

To: Dave Jandt, AFS Fire Management Officer

From: Ben Kennedy, BLM, FDO Hydrologist

Subject: Water Quality Samples for Fire Retardant impacts-small lake near Hughes, Hughes Creek Fire #199

Date: June 20, 2007

On June 12 we were able to collect water samples from a small lake near Hughes Creek Fire #199 (N 66° 08' .369", W 154° 13' .817"). The lake received an unknown quantity of fire retardant during June? AFS fire suppression efforts in the area. Water samples were also collected from a second lake of similar size, approximately 2 miles south (N 66° 07' .029", W 154° 14' .504"), for use as general background reference of water quality and chemistry for lakes near the Hughes Creek fire (see attached map and photos). Water quality parameters of water temperature, conductivity, pH, and dissolved oxygen were collected in the field using a YSI multi-parameter meter. Water depths were less than 7 feet.

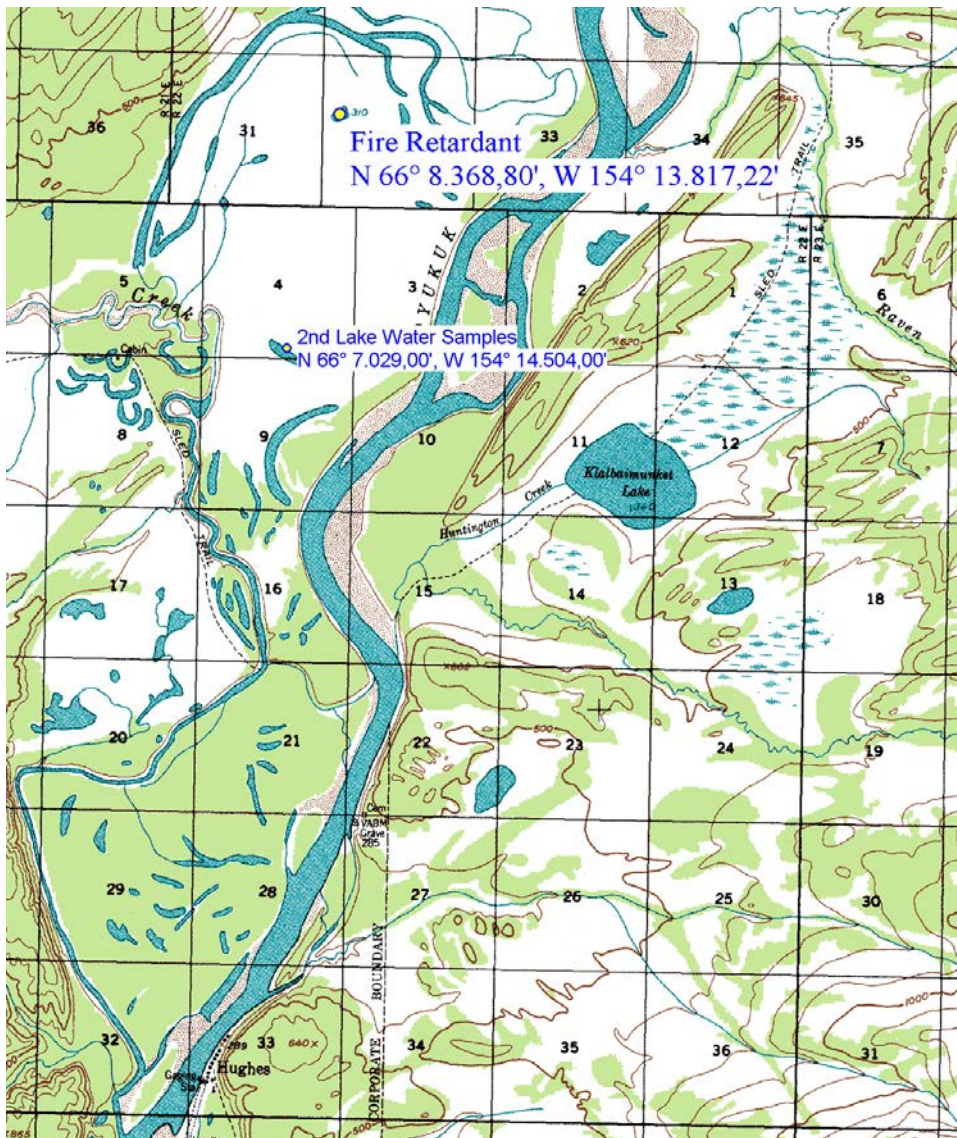
Water Samples were processed and delivered within 24 hrs of sampling to Analytica Lab, 475 Hall St. Fairbanks, AK 99701, for analysis. Requested analysis included Nutrients, Major ions, Alkalinity, Chlorophyll, and Organic carbon. Lab results should be back from Analytica by mid-July—expected cost is \$3,100.

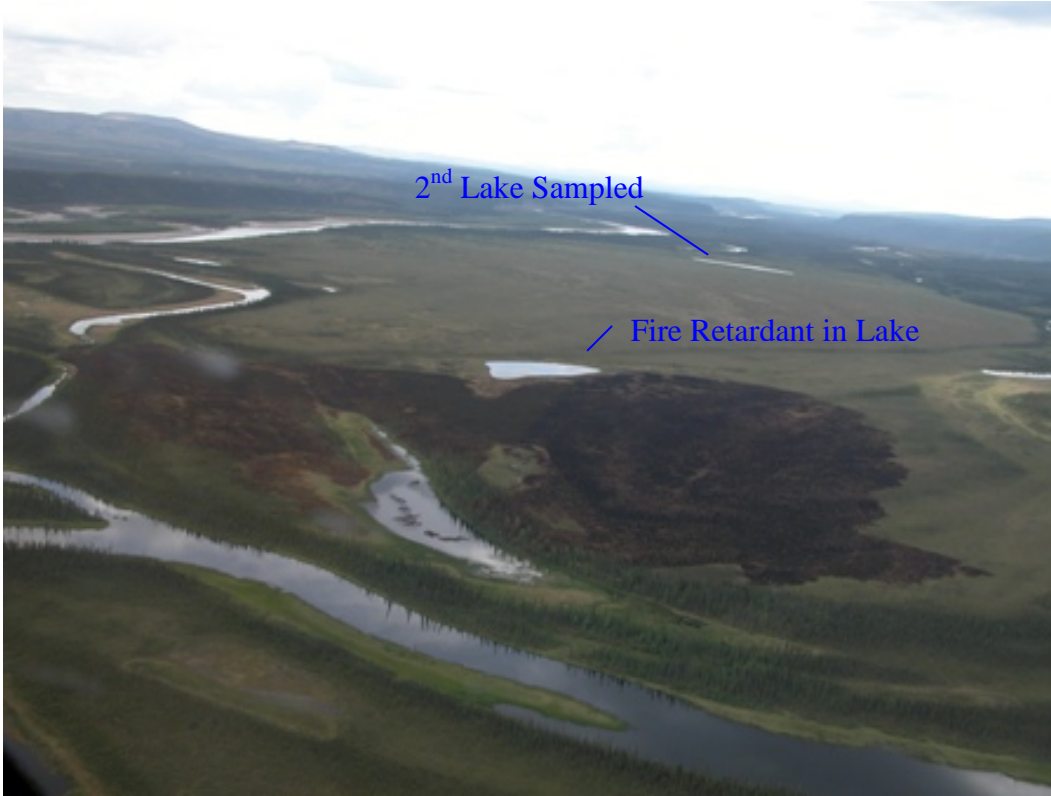
It would be useful to collect a second round of water samples in August or September 2007 ( ~\$3,100) and a third round of sampling in 2008 (~ \$3,100) to determine if there are long-term effects from the fire retardant as well as document water quality and water chemistry variations for both lakes. It would also be helpful if you could have personnel from AFS that were involved in the retardant drop as well those on the ground during fire suppression efforts send email or call with the following information:

Hughes Creek Fire #199 Retardant Drop:

- 1) Date:
- 2) Time:
- 3) Aircraft type:
- 4) Aircraft Altitude above ground level during deployment of Fire Retardant:
- 5) Aircraft flight Path Direction (South to North?):
- 6) Total Volume of Retardant Dropped at site:
- 7) Single Pass or multiple Pass:
- 8) Estimated percent of Retardant that fell in the lake:
- 9) Copies of any photos of site before or after the retardant drop:
- 10) Any other information/observations/opinions that AFS personnel believe may be useful.

Map and Photos





**Figure 1.** View from N to S of small lake with fire retardant (center) and 2<sup>nd</sup> Lake south of burn area of Hughes Creek Fire. Photo obtained June 12, 2007



**Figure 2.** View from S to N, small lake with No Fire Retardant (lower right-center) and Fire Retardant Lake (upper left-center), Hughes Creek Fire. Photo obtained June 12, 2007