

Attachment 1

Executive Summary
2006 Results and Performance Standards

Flambeau Mine

Flambeau 2006 Vegetation Report Executive Summary

The vegetation of the reclaimed Flambeau mine was sampled in May and August of 2006. This is the fifth year of sampling since Notice of Completion (NOC) was accepted by the WDNR in 2001. The following techniques were used to sample herbaceous vegetation: quadrat sampling, timed meander search, and biomass sampling. Woody species were sampled by recording canopy intercept and counting stems along belted transects, and counting all trees and shrub in all woodland planting zones.

The mining permit includes five vegetation performance standards. All five were met again this year. Total plant cover is much greater than the 70% required by performance standard (Table A). The survivorship of woody species in woodland communities is greater than the 80% standard because all planted woody species were found alive in the woodland community, and species proportions were similar to the initial planting (Table B). The required number of planted native species was found in each community because greater than 15 Target Species were found in the woodland and upland grassland communities and greater than 12 Target Species were found in the wetland community (Table C). The diversity standard was met because greater than 80% of the Target Species planted in each plant community was observed (Table C). Finally, both total and native biomass was greater this year than in 2001 (NOC) (Table D).

The site is well vegetated with a diverse and abundant native flora. Average total plant cover over the site is 99%, at least 293 species are present on the site (78% of which are native), and total native cover is nearly 40%. Total native cover and total biomass decreased this year due to two consecutive years of drought conditions. The beginning of 2006 growing season was so dry a State of Emergency was declared for

the region on July 19. Although average native vegetation cover for the entire site decreased this year, biomass data and cover data from specific communities indicate that natives still dominate the site. Native species comprise nearly 65% of the biomass sampled in the upland grasslands in 2006, and native species biomass is over twice as great as it was in 2001. In addition, native cover in wetlands was well over 60% this year (2006). Drought conditions also reduced tree survivorship. However, the drought did not seem to impact species disproportionately, because all species are still present on site and in similar proportion to the original planting plan. Therefore, monitoring data indicates that native species dominate both the wetlands and the upland grassland, and are common in the woodlands.

Quadrat data was tested statistically to determine if sampling size was sufficient. The results from 2001 and 2005 indicate that the sampling size was sufficient; however, there is greater variation in the 2006 data, which is likely due to the patchy effects of the drought.

No evidence of significant erosion or sedimentation in any upland, wetland, or biofilter settings was apparent on the mine in 2006. In addition, documented use of the mine by birds, butterflies and other wildlife clearly indicates that the revegetated Flambeau Mine provides habitat for a diverse fauna.

The result of the data collected for this site demonstrates that the site is tracking the desired trajectory for plant community development. The abundance and diversity of native species have increased substantially in all plant communities since installation and are well established and widespread on the site. Further, the intended structural habitat characteristics are present in the upland grassland and wetlands, and slowly (as anticipated) developing in the woodlands. In summary, after eight full growing seasons the reclaimed mine site has shown a remarkable development of native plant communities and habitat and wildlife utilization.

Flambeau 2006 Summary Tables

Table A. Performance Standard 1.

Each plant community will have greater than 70% Total Cover.

Ecological Community	% Total Cover per Year						
	2000	2001	2002	2003	2004	2005	2006
Grassland	96	95	96	90	95	98	99
Woodland	98	98	98	98	99	98	100
Wetland	100	100	100	92	95	83	98

Table B. Performance Standard 2.

At least 80% of initially planted woody species must survive in a similar proportion to the initial plantings and show signs of vigor and health.

Ecological Community	% Survival per Year						
	2000	2001	2002	2003	2004	2005	2006
Woodland	100	100	100	100	100	100	100

Table C. Performance Standards 3 and 4.

The woodland and grassland communities shall have greater than 15 Target Species present, and the wetland community shall have greater than 12 Target Species present. Greater than 80% of the Target Species in each community shall be present.

Ecological Community	Year													
	2000		2001		2002		2003		2004		2005		2006	
	# Target Species	% Target Species	# Target Species	% Target Species	# Target Species	% Target Species	# Target Species	% Target Species	# Target Species	% Target Species	# Target Species	% Target Species	# Target Species	% Target Species
Grassland	15	88%	16	94%	16	94%	15	88%	16	94%	15	88%	16	94%
Woodland	25	100%	24	96%	23	92%	22	88%	22	88%	24	95%	23	92%
Wetland	32	82%	32	82%	30	77%	34	87%	34	87%	37	96%	32	82%

Table D. Performance Standard 5.

At least 80% of the biomass shall be present at NOC in 2001 shall be present at COC.

Ecological Community	2001 (NOC)				2005				2006 (COC)			
	Mean Total Weight	% Biomass All	Mean Native Weight	% Biomass Natives	Mean Total Weight	% Biomass All	Mean Native Weight	% Biomass Natives	Mean Total Weight	% Biomass All Samples	Mean Native Weight	% Biomass Natives
	Grassland	508g	100%	172g	100%	668g	131%	264g	153%	609g	120%	391g