

MINNEAPOLIS PARK AND RECREATION BOARD
Table 1: WATER QUALITY ANALYSES – 2020, 2021, 2022

<u>Parameter</u>	<u>Desired Reporting Limit</u>	<u>Lab Reporting Limit</u>	<u>Estimated sample/year</u>	<u>Method Number</u>	<u>Unit cost*</u>
<u>Chemical Analyses</u>					
1. Total phosphorus	(<10 ug/L)	_____	762	_____	_____
2. Total dissolved phosphorus	(<10 ug/L)	_____	167	_____	_____
3. Soluble reactive phosphorus	(<3 ug/L)	_____	589	_____	_____
4. Chlorophyll <u>a</u> (<i>pheophytin corrected</i>)	(<0.5ug/L)	_____	214	_____	_____
4a. Spectrophotometric determination				_____	_____
4b. Fluorometric determination				_____	_____
4c. Pheo-a				_____	_____
5. Total Kjeldahl nitrogen	(<0.5 mg/L)	_____	92	_____	_____
6. Total nitrogen(persulfate digestion)	(<0.04 mg/L) ⁽¹⁾	_____	381	_____	_____
7. Ammonia nitrogen	(<0.01 mg/L)	_____	109	_____	_____
8. Nitrate-nitrite nitrogen	(<0.03 mg/L)	_____	265	_____	_____
9. Total suspended solids (TSS)	(< 1 mg/L)	_____	167	_____	_____
10. Total dissolved solids (TDS)	(<5 mg/L)	_____	167	_____	_____
11. Alkalinity	(<5 mg/L CaCO ₃)	_____	109	_____	_____
12. Chloride	(<2 mg/L)	_____	522	_____	_____
13. Silica	(<0.5 mg/L)	_____	139	_____	_____
14. Volatile Suspended Solids (VSS)	(<2 mg/L)	_____	167	_____	_____
15. Sulfate	(<1 mg/L)	_____	155	_____	_____
16. Hardness	(<5 mg/L CaCO ₃)	_____	265	_____	_____
Metals ^{(2) (3)} Metal Digestion (each sample requires digestion)			201	_____	_____
17. Total aluminum	(<0.05 mg/L)	_____	35	_____	_____
18. Dissolved aluminum	(<0.05 mg/L)	_____	35	_____	_____
19. Copper	(<5ug/L)	_____	167	_____	_____
20. Lead	(<3 ug/L)	_____	167	_____	_____
21. Zinc	(<20 ug/L)	_____	167	_____	_____
22. Manganese	(<0.01 mg/L)	_____		_____	_____

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23. Dissolved Iron	(<50 ug/L)	_____	81	_____	_____
24. Total Iron	(<50 ug/L)	_____	81	_____	_____
25. Lab pH		_____		_____	_____
26. Specific conductance	(<10 uhmos)	_____	12	_____	_____
27. DOC	(<0.1 mg/L)	_____	167	_____	_____
28. COD	(<20 mg/L)	_____	167	_____	_____
Occasional Requests					
29. Biological Oxygen Demand – 5 day	(<1 mg/L)	_____		_____	_____
30. Fluoride	(<0.15 mg/L)	_____	6	_____	_____
31. Free Chlorine	(<0.5 mg/L)	_____	6	_____	_____
32. CALCIUM					
a. Calcium (as CaCO3)	(2 mg/L)	_____	6	_____	_____
b. Calcuim	(<0.1 mg/L)	_____		_____	_____
33. MAGNESIUM					
a. Mg (as MgCO3)	(2 mg/L)	_____	12	_____	_____
b. Mg	(<0.1 mg/L)	_____		_____	_____
34. Fat, Oil, Grease (FOG)	(<5 mg/L)	_____	32	_____	_____
Bacteria					
35. Enterococci ⁽⁴⁾			509	_____	_____
Friday sample submittal cost					_____
36. Escherichia Coli ⁽⁴⁾			958	_____	_____
Friday sample submittal cost					_____
37. Pseudomonas aeruginosa ⁽⁴⁾			509	_____	_____
Friday sample submittal cost					_____
38. Ability to process bacteria samples submitted on Fridays within holding times? (Expectation that data may then need to be reported on Saturday)				Yes / No	Explain: _____
Other Services					
39. Flow compositing of storm sewer samples from ISCO sampler bottles delivered to lab for analysis			155 sets		_____
40. Cleaning of ISCO sample bottles ⁽⁵⁾			155 sets		_____

41. Type I reagent-grade de-ionized water ≤ 18 megaohms resistivity; 50 gallons 12 _____
42. Indicate days and times when samples will be accepted (or picked up if not within 15 miles) _____
 If lab is further than 15 miles do you provide a courier (circle) yes / no
 Are courier costs reflected in the cost per sample? Yes / No
 If not, include a cost estimate of total sample courier delivery cost / per year _____
43. Ability of the lab to report results to MPRB within four weeks of sample delivery: _____
44. Ability of lab to report Beach and Webber NSP bacteria data within 28-30 hours or in consultation with MPRB: _____

* Unit cost to include sample containers, delivery of containers from labs outside 15 mile area of client office, preservative, shipment of samples to labs outside 15 mile area of client office, laboratory analysis and lab QA/QC.

- Reporting of results to MPRB - within four weeks of sample delivery.
- Total phosphorus samples can be acidified by MPRB.
- Containers should be new bottles or otherwise suitably prepared by lab.
- Lab must be available for samples acceptance on Fridays.

SAMPLE COLLECTION AND DELIVERY TO LAB BY MPRB PERSONNEL TO LABS WITHIN 15 MILES OF MPRB'S SOUTH MINNEAPOLIS OFFICE; ANALYSIS COSTS SHALL INCLUDE DELIVERY COSTS FOR SHIPMENTS OUTSIDE THE 15 MILE DELIVERY AREA.

Methods notes:

- (1) Alkaline persulfate oxidation method preferred; methodology references available upon request - bidders must specify method.
- (2) Specify either ICP or AA for analysis method
- (3) Metal samples to be acidified upon delivery to lab by vendor. Dissolved metals samples filtered through a 0.45 μm membrane filter prior to acidification by vendor.
- (4) IDEXX Quanti tray preferred
- (5) Cleaning of 24 ISCO bottles per set (HCl and deionized water rinses) and pick-up of cleaned bottles by client or shipped to client at vendor's expense.