

Water Quality

Water quality is monitored at sites on the Salmon River, Thompson Creek, and Squaw Creek. There are two monitoring sites located on the Salmon River and Squaw Creek, one upstream of mine disturbance, and one downstream of mine disturbance. There are four monitoring sites on Thompson Creek, one upstream of mine disturbance, one below the confluence with Buckskin Creek, one above the confluence with Pat Hughes Creek, and one below the confluence with Pat Hughes Creek. Water quality samples are taken based on the hydrograph. Samples are taken in the spring before peak flow, during spring peak flow, summer low flow, and fall low flow. The parameters analyzed are in accordance with a National Pollutant Discharge Elimination System (NPDES) permit.

The tables below present water quality data for these parameters (with the exception of total suspended solids) from 1998 to 2008 (October 1998 is when Thompson Creek Mine started using lower detection limits for water quality analysis). The tables present a fraction for each parameter, which is the number of times Idaho water quality standards have been exceeded over the number of samples that have been taken at that location. Past exceedances for selenium in Thompson Creek have arisen when flow in Thompson Creek is low. To avoid potential in stream water quality issues, water from the Buckskin drainage (including water from the Buckskin waste rock facility) is diverted into the Thompson Creek pipeline to be used in the mill when flow in Thompson Creek drops below 7 cubic feet per second.



Salmon River

Site	Silver	Arsenic	Cadmium	Chromium	Copper	Mercury	Lead ¹	Selenium	Zinc	pH
SR-3	0/30	0/41	0/41	0/31	0/41	0/44	1/41	0/41	0/41	0/44
SR-1	0/31	0/41	0/41	0/31	0/41	0/44	3/41 ²	0/41	0/41	0/45

Thompson Creek

Site	Silver	Arsenic	Cadmium	Chromium	Copper	Mercury	Lead ¹	Selenium	Zinc	pH
TC-4	0/30	0/44	0/44	0/30	0/44	0/47	0/44	0/46	0/44	0/131
TC-3	0/38	0/43	0/43	0/38	0/43	0/46	0/43	7/47	0/43	1/129
TC-2	0/35	0/38	0/38	0/35	0/38	0/41	0/38	3/40	0/38	0/116
TC-1	0/30	0/42	1/42	0/30	0/42	0/45	1/42	5/47	0/42	0/129

Squaw Creek

Site	Silver	Arsenic	Cadmium	Chromium	Copper	Mercury	Lead ¹	Selenium	Zinc	pH
SQ-3	0/31	0/39	0/41	0/31	0/41	0/45	1/41 ³	0/42	0/41	1/207
SQ-2	0/31	0/41	0/39	0/31	0/39	0/46	0/39	0/40	0/39	0/122

¹ Increased dissolved lead was noted on 26 April 1999 at sites both upstream and downstream of the mine, including exceedances at sites SR-3, SR-1, and SQ-3, and increases at TC-4, TC-1, and SQ-2.

² One of the exceedances at SR-1 was on 26 April 1999 as described for footnote #1. Concerning the two other exceedances, one is likely lab error and the other is unexplained.

³ The excursion noted occurred on 16 April 2008 and is likely a lab error.

* Water quality data is summarized from Thompson Creek Mining Company's 2008 Annual Water Quality Report submitted to Idaho Division of Environmental Quality. Data has not undergone quality control and is not a thorough analysis of water quality.