

**NEW GOLD RAINY RIVER MINE
APPENDIX G
VEGETATION PLOT WORK SUMMARY
MEMO**



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Memorandum

To: Garnet Cornell – Environment Superintendent, New Gold Inc.

From: Haley Cunningham, Junior Engineer

Cc: Lindsay Tallon – Okane Consultants
Robyn Lloyd – New Gold Inc.

Our ref: 1003-221-001

Date: August 23, 2022

Re: **Rainy River Mine - 2022 Vegetation Trial Monitoring Summary Rev0**

New Gold Inc. (New Gold) established a vegetation trial at the Rainy River Mine (RRM) to investigate the performance of locally common species with operationally feasible cover system configurations. It is anticipated that learnings from the trial will serve to inform the closure plan, and that this work will contribute to New Gold's commitment to demonstrate to government regulators and community stakeholders that vegetation can be re-established during progressive reclamation and closure. Construction at the trial was completed in September 2019, and many of the experimental tree plots were planted in late October 2019. Hydroseeding of the slopes was completed in the Fall of 2020. The purpose of this memorandum is to summarize monitoring activities completed by Okane Consultants (Okane) in 2022 and to document baseline conditions observed.

Background

The vegetation trial is designed as a randomized block study and is sited on the plateau of a dedicated trial area. Combinations of four soil treatments and nine vegetation treatments are arranged in three replicates. A destructive plot area is designated for destructive root sampling and investigation as the trial progresses. Slopes surrounding the block study have

been seeded with various methods and are used to qualitatively evaluate operational seeding techniques, vegetation establishment and erosion. Planned arrangement of the trial area is presented for reference in Figure 1 to 3.

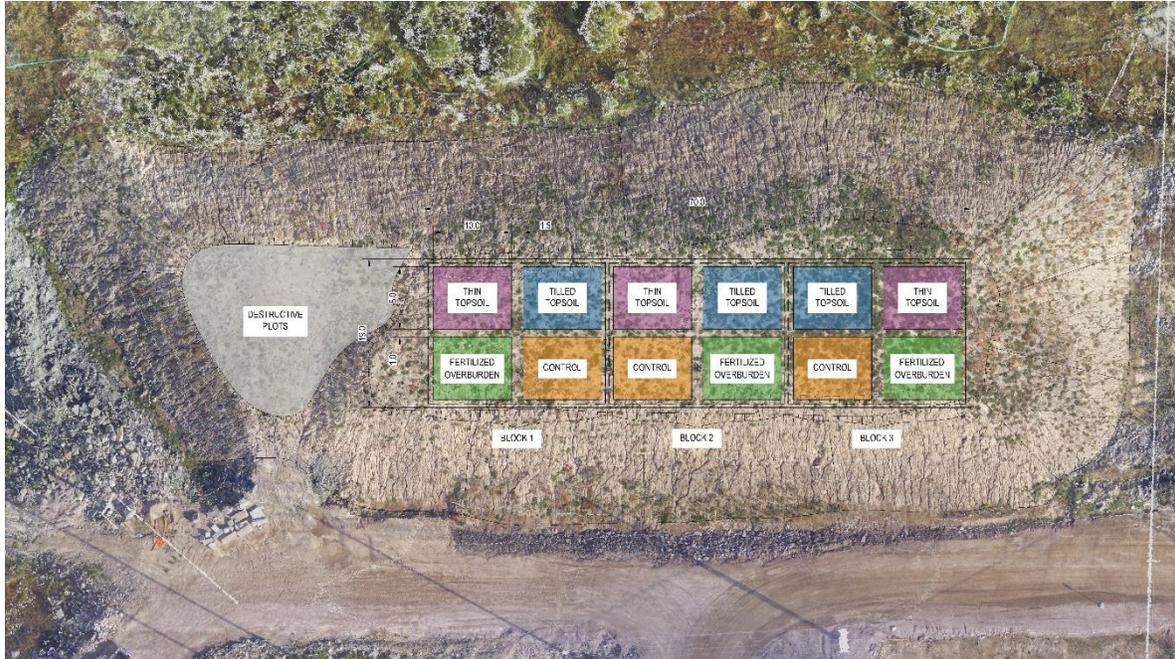


Figure 1: Arrangement of soil treatments in experimental tree plots.



Figure 2: Arrangement of vegetation treatments in experimental tree plots.

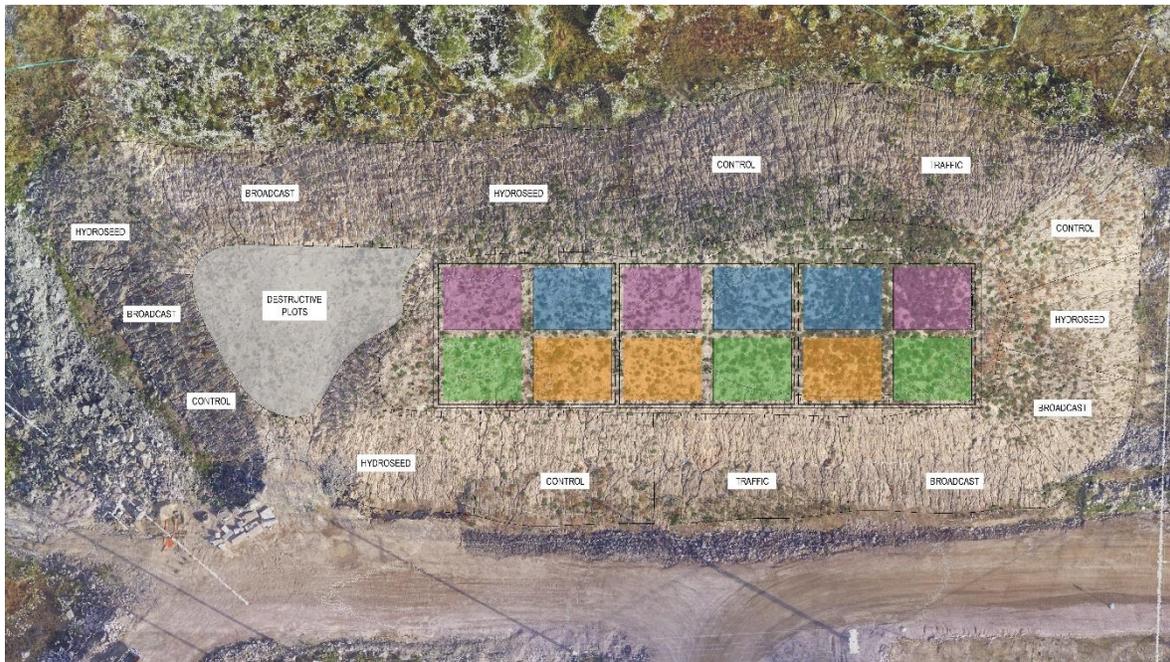


Figure 3: Arrangement of slope treatments

The general cover system configuration planned for use on the Rainy River site stockpiles consists of a 0.5 m barrier layer overlain by a 1.0 m growth medium layer, designed to limit net percolation (NP) and control oxygen (O₂) ingress to the mine rock. The enhanced cover system uses both moisture store-and-release and enhanced runoff principles to achieve reduced NP. The barrier layer within the cover system controls O₂ ingress by effectively eliminating advective gas transport.

The vegetation trial was constructed in 2019 using the same cover system design, with clay overburden used for both the barrier and growth medium layers. Four soil treatments were chosen to represent potential options for operational revegetation:

- 1) Thin topsoil – a 0.15 m layer of topsoil was applied to the surface;
- 2) Tilled topsoil – a 0.15 m layer of topsoil was applied to the surface and then mixed into the overburden using a skid steer tiller;
- 3) Fertilized overburden – a commercial mix of fertilizer, mainly comprised of bonemeal, was applied to the overburden surface using a skid steer tiller; and
- 4) Control – no amendment or modification to the overburden surface.

The species chosen for inclusion in the trial represent locally common or significant species:

- 1) Aspen;
- 2) Black spruce;

- 3) Black ash;
- 4) Eastern white cedar;
- 5) White spruce;
- 6) Jack pine;
- 7) Ground Cover Mix – may include species typical for the ecosystem, such as bearberry, blueberry, ground cedar, or Labrador tea;
- 8) Shrub Mix – includes available species typical of the ecosystem, such as high bush cranberry, Saskatoon berry, beaked hazelnut, alder or red osier dogwood;
- 9) Community Mix – culturally significant species selected by local communities, not necessarily found in local area.

Experimental tree plot planting on the plateau commenced in late October 2019 but was not completed that year. Planting was completed in November 2020. Of note, Tobacco and Juniper species were not planted and are planned to be excluded from the trial. Commercial availability of tobacco and juniper species is limited, and it would not be feasible to include them in large-scale reclamation operations.

The slope areas surrounding the trial were hydroseeded in late September 2019 and included a test of commercially available ProGanics Biotic Soil Media from Profile Products. Other sections of the landform slopes were broadcast seeded, track packed, or left unseeded as a control. In September 2020, all slopes were treated with ProGanics Biotic Soil Media to prevent further erosion.

Construction of the overburden destructive plot was completed in autumn 2019. Some species were planted on the plot in late October 2019, and planting was completed in November 2020.

Monitoring Activities

Okane personnel visited the vegetation trial in Summer 2022 to complete an erosion survey, record growth indicator measurements for early plant growth trajectories, and complete a root investigation at the destructive plots. Haley Cunningham and Brady Hay visited the site and recorded observations on August 9, 2022.

Slope Erosion Survey

In general, significant erosion was observed on the sloped areas of the trial. Measured erosional features are included in Table 1. Erosion features were difficult to identify on most trial areas due to high vegetative coverage.

Table 1: Major erosion features on slope treatments (S-sheet, R-rill, G-gully).

Slope Orientation	Hydroseed	Broadcast	Traffic	Control
North	<p>S, R Some sheet erosion noticeable Uniform shallow erosion over slope (Depth < 5 cm)</p>	<p>R Erosion is minimal over slope (Depth < 5 cm)</p>	<p>R Erosion is minimal, uniform over slope, and shallow rill erosion Depth < 15 cm Width = 5 – 30 cm</p>	<p>R, G Erosion is uniform over slope (Depth < 30 cm)</p>
	<p>G Lower slope – partial slope length Depth = ~35 cm Width = 40-50 cm</p>	<p>G Mid slope – full slope length Depth = 30 cm Width = 50 - 75cm</p>		
East	<p>R Erosion is minimal, uniform over slope, and shallow rill erosion (Depth < 5 cm)</p>	<p>R Erosion is minimal, uniform over slope, and shallow rill erosion Depth < 10 cm Width = 5 - 15 cm</p>	n/a	<p>R Erosion is minimal, uniform over slope, and shallow rill erosion (Depth < 10 cm)</p>
South	<p>R Several along lower slope – partial slope length Depth = 15 - 20 cm Width = 10 - 40 cm</p>	<p>S, R Some sheet erosion noticeable Uniform shallow erosion over slope (Depth < 10 cm)</p>	<p>R Erosion is uniform over slope, and shallow rill erosion (Depth < 10 cm)</p>	<p>R Erosion is minimal, uniform over slope, and shallow rill erosion Depth < 10 cm Width = 20 - 25 cm</p>
	<p>G Entire slope length Depth = 37 cm Width = 60 - 65 cm</p>	<p>G Entire slope length Depth = 35-40 cm Max width = ~1.0 m</p>	<p>G Lower slope – partial slope length Depth = 25 cm Width = 25 cm</p>	
West	<p>R Shallow rill erosion at crest and toe of slope Depth < 15 cm Width = 10 - 75 cm</p>	<p>R Shallow rill erosion over slope (Depth < 5 cm)</p> <p>G Lower slope Depth = 20 - 35 cm Max width = ~80 cm</p>	n/a	<p>S, R Some sheet erosion noticeable Shallow rill erosion over slope (Depth < 10 cm)</p> <p>G Lower slope Depth = 45 cm Max width = ~70 cm</p>



Figure 4: South Slope Rill (left) and Gully (right) erosion.



Figure 5: North Slope Rill (left) and Gully (right) erosion.



Figure 6: West Slope Rill erosion.

Annual Growth Measurements

The purpose of the late summer / early fall site visit was to collect annual growth measurements that can be used to quantify vegetation growth in the experimental tree plots at regular annual intervals. General observations were also noted along the slopes and at the Destructive Plot. Haley Cunningham and Brady Hay collected measurements from August 9, 2022.

Slopes

Vegetation ground coverage generally increased, ranging from 50% to 100% over the slopes (Table 2). Of note, all slopes were treated with ProGanics Biotic Soil Media in September 2020 to minimize further erosion. Ground coverage increased from 2021 in which most slope treatment areas had on average 50% coverage to a minimum of 75% coverage in 2022.

Table 2: Major erosion features on slope treatments (S-sheet, R-rill, G-gully).

Slope Orientation	Hydroseed	Broadcast	Traffic	Control
North	75% Mostly wheat grass, additional weed types, uniform coverage	50-75% Mostly wheat grass, additional weed types, uniform coverage, some areas with more sparse coverage	100% Mostly weed types, more dense and uniform coverage	100% Mostly weed types, more dense and uniform coverage
	75-100% Mostly wheat grass, additional weed types, more dense and uniform coverage	75% Various weeds and grasses, uniform coverage	n/a	75% Mostly weed types, uniform coverage
South	50-75% Mostly wheat grass, additional weed types, uniform coverage, some areas with more sparse coverage	75% Mostly wheat grass, additional weed types, uniform coverage	75-100% Mostly weed types, some wheat grass, more dense and uniform coverage	75% Mostly wheat grass, additional weed types, uniform coverage
	75% Mostly wheat grass, additional weed types, uniform coverage	75% Various weeds and grasses, uniform coverage	n/a	75% Various weeds and grasses, uniform coverage



Figure 7: South Slope Hydroseed – August 26, 2020 (left), August 18, 2021 (middle), and August 9, 2022 (right).



Figure 8: East Slope - August 26, 2020 (left), August 18, 2021 (middle), and August 9, 2022 (right).

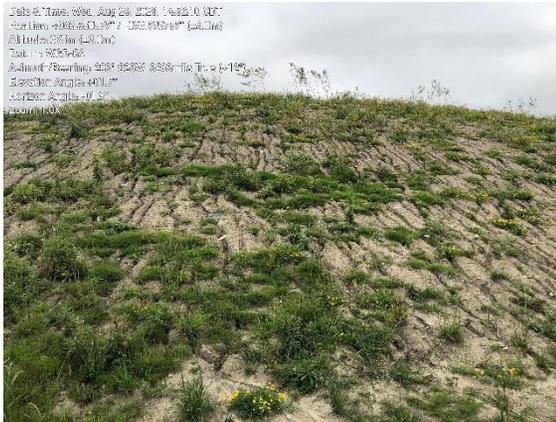


Figure 9: North Slope Control - August 26, 2020 (left), August 18, 2021 (middle), and August 9, 2022 (right).

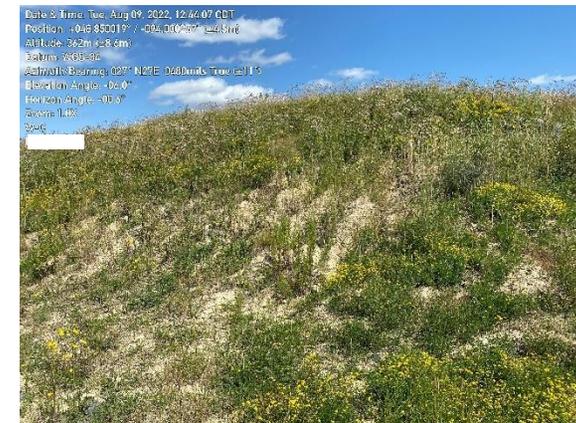
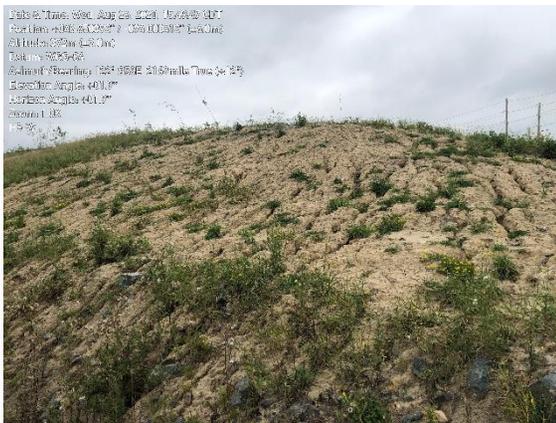


Figure 10: West Slope Broadcast - August 26, 2020 (left), August 18, 2021 (middle), and August 9, 2022 (right).

Plateau

Jack pine plots were not planted at the time of the field visit. It appears that in the Block 3 filled topsoil treatment, black spruce was planted in the sub-plot designated for white spruce. The Community Mix plots were not planted, except for some grass species in select plots. Of note, the Ground Cover Mix plots appear to have been planted with a tree species, and two shrub species, not typical of ground cover.

Overall, the general health of the planted vegetation appeared to be struggling compared to previous years. Some general observations for the various species include:

- Aspen and Black Ash – generally appeared to be doing better for the fertilized overburden and control soil treatments.
- Black Spruce – generally appeared to be doing better for the fertilized overburden and control soil treatments.
- White Spruce – appeared to be struggling and/or dead for all four soil treatments.
- Shrub mix – generally appeared to be struggling for all soil treatments however new bottom growth was occurring on some of the shrubs.

A general health check was performed during the survey. Vegetation was rated on a qualitative 5-point scale to gauge if the tree/ shrub had established well:

- Healthy (H) – the specimen generally appeared to be in good health;
- Healthy / Struggling (H/S) – the specimen was not in prime condition, showing some sign(s) of poor health;
- Struggling (S) – the specimen was in poor condition, with the majority of the plant showing signs of wilting, lost leaves, or discolouration;
- Struggling / Dead (S/D) – the specimen was in very poor health or unclear if the plant had died; and
- Dead (D) – the specimen was clearly dead or had been completely uprooted.

Table 3 provides a summary of gauged health observed during the experimental tree plot survey. Generally, some vegetation loss and health decline were observed between August 2021 and August 2022. Due to the dense vegetation establishment on some of the plots, mainly the thin and filled soil treatment plots, some planted vegetation was difficult to identify such as those in the ground, shrub, and community mix plots.

Table 3: General health of planted trees and shrubs (H-healthy, S-struggling, D-dead).

Species	Soil Treatment	Block 1			Block 2			Block 3		
		2020	2021	2022	2020	2021	2022	2020	2021	2022
Aspen	Thin Topsoil	9H, 1D	6H, 3S, 1D	5H, 1H/S, 1S, 3D	6H, 1H/S, 3S/D	6H, 4D	7H, 3D	10H, 1D	5H/S, 3S, 2D	8H, 2D
	Tilled Topsoil	10H	5H, 1S, 4D	2H/S, 4S, 3D	9H, 1S/D	10H	5H, 2S, 3D	9H, 1S	10H	8H, 2D
	Fertilized Overburden	9H, 1D	9H, 1D	9H, 1D**	10H	10H	9H, 1D	10H, 1D	10H	10H
	Control	9H, 1D	9H, 1D	9H, 1D	10H	10H	10H/S	10H	10H	9H, 1S/D
Black Spruce	Thin Topsoil	10H	2H, 3S, 5D	2H, 8D	10H	3H, 3S, 4D	1H/S, 2S, 7D	10H*	10D	10D
	Tilled Topsoil	9H, 1D	4H/S, 1S, 5D	3H, 7D	3H, 6S, 1D	10D	10D	10H	1S, 9D	10D
	Fertilized Overburden	10H	10H	10H	10H	10H	10H	9H, 1H/S	10D	10D
	Control	10H	10H	10H	10H	10H	8H, 2S	10H	6H, 2S, 2D	8H, 1S, 1D
Black Ash	Thin Topsoil	10H	10S	6H, 4H/S	9H, 1H/S	10H	4H, 1H/S, 2S, 3D	9H, 1D	9S, 1D	8H/S, 2D
	Tilled Topsoil	10H	9S	4S, 1S/D, 5D	9H, 1D	9H/S, 1D	3S, 7D	10H	4H, 6S	8H, 2D
	Fertilized Overburden	10H	10H	10H	10H	10H	10H	10H	10H	10H
	Control	10H	10H	10H	10H	10H	10H	9H, 1H/S	9H, 1S	9H, 1S
Eastern White Cedar	Thin Topsoil	10S	10S/D	4SD, 6D	10H	10S	4S, 6D	11H/S	11S/D	4S, 7D
	Tilled Topsoil	10S	10S/D	10S/D	10H	10S/D	3S, 7D	10S/D	10S	3S, 7D
	Fertilized Overburden	10H	10H/S	10H	10H	10H/S	10H/S	11H/S	10S, 1D	5S, 6D
	Control	10H/S	10S	10S	10H	10H/S	10S	11H/S	11S	11S/D
White Spruce	Thin Topsoil	-	10D	10D	-	10D	10D	-	1H, 2S, 7D	1S, 9D
	Tilled Topsoil	-	10D	10D	-	10D	1S, 9D	-	10D	10D
	Fertilized Overburden	-	3S, 7D	2H, 3S, 1S/D, 4D	-	10S	1S, 9D	-	1S, 9D	10D
	Control	-	1S, 9S/D	1S, 9D	-	3H, 3S, 4D	7S, 3D	-	3S, 7D	2S, 8D

Species	Soil Treatment	Block 1			Block 2			Block 3		
		2020	2021	2022	2020	2021	2022	2020	2021	2022
Jack Pine	Thin Topsoil	-	-	-	-	-	-	-	-	-
	Tilled Topsoil	-	-	-	-	-	-	-	-	-
	Fertilized Overburden	-	-	-	-	-	-	-	-	-
	Control	-	-	-	-	-	-	-	-	-
Ground Cover Mix	Thin Topsoil	6H	4S, 2D	1H, 2 S/D, 2D	6H	6S	1S, 5D	6H	5S	1H/S, 1S, 4D
	Tilled Topsoil	4S, 1S/D, 1D	1S, 3S/D, 2D	5D	5H, 1D	6S	6D	6H/S	3S, 3D	1S/D, 5D
	Fertilized Overburden	6H	6S	2H/S, 1S/D, 3D	4H, 1H/S	6H/S	2H/S, 2S, 2D	6H	6S	2H, 2S/D, 2D
	Control	4H, 2S	6S	2H, 2S/D, 2D	5H, 1H/S	6S	1S, 1S/D, 4D	6H	6S	2S, 2S/D, 2D
Shrub Mix	Thin Topsoil	4H	2S/D, 2D	2S/D, 2D	4H	1S, 3D	4D	4H	2S, 2D	2S, 2S/D
	Tilled Topsoil	4H	4S	4D	4H	4S	4D	H	3S, 1D	1H, 3D
	Fertilized Overburden	4H	4H	4H/S	4H	4H	1H, 2H/S, 1S	4H	1H, 2S, 1D	2H, 2D
	Control	4H	4H	4H/S	4H	4H	4S	4H	1H, 3S	4D
Community Mix	Thin Topsoil	-	-	-	-	-	-	3H	3H	-
	Tilled Topsoil	-	-	-	-	3H	-	-	3H	-
	Fertilized Overburden	2H	2H	***	-	-	-	-	3H	***
	Control	3H	3H	***	-	-	-	3H	3H	***

* Planted in white spruce design plot;

** Dead aspen removed from plot in 2022.

*** Difficult to identify planted species due to weed type vegetation growing in plot.



Figure 11: Block 1 – Fertilized Overburden - Black Spruce (left) and White Spruce (right).



Figure 12: Block 3 –Fertilized Overburden – Aspen (left) and Thin Topsoil – Aspen (right).

During the 2022 survey, three trees were randomly selected in each plot to measure the growth indicators. Several growth indicator measurements were recorded during the autumn survey for annual growth comparisons:

- Root Collar – the diameter of the tree base at the widest part of the root collar (where the root joins the stem), or just above the ground surface, whichever is higher;
- Total Height – the distance between the root collar and the base of the terminal bud (of the tallest stem). For leaning trees, this distance was measured along the slope of the stem;

- Diameter at Breast Height (DBH) – the diameter of the tree at 1.3 m above the base; and
- Crown Diameter – the average horizontal width of the crown.

A summary of growth indicator measurements by plot are provided in Appendix A. Average indicator measurements by species are included in Table 4.

Table 4: Mean tree growth indicator measurements +/- standard deviation.

Tree Species	Root Collar (mm)	Crown Diameter (cm)	Height (cm)			DBH (mm)		
	2020	2020	2021	2022	2020	2021	2022	
Aspen	21.5 +/- 2.0	24.6 +/- 10.2	258.6 +/- 26	254.9 +/- 33.2	266.3 +/- 34.7	14 +/- 1.6	15.2 +/- 1.1	16.1 +/- 1.9
Black spruce	22.5 +/- 3.1	26.7 +/- 7.5	99.5 +/- 17.8	107.8 +/- 16.8	117.0 +/- 12.3		n/a	
Black ash	21.6 +/- 2.4	29.9 +/- 9.0	219.6 +/- 30.4	213.4 +/- 31.3	226.4 +/- 28.7	10.8 +/- 2.2	11.3 +/- 2.4	11.1 +/- 2.4
Eastern white cedar	22.0 +/- 4.7	16.3 +/- 6.1	99.4 +/- 10.8	96.5 +/- 16.5	100.2 +/- 14.5		n/a	
White spruce	Not planted		Not planted	68.1 +/- 16.7	69.4 +/- 19.9	Not planted	n/a	
Jack pine	Not planted							

Measurements expressed as mean +/- SD

Ground cover was estimated at each plot during the surveys. During the 2022 autumn survey, ground cover increased in all plots, and most notably in some of the control and fertilized overburden plots (Table 5). Figures 13 to 16 compare plots from each soil treatment group as observed during the 2020, 2021 and 2022 surveys.

Table 5: Average ground coverage (%) observed in Autumn 2020, 2021, and 2022.

Soil Treatment	Block 1			Block 2			Block 3			Average		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Thin Topsoil	67	75	93	75	75	95	75	75	100	72	75	96
Tilled Topsoil	75	75	95	75	75	97	64	75	100	71	75	97
Fertilized Overburden	17	19	30	17	19	33	25	19	65	19	19	43
Control	19	19	32	17	19	25	22	19	38	19	19	32



Figure 13: Block 2 – Thin Topsoil – Eastern white cedar plot as observed on August 28, 2020, (left), August 17, 2021 (middle), and August 9, 2022.



Figure 14: Block 1 – Tilled Topsoil – Black Spruce plot as observed on August 28, 2020, (left), August 17, 2021 (middle), and August 9, 2022.



Figure 15: Block 2 – Fertilized Overburden – Black ash plot as observed on August 28, 2020, (left), August 17, 2021 (middle), and August 9, 2022.



Figure 16: Block 3 – Control – Aspen plot as observed on August 28, 2020, (left), August 17, 2021 (middle), and August 9, 2022.

Destructive Plot

Minimal erosion was observed in the destructive plot, except for some down-slope erosion on the north edge of the plot. Vegetation was generally noted to have established well, and ground cover has increased since the 2021 survey. Estimated percent ground cover during the annual survey in autumn was approximately 75% for 2020 and 2021 but has increase to 90% for 2022. Only general observations of poor health were noted during the autumn visit; Table 6 includes a summary of general health, extrapolating the number of healthy trees from the totals recorded.

Table 6: General health of trees and shrubs planted in the Destructive Plot (H-healthy, S-struggling, D-dead).

Species	Destructive Plot		
	2020	2021	2022
Aspen	8 H, 4 S	7 H, 2 S, 3 D	4 H, 2 S, 4 D
Black spruce	14 H	5 H, 3 H/S, 6 D	4 H, 3 S, 4 D
Black ash	21 H, 1 S	1 H/S, 13 S, 1 S/D, 6 D	5 H, 2 H/S, 2 S, 12 D
Eastern white cedar	11 S	8 S/D	1 S/D, 5 D
White spruce	-	6 D	6 D
Jack pine	10 H, 1 S	1 S/D, 10 D	1 S/D, 8 D
Shrub (1)	8 H	8 S/D	2 S, 9 D
Shrub (2)	20 H		

Only struggling or dead trees were noted in the autumn survey (**bolded**), all other specimens were labelled as healthy.

Shrub (1) assumed to be raspberry bushes; Shrub (2) unknown and not recorded in 2021.



Figure 17: Destructive plot ground coverage.

In addition, a root investigation was complete to investigate root depth and spread (Table 7). Rooting depth did not extend into the underlying till and remained within the overlying topsoil. Root spread appeared to be minimal, it was observed that the root spread did not appear to greatly exceed that in which it was likely originally planted.

Table 7: Destructive Plot root investigation.

Species	Root Depth	Root Spread
Aspen	24 cm	11 – 14 cm
Black ash	23 cm	13 – 17 cm
Black ash (small)	16 cm	20 – 26 cm
Black spruce	25 cm	30 – 37 cm

Closure

We trust information provided in this memorandum is satisfactory for your requirements. Please do not hesitate to contact me at (306) 850-6140 or hcunningham@okc-sk.com should you have any questions or comments.

Appendix A

Plot Growth Indicator Measurements & General Health

Table 8: Plot growth indicator measurements and general health.

Block	Soil Treatment	Vegetation Treatment	Date	Total height		DBH		Health Check					Total Count (# trees or shrubs)	Ground Cover (%)	Comment	
				Mean	+/- SD	Mean	+/- SD	H	H/S	S	S/D	D				
				(cm)		(mm)										
Block 1	Thin Topsoil	Aspen	8/9/2022	2738	252	153	1.9	5	1	1		3	10	95%		
Block 1	Thin Topsoil	Black spruce	8/9/2022	94.9	50	n/a		10					10	90%		
Block 1	Thin Topsoil	Black ash	8/9/2022	237.1	17.9	124	0.9	6	4				10	95%		
Block 1	Thin Topsoil	Eastern white cedar	8/9/2022	101.2	10.9	n/a					4	6	10	95%		
Block 1	Thin Topsoil	White spruce**	8/9/2022									10	10	95%		
Block 1	Thin Topsoil	Jackpine	8/9/2022	Not planted									90%			
Block 1	Thin Topsoil	Ground Cover Mix	8/9/2022	295.0	50	145	2.15	2				2	2	4	90%	Trees Shrubs
Block 1	Thin Topsoil	Shrub Mix	8/9/2022	90.4	4.5	n/a					2	2	4	95%		
Block 1	Thin Topsoil	Community Mix	8/9/2022											95%		
Block 1	Tilled Topsoil	Aspen	8/9/2022	276.0	20.1	150	1.0		2	4		3	9	95%		
Block 1	Tilled Topsoil	Black spruce	8/9/2022	120.8	6.5	n/a		3				7	10	95%		
Block 1	Tilled Topsoil	Black ash	8/9/2022	231.6	7.4	9.4	1.7		4	1		5	10	95%		
Block 1	Tilled Topsoil	Eastern white cedar	8/9/2022	96.8	16.0	n/a					10		10	95%		
Block 1	Tilled Topsoil	White spruce**	8/9/2022									10	10	95%		
Block 1	Tilled Topsoil	Jackpine	8/9/2022	Not planted									95%			
Block 1	Tilled Topsoil	Ground Cover Mix**	8/9/2022									1	1	95%	Trees Shrubs	
Block 1	Tilled Topsoil	Shrub Mix**	8/9/2022									4	4	95%		
Block 1	Tilled Topsoil	Community Mix	8/9/2022											95%		
Block 1	Fertilized Overburden	Aspen	8/9/2022	275.2	29.3	168		9				1	10	25%	Dead tree removed in 2021	
Block 1	Fertilized Overburden	Black spruce	8/9/2022	114.1	15.8	n/a		10					10	35%	Some trees have pine cones	
Block 1	Fertilized Overburden	Black ash	8/9/2022	226.6	8.7	123		10					10	25%		
Block 1	Fertilized Overburden	Eastern white cedar	8/9/2022	97.1	5.2	n/a		10					10	25%		
Block 1	Fertilized Overburden	White spruce	8/9/2022	67.7	6.5	n/a		2		3	1	4	10	25%		
Block 1	Fertilized Overburden	Jackpine	8/9/2022	Not planted									25%			
Block 1	Fertilized Overburden	Ground Cover Mix	8/9/2022	254.0	-	15.4	-		1			1	2	25%	Trees Shrubs	
Block 1	Fertilized Overburden	Shrub Mix	8/9/2022	55.0	-	n/a			1		1	2	4	25%		
Block 1	Fertilized Overburden	Community Mix	8/9/2022	93.5	23.5	n/a			4				4	25%		
Block 1	Fertilized Overburden	Community Mix	8/9/2022											60%		
Block 1	Control	Aspen	8/9/2022	277.9	25.4	190	2.1	9				1	10	25%		
Block 1	Control	Black spruce	8/9/2022	125.0	11.0	n/a		10					10	25%	Some trees have pine cones	
Block 2	Control	Black ash	8/9/2022	233.9	17.0	138	1.5	10					10	25%		
Block 3	Control	Eastern white cedar	8/9/2022	105.7	2.2	n/a				10			10	25%		
Block 4	Control	White spruce	8/9/2022	65.0	-	n/a				1		9	10	50%		
Block 1	Control	Jackpine	8/9/2022	Not planted									55%			
Block 1	Control	Ground Cover Mix	8/9/2022	270.0	4.0	18.2		2					2	30%	Trees Shrubs	
Block 1	Control	Shrub Mix	8/9/2022							2		2	4	25%		
Block 1	Control	Shrub Mix	8/9/2022	117.9	4.1					2		2	4	25%		

Block1	Control	CommunityMix	8/9/2022											25%	
Block2	Thin Topsoil	Aspen	8/9/2022	2853	93	167	09	7				3	10	95%	
Block2	Thin Topsoil	Black spruce	8/9/2022	1156	34	n/a			1	2		7	10	95%	
Block2	Thin Topsoil	Blackash	8/9/2022	2177	210	93	26	4	1	2		3	10	95%	
Block2	Thin Topsoil	Eastern white cedar	8/9/2022	967	143	n/a				4		6	10	95%	
Block2	Thin Topsoil	White spruce**	8/9/2022									10	10	95%	
Block2	Thin Topsoil	Jackpine	8/9/2022											95%	
				Not planted											
Block2	Thin Topsoil	Ground Cover Mix	8/9/2022	2020		11.6					1	1	2	95%	Trees
			8/9/2022									4	4	95%	Shrubs
Block2	Thin Topsoil	Shrub Mix**	8/9/2022									4	4	95%	
Block2	Thin Topsoil	Community Mix	8/9/2022											95%	
Block2	Tilled Topsoil	Aspen	8/9/2022	2895	165	147	12	5		2		3	10	100%	
Block2	Tilled Topsoil	Black spruce**	8/9/2022									10	10	100%	
Block2	Tilled Topsoil	Blackash	8/9/2022	2073	37	83	21			3		7	10	95%	
Block2	Tilled Topsoil	Eastern white cedar	8/9/2022	75.1	237	n/a				3		7	10	95%	
Block2	Tilled Topsoil	White spruce**	8/9/2022									10	10	95%	
Block2	Tilled Topsoil	Jackpine	8/9/2022											100%	
				Not planted											
Block2	Tilled Topsoil	Ground Cover Mix**	8/9/2022									2	2	95%	Trees
			8/9/2022									4	4	95%	Shrubs
Block2	Tilled Topsoil	Shrub Mix**	8/9/2022									4	4	95%	
Block2	Tilled Topsoil	Community Mix	8/9/2022											95%	
Block2	Fertilized Overburden	Aspen	8/9/2022	187.4	70	152	08	9				1	10	65%	
Block2	Fertilized Overburden	Black spruce	8/9/2022	121.1	105	n/a		10					10	35%	Some trees have pine cones
	Fertilized Overburden	Blackash	8/9/2022	243.4	5.1	11.5	1.2	10					10	25%	
Block2	Fertilized Overburden	Eastern white cedar	8/9/2022	110.1	48	n/a			10				10	25%	
Block2	Fertilized Overburden	White spruce	8/9/2022	630		n/a				1		9	10	25%	
Block2	Fertilized Overburden	Jackpine	8/9/2022											50%	
				Not planted											
Block2	Fertilized Overburden	Ground Cover Mix	8/9/2022	2430		142					1	1	2	25%	Trees
			8/9/2022	90.4		n/a			2	1		1	4	25%	Shrubs
Block2	Fertilized Overburden	Shrub Mix	8/9/2022	99.8	92			1	2	1			4	25%	
Block2	Fertilized Overburden	Community Mix	8/9/2022											25%	
Block2	Control	Aspen	8/9/2022	277.4	180	165	05		10				10	25%	
Block2	Control	Black spruce	8/9/2022	117.6	5.4	n/a		8		2			10	25%	Some trees have pine cones
Block2	Control	Blackash	8/9/2022	205.9	40.9	9.5	1.7	10					10	25%	
Block2	Control	Eastern white cedar	8/9/2022	104.7	12.7	n/a				10			10	25%	
Block2	Control	White spruce	8/9/2022	62.8	10.7	n/a				7		3	10	25%	
Block2	Control	Jackpine	8/9/2022											25%	
				Not planted											
Block2	Control	Ground Cover Mix	8/9/2022									2	2	25%	Trees - some trees have berries
			8/9/2022	500		n/a				1	1	2	4	25%	Shrubs
Block2	Control	Shrub Mix	8/9/2022	86.8	35.6	n/a				4			4	25%	
Block2	Control	Community Mix	8/9/2022											25%	
Block3	Thin Topsoil	Aspen	8/9/2022	239.4	16.3	182	1.2	8				2	10		
Block3	Thin Topsoil	Black spruce**	8/9/2022									10	10		Actually white spruce
Block3	Thin Topsoil	Blackash	8/9/2022	214.6	50.2	120	1.6		8			2	10		

Block3	Thin Topsoil	Easternwhitecedr	8/9/2022	932	74	n/a			4		7	11		
Block3	Thin Topsoil	White spruce	8/9/2022	1120		n/a			1		9	10		Actually black spruce
Block3	Thin Topsoil	Jackpine	8/9/2022					Not planted						
Block3	Thin Topsoil	Ground Cover Mix	8/9/2022	2600	20	167	10		1	1		2		Tree
Block3	Thin Topsoil	Shrub Mix	8/9/2022	600		n/a			2	2	4	4		Shrubs
Block3	Thin Topsoil	Community Mix	8/9/2022											
Block3	Tilled Topsoil	Aspen	8/9/2022	2880		164		8			2	10		
Block3	Tilled Topsoil	Black spruce**	8/9/2022								10	10		
Block3	Tilled Topsoil	Black ash	8/9/2022	2295		114		8			2	10		
Block3	Tilled Topsoil	Eastern white cedar	8/9/2022	1177		n/a			3		7	10		
Block3	Tilled Topsoil	White spruce**	8/9/2022								10	10		
Block3	Tilled Topsoil	Jackpine	8/9/2022					Not planted						
Block3	Tilled Topsoil	Ground Cover Mix	8/9/2022	2370		117			1		1	2		Trees
Block3	Tilled Topsoil	Shrub Mix	8/9/2022	1140		n/a		1			3	4		Shrubs
Block3	Tilled Topsoil	Community Mix	8/9/2022											
Block3	Fertilized Overburden	Aspen	8/9/2022	2638	112	160	10	10				10		
Block3	Fertilized Overburden	Black spruce**	8/9/2022								10	10		
Block3	Fertilized Overburden	Black ash	8/9/2022	2544	57	114	18	10				10		
Block3	Fertilized Overburden	Eastern white cedar	8/9/2022	998	118	n/a			5		6	11		
Block3	Fertilized Overburden	White spruce**	8/9/2022								10	10		
Block3	Fertilized Overburden	Jackpine	8/9/2022					Not planted						
Block3	Fertilized Overburden	Ground Cover Mix	8/9/2022	2565	15	143	04	2				2		Trees
Block3	Fertilized Overburden	Shrub Mix	8/9/2022	1154	35	n/a		2			2	4		Shrubs
Block3	Fertilized Overburden	Community Mix	8/9/2022											
Block3	Control	Aspen	8/9/2022	2742	312	140	17	9		1		10		
Block3	Control	Black spruce	8/9/2022	1184	117	n/a		8	1		1	10		
Block3	Control	Black ash	8/9/2022	2146	483	121	07	9	1			10		
Block3	Control	Eastern white cedar	8/9/2022	1080	77	n/a					11	11		
Block3	Control	White spruce	8/9/2022	577	95	n/a			2		8	10		
Block3	Control	Jackpine	8/9/2022					Not planted						
Block3	Control	Ground Cover Mix	8/9/2022	2020	20	127	06		2			2		Trees
Block3	Control	Shrub Mix**	8/9/2022	300		n/a					2	4		Shrubs
Block3	Control	Community Mix	8/9/2022								4	4		

*Only one tree tall enough for DBH, no SD given

**Dead species were not measured