

Flambeau Mining Company Surface Water Monitoring Plan 9/24/2015

Flambeau Mining Company shall implement a Surface Water Monitoring Program in 2016 after completion of construction and restoration activities undertaken pursuant to this permit.

The surface water monitoring program shall include the following:

- Continued surface water sampling at existing locations SW-C9 (representing the upstream conditions of the connected waterway's connection to Intermittent Stream C) and SW-C1 (representing downstream conditions of the connected waterway's connection to Intermittent Stream C).
- The targeted frequency of sampling at SW-C9 and SW-C1 shall be as follows:
 - 8 samples of qualified flow events during the period from April 1 to November 30 of each year
 - Samples obtained to reflect a variety of qualifying precipitation / runoff conditions
 - If 8 qualified flow events do not occur during the calendar year, the sampling frequency shall be reduced accordingly
- Sample points SW-C9 and SW-C1 will be sampled up to 8 times per year for a period of three (3) years.
- Sampling will consist of collecting samples only during qualifying storm / flow events with a *qualified flow event* being defined as a precipitation event with rainfall equal or greater than 0.5 inches which exhibits continuous and simultaneous visible flow at both monitoring locations (SW-C9 and SW-C1).
- The depth of stream flow shall be measured at the time of water sampling utilizing a removable staff gauge at the STH 27 culvert outlet adjacent to SW-C9 and at the Copper Park lane culvert outlet proximal to SW-C1. Permanent brackets will be attached at the exit of both culverts to allow a portable staff gage to be set in place to obtain depth of water measurements. The bracket system will be constructed such that the portable staff gage will be held at the same elevation for all sampling events providing repeatable and comparative results. Upon the completion of sampling a given event, the staff gage will be removed and stored on site.
- Field parameters shall be obtained associated with the grab sample and will consist of dissolved oxygen, electrical conductivity, Oxidation Reduction Potential (ORP), pH, and temperature.

Flow shall be determined based on the size of the culvert, measured depth of flow at the culvert outlet, and the standard mathematical relationship between depth of flow and culvert characteristics (standardized culvert hydraulics).

- The grab samples shall be collected, documented, and preserved as per the current Quality Assurance Project Plan and transported to a certified laboratory for analysis of total copper, total zinc, hardness as CaCO₃, total suspended solids, pH, and electrical conductivity.
- The field and analytical results collected to date shall be summarized and provided to the Department by July 1 of the year the sample(s) is taken and within 45 days following collection of the last sample of the year.

Note that for ease of reference, the drainageway between SW-C9 and SW-CI is referred to as Intermittent Stream C.

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