

Excessive idling and owners dumping bilges could be the cause of water pollution at the City Beach dock, a short distance from the popular swimming location. Richard Hanners / Whitefish Pilot file photo

## Lake's water quality threatened by watercraft

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Are children swimming at City Beach at risk from motor boat pollution?

That was the question the Whitefish Lake Institute wanted to answer when they initiated a water pollution study in 2005.



Lake water samples were collected at four sites — mid-lake near Hellroaring Point, at State Park between the boat launch and the swimming area, at the Lodge at Whitefish Lake boat dock, and at City Beach between the dock and the swimming area. The samples were taken between 3 and 5 p.m. on seven dates between August 2005 and October 2006.

The study focused on BTEX — a group of chemicals associated with gasoline engines. The Institute also conducted a survey of docks and boat use in Whitefish Lake.

"The various avenues of BTEX exposure to recreationalists suggest that public health could be compromised in select areas of Whitefish Lake at specific times," the study's Feb. 22 report concluded. "It is also reasonable to conclude that aquatic life located in littoral areas associated with heavy boat traffic and boat storage/staging areas are at increased risk of deleterious acute and/or chronic effects based upon the review of available scientific literature."

BTEX compounds (benzene, toluene, ethylbenzene and xylene) are known to cause cancer, birth defects and damage to the nervous system, liver and kidneys to humans exposed by inhalation, ingestion or absorption through the skin.

None of the Institute's samples indicated that BTEX exceeded the Environmental Protection Agency's maximum contaminant level for drinking water, but benzene levels exceeded California water standards on two occasions — including Fourth of July 2006.

The city maintains an inlet for its water system about 1,200 feet off Mountain Harbor which serves as a backup for the city water reservoir below Big Mountain. Many lakeshore residents, however, continue to drink lake water.

Two popular swimming areas in Whitefish Lake are located directly adjacent to public boat launches — City Beach and State Park. Both sites are also believed to be located in bays with slow flushing times, the report said.

City Beach is particularly popular for swimmers. A 2005 poll of 461 local school students by the Whitefish Lake Institute found that 88 percent recreated on the lake. Of those, 86 percent of the fourth-graders, 91 percent of the eighth-graders and 83 percent of the 11th-graders spent time swimming in the lake.

Studies done in Lake Tahoe and other places indicate that carbureted two-stroke marine engines found in outboards and personal watercraft may contribute a disproportionate amount of gasoline constituents to waterways.

Several studies indicate that up to 30 percent of gasoline consumed by personal watercraft is released unburned into waterways through the exhaust system.

The threat posed by personal watercraft has been enhanced nationwide by the craft's growing popularity. The EPA estimates personal watercraft use will increase from 4 percent of all boats in 1993 to 20 percent in 2007.

In Montana, the number of registered personal watercraft increased from 5,131 in 2000 to 8,212 by the end of 2006. The Institute's survey indicated that nearly 20 percent of watercraft in Whitefish Lake were personal watercraft, but it was unknown how many had carbureted two-stroke engines.

The EPA began phasing in stricter regulations for marine engines in 1998 aimed at reducing emissions by 75 percent in 2025. The agency found that four-stroke engines are 75-95 percent cleaner than carbureted two-stroke engines.

Personal watercraft emissions are not the only sources of BTEX, the study notes. For example, water samples taken at the City Beach launch site on Sept. 10, 2006, found the highest BTEX concentrations even though that was the sample date with the lowest number of motorized watercraft on the lake. Benzene levels from that sample were found to be 66 percent of the EPA maximum contaminant level for drinking water.

The report provides several explanations for the anomaly — a minor spill during refueling, boat owners draining their bilges or excessive engine idling.

Other sources of BTEX in Whitefish Lake include stormwater runoff from impervious surfaces and residual pollution from a 1989 train wreck. Up to 25,000 gallons of diesel fuel may have spilled into the lake when several Burlington Northern Railway rail cars fell down the embankment into Mackinaw Bay.

Whitefish Lake Institute director Mike Koopal presented his report to the newly formed Whitefish Water Quality Advisory Committee on Wednesday.

He told the Pilot that the city should consider installing a catchment system at the City Beach boat launch that boat owners could use for draining bilges. Public education could be the solution to people idling motors while they wait to leave, he said.

"The community of Whitefish and the local economy depend on providing a quality recreational experience at Whitefish Lake for the general public," the report concludes. "That experience must maintain the current accessibility options to the lake by the general public while also protecting the public's health."