
Technical Memorandum Highlight Sheet

This memo summarizes the ECT report dated February 10, 2016 (attached) documenting the effectiveness of the Energy-Passive Groundwater Recharge Product (EGRP®) to reduce the total runoff from an urban park. This report includes all of the additional data collected in 2015.

The collected data documents that the EGRP® technology significantly increases infiltration, reduces surface water runoff, and does not adversely affect the groundwater quality or level. The Belle Isle location was selected as a test site because of its history of surface water ponding during precipitation events and because the shallow geology of the island is similar to that of a large portion of Detroit and southeast Michigan.

The results of this study document that:

1) ECT observed no standing water at the Test Site once the EGRP® became substantially acclimated.
2) There was no measurable impact on the water quality of the affected groundwater (see Table 1 below).
3) Smaller storms no longer contributed to stormwater runoff from the Test Site (see Figure 6 below).
4) The groundwater elevation was not negatively impacted by the EGRP® installation (see Figure 4 below).
5) The total runoff measured in the storm sewers exiting the Test Area was reduced by 80% (see Figure 6 below).
6) Increased infiltration on the Test Site indicate the upper areas of the soil column (above the storm drain system) in the Test Area became better drained thereby reducing the saturated soils immediately adjacent to the old and permeable drainage network (see Figure 6 below) and had a positive impact on the infiltration contribution at the site.

Figures and Tables from Final Technical Memorandum:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>MDEQ Part 201, Non-residential Drinking Water Criteria</th>
<th>Lake St. Clair Regional Monitoring Project – Median Dry weather (23 sites/16 events) Surface Water</th>
<th>Lake St. Clair Regional Monitoring Project median wet weather (13 sites/10 events) Surface Water</th>
<th>P-2 (Test)</th>
<th>P-4 (Control)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Phosphorus</td>
<td>mg/L</td>
<td>240</td>
<td>0.059</td>
<td>0.14</td>
<td>0.082</td>
<td>0.23</td>
</tr>
<tr>
<td>Chloride</td>
<td>mg/L</td>
<td>250</td>
<td>130</td>
<td>111</td>
<td>670</td>
<td>1,400</td>
</tr>
<tr>
<td>Total Dissolved Solids</td>
<td>mg/L</td>
<td>500</td>
<td>534</td>
<td>420</td>
<td>&lt;40</td>
<td>&lt;40</td>
</tr>
<tr>
<td>E. coli</td>
<td>cfu/100 mL</td>
<td></td>
<td>93</td>
<td>1,333</td>
<td>21</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 1: Groundwater Quality Results – Belle Isle, Michigan
Cumulative Daily Flow (gallons/acre) and Cumulative Precipitation (gallons/acre)

PRE-INSTALLATION:
- Slope of Test flow curve is steeper than precip curve.
- Test flow curve is higher than precip and highly responsive to precip, showing precip is accumulating (not infiltrating) and flow is directly influenced by precip.

POST-INSTALLATION:
- Test flow curve falls below the precip curve indicating EGRP influence.
- Slope of the Test flow trails off while precip continues to rise.

PERFORMANCE:
- Test Flow curve demonstrates additional reduction when compared to precip flow curve as slope levels in comparison.
- The post-acclimation total flow shows an 80% reduction when compared to pre-installation flow, whereas precipitation is greater.

Figure 6: Test Site Cumulative Daily Flow

Groundwater Levels
Test and Control

Control Groundwater: 575.78
Test Groundwater: 573.03
Detroit River:

PRE-INSTALLATION:
- Control & Test Groundwater Elevations

POST-INSTALLATION:
- Test Groundwater elevations continue to decline. No visible mounding of the groundwater elevation occurring on the Test Site.
- Groundwater monitoring equipment removed for data retrieval.

Figure 4: Groundwater and Detroit River Level Elevations