

## Water Quality Summary – Meadow Lake 2023

| <b>Parameter</b>      | <b>East Canal</b> | <b>West Canal</b> | <b>Beach</b> | <b>Target Range</b> | <b>Status</b> |
|-----------------------|-------------------|-------------------|--------------|---------------------|---------------|
| <i>Mercury</i>        | 0.095             | 0.116             | <0.007       | <0.41 PPM           | Normal        |
| <i>Arsenic</i>        | 165               | 236               | 4.23         | <57 PPM             | Caution       |
| <i>Copper</i>         | 2120              | 981               | 28.2         | <390 PPM            | Caution       |
| <i>Lead</i>           | 25.5              | 66                | 2.98         | <450 PPM            | Normal        |
| <i>Sodium</i>         | 638               | 592               | 144          | <40 PPM             | Caution       |
| <i>Phosphorous</i>    | 470               | 534               | 174          | <150 PPM            | Caution       |
| <i>Organic Matter</i> | 27.1              | 32.5              | 6.56         | NA*                 | Normal        |

| <b>Parameter</b>          | <b>Deep Hole</b> | <b>Dam</b> | <b>Gala Inlet</b> | <b>Target Range</b> | <b>Status</b> |
|---------------------------|------------------|------------|-------------------|---------------------|---------------|
| <i>Mercury</i>            | 0.166            | 0.149      | 0.219             | <0.41 PPM           | Normal        |
| <i>Arsenic</i>            | 82.8             | 49.7       | 76.3              | <57 PPM             | Caution       |
| <i>Copper</i>             | 1610             | 1170       | 419               | <390 PPM            | Caution       |
| <i>Lead</i>               | 53.6             | 35.2       | 64.7              | <450 PPM            | Normal        |
| <i>Sodium</i>             | 802              | 672        | 379               | <40 PPM             | Caution       |
| <i>Phosphorous</i>        | 755              | 425        | 654               | <150 PPM            | Caution       |
| <i>Organic Matter (%)</i> | 26.7             | 25.1       | 26.7              | NA*                 | Normal        |

● CRITICAL     
 ● CAUTION     
 ● NORMAL     
 ND= NON-DETECT

## Discussion

---

Several parameters did test higher than expected. The main high-risk factors tested lower than the threshold, which is great. Some of the heavy metals did test above the threshold in some locations and normal in others. The copper parameter may see high, however copper based algaecide treatments were done multiple times in the lake this year. A higher reading would be expected due to these treatments. The excess phosphorous in the soil may be a contributing factor to the algal blooms and macroalgae growth that is seen yearly. The Organic Matter amount is above the mark that we like to typically see. However, this is not uncommon to see either. Years of leaf and grass litter, run-off, aquatic life debris, and other various forms of organic material build up and causes the muck to form.

Overall, the lake is mostly normal and there are not any critical results that should cause major concerns. There are some areas of the lake that could benefit from some additional care.

**Heavy Metals:** The target range is provided to create an understanding of the allowable threshold. Any reported number below the target range is normal. Anything above can be a cause for concern.

**Phosphorus:** Is the usable nutrient that aquatic vegetation uses to grow. The target range is the maximum number for normal growth. Anything above that number doesn't indicate a negative factor. It means there is more phosphorus in the system than required for normal growth.

**Organic Matter\*:** This percent indicates how much organic matter vs inorganic matter there is per sample. There is not a threshold for this ratio. However, the larger the amount of organic matter the more likely the bottom sediment has "Muck" characteristics compared to a firm bottom. We have found anything above 10% tends to be the classic "Muck".

Water samples were taken on 8/21/23. Water tests were completed on 8/28/23. This report describes conditions at the time the samples were taken. The quality of the water was tested only to the parameters listed above.

Compiled and Certified by:



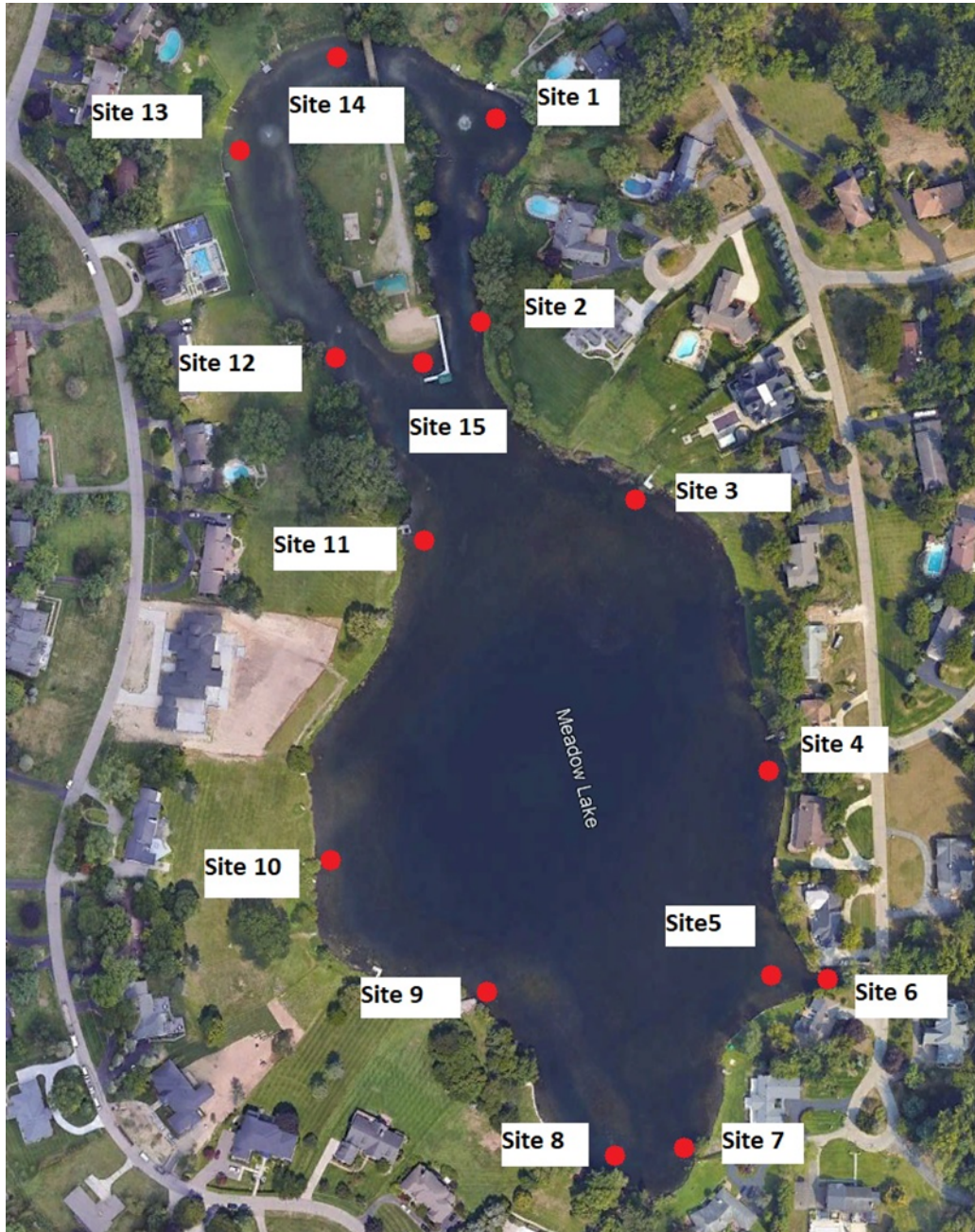
Water Quality Specialist and Environmental Biologist

Date: 9/15/2023

## Meadow Lake Sediment Site Locations



**Meadow Lake Muck Depth Map and Results**



| <u>Site</u> | <u>Depth (Inches)</u> |
|-------------|-----------------------|
| 1           | 24                    |
| 2           | 53                    |
| 3           | 64                    |
| 4           | 41                    |
| 5           | 11                    |
| 6           | 48                    |
| 7           | 3                     |
| 8           | 2                     |
| 9           | 16                    |
| 10          | 21                    |
| 11          | 30                    |
| 12          | 59                    |
| 13          | 2                     |
| 14          | 50                    |
| 15          | 2                     |

|                |             |
|----------------|-------------|
| Average Muck   | 28.7 Inches |
| Maximum Amount | 64 Inches   |
| Minimum Amount | 2 Inches    |