rosa woodsii*		Wood's Rose

Total Counts by Lifeform:	
Perennial Grasses	**10**
Perennial Forbs	**14**
Sub-Shrubs	**2**
Shrubs & Trees	**4**
Annual Grasses	2
Annual / Biennial Forbs	8
Total Species Encountered	**40**

Table 2 Bowie #1 - East Mine - Phase II - 2016

Ground Cover Summary

Percent Ground Cover Based on Point-Intercept Sampling

			Area -->	**Average Cover**	**Relative Cover**
Grasses and Grass-likes					
N	P	*Achnatherum hymenoides*	Indian Ricegrass	0.50	0.75
NxW	A	*Anisantha tectorum*	Cheatgrass	3.43	5.17
I	A	*Bromus japonicus*	Japanese Brome	0.73	1.10
I	P	*Dactylis glomerata*	Orchardgrass	0.03	0.05
N	P	*Elymus lanceolatus var. lanceolatus*	Thickspike Wheatgrass	20.97	31.54
N	P	*Elymus trachycaulus*	Slender Wheatgrass	0.40	0.60
N	P	*Pascopyron smithii*	Western Wheatgrass	5.50	8.27
N	P	*Poa agassizensis / Poa pratensis*	Bluegrass	0.13	0.20
N	P	*Poa secunda*	Sandberg's Bluegrass	0.07	0.10
N	P	*Pseudoroegneria spicatum spicatum*	Bluebunch Wheatgrass	0.07	0.10
I	P	*Thinopyrum intermedium*	Intermediate Wheatgrass	0.07	0.10
Forbs					
I	A	*Alyssum desertorum*	Desert Alyssum	6.97	10.48
I	P	*Astragalus cicer*	Cicer Milkvetch	10.87	16.35
NxW	P	*Cardaria draba*	Whitetop	0.37	0.55
NxW	P	*Convolvulus arvensis*	Bindweed	1.07	1.60
N	P	*Cuscuta indecora*	Dodder	0.03	0.05
I	A	*Erodium cicutarium*	Redstem Stork's bill	0.17	0.25
N	A	*Gayophytum ramosissimum*	Groundsmoke	0.03	0.05
N	B	*Grindelia squarrosa*	Curlycup Gumweed	0.90	1.35
I	B	*Lactuca serriola*	Prickly Lettuce	0.97	1.45
N	B	*Machaeranthera canescens*	Hoary Aster	0.10	0.15
I	P	*Medicago sativa*	Alfalfa	10.73	16.15
I	B	*Melilotus alba*	White Sweetclover	0.17	0.25
I	B	*Melilotus officinalis*	Sweetclover	1.30	1.96
N	P	*Penstemon strictus*	ɔcky Mountain Penstemon	0.07	0.10
I	P	*Sanguisorba minor*	Small Burnet	0.50	0.75
Trees, Shrubs, and Sub-Shrubs					
N	SS	*Krascheninnikovia lanata*	Winterfat	0.13	0.20
N	SS	*Lepidium montanum*	Mountain Pepperweed	0.20	0.30

Total Plant Cover	**66.47**
Rock	6.27
Litter	17.07
Bare ground	10.20

Total Plant Cover (excluding noxious weeds)	**61.60**	**92.68**
Perennial Cover (excluding noxious weeds)	**50.27**	**75.63**
Annual & Biennial Cover (excluding noxious weeds)	**11.33**	**17.05**
Summary by Lifeform:		
Native Perennial Cool Grasses	**27.63**	**41.57**
Introduced Perennial Grasses	**0.10**	**0.15**
Annual Grasses	0.73	1.10
Native Perennial Forbs	**0.10**	**0.15**
Native Biennial Forbs	1.00	1.50
Native Annual Forbs	0.03	0.05
Introduced Perennial Forbs	**22.10**	**33.25**
Introduced Biennial Forbs	2.43	3.66
Introduced Annual Forbs	7.13	10.73
Noxious Weeds	4.87	7.32
Sub-Shrubs	**0.33**	**0.50**
Shrubs	**-**	**-**
Trees	**-**	**-**

Sample Adequacy Calculations:	
n =	**30**
Mean =	**66.47**
Variance =	**70.74**
n_{min} =	**2.75**

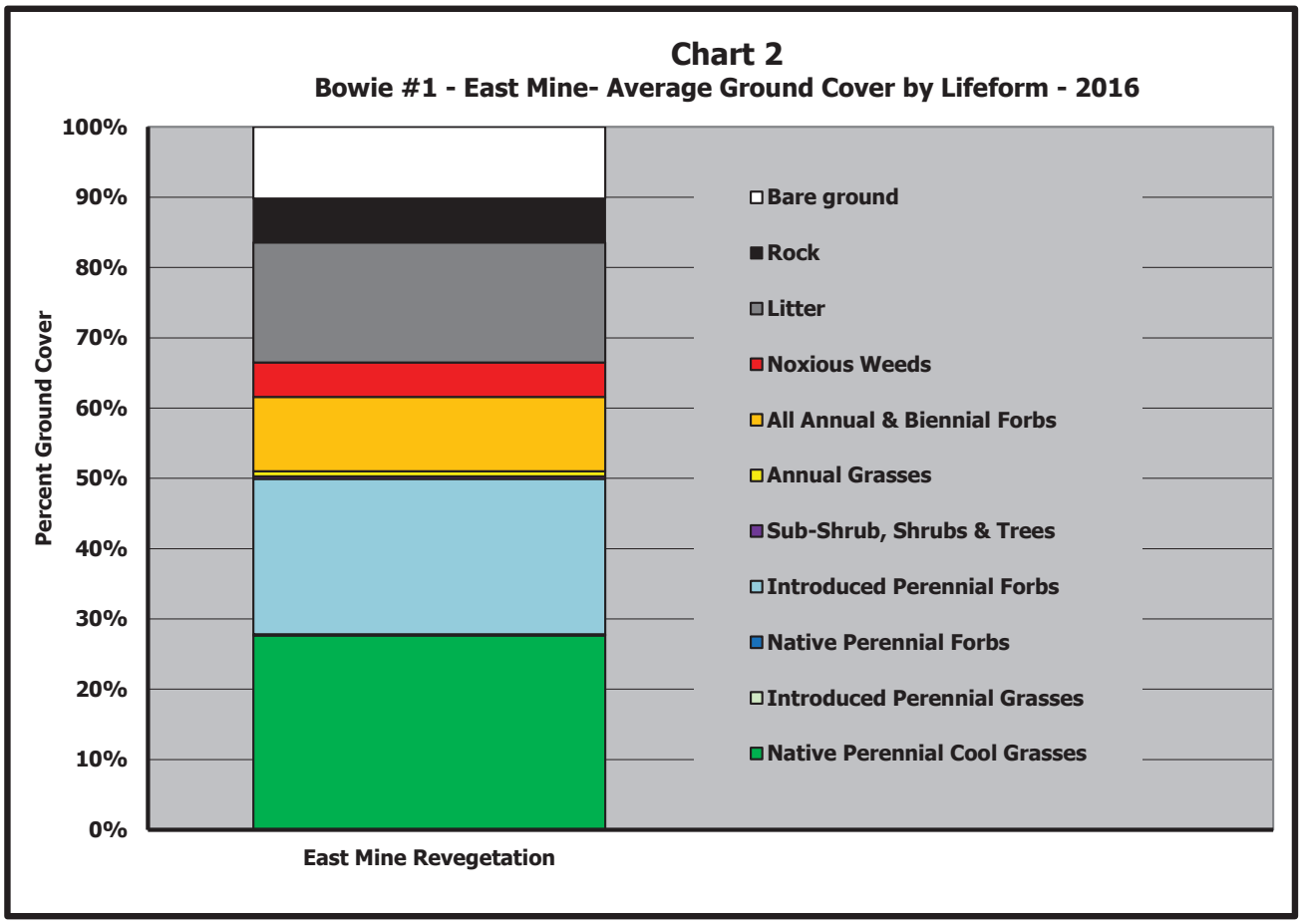


Chart 2
Bowie #1 - East Mine- Average Ground Cover by Lifeform - 2016
Percent Ground Cover
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
East Mine Revegetation
Bare ground
Rock
Litter
Noxious Weeds
All Annual & Biennial Forbs
Annual Grasses
Sub-Shrub, Shrubs & Trees
Introduced Perennial Forbs
Native Perennial Forbs
Introduced Perennial Grasses
Native Perennial Cool Grasses

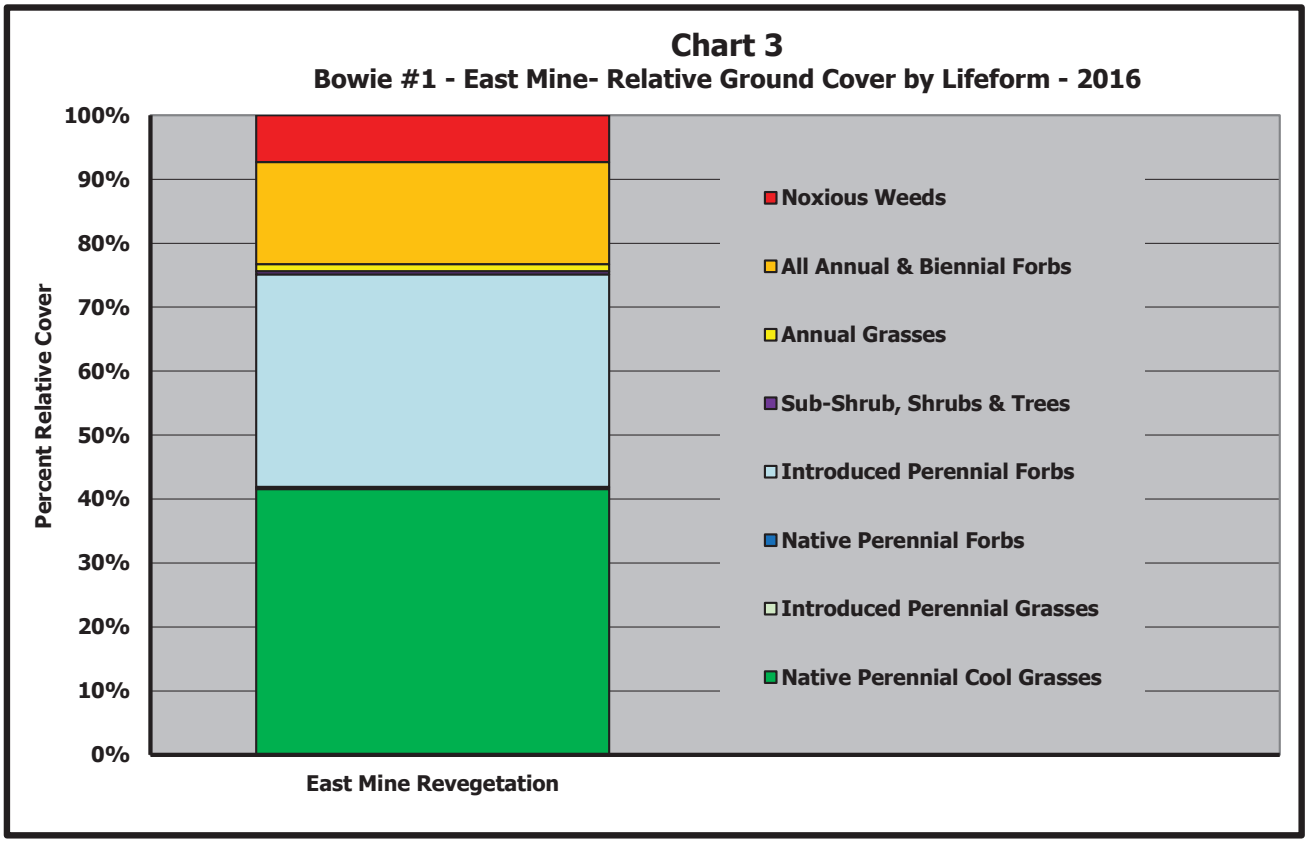


Chart 3
Bowie #1 - East Mine- Relative Ground Cover by Lifeform - 2016
Percent Relative Cover
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
East Mine Revegetation
Noxious Weeds
All Annual & Biennial Forbs
Annual Grasses
Sub-Shrub, Shrubs & Trees
Introduced Perennial Forbs
Native Perennial Forbs
Introduced Perennial Grasses
Native Perennial Cool Grasses

Table 3 Bowie #1 - East Mine - Phase II - Vegetation Cover - 2016

Phase 2 - Drill Pads and Access Roads Revegetation

Raw Data

Percent Ground Cover Based on Point-Intercept Sampling

		Transect -->	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	*Achnatherum hymenoides*							4	7								4															**0.50**	**0.75**	**10**
NxW	A	*Anisantha tectorum*	2	18			1	11	4	33		1						1		9	3		5								4	11	**3.43**	**5.17**	**43**
I	A	*Bromus japonicus*								3												2						4		1	10	2	**0.73**	**1.10**	**20**
I	P	*Dactylis glomerata*																											1				**0.03**	**0.05**	**3**
N	P	*Elymus lanceolatus var. lanceolatus*	23	34	3	4	12	27	31	3	77	44	51	46	39	47	18	13	20	26	10		10	17	10	7			40	7	10		**20.97**	**31.54**	**87**
N	P	*Elymus trachycaulus*																								7	5						**0.40**	**0.60**	**7**
N	P	*Pascopyron smithii*	19	9	13	7	2	8	2			2					13		6		5		5	9	14	7	1		10	33			**5.50**	**8.27**	**60**
N	P	*Poa agassizensis / Poa pratensis*																												4			**0.13**	**0.20**	**3**
N	P	*Poa secunda*	1	1																													**0.07**	**0.10**	**7**
N	P	*Pseudoroegneria spicatum spicatum*																						1		1							**0.07**	**0.10**	**7**
I	P	*Thinopyrum intermedium*																											2				**0.07**	**0.10**	**3**
Forbs																																			
I	A	*Alyssum desertorum*	4	1	5	1	1	3	3	4		13	3	1	11	2	8	16	11		4	6	7	8	6	3	16	44	2	3	12	11	**6.97**	**10.48**	**93**
I	P	*Astragalus cicer*	11	11	13	52	13	4	11					2			13				46		30	35	42	17	9	13			4		**10.87**	**16.35**	**57**
NxW	P	*Cardaria draba*						11																									**0.37**	**0.55**	**3**
NxW	P	*Convolvulus arvensis*						3		4							2	1	1	15		6											**1.07**	**1.60**	**23**
N	P	*Cuscuta indecora*														1																	**0.03**	**0.05**	**3**
I	A	*Erodium cicutarium*		1								3											1										**0.17**	**0.25**	**10**
N	A	*Gayophytum ramosissimum*																								1							**0.03**	**0.05**	**3**
N	B	*Grindelia squarrosa*				2			1													13	9			1	1						**0.90**	**1.35**	**20**
I	B	*Lactuca serriola*			4	1			2	1							1	1		2			3				4	6	1		1	2	**0.97**	**1.45**	**43**
N	B	*Machaeranthera canescens*																	3														**0.10**	**0.15**	**3**
I	P	*Medicago sativa*		1	7		14		2				14	3	19	24	10	28	15		5	18		3	8	22	21	10	18	16	14	50	**10.73**	**16.15**	**73**
I	B	*Melilotus alba*																5															**0.17**	**0.25**	**3**
I	B	*Melilotus officinalis*	2		14				1													22											**1.30**	**1.96**	**13**
N	P	*Penstemon strictus*																						1		1							**0.07**	**0.10**	**7**
I	P	*Sanguisorba minor*							3										4	6							1				1		**0.50**	**0.75**	**17**
Trees, Shrubs, and Sub-Shrubs																																			
N	SS	*Kraschenninnikovia lanata*															4																**0.13**	**0.20**	**3**
N	SS	*Lepidium montanum*																									6						**0.20**	**0.30**	**3**
																																	Mean		
		Total Plant Cover	**62**	**76**	**59**	**67**	**43**	**67**	**64**	**55**	**77**	**63**	**68**	**52**	**69**	**74**	**69**	**69**	**60**	**58**	**73**	**67**	**70**	**74**	**80**	**66**	**65**	**77**	**74**	**64**	**56**	**76**	**66.47**		
		Rock	4	7	6	7	35	4	8	9	8	11	6	11	0	4	1	1	5	11	4	2	7	4	0	2	1	3	14	5	7	1	**6.27**		
		Litter	17	11	17	13	7	21	15	11	11	13	17	27	30	17	25	18	22	29	15	24	12	11	20	18	19	10	12	22	21	7	**17.07**		
		Bare ground	17	6	18	13	15	8	13	25	4	13	9	10	1	5	5	12	13	2	8	7	11	11	0	14	15	10	0	9	16	16	**10.20**		
		Perennial Cover (excl. noxious weeds)	**54**	**56**	**36**	**63**	**41**	**39**	**53**	**10**	**77**	**46**	**65**	**51**	**58**	**72**	**58**	**45**	**45**	**32**	**66**	**18**	**45**	**66**	**74**	**62**	**43**	**23**	**71**	**60**	**29**	**50**	**50.27**	**75.63%**	
		Annual & Biennial Cover (excl. noxious weeds)	**6**	**2**	**23**	**4**	**1**	**3**	**7**	**8**	**0**	**16**	**3**	**1**	**11**	**2**	**9**	**22**	**14**	**2**	**4**	**43**	**20**	**8**	**6**	**4**	**22**	**54**	**3**	**4**	**23**	**15**	**11.33**	**17.05%**	

Sample Adequacy Calculations — **Mean = 66.47** **Variance = 70.74** **t= 1.31** **n= 30** **n_{min} = 2.75**

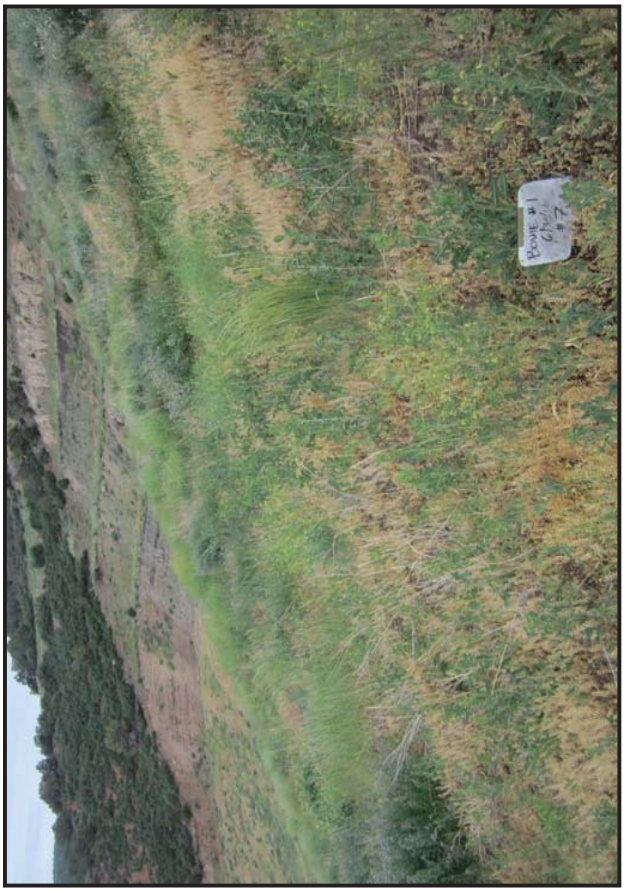


Photo 2 - Bowie #1 Mine - East Mine - Circa #7 - 2016

Photo 4 - Bowie #1 Mine - East Mine - Circa #14 - 2016

Photo 1 - Bowie #1 Mine - East Mine - Circa #4 - 2016

Photo 3 - Bowie #1 Mine - East Mine - Circa #5 - 2016

Photo 5 - Bowie #1 Mine - East Mine - Circa #16 - 2016

Photo 6 - Bowie #1 Mine - East Mine - Circa #16 - 2016

Photo 7 - Bowie #1 Mine - East Mine - Circa #21 - 2016

Photo 8 - Bowie #1 Mine - East Mine - Circa #21 - 2016

Photo 10 - Bowie #1 Mine - East Mine - Circa #30 - 2016

Photo 9 - Bowie #1 Mine - East Mine - Circa #24 - 2016

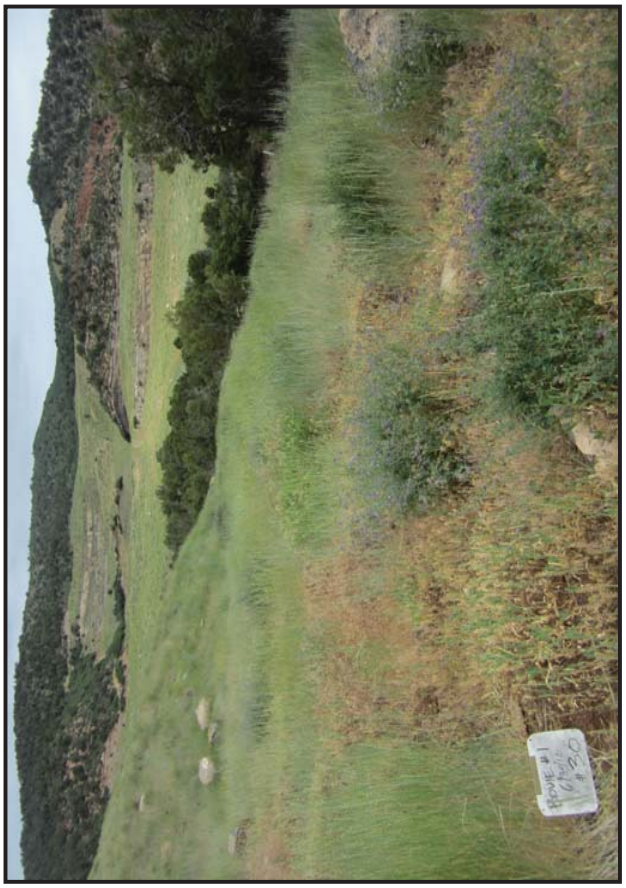


Photo 11 - Bowie #1 Mine - East Mine - Circa #30 - 2016