

Obed Mountain Mine (OMM) Progress Report Wildlife Work Completed to October 1, 2014

1.0 INTRODUCTION

This progress report updates wildlife monitoring work completed to October 1, 2014 as outlined in the wildlife impact assessment and monitoring plans previously submitted in compliance with the Environment Protection Order EPO-2013-34-CR (EPO).

Monitoring refers to the collection and analysis of repeated observations to evaluate change in conditions after the OBED Mountain Mine (OBED) wastewater release and progressing toward a management objective. In this case the objective is to return conditions to the state prior to the wastewater release. Monitoring will provide evidence for management change or continuation.

The wildlife monitoring program includes two components:

1. Identify initial wildlife response,
2. Test the impact predictions, and evaluate effectiveness of mitigation measures (long term).

The initial wildlife response was assessed by means of the November 2013 Biophysical Assessment and by the use of remote cameras. A summary of the results of eight camera trap placements in Zone 1 is included in the March 31, 2014 progress report. The summary presents wildlife detections of ungulates, carnivores and human activity in bi-weekly intervals. Since that time three cameras have been placed in Zone 3 downstream of Sediment Trap#3 and three cameras have been placed in a control tributary that flows into Apetown Creek downstream of the DX crossing near the blowout. All cameras will be maintained through the winter of 2014/15 after which time results will be evaluated.

Five focal species have been selected for the long term monitoring program to evaluate potential impacts and response of wildlife to the Obed wastewater release. They are: American beaver, moose, small carnivores (short-tailed weasel), migrant shorebirds and ground dwelling songbirds (Emberizids). Monitoring programs were initiated in the winter of 2013/2014 and completed by mid-summer, 2014.

A. American Beaver

Beaver dams that were in the Zone 1 impact area include a large beaver dam and lodge on the Spillway and a bank den located in the ECP Pond. The wastewater release broke the dam on the Spillway and exposed the beaver lodge. Some beavers managed to survive the winter but have since abandoned the location. It is expected beavers will not return until water flows again in the Spillway. A camera (WC#8) has been placed on the Spillway beaver dam to monitor potential beaver activity and other wildlife activity at this location.

The beavers occupying a bank den in the ECP settling pond have remained active throughout the summer and have established a winter food cache.

Upstream of the Zone 1 impact area, a series of active beaver dams and lodge are located in the headwaters of Apetowun Creek. The lowest pond abuts the Obed Mountain Mine haulroad and is being used as a catchment for water being drained from the Main Tailings Pond. Water

from this lowest beaver pond flows through an open culvert to the ECP Pond and finally is returned to Apetowun Creek upstream of the impact area.

All beaver dams and lodges will be inspected for activity prior to freeze up and again in the early spring after snowmelt.

B. Moose

To assess moose use of the impact area, a series of snow-track counts was completed in the winter of 2013/2014 and a pellet-group count survey was conducted in the spring of 2014. Both measures give an indication of over winter use. Track counts will be repeated in the winter of 2014/15 after which an evaluation of the need to continue monitoring in Zone 3 will be completed. Pellets-group counts will be summarized and used to refine moose habitat mapping (see April 2014 progress report). An evaluation will then be made of the need to repeat the pellet-group count outside the immediately affected areas of Zone 1.

Information from the wildlife camera traps provide a year round indication of moose use of the riparian habitat affected by the wastewater release.

C. Ermine (Short-tailed weasel)

Response of this species to the wastewater release will be monitored using winter snow-track counts and wildlife camera traps as described above. Fur harvest returns of the local trap lines will also be obtained to look at long term trends and provide a context for monitoring.

D. Migrant Shorebirds

Multi-year migration surveys (2009, 2011, 2012, 2013) of OBED's Main Tailing Pond has identified this waterbody to be a migration stopover for a diversity of shorebirds. Shorebirds feed mainly on invertebrates taken from mud and other soft substrates. Their presence can be indicative of an areas biological productivity and health. In 2014, waterbird use of the Main Tailings Pond was monitored weekly from April 29 through to the end of August. Surveys are continuing until October 31, 2014 when migration is finished. Results will be summarized and compared to surveys made prior to the wastewater release.

E. Ground-dwelling Songbirds (Emberizids)

Territory Mapping - Six large plots (100 m X 200 m) were established in Zone 1 during the last week of May 2014 to monitor songbird response to the wastewater release by a spot mapping technique. Plots were placed in variable habitats affected by the wastewater release: reclaimed deciduous forest, riparian willow meadow, riparian coniferous forest. Three plots were placed along the Spillway and three plots were placed along Apetowun Creek upstream (one) and downstream (two) of the DX road crossing. Plots were monitored five to six times throughout the breeding season between May 24 and July 5; all bird locations and activity were mapped and individual territories identified.

Mapping will be summarized and repeated in the spring of 2015. Spot mapping will produce several indices to evaluate the impact of the wastewater release on the songbird community including: species composition, annual indices of population levels, and an estimate of density.

Bird Banding - To obtain measures of reproductive success, and fidelity between years a bird banding program was established on the same six plots used for territory mapping plus a control site located on Obed Mountain Mine. Banding was carried out while birds were still on territory (July 30 and August 7) and just prior to migration. All federal and provincial banding permits were obtained for this project.

A total of 18 species and 32 birds (including 3 recaptures) were captured during this banding program. Birds were banded and the following information obtained prior to releasing them on site: sex, age, weight, several body and wing measurements, fat and muscle score, evidence of moult and photographs.

Banding will be repeated in 2015 in early June when pairs are on territory and in late July 2015 when adults are feeding young but prior to migration.