August 12th, 2026

Mr. Jonathan Emmer
Reclamation Director
ND State Public Service Commission
600 East Boulevard, Dept. 408
Bismarck, ND 58505-0480

RE: Request for Variance on the SE¼ of Section 23, Permit NAFK-8405

Dear Mr. Emmer:

The Falkirk Mining Company (Falkirk) is requesting a variance to the 10-year liability period for a portion of a proposed bond release in the SE¼ of Section 23, Township 146 North, Range 82 West in accordance with Public Service Commission (PSC) Policy Memorandum No. 20. The proposed bond release area is native grassland, owned by Chad and Jennifer Berg SE¼ of Section 23, Township 146 North, Range 82 West (See attached maps). The variance area being requested is a reclaimed access road that is 1.5 acres. This road was used to access pit water pond P-E24-01. The access road was respread and reclaimed in 2017 and seeded to native grassland seed mix in 2018 making 2026 year nine of revegetation. The total area of disturbance is approximately 19.5 acres in the proposed bond release area. The remaining acres outside of the variance areas were reclaimed in 1995, 2008, and 2013 through 2016 (See Revegetation Period Initiated Map for locations). The access road accounts for 7.8 percent of the disturbance area for the proposed bond release area, or 7.7 percent of the entire area. This meets the Policy Memorandum No. 20 threshold being an access road to a water management structure and the variance area being less than 20 percent of the surrounding reclamation tract.

The native grassland in the SE¼ of Section 23 of the proposed bond release area exceed the bond release standards. The loamy reference area was used to calculate the productivity standard of 2,957 lbs/acre in 2024 and 2,618 lbs/acre in 2025. The production data from the reclaimed native grassland in SE¼ of Section 23 was 4,083 lbs/acre in 2024 and 3,585 lbs/acre in 2025. The loamy reference area was used to calculate the weighted cover value of 90.9% in 2024 and 90.9% in 2025. The cover data collected from the native grassland in the SE¼ of Section 23 was 96.1% in 2024 and 97.2% in 2025. The total cover is based on basal hits of perennial species. In 2024 and 2025, the reclaimed native grassland had five native grass species that were present using cover data. The reclaimed native grassland in 2024 had two cool season grasses and two warm season grasses. In 2025, two cool season grasses and three warm season grasses meet the three percent relative basal cover threshold. The relative composition of all warm season grasses in 2024 was 15.4% relative cover and 2025 it was 16.0% relative cover. The species list contained 16 native forbs in 2024 and

Falkirk Mine
2801 1st Street SW
Underwood, ND 58576
P: 701.442.5751 F: 701.250.2473
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2025. This data provides that the production, cover, diversity, and seasonality standards for the reclaimed native grassland in the SE¼ of Section 23 were meet in 2024 and in 2025. This data included the variance area in the sampling (See attached field maps). Falkirk would like to release the proposed bond release area in the SE¼ of Section 23 from Falkirk's Permit NAFK-8405.

Regards,
THE FALKIRK MINING COMPANY

Tanner Jochim
Environmental Specialist

TJ
Attachments
cc: Johnathan Emmer
Monty Johnson
Guy Welch
Warren Swenson
Jeff Roerick
Preston Ripplinger
Taylor DeVries
Brandon Myran
Steve Burke

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NAFK-8405 Section 23
Falkirk Mine
2024 Reclaimed Grassland Production

	Native						Introduced								
Plot #	*Big Bluestem*	*Blue Grama*	*Green Needlegrass*	*Sideoats Grama*	*Switchgrass*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Quackgrass*	*Alfalfa*	*Black Medick*	*Yellow Sweetclover*	Plot Total
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	137.9	0.0	0.0	0.0	0.0	148.3
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	118.4	0.0	10.8	0.0	0.0	134.5
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	104.8	0.0	12.3	0.0	0.0	123.3
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.6	0.0	0.0	15.2	13.3	0.0	0.0	95.2
5	0.0	0.0	18.3	47.7	0.0	12.2	0.0	0.0	13.5	0.0	24.5	0.0	6.1	0.0	122.3
6	0.0	0.0	0.0	52.5	0.0	0.0	0.0	0.0	12.5	0.0	47.5	0.0	8.8	3.8	125.1
7	24.2	2.4	14.5	46.0	3.6	8.5	0.0	0.0	9.7	0.0	12.1	0.0	0.0	0.0	121.1
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.2	25.2	28.0	14.0	0.0	0.0	0.0	93.4
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.7	21.5	32.3	24.8	19.4	0.0	0.0	107.7
10	0.0	0.0	0.0	0.0	0.0	10.2	0.0	27.9	0.0	25.1	18.6	11.1	0.0	0.0	92.9
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.8	38.5	0.0	0.0	0.0	4.1	0.0	101.3
12	0.0	0.0	0.0	0.0	0.0	0.0	50.0	21.9	26.0	0.0	0.0	0.0	6.2	0.0	104.1
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.6	31.3	25.5	0.0	0.0	3.5	0.0	115.9
14	0.0	0.0	0.0	0.0	0.0	0.0	26.6	34.8	28.4	0.0	0.0	0.0	1.8	0.0	91.7
15	0.0	0.0	0.0	0.0	0.0	0.0	23.9	47.8	21.0	0.0	0.0	0.0	2.9	0.0	95.6
16	0.0	0.0	0.0	0.0	0.0	0.0	41.5	49.8	27.7	0.0	0.0	19.4	0.0	0.0	138.4
17	0.0	0.0	14.6	0.0	0.0	2.4	0.0	12.2	58.5	0.0	0.0	34.1	0.0	0.0	121.9
18	0.0	0.0	0.0	0.0	0.0	3.4	17.0	28.3	58.9	0.0	0.0	0.0	5.7	0.0	113.3
19	0.0	0.0	0.0	0.0	0.0	0.0	25.2	20.2	15.1	0.0	0.0	34.3	2.0	4.0	100.9
20	0.0	0.0	0.0	14.1	0.0	0.0	0.0	106.0	0.0	21.2	0.0	0.0	0.0	0.0	141.3
Total	24.2	2.4	47.5	160.4	3.6	36.8	184.2	565.7	409.8	493.2	156.7	154.8	41.0	7.8	2288.2
Mean															114.41
Std. Dev															17.56
% Weight	1.1%	0.1%	2.1%	7.0%	0.2%	1.6%	8.1%	24.7%	17.9%	21.6%	6.8%	6.8%	1.8%	0.3%	

Sample Size And Adequacy:

Method 1

Standard Error As A Percentage Of The Mean Method:

Using: $n = s^2 \div (0.06x)^2$

Standard Deviation (s) = 17.56

Mean Cover (x) = 114.41

Calculated Required Sample Size (n) = 6.5

7<20 Thus adequate number of samples were taken.

Method 2

Two-Stage Sampling Technique:

Using: $n = t^2s^2 \div d^2$

t Distribution, Used 20 for n (t) = 1.328

Standard Deviation (s) = 17.56

10% of Sample Mean (d) = 11.44

Calculated Required Sample Size (n) = 4.2

5<20 Thus adequate number of samples were taken

Production Conversion: Sample Mean (X) x Conversion Factor g/m^2 to lbs/ac = Production

114.4 g per 0.25m^2 x 35.69 = **4083 lbs/acre Average Production**

Notes:

1. Production sampling was conducted on July 27, 2024.
2. Production was measured by clipping a 1/4 meter frame by species.
3. Clippings 1-3: 2008 Seeding, Clipping 4: 2013 Seeding, Clippings 5-7: 2014 Seeding, Clippings 8-9: 2016 Seeding, Clipping 10: 2018 Seeding, Clipping 11-19: 1995 Seeding, and Clipping 20: 2015 Seeding

NAFK-8405 Section 23
Falkirk Mine
2025 Reclaimed Grassland Production

	Native							Introduced						
Plot #	*Big Bluestem*	*Blue Grama*	*Green Needlegrass*	*Sideoats Grama*	*Switchgrass*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Alfalfa*	*Yellow Sweetclover*	Plot Total
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.8	61.7	0.0	128.5
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.4	0.0	57.2	45.7	0.0	114.3
3	42.9	1.1	14.7	19.2	0.0	0.0	0.0	0.0	16.9	0.0	18.0	0.0	112.8
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.2	8.0	0.0	42.1	0.0	100.3
5	37.6	0.0	16.1	19.3	5.4	4.3	0.0	0.0	0.0	0.0	14.0	10.7	107.4
6	41.9	0.0	22.1	16.5	0.0	3.3	0.0	0.0	0.0	0.0	15.4	11.0	110.3
7	30.5	0.0	0.0	29.5	0.0	5.5	0.0	0.0	0.0	0.0	34.9	8.7	109.1
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.5	43.0	14.0	107.4
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.0	64.3	0.0	121.3
10	0.0	2.6	11.3	7.0	10.5	6.1	0.0	7.9	8.7	0.0	18.3	14.8	87.3
11	0.0	0.0	0.0	0.0	0.0	0.0	20.4	35.8	2.4	0.0	22.8	0.0	81.4
12	0.0	0.0	0.0	0.0	0.0	1.6	18.0	29.0	0.0	0.0	29.8	0.0	78.3
13	0.0	0.0	0.0	0.0	0.0	3.0	0.0	68.9	0.0	0.0	26.6	0.0	98.4
14	0.0	3.8	0.0	0.0	0.0	0.0	11.4	39.6	3.0	0.0	18.3	0.0	76.1
15	0.0	0.0	0.0	0.0	0.0	0.0	12.4	48.1	0.0	8.3	14.1	0.0	82.9
16	0.0	0.0	0.0	6.6	0.0	0.0	0.0	50.6	1.9	0.0	34.7	0.0	93.7
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.9	5.2	7.3	43.8	0.0	104.2
18	0.0	0.0	0.0	7.5	0.0	0.0	29.9	28.0	1.9	0.0	26.1	0.0	93.3
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.0	2.4	6.4	26.5	0.0	80.4
20	0.0	0.0	0.0	9.7	0.0	0.0	0.0	82.8	0.0	29.2	0.0	0.0	121.8
Total	152.9	7.6	64.2	115.3	15.8	23.7	92.1	545.1	50.5	282.7	600.0	59.3	2009.2
Mean													100.46
Std. Dev													15.79
% Weight	7.6%	0.4%	3.2%	5.7%	0.8%	1.2%	4.6%	27.1%	2.5%	14.1%	29.9%	3.0%	

Sample Size And Adequacy:

Method 1

Standard Error As A Percentage Of The Mean Method:

Using: $n = s^2 \div (0.06x)^2$

Standard Deviation (s) = 15.79

Mean Cover (x) = 100.46

Calculated Required Sample Size (n) = 6.9

7<20 Thus adequate number of samples were taken.

Method 2

Two-Stage Sampling Technique:

Using: $n = t^2s^2 \div d^2$

t Distribution, Used 20 for n (t) = 1.328

Standard Deviation (s) = 15.79

10% of Sample Mean (d) = 10.0

Calculated Required Sample Size (n) = 4.4

5<20 Thus adequate number of samples were taken

Production Conversion: Sample Mean (X) x Conversion Factor g/m^2 to lbs/ac = Production

100.5 g per $0.25m^2$ x 35.69 = **3585 lbs/acre Average Production**

Notes:

1. Production sampling was conducted on July 17, 2025.
2. Production was measured by clipping a 1/4 meter frame by species.
3. Clippings 1-3: 2008 Seeding, Clipping 4: 2013 Seeding, Clippings 5-7: 2014 Seeding, Clippings 8-9: 2016 Seeding, Clipping 10: 2018 Seeding, Clipping 11-19: 1995 Seeding, and Clipping 20: 2015 Seeding

NAFK-8405 Section 23
Falkirk Mine
2024 Native Grassland Basal Cover

	Native					Introduced									
Frame	*Big Bluestem*	*Blue Grama*	*Green Needlegrass*	*Sideoats Grama*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Quackgrass*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
1	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
2	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
3	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
4	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
5	0	0	0	0	0	0	0	0	1	0	0	0	9	0	10
6	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
7	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
8	0	0	0	0	0	0	0	0	1	0	0	0	9	0	10
9	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
10	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
11	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
12	0	0	0	1	0	0	0	0	0	0	0	0	9	0	10
13	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
14	0	0	0	0	0	0	0	0	1	0	0	0	9	0	10
15	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
16	0	0	0	0	0	0	0	0	1	0	0	0	9	0	10
17	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
18	0	0	0	0	0	0	0	0	0	0	1	0	9	0	10
19	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
20	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
21	0	0	0	0	0	0	0	0	1	0	0	0	9	0	10
22	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
23	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
24	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
25	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
26	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
27	0	0	0	0	0	0	0	0	1	0	0	0	9	0	10
28	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
29	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
30	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
31	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
32	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
33	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
34	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
35	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
36	0	0	0	0	0	0	0	0	0	0	1	0	9	0	10
37	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
38	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
39	0	0	0	0	0	0	0	0	0	1	0	0	9	0	10
40	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
41	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
42	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
43	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
44	0	0	0	0	1	0	0	0	0	0	0	0	9	0	10
45	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
46	0	0	1	0	0	0	0	0	0	0	0	0	8	1	9
47	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
48	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
49	0	0	0	1	0	0	0	0	0	0	0	0	9	0	10
50	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10

NAFK-8405 Section 23
Falkirk Mine
2024 Native Grassland Basal Cover

	Native					Introduced									
Frame	*Big Bluestem*	*Blue Grama*	*Green Needlegrass*	*Sideoats Grama*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Quackgrass*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
51	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
52	0	0	0	0	0	0	0	0	0	1	0	0	9	0	10
53	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
54	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
55	0	0	0	1	0	0	0	0	0	0	0	0	9	0	10
56	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
57	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
58	0	0	0	0	0	0	0	0	0	1	0	0	9	0	10
59	0	0	0	1	0	0	0	0	0	0	0	0	9	0	10
60	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
61	1	0	0	0	0	0	0	0	0	0	0	0	9	0	10
62	0	1	0	0	0	0	0	0	0	0	0	0	9	0	10
63	0	0	0	1	0	0	0	0	0	0	0	0	8	1	9
64	0	0	0	0	0	0	0	1	0	0	0	0	7	2	8
65	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
66	1	0	0	0	0	0	0	0	0	0	0	0	9	0	10
67	0	0	0	0	1	0	0	0	0	0	0	0	9	0	10
68	0	0	1	0	0	0	0	0	0	0	0	0	9	0	10
69	0	0	0	1	0	0	0	0	0	0	0	0	8	1	9
70	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
71	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
72	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
73	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
74	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
75	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
76	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
77	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
78	1	0	0	0	0	0	0	0	0	0	0	0	9	0	10
79	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
80	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
81	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
82	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
83	0	0	0	0	0	0	0	0	1	0	0	0	9	0	10
84	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
85	0	0	0	0	0	0	0	0	0	0	1	0	9	0	10
86	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
87	0	0	0	0	0	0	0	0	0	1	0	0	9	0	10
88	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
89	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
90	0	0	0	0	0	0	0	0	1	0	0	0	9	0	10
91	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
92	0	0	0	0	0	0	0	0	0	0	1	0	9	0	10
93	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
94	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
95	0	0	0	0	1	0	0	0	0	0	0	0	9	0	10
96	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
97	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
98	0	0	0	0	1	0	0	0	0	0	0	0	8	1	9
99	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
100	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10

NAFK-8405 Section 23
Falkirk Mine
2024 Native Grassland Basal Cover

	Native					Introduced									
Frame	*Big Bluestem*	*Blue Grama*	*Green Needlegrass*	*Sideoats Grama*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Quackgrass*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
101	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
102	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
103	0	0	0	0	0	0	0	0	0	0	0	0	7	3	7
104	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
105	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
106	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
107	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
108	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
109	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
110	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
111	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
112	0	0	0	0	0	0	1	0	0	0	0	0	8	1	9
113	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
114	0	0	0	0	0	1	0	0	0	0	0	0	9	0	10
115	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
116	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
117	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
118	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
119	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
120	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
121	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
122	0	0	0	0	0	0	0	0	0	0	0	0	7	3	7
123	0	0	0	0	0	0	1	0	0	0	0	0	8	1	9
124	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
125	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
126	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
127	0	0	0	0	0	0	0	0	1	0	0	0	8	1	9
128	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
129	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
130	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
131	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
132	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
133	0	0	0	0	0	1	0	0	0	0	0	0	9	0	10
134	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
135	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
136	0	0	0	0	0	1	0	0	0	0	0	0	9	0	10
137	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
138	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
139	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
140	0	0	0	0	0	0	1	0	0	0	0	0	8	1	9
141	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
142	0	0	0	0	0	1	0	0	0	0	0	0	9	0	10
143	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
144	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
145	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
146	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
147	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
148	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
149	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
150	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10

NAFK-8405 Section 23
Falkirk Mine
2024 Native Grassland Basal Cover

	Native					Introduced									
Frame	*Big Bluestem*	*Blue Grama*	*Green Needlegrass*	*Sideoats Grama*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Quackgrass*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
151	0	0	0	0	0	1	0	0	0	0	0	0	9	0	10
152	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
153	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
154	0	0	0	0	0	0	0	0	0	0	1	0	7	2	8
155	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
156	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
157	0	0	0	0	0	0	0	0	0	0	1	0	9	0	10
158	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
159	0	0	0	0	0	1	0	0	0	0	0	0	9	0	10
160	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
161	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
162	0	0	1	0	0	0	0	0	0	0	0	0	9	0	10
163	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
164	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
165	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
166	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
167	0	0	0	0	0	0	0	0	0	0	0	0	7	3	7
168	0	0	0	0	0	1	0	0	0	0	0	0	9	0	10
169	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
170	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
171	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
172	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
173	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
174	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
175	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
176	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
177	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
178	0	0	0	0	1	0	0	0	0	0	0	0	8	1	9
179	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
180	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
181	0	0	0	0	0	1	0	0	0	0	0	0	9	0	10
182	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
183	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
184	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
185	0	0	0	0	0	0	0	0	0	0	1	0	9	0	10
186	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
187	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
188	0	0	0	0	0	0	0	1	0	0	0	0	9	0	10
189	0	0	0	1	0	0	0	0	0	0	0	0	9	0	10
190	0	0	0	0	0	0	0	0	0	0	0	1	9	0	10
191	0	0	0	0	0	0	0	0	0	0	0	0	7	3	7
192	0	0	0	0	0	0	1	0	0	0	0	0	8	1	9
193	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
194	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
195	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
196	0	0	0	1	0	0	0	0	0	0	0	0	9	0	10
197	0	0	0	0	0	0	1	0	0	0	0	0	9	0	10
198	0	0	0	0	0	0	0	0	0	0	0	0	8	2	8
199	0	0	0	0	0	0	0	0	0	0	0	0	9	1	9
200	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10

NAFK-8405 Section 23
Falkirk Mine
2024 Native Grassland Basal Cover

	Native					Introduced									
Frame	*Big Bluestem*	*Blue Grama*	*Green Needlegrass*	*Sideoats Grama*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Quackgrass*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
Total	3	1	3	8	5	8	15	15	9	4	7	1	1845	76	1924
Mean															9.62
Std. Dev															0.73
% Cover															
Absolute	0.2	0.1	0.2	0.4	0.3	0.4	0.8	0.8	0.5	0.2	0.4	0.1	92.3	3.8	96.2
Relative	3.8	1.3	3.8	10.1	6.3	10.1	19.0	19.0	11.4	5.1	8.9	1.3			100.0

Relative Cover and Total Cover without Yellow Sweetclover

	Native					Introduced									
	Big Bluestem	*Blue Grama*	*Green Needlegrass*	*Sideoats Grama*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Quackgrass*	*Alfalfa*		*Perennial Litter*	*Bare*	*Total Cover*
Total	3	1	3	8	5	8	15	15	9	4	7		1845	77	1924
% Cover															
Absolute	0.2	0.1	0.2	0.4	0.3	0.4	0.8	0.8	0.5	0.2	0.4		92.3	3.9	96.1
Relative	3.8	1.3	3.8	10.3	6.4	10.3	19.2	19.2	11.5	5.1	9.0				

Sample Size And Adequacy:

Two-Stage Sampling Technique:

Using: $n = t^2pq \div d^2$

t Distribution, Used 200 for n (t) = 1.289

% Average Cover (p) = 96.2

100 - p (q) = 3.8

Absolute Mean Error (d) = 10

Calculated Required Sample Size (n) = 6.1

7<200 Thus adequate number of samples were taken

Notes:

1. Cover sampling was conducted on July 27, 2024.
2. Frames 1-30: 2008 Seeding, Frames 31-40: 2013 Seeding, Frames 41-70: 2014 Seeding, Frames 71-90: 2016 Seeding, Frames 91-100: 2018 Seeding, Frames 101-190: 1995 Seeding, and Frames 191-200: 2015 Seeding

NAFK-8405 Section 23
Falkirk Mine
2025 Native Grassland Basal Cover

	Native					Introduced								
Frame	*Big Bluestem*	*Green Needlegrass*	*Sideoats Grama*	*Switchgrass*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
1	0	0	0	0	0	0	0	0	0	0	0	10	0	10
2	0	0	0	0	0	0	0	0	0	0	0	10	0	10
3	0	0	0	0	0	0	0	0	1	0	0	9	0	10
4	0	0	0	0	0	0	0	0	0	0	0	10	0	10
5	0	0	0	0	0	0	0	0	0	0	0	10	0	10
6	0	0	0	0	0	0	0	0	0	0	0	10	0	10
7	0	0	0	0	0	0	0	0	1	0	0	9	0	10
8	0	0	0	0	0	0	0	0	0	0	0	10	0	10
9	0	0	0	0	0	0	0	0	0	1	0	9	0	10
10	0	0	0	0	0	0	0	0	0	0	0	10	0	10
11	0	0	0	0	0	0	0	0	0	0	0	10	0	10
12	0	0	0	0	0	0	1	0	0	0	0	9	0	10
13	0	0	0	0	0	0	0	0	0	0	0	10	0	10
14	0	0	0	0	0	0	0	0	0	0	0	10	0	10
15	0	0	0	0	0	0	0	0	1	0	0	9	0	10
16	0	0	0	0	0	0	0	0	0	0	0	10	0	10
17	0	0	0	0	0	0	0	0	0	1	0	9	0	10
18	0	0	0	0	0	0	0	0	0	0	0	10	0	10
19	0	0	0	0	0	0	0	0	0	0	0	10	0	10
20	0	0	0	0	0	0	0	0	0	0	0	10	0	10
21	0	0	0	0	0	0	0	0	0	0	0	10	0	10
22	0	0	0	0	0	0	0	0	0	0	0	10	0	10
23	1	0	0	0	0	0	0	0	0	0	0	9	0	10
24	0	0	0	0	0	0	0	0	0	0	0	10	0	10
25	0	0	0	0	0	0	0	0	0	1	0	9	0	10
26	0	0	0	0	0	0	0	0	0	0	0	10	0	10
27	0	0	1	0	0	0	0	0	0	0	0	9	0	10
28	0	0	0	0	0	0	0	0	0	0	0	10	0	10
29	0	0	0	0	0	0	0	1	0	0	0	9	0	10
30	0	0	0	0	0	0	0	0	0	0	0	10	0	10
31	0	0	0	0	0	0	0	0	0	0	0	10	0	10
32	0	0	0	0	0	0	0	0	0	0	0	10	0	10
33	0	0	0	0	0	0	1	0	0	0	0	9	0	10
34	0	0	0	0	0	0	0	0	0	0	0	10	0	10
35	0	0	0	0	0	0	1	0	0	0	0	9	0	10
36	0	0	0	0	0	0	0	0	0	0	0	10	0	10
37	0	0	0	0	0	0	0	0	0	0	0	10	0	10
38	0	0	0	0	0	0	0	0	0	1	0	9	0	10
39	0	0	0	0	0	0	0	0	0	0	0	10	0	10
40	0	0	0	0	0	0	0	0	0	0	0	10	0	10
41	0	0	0	0	0	0	0	0	0	0	0	10	0	10
42	0	0	0	0	0	0	0	0	0	0	0	10	0	10
43	0	0	0	0	0	0	0	0	0	1	0	9	0	10
44	1	0	0	0	0	0	0	0	0	0	0	9	0	10
45	0	0	0	0	0	0	0	0	0	0	0	10	0	10
46	0	0	0	0	0	0	0	0	0	0	0	10	0	10
47	1	0	0	0	0	0	0	0	0	0	0	9	0	10
48	0	0	0	0	0	0	0	0	0	0	0	10	0	10
49	0	0	1	0	0	0	0	0	0	0	0	9	0	10
50	0	0	0	0	0	0	0	0	0	0	0	10	0	10

NAFK-8405 Section 23
Falkirk Mine
2025 Native Grassland Basal Cover

	Native					Introduced								
Frame	*Big Bluestem*	*Green Needlegrass*	*Sideoats Grama*	*Switchgrass*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
51	0	0	0	0	0	0	0	0	0	0	0	10	0	10
52	0	1	0	0	0	0	0	0	0	0	0	9	0	10
53	0	0	1	0	0	0	0	0	0	0	0	9	0	10
54	0	0	0	0	0	0	0	0	0	0	0	10	0	10
55	0	1	0	0	0	0	0	0	0	0	0	9	0	10
56	0	0	0	1	0	0	0	0	0	0	0	9	0	10
57	0	0	0	0	0	0	0	0	0	0	0	10	0	10
58	0	0	0	0	0	0	0	0	0	1	0	9	0	10
59	0	0	0	0	0	0	0	0	0	0	0	10	0	10
60	0	0	0	0	0	0	0	0	0	0	0	10	0	10
61	1	0	0	0	0	0	0	0	0	0	0	9	0	10
62	0	0	0	0	0	0	0	1	0	0	0	9	0	10
63	0	0	0	0	0	0	0	0	0	0	0	10	0	10
64	0	0	0	0	0	0	0	0	0	0	0	10	0	10
65	0	0	0	0	1	0	0	0	0	0	0	9	0	10
66	0	0	0	0	0	0	0	0	0	0	1	9	0	10
67	0	0	0	0	0	0	0	0	0	0	0	10	0	10
68	0	0	0	0	0	0	0	0	0	0	0	10	0	10
69	0	1	0	0	0	0	0	0	0	0	0	9	0	10
70	0	0	0	0	0	0	0	0	0	0	0	10	0	10
71	0	0	0	0	0	0	0	0	0	0	0	10	0	10
72	0	0	0	0	0	0	0	0	1	0	0	9	0	10
73	0	0	0	0	0	0	0	0	0	0	0	10	0	10
74	0	0	0	0	0	0	0	0	1	0	0	9	0	10
75	0	0	0	0	0	0	0	0	0	0	0	10	0	10
76	0	0	0	0	0	0	0	0	0	0	0	10	0	10
77	0	0	0	0	0	0	0	0	0	1	0	9	0	10
78	0	0	0	0	0	0	0	0	0	0	0	10	0	10
79	0	0	0	0	0	0	0	0	0	0	0	10	0	10
80	0	0	0	0	0	0	0	0	0	0	0	10	0	10
81	0	0	0	0	0	0	0	0	0	0	0	10	0	10
82	0	0	0	0	0	0	0	0	1	0	0	9	0	10
83	0	0	0	0	0	0	0	0	0	0	0	10	0	10
84	0	0	0	0	0	0	0	0	0	0	0	10	0	10
85	0	0	0	0	0	0	0	0	0	1	0	9	0	10
86	0	0	0	0	0	0	0	0	0	0	0	10	0	10
87	0	0	0	0	0	0	0	0	0	1	0	9	0	10
88	0	0	0	0	0	0	0	0	0	0	0	10	0	10
89	0	0	0	0	0	0	0	0	0	0	0	10	0	10
90	0	0	0	0	0	0	0	0	0	1	0	9	0	10
91	0	0	0	0	0	0	0	0	0	0	0	10	0	10
92	0	0	0	0	0	0	0	0	0	0	0	10	0	10
93	0	0	1	0	0	0	0	0	0	1	0	8	0	10
94	0	0	0	1	0	0	0	0	0	0	0	9	0	10
95	0	0	0	0	1	0	0	1	0	0	0	8	0	10
96	0	0	0	1	0	0	0	0	0	0	0	9	0	10
97	0	0	0	0	0	0	0	0	0	0	0	10	0	10
98	0	0	0	0	0	0	0	0	0	0	1	9	0	10
99	0	0	0	0	0	0	1	0	0	0	0	9	0	10
100	0	0	0	0	0	0	0	0	0	0	0	10	0	10

NAFK-8405 Section 23
Falkirk Mine
2025 Native Grassland Basal Cover

	Native					Introduced								
Frame	*Big Bluestem*	*Green Needlegrass*	*Sideoats Grama*	*Switchgrass*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
101	0	0	0	0	0	0	0	0	0	0	0	10	0	10
102	0	0	0	0	0	0	0	0	0	1	0	8	1	9
103	0	0	0	0	0	0	0	0	0	0	0	8	2	8
104	0	0	0	0	0	1	0	0	0	0	0	8	1	9
105	0	0	0	0	0	0	1	0	0	0	0	9	0	10
106	0	0	0	0	0	0	0	0	0	0	0	7	3	7
107	0	0	0	0	0	0	1	0	0	0	0	7	2	8
108	0	0	0	0	0	0	0	0	0	0	0	9	1	9
109	0	0	0	0	0	0	0	0	0	0	0	9	1	9
110	0	0	0	0	0	0	0	0	0	0	0	8	2	8
111	0	0	0	0	0	0	0	0	0	0	0	7	3	7
112	0	0	0	0	0	0	0	0	0	0	0	8	2	8
113	0	0	0	0	0	0	0	0	0	0	0	9	1	9
114	0	0	0	0	1	0	0	1	0	0	0	8	0	10
115	0	0	0	0	0	0	0	0	0	0	0	9	1	9
116	0	0	1	0	0	0	0	0	0	0	0	6	3	7
117	0	0	0	0	0	0	0	0	0	1	0	7	2	8
118	0	0	0	0	0	0	0	0	0	0	0	7	3	7
119	0	0	0	0	0	1	0	0	0	0	0	8	1	9
120	0	0	0	0	0	0	0	0	0	0	0	9	1	9
121	0	0	0	0	0	0	0	0	0	0	0	10	0	10
122	0	0	0	0	0	0	0	0	0	0	0	9	1	9
123	0	0	0	0	0	0	1	0	0	0	0	9	0	10
124	0	0	0	0	0	0	0	0	0	0	0	10	0	10
125	0	0	0	0	0	0	0	0	0	0	0	8	2	8
126	0	0	0	0	0	0	1	0	0	0	0	9	0	10
127	0	0	0	0	0	0	0	0	0	0	0	10	0	10
128	0	0	0	0	0	0	0	0	0	1	0	7	2	8
129	0	0	0	0	0	0	0	0	0	0	0	10	0	10
130	0	0	0	0	0	0	0	0	0	0	0	9	1	9
131	0	0	0	0	0	0	0	0	0	0	0	9	1	9
132	0	0	0	0	0	0	1	0	0	0	0	9	0	10
133	0	0	0	0	0	0	0	0	0	1	0	9	0	10
134	0	0	0	0	0	0	0	0	0	0	0	8	2	8
135	0	0	0	0	0	0	0	0	0	0	0	10	0	10
136	0	0	0	0	0	0	0	0	0	0	0	10	0	10
137	0	0	0	0	0	0	0	0	0	0	0	10	0	10
138	0	0	0	0	0	0	1	0	0	0	0	9	0	10
139	0	0	0	0	0	0	0	0	0	0	0	9	1	9
140	0	0	0	0	0	0	0	0	0	0	0	9	1	9
141	0	0	0	0	0	0	0	0	0	0	0	10	0	10
142	0	0	0	0	0	0	0	0	0	0	0	10	0	10
143	0	0	0	0	0	0	0	0	0	0	0	10	0	10
144	0	0	0	0	0	0	1	0	0	0	0	7	2	8
145	0	0	0	0	0	0	0	0	0	0	0	7	3	7
146	0	0	0	0	0	0	0	0	0	0	0	10	0	10
147	0	0	0	0	0	0	0	0	0	0	0	8	2	8
148	0	0	0	0	0	0	0	0	0	0	0	10	0	10
149	0	0	0	0	0	0	1	0	0	0	0	9	0	10
150	0	0	0	0	0	0	0	0	0	0	0	10	0	10

NAFK-8405 Section 23
Falkirk Mine
2025 Native Grassland Basal Cover

	Native					Introduced								
Frame	*Big Bluestem*	*Green Needlegrass*	*Sideoats Grama*	*Switchgrass*	*Western Wheatgrass*	*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
151	0	0	0	0	0	0	0	0	0	1	0	9	0	10
152	0	0	0	0	0	0	0	0	0	1	0	8	1	9
153	0	0	0	0	0	0	0	0	0	0	0	10	0	10
154	0	0	0	0	0	0	1	0	0	0	0	9	0	10
155	0	0	0	0	0	0	0	0	0	0	0	9	1	9
156	0	0	0	0	0	0	0	0	0	0	0	10	0	10
157	0	0	0	0	0	0	0	0	0	0	0	9	1	9
158	0	0	0	0	0	0	0	0	0	0	0	8	2	8
159	0	0	0	0	0	0	0	0	0	0	0	10	0	10
160	0	0	0	0	0	0	0	0	0	0	0	10	0	10
161	0	0	0	0	0	0	0	0	0	0	0	10	0	10
162	0	0	0	0	0	0	1	0	0	0	0	9	0	10
163	0	0	0	0	0	0	0	0	0	0	0	10	0	10
164	0	0	0	0	0	0	0	1	0	0	0	9	0	10
165	0	0	0	0	0	1	0	0	0	0	0	9	0	10
166	0	0	0	0	0	0	0	0	0	0	0	10	0	10
167	0	0	0	0	0	0	0	0	0	0	0	10	0	10
168	0	0	0	0	0	0	0	0	0	0	0	10	0	10
169	0	0	0	0	0	0	0	0	0	1	0	9	0	10
170	0	0	0	0	0	0	0	0	0	0	0	10	0	10
171	0	0	0	0	0	0	0	0	0	0	0	10	0	10
172	0	0	0	0	0	0	0	0	0	0	0	10	0	10
173	0	0	0	0	0	1	0	0	0	0	0	9	0	10
174	0	0	0	0	0	0	0	0	0	0	0	10	0	10
175	0	0	0	0	0	1	0	0	0	0	0	9	0	10
176	0	0	0	0	0	0	0	0	0	0	0	10	0	10
177	0	0	0	0	0	0	0	0	0	0	0	10	0	10
178	0	0	0	0	0	0	0	0	0	0	0	10	0	10
179	0	0	0	0	0	0	1	0	0	0	0	9	0	10
180	0	0	0	0	0	0	0	0	0	0	0	10	0	10
181	0	0	0	0	0	0	0	0	0	0	0	10	0	10
182	0	0	0	0	0	0	0	0	0	0	0	10	0	10
183	0	0	0	0	0	0	1	0	0	0	0	9	0	10
184	0	0	0	0	0	0	0	0	0	1	0	9	0	10
185	0	0	0	0	0	0	0	0	0	0	0	10	0	10
186	0	0	0	0	0	0	0	0	0	0	0	10	0	10
187	0	0	0	0	0	0	1	0	0	0	0	9	0	10
188	0	0	0	0	0	0	0	1	0	0	0	9	0	10
189	0	0	0	0	0	0	0	0	0	0	0	10	0	10
190	0	0	0	0	1	0	0	0	0	0	0	9	0	10
191	0	0	0	0	0	0	0	0	0	0	0	10	0	10
192	0	0	0	0	0	0	1	0	0	0	0	9	0	10
193	0	0	0	0	0	0	0	0	0	0	0	9	1	9
194	0	0	0	0	0	0	0	0	0	0	0	10	0	10
195	0	0	0	0	0	1	0	0	0	0	0	9	0	10
196	0	0	0	0	0	0	0	0	0	0	0	10	0	10
197	0	0	0	0	0	0	0	0	0	0	0	10	0	10
198	0	0	0	0	0	0	1	0	0	0	0	9	0	10
199	0	0	0	0	0	0	0	0	0	0	0	10	0	10
200	0	0	0	0	0	0	0	0	0	0	0	10	0	10

NAFK-8405 Section 23
Falkirk Mine
2025 Native Grassland Basal Cover

	Native						Introduced								
Frame	*Big Bluestem*	*Green Needlegrass*	*Sideoats Grama*	*Switchgrass*	*Western Wheatgrass*		*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Alfalfa*	*Yellow Sweetclover*	*Perennial Litter*	*Bare*	*Total Cover*
Total	4	3	5	3	4	0	6	19	6	6	19	2	1869	54	1946
Mean															9.73
Std. Dev															0.68
% Cover															
Absolute	0.2	0.2	0.3	0.2	0.2		0.3	1.0	0.3	0.3	1.0	0.1	93.5	2.7	97.3
Relative	5.2	3.9	6.5	3.9	5.2		7.8	24.7	7.8	7.8	24.7	2.6			100.0

Relative Cover and Total Cover without Yellow Sweetclover

	Native						Introduced								
	Big Bluestem	*Green Needlegrass*	*Sideoats Grama*	*Switchgrass*	*Western Wheatgrass*		*Crested Wheatgrass*	*Intermediate Wheatgrass*	*Kentucky Bluegrass*	*Smooth Brome*	*Alfalfa*		*Perennial Litter*	*Bare*	*Total Cover*
Total	4	3	5	3	4		6	19	6	6	19		1869	56	1946
% Cover															
Absolute	0.2	0.2	0.3	0.2	0.2	0.0	0.3	1.0	0.3	0.3	1.0		93.5	2.8	97.2
Relative	5.3	4.0	6.7	4.0	5.3	0.0	8.0	25.3	8.0	8.0	25.3				

Sample Size And Adequacy:

Two-Stage Sampling Technique:

Using: $n = t^2pq \div d^2$

t Distribution, Used 200 for n (t) = 1.289

% Average Cover (p) = 97.3

100 - p (q) = 2.7

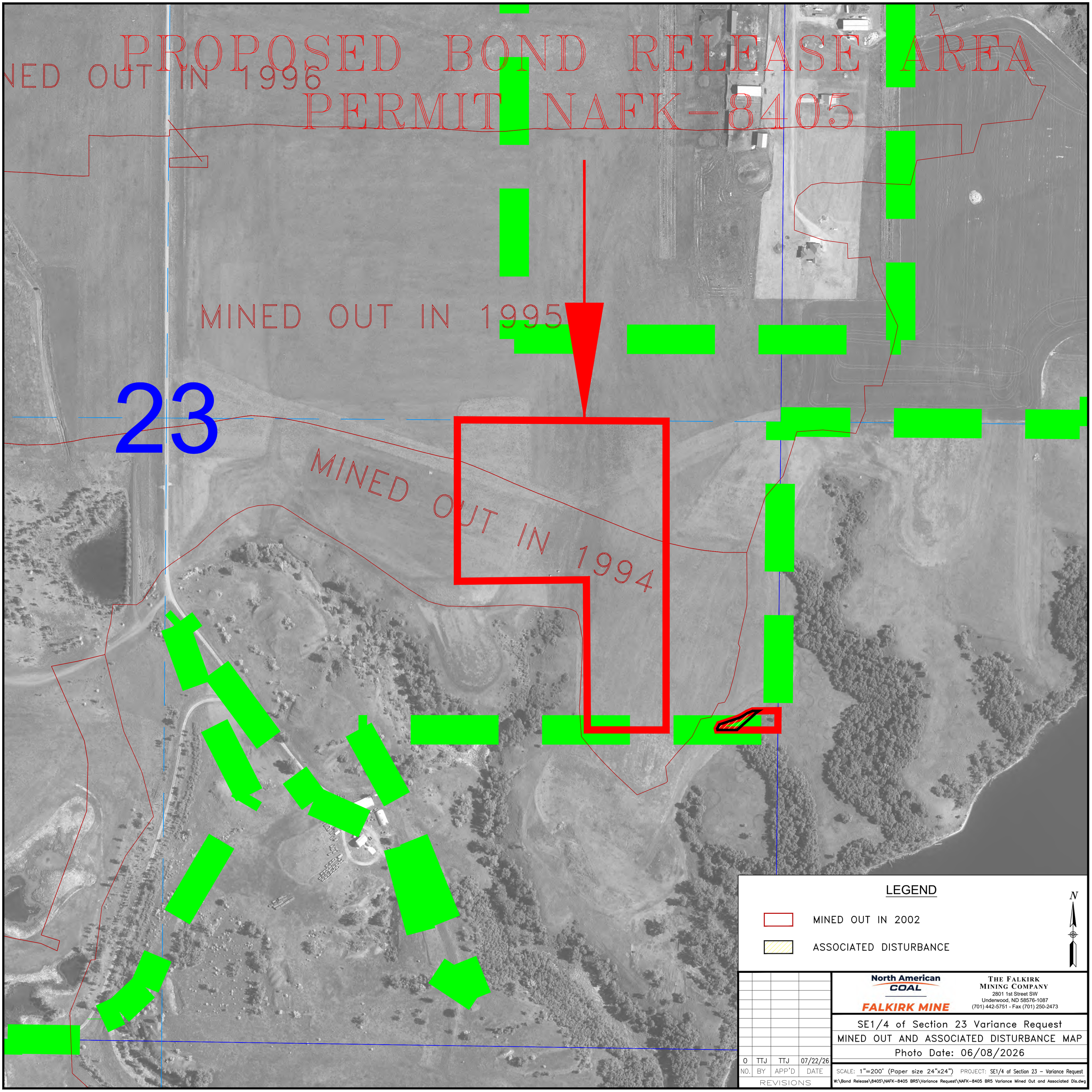
Absolute Mean Error (d) = 10

Calculated Required Sample Size (n) = 4.4

5<200 Thus adequate number of samples were taken

Notes:

1. Cover sampling was conducted on July 17, 2025.
2. Frames 1-30: 2008 Seeding, Frames 31-40: 2013 Seeding, Frames 41-70: 2014 Seeding, Frames 71-90: 2016 Seeding, Frames 91-100: 2018 Seeding, Frames 101-190: 1995 Seeding, and Frames 191-200: 2015 Seeding


PROPOSED BOND RELEASE AREA
PERMIT NAFK-8405
NED OUT IN 1996
MINED OUT IN 1995
23
MINED OUT IN 1994
LEGEND
MINED OUT IN 2002
ASSOCIATED DISTURBANCE
N
North American COAL
FALKIRK MINE
THE FALKIRK MINING COMPANY
2801 1st Street SW
Underwood, ND 58576-1087
(701) 442-5751 - Fax (701) 250-2473
SE1/4 of Section 23 Variance Request
MINED OUT AND ASSOCIATED DISTURBANCE MAP
Photo Date: 06/08/2026
0 TTJ TTJ 07/22/26
NO. BY APP'D DATE
REVISIONS
SCALE: 1"=200' (Paper size 24"x24") PROJECT: SE1/4 of Section 23 – Variance Request
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PROPOSED BOND RELEASE AREA
PERMIT NAFK-8405

23

2013

2014 2008 2008

2018

Variance Area
(1.5 acres)

2014 2008

2016

1995

2015

LEGEND

2016 YEAR REVEGETATION PERIOD INITIATED

N

NO.	BY	APP'D	DATE
0	TTJ	TTJ	07/22/26

REVISIONS

North American COAL
FALKIRK MINE

THE FALKIRK MINING COMPANY
2801 1st Street SW
Underwood, ND 58576-1087
(701) 442-5751 - Fax (701) 250-2473

SE1/4 of Section 23 Variance Request
REVEGETATION PERIOD INITIATED MAP
Photo Date: 06/08/2026

SCALE: 1"=200' (Paper size 24"x24") PROJECT: SE1/4 of Section 23 – Variance Request

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PROPOSED BOND RELEASE AREA
PERMIT NAFK-8405

23

LEGEND

- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- PERMIT BOUNDARY
- PROPOSED VARIANCE AREAS
- SURROUNDING RECLAMATION TRACT

N

NO.	BY	APP'D	DATE
0	TTJ	TTJ	07/22/26

REVISIONS

North American COAL
FALKIRK MINE

THE FALKIRK MINING COMPANY
2801 1st Street SW
Underwood, ND 58576-1087
(701) 442-5751 - Fax (701) 250-2473

SE1/4 of Section 23 Variance Request
POST-MINE WATERSHED MAP

SCALE: 1"=200' (Paper size 24"x24") PROJECT: SE1/4 of Section 23 - Variance Request

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