

Smithtown Bay (DNR ID 27-0133-00)

MCWD Site ID: LSM01

Sample Location GPS Coordinates: 44.8892N, -93.6403W

Surface Area (acres): 112

Max. Depth (ft): 80



Site Information

Lake Minnetonka is a class 2B lake protected for aquatic life and recreation. Smithtown Bay is located on the western side of Lake Minnetonka near the city of Victoria. The bay is adjacent to West Upper Lake and East Upper Lake. Water Quality information is available starting in 1997. MCWD staff have been monitoring the lake on a bi-weekly basis from the time of ice out (April) to the time of fall mixing (mid-October) since 2006. A YSI multi-probe meter was used to measure dissolved oxygen (DO), temperature ($^{\circ}\text{C}$), pH, and specific conductivity ($\mu\text{S}/\text{cm}$) from the water surface and at each meter depth to the bottom. Water samples were collected at 1 meter below the water surface as well as one meter from the bottom. Surface and bottom sample parameters analyzed included total phosphorus (TP), total dissolved phosphorus (TDP), soluble reduced phosphorus (SRP), total nitrogen (TN), total dissolved nitrogen (TDN), NO_3/NO_2 , and ammonia (NH_4). Chlorophyll-*a* surface concentrations were also analyzed and measurements of Secchi disc depth were recorded.

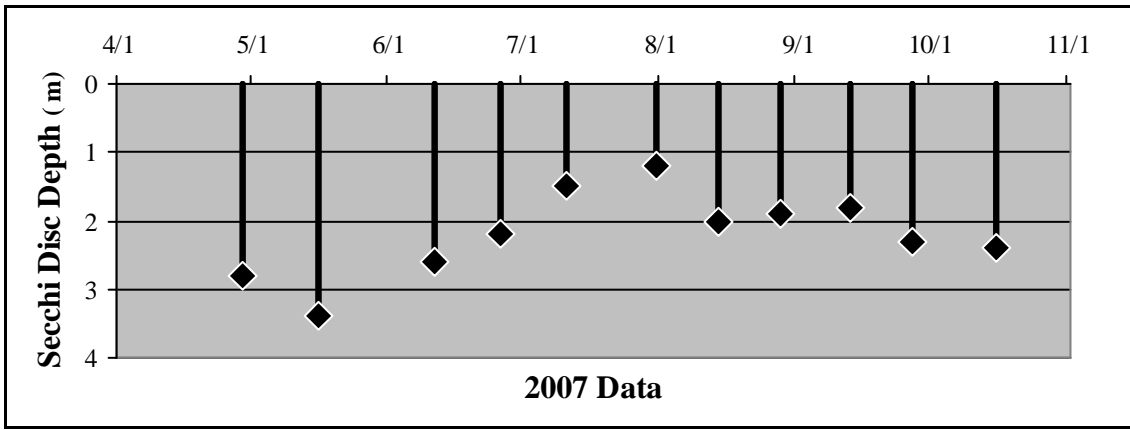
2007 Data Summary

- Secchi disc depth was at or deeper than the standard (1.2 m) for all of the season. Declines occurred from mid-May through July and then increased through the rest of the season.
- Chlorophyll-*a* concentrations were below the standard (15 ppb) for the entire seasons despite gradually increasing as the summer progressed.
- TP concentrations were under the standard (40 ppb) for most of the season. The only sample with a concentration greater than the standard occurred in late June.

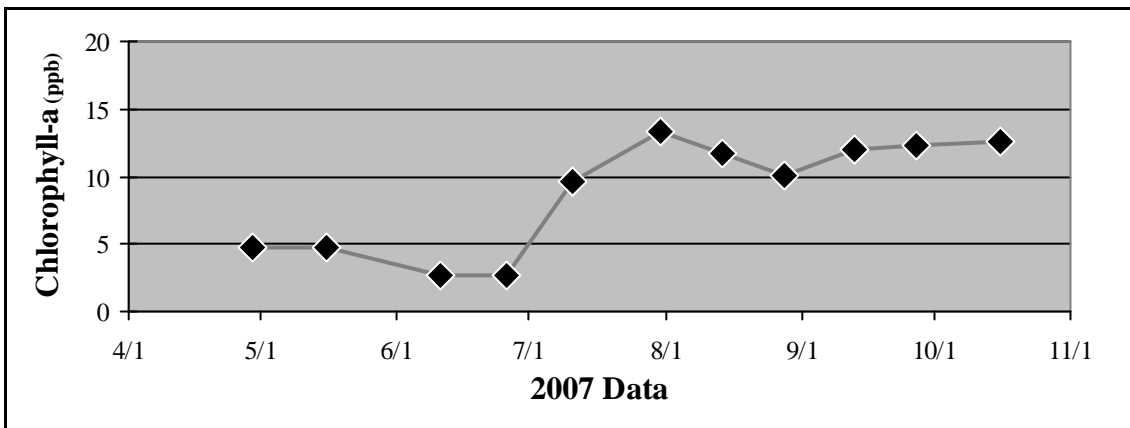
Table 2.21 Smithtown Bay 2007 Summary

2007 Summer (May-September) Water Quality Summary				
Parameter	Range	Mean	Grade	TSI value *
Secchi Depth (m)	1.2 - 3.4	1.9	C	50
Surface TP (µg/L)	19 - 42	28.0	B	52
Chlorophyll- <i>a</i> (µg/L)	2.7 - 13.4	9.3	A	52
		Overall Score	B	52

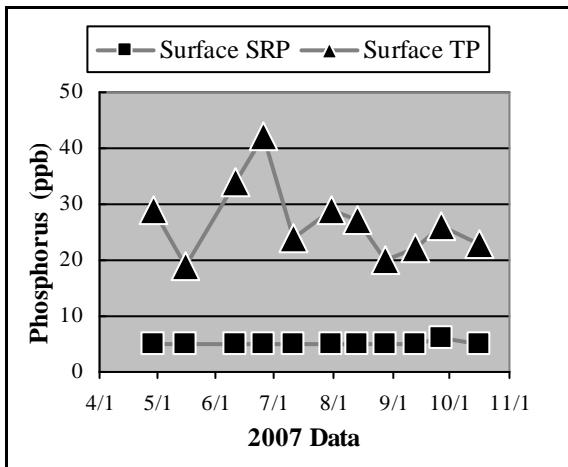
**excludes May Data*



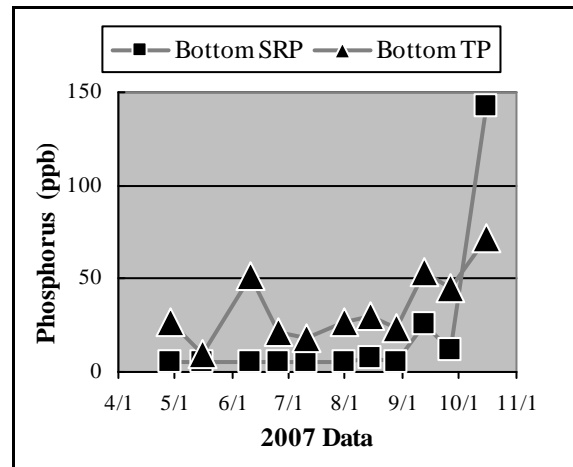
a.



b.

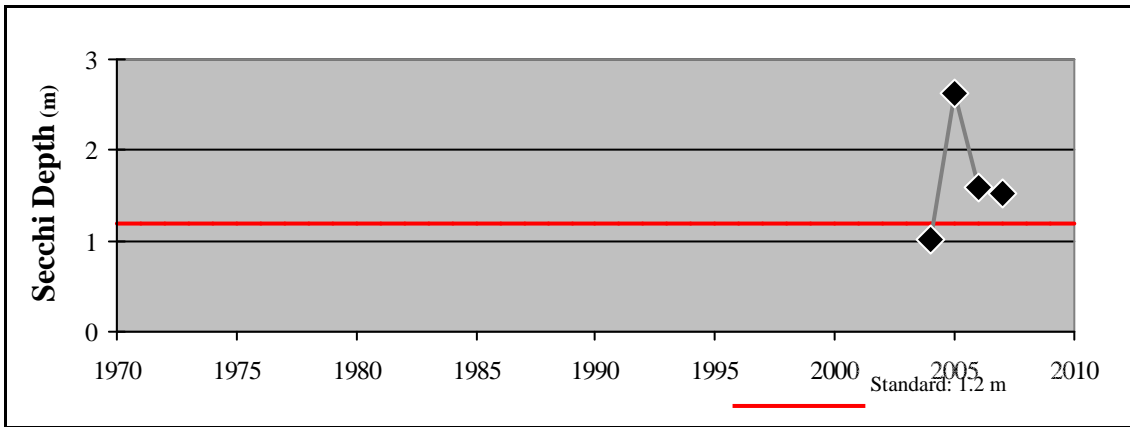


c.

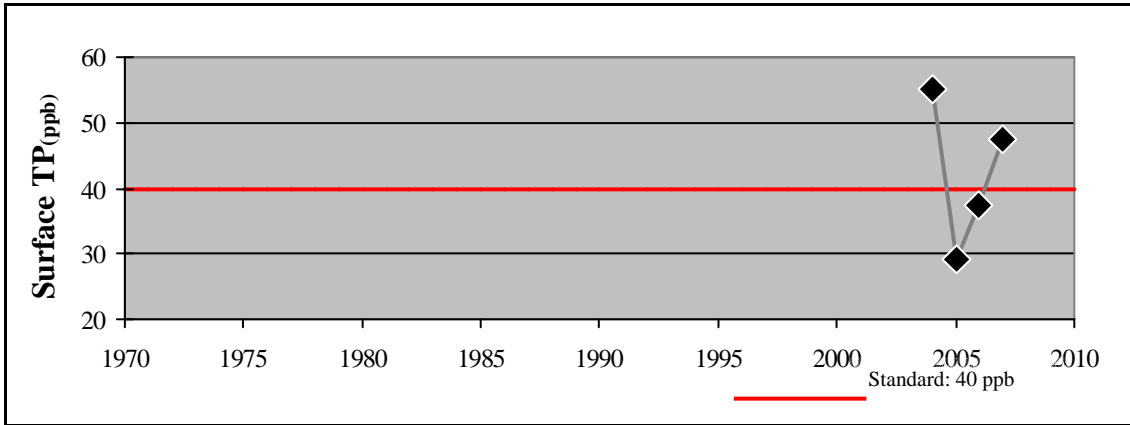


d.

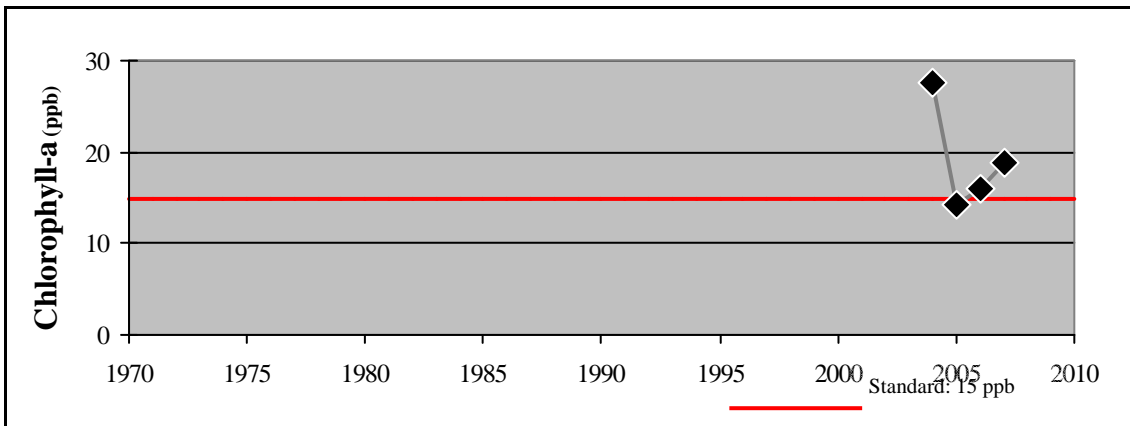
**Figure 2.23 (a-d) Smithtown Bay
2007 Grade: B**



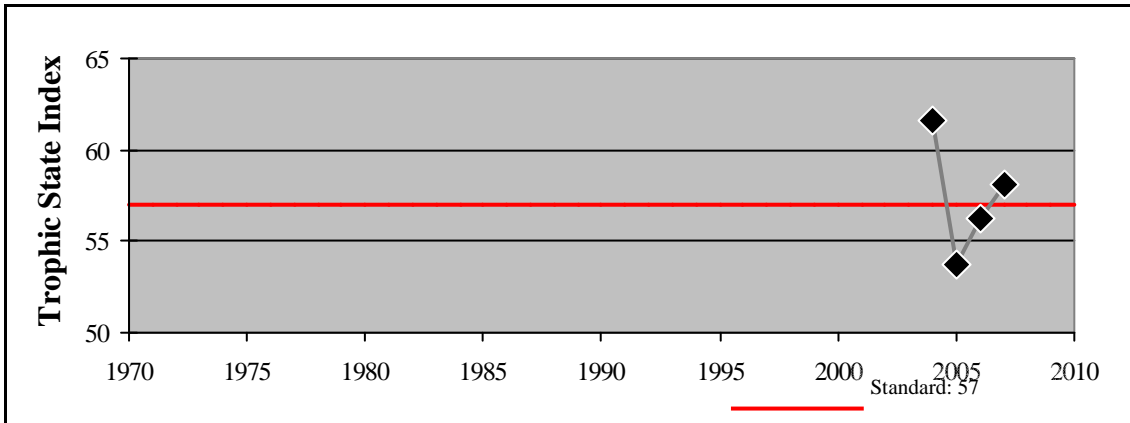
e.



f.



g.



h.

Figure 2.23 (e - h) Smithtown Bay - Summer Mean Values