DATE: 3/2/2015

TO: John Rashid, Facilities Management – Assoc. Director (Construction/PM) / Interim Dir.

FROM: Erik Larson, Facilities Management - Sr. Engineer

SUBJECT: Summary of 2014 Inspection of Facilities Management’s Structural Storm Water Devices, Outfalls, and Ponds (UMD SWPPP 6b-2 / 6b-3 / 6b-5)

The annual inspections of the Facilities Management structural storm water devices, approximately 20% of UMD’s outfalls, and UMD ponds per the MPCA’s MS4’s storm water permit MN R580000 were completed this fall. While the majority of our features appear to be operating appropriately, there are a few items that should be addressed. A prioritized summary with recommendations follows. My recommendation is that those described as high priority should be addressed this summer and low priority items maybe deferred and reviewed again this fall to see if they continue to be a problem.

HIGH PRIORITY

ST4903 LSBE North Rain Garden
North inlet has a moderate amount of sediment in the forebay. I recommend cleaning out the sediment before it washes into the rain garden.

ST5146 Lot M Stormceptor
There are 10”-12” of sediment in the Stormceptor. Since this Stormceptor normally takes 2-3 years between cleanings and it was cleaned on 9/13/13 this is most likely from the Malosky Stadium water main break that was repaired on 6/19/2014. FM will clean even though it would normally be Parking’s turn.

ST6213 Chiller Plant Pervious Pavers
The permeable pavers in this area were removed during the repair of the water main break. This area will be repaired spring 2015 as part of the water main repair project.

ST4413 Rain Garden on the North West side of Civil Engineering
Ground cover was removed due to water main break. This area will be replanted spring 2015 as part of the water main repair project.

MEDIUM PRIORITY

ST3143 CUB Rain Garden
There was sand dumped into the rain garden. Cleaned up by the contractor on 11/6/2014.

LOW PRIORITY

ST4373 SCiv Pervious Pavers
The grit between pavers has disappeared. I recommend adding grit to the pavers.

ST4933 LSBE South Rain Garden
The gate in the AgriDrain is down but the water level is down. I recommend investigating water level in the summer for a leaking seal or a short circuit around control structure.
ST5023 Woodland Walk Rain Garden - West

This area should have additional planting in order to better stabilize the rain garden and promote plant transpiration or stormwater. **I recommend adding additional plant material to this rain garden.**

ST5223 Woodland Walk Rain Garden - Middle

There is minor erosion from water runoff. This area should have additional planting in order to better stabilize the rain garden and promote plant transpiration or stormwater. **I recommend adding additional plant material to this rain garden, particularly on the side slopes to help hold the soil/mulch in place.**

ST5233 Woodland Walk Rain Garden - East

This area should have additional planting in order to better stabilize the rain garden and promote plant transpiration or stormwater. **I recommend adding additional plant material to this rain garden.**

ST6090 Lund Building Outfall

The rings on this manhole are starting to deteriorate. **I recommend skim coating the rings to protect from further deterioration, or replacing them if it is determined that they are already too far gone.**

The rest of our structural storm water devices, the outfalls inspected, and the ponds appear to be functioning as intended. **Unless I am directed otherwise, I will proceed to correct the high priority issues under R&R Project 03-500-151018 R&R 15 Storm Water PM. I will take a look at the low priority issues if time and storm water funds allow.**

**Update on last year's issues:**

ST4913 -- Clean out sediment left from CUB project. – Cleaned 05/23/14
ST6193 – Clean out sedimentation basin. – Cleaned 11/14/13
ST1585 – Clean out culvert apron. –Cleaned 11/8/13
ST2913 – Remove silt fence and erosion control netting. –Removed 11/6/13
ST4903 – Clean sediment from forebay. – Medium Priority - Not done – On this year’s list again
ST5715 – Clean inlet of culvert. – Culvert plugged in spring, believed to be crushed under street – City was contacted – They were to look at it, but nothing was done
ST4933 – Investigate water level in AgriDrain. – Low Priority – Not done – On this year’s list again

If you have any questions regarding these inspections please contact me at (218) 726-6915 or elarson@d.umn.edu.

Thanks.

**Enclosures:**

   Inspection Reports:  ST4903
                     ST5146
                     ST6213
                     ST3143
                     ST4413
                     ST4373
                     ST4933
                     ST5023
                     ST5223
                     ST5233
                     ST6090

C:  UMD Storm Water Steering Committee
**STORM WATER INSPECTION FORM**

**Outfall #**: [Blank]  
**Photograph Name**: [Blank]  
**Inspection Date**: 10/25/2014

**Mechanical Structure #**: ST6213  
**Type**: Pervious Pavers

**Location**: North side Chiller Plant  
**Inspector**: Erik J. Larson

**Weather**:  
- Air Temperature: 65°F  
- Rain: [Y] [N]  
- Date of Last Rain: [10/20/2014]  
- Sunny [Cloudy]

**Date of last inspection**: 10/22/2013

**Describe drainage area**: North side Chiller Plant Parking/Delivery Areas

**Shared Use**: [Y] [N]

**Describe**: Parking and Deliveries

### Physical Observations

**Condition of Device**: Good  
- Average  
- Poor  
- Work Needed: [Y] [N]

**Describe Work Needed**: N/A  
**Any Materials Within Structure**: Deteriorating: [Y] [N]

**Releasing Pollution**: [Y] [N]

**Describe**: [Blank]

**Capacity of Pipe**:  
- Size of pipe: N/A  
- Depth of Water: N/A  
- Has Source of Flow Been Determined: [Y] [N]

**Source of Water**: N/A  
**Describe Storage Capacity**: Minimal  
- Less Than Half  
- Greater Than Half  
- Full  
- Amount Remaining: [Blank]

**Flow**: Performing Properly  
- Full  
- Overloaded  
- Clogged  
- Other:

**Work Needed**: [Y] [N]

**Describe**: Vacuum out sediment

**Odor**: None  
- Sewage  
- Sulfide  
- Oil  
- Gas  
- Rancid-Sour  
- Other:

**Color**: Normal  
- Dark Brown  
- Light Brown  
- Other:

**Turbidity**: None  
- Cloudy  
- Suspended Particles  
- Other:

**Water Temperature**: [F]  
- Not Available

**Accumulated Materials**

**Floatables**: None  
- Sheen  
- Foam  
- Sewage  
- Litter  
- Other: Algae  
- Sample Collected: [Y] [N]

**Oil in Oil Port**: [Y] [N]  
**Describe Work Needed**: N/A

**Deposits**: None  
- Sediment  
- Oily  
- Describe: Sample Collected: [Y] [N]

**Depth of Sediment**: N/A  
**Describe Work Needed**: N/A

**Stains**: [Y] [N]  
**Work Needed**: [Y] [N]

**Vegetation Conditions**: Normal  
- Excessive Growth  
- Inhibited Growth  
- Describe:

**Erosion**: None  
- Minor Erosion  
- Major Erosion  
- Erosion Protected  
- Y [N]

**Describe Work Needed**: N/A

**Immediate Work Needed**: [Y] [N]

**Describe**: [Blank]

### Inspection Comments / Recommendations

**Comments / Recommendations**

<table>
<thead>
<tr>
<th>Completed</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Y] [N]</td>
<td>[Blank]</td>
</tr>
</tbody>
</table>

**N 46 48.963**

**W 92 05.013**

Printed - 3/2/2015
University of Minnesota Duluth

STORM WATER INSPECTION FORM

Outfall #: ST6090  Photograph Name: ST6090  Inspection Date: 10/21/2014

Pond Name:  Photograph Name: ST6090  Date of last inspection: 10/19/2010

Mechanical Structure #:  Type:

Location: Lund Bldg, College St.  Inspector: Erik J. Larson

Weather: Air Temperature: 40 Rain: Y N  Date of Last Rain: 10/17/2014 Sunny Cloudy

Date of last inspection: 10/19/2010

Describe drainage area: Lund Roof, Lot B, Lund Lot

Shared Use: Y N  Describe: FM & Parking

Physical Observations

Odor: None Sewage Sulfide Oil Gas Rancid-Sour Other:

Color: None Dark Brown Light Brown Other:

Turbidity: None Cloudy Opaque

Deposits / Stains: None Sediment Oily Describe: Sample Collected: Y N

Depth of Sediment: N/A Measurement: Thin layer on bottom  Remaining Capacity

Describe Work Needed: N/A

Floatables: None Sheen Foam Sewage Litter Other: Sample Collected: Y N

Oil in Oil Port: Y N N/A Measurement: Calulated:

Describe Work Needed: N/A

Vegetation Conditions: Normal Excessive Growth Inhibited Growth Describe:

Describe Work Needed: N/A

Erosion: None Minor Erosion Major Erosion Erosion Protected Y N

Describe Work Needed: N/A

Condition: Good Average Poor  Work Needed: Y N

Describe Work Needed: N/A

Flow: Size of Pipe: 24" Depth of Water: .5" Has Source of Flow Been Determined: Y N

Source of Water: N/A Lund Building / Parking Lot Drain Tiles

Water Temperature: F Not Available

Inspection Comments / Recommendations

Comments / Recommendations  Completed Date

City of Duluth Manhole

Miner flow, looks good  Y N

Minor ring failure  Y N

W 092 04.989  Y N

MPCA Permit Requirements (Annual)

Section V.G.6.b.2-6

* Inspection of structural pollution control devices
* Inspect 20% of outfalls and ponds
* Note repair, replacement, and/or maintenance needed including schedule for completion
* Summarize inspection results for annual report
### STORM WATER INSPECTION FORM

**Outfall # :** 
**Photograph Name :** 
**Inspection Date:** 11/4/2014

**Pond Name:** 
**Date of last inspection:** 10/29/201

**Mechanical Structure # :** ST5223  
**Type:** Rain Garden

**Location:** Woodland Walk

**Inspector:** Erik J. Larson

**Weather:** Air Temperature: 41  
**Rain:** Y N  
**Date of Last Rain:** 11/3/2014 Sunny Cloudy

**Describe drainage area:** Woodland Grand Enterance Walk

**Shared Use:** Y N

### Physical Observations

#### Condition of Device:
- **Good**  
- **Average**  
- **Poor**  
- **N/A**  
- **Work Needed:** Y N

#### Any Materials Within Structure:
- **Deteriorating:** Y N  
- **Describe:**

#### Capapcity of Pipe:
- **Size of pipe:**
- **Depth of Water:**
- **Has Source of Flow Been Determined:** Y N

#### Source of Water:
- **N/A**

#### Flow:
- **Performing Properly**
- **Full**
- **Overloaded**
- **Clogged**
- **Other:**

#### Odor:
- **None**
- **Sewage**
- **Sulfide**
- **Oil**
- **Gas**
- **Rancid-Sour**
- **Other:**

#### Color:
- **Normal**
- **Dark Brown**
- **Light Brown**
- **Other:**

#### Turbidity:
- **None**
- **Cloudy**
- **Suspended Particles**
- **Other:**

#### Water Temperature:
- F
- **Not Available**

### Accumulated Materials

#### Floatables:
- **None**
- **Sheen**
- **Foam**
- **Sewage**
- **Litter**
- **Other:**

#### Oil in Oil Port:
- **Y**
- **N**
- **N/A**

#### Deposits:
- **None**
- **Sediment**
- **Oily**
- **Describe:**

#### Depth of Sediment:
- **N/A**

#### Stains:
- **Y**
- **N**

#### Vegetation Conditions:
- **Normal**
- **Excessive Growth**
- **Inhibited Growth**

#### Erosion:
- **None**
- **Minor Erosion**
- **Major Erosion**
- **Erosion Protected**

#### Immediate Work Needed:
- **Y**
- **N**

#### Next Anticipated Work Date:

### Inspection Comments / Recommendations

**Comments / Recommendations**

- **New Fall 2013**
- **Completed**
- **Date**
- **Y**
- **N**

- **Additional Planting needed**
- **Minor Erosion Clean out sand**

- **N 46 49.083**
- **W 92 04.784**
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<thead>
<tr>
<th>Physical Observations</th>
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<tbody>
<tr>
<td><strong>Condition of Device:</strong></td>
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<td>Deteriorating</td>
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<tr>
<td><strong>Releasing Pollution:</strong></td>
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<td>N</td>
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<td><strong>Depth of Water:</strong></td>
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</tr>
<tr>
<td><strong>Work Needed:</strong></td>
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<td>N</td>
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<tr>
<td><strong>Odor:</strong></td>
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<tr>
<td><strong>Color:</strong></td>
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<tr>
<td><strong>Turbidity:</strong></td>
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</tr>
<tr>
<td><strong>Water Temperature:</strong></td>
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<tr>
<td><strong>Accumulated Materials:</strong></td>
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<td></td>
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<tr>
<td><strong>Floatables:</strong></td>
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<tr>
<td><strong>Oil in Oil Port:</strong></td>
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</tr>
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<td><strong>Measurement:</strong></td>
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<tr>
<td><strong>Deposit:</strong></td>
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<tr>
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<td><strong>Measurement:</strong></td>
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<td>N</td>
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<td><strong>Vegetation Conditions:</strong></td>
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<tr>
<td><strong>Erosion:</strong></td>
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<tr>
<td><strong>Immediate Work Needed:</strong></td>
<td>Y</td>
<td>N</td>
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<tr>
<td><strong>Inspection Comments / Recommendations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outlet pipe has 1/2&quot; water</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Needs to be cleaned</strong></td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td><strong>Water Main break</strong></td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

**Sample Collected:**

**Measurement:**

**Remaining Capacity:**

**Next Anticipated Work Date:**

**Completed** | **Date**
--- | ---
Y | 10/16/2014
Y | 10/29/2013
Y | 10/13/2014
Y | 10/29/2013
Y | 10/13/2014
### STORM WATER INSPECTION FORM

**Outfall #:** ____________________________  **Photograph Name:** 13-ST5023  **Inspection Date:** 11/4/2014

**Pond Name:** ____________________________  **Date of last inspection:** 10/29/2013

**Mechanical Structure #:** ST5023  **Type:** Rain Garden

**Location:** Woodland Walk

**Inspector:** Erik J. Larson

**Weather:**
- **Air Temperature:** 41
- **Rain:** Y N
- **Date of Last Rain:** 11/3/2014 Sunny Cloudy

**Describe drainage area:** Woodland Grand Entrance walk

**Shared Use:** Y N

### Physical Observations

<table>
<thead>
<tr>
<th>Condition of Device:</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
<th>Work Needed:</th>
<th>Y N</th>
</tr>
</thead>
</table>

**Describe Work Needed:**

**Any Materials Within Structure:** Deteriorating: Y N

**Describe:**

**Releasing Pollution:** Y N

**Has Source of Flow Been Determined:** Y N

<table>
<thead>
<tr>
<th>Capacity of Pipe:</th>
<th>Size of pipe:</th>
<th>Depth of Water:</th>
<th>Has Source of Flow Been Determined:</th>
<th>Y N</th>
</tr>
</thead>
</table>

**Source of Water:** N/A

**Describe Storage Capacity:** Minimal | Less Than Half | Greater Than Half | Full | Amount Remaining: ________

**Flow:** Performing Properly | Full | Overloaded | Clogged | Other: Other: ________

**Work Needed:** Y N

**Describe:**

**Odor:** None | Sewage | Sulfide | Oil | Gas | Rancid-Sour | Other: Other: ________

**Color:** Normal | Dark Brown | Light Brown | Other: Other: ________

<table>
<thead>
<tr>
<th>Turbidity:</th>
<th>None</th>
<th>Cloudy</th>
<th>Suspended Particles</th>
<th>Other: Other: ________</th>
</tr>
</thead>
</table>

**Water Temperature:** F | Not Available

### Accumulated Materials

**Floatables:** None | Sheen | Foam | Sewage | Litter | Other | Sample Collected: Y N

**Oil in Oil Port:** Y N N/A

**Describe Work Needed:** N/A

**Measurement:** Calculated: ________

**Deposits:** None | Sediment | Oily | Describe: Describe: Sample Collected: Y N

**Depth of Sediment:** N/A

**Describe Work Needed:** N/A

**Measurement:** Remaining Capacity ________

**Stains:** Y N

**Work Needed:** Y N

**Describe:**

**Vegetation Conditions:** Normal | Excessive Growth | Inhibited Growth | Describe: Describe: ________

**Erosion:** None | Minor Erosion | Major Erosion | Erosion Protected | Y N

**Describe Work Needed:** N/A

### Inspection Comments / Recommendations

**Comments / Recommendations**

- **New Fall 2013**
  - Needs Additional Planting

- **N 46 49.076**
  - W 92 04.812
## Storm Water Inspection Form

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Outfall #</td>
<td></td>
</tr>
<tr>
<td>Photograph Name</td>
<td></td>
</tr>
<tr>
<td>Inspection Date</td>
<td>11/04/14</td>
</tr>
<tr>
<td>Pond Name</td>
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</tr>
<tr>
<td>Date of last inspection</td>
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<td>Type</td>
<td>Rain Garden</td>
</tr>
<tr>
<td>Location</td>
<td>LSBE South side</td>
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<tr>
<td>Inspector</td>
<td>Erik J. Larson</td>
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<tr>
<td>Weather</td>
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<tr>
<td>Air Temperature</td>
<td>41</td>
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<tr>
<td>Rain</td>
<td>Y</td>
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<tr>
<td>Date of Last Rain</td>
<td>11/4/2014</td>
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<tr>
<td>Describe drainage area</td>
<td>LSBE/Kirby Drive</td>
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<tr>
<td>Shared Use</td>
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<td>11/04/14</td>
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<tr>
<td>Weather</td>
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### Physical Observations

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<tr>
<th>Condition of Device</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
<th>Work Needed: Y</th>
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<tbody>
<tr>
<td>Describe Work Needed</td>
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<tr>
<td>Investigate why water is not being stored behind Agradrain</td>
<td>_</td>
<td>_</td>
<td>_</td>
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<td>_</td>
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<tr>
<td>Any Materials Within Structure</td>
<td>Deteriorating: Y</td>
<td>N</td>
<td>Describe:</td>
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<tr>
<td>Releasing Pollution</td>
<td>Y</td>
<td>N</td>
<td>Describe:</td>
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</table>

### Capacity of Pipe

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<tr>
<td>Has Source of Flow Been Determined</td>
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### Flow

<table>
<thead>
<tr>
<th>Flow</th>
<th>Performing Properly</th>
<th>Full</th>
<th>Overloaded</th>
<th>Clogged</th>
<th>Other:</th>
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<tbody>
<tr>
<td>Work Needed</td>
<td>Y N</td>
<td></td>
<td></td>
<td></td>
<td></td>
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### Odor

<table>
<thead>
<tr>
<th>Odor</th>
<th>None</th>
<th>Sewage</th>
<th>Sulfide</th>
<th>Oil</th>
<th>Gas</th>
<th>Rancid-Sour</th>
<th>Other:</th>
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<tbody>
<tr>
<td>Describe:</td>
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### Color

<table>
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<th>Dark Brown</th>
<th>Light Brown</th>
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<tbody>
<tr>
<td>Describe:</td>
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</table>

### Turbidity

<table>
<thead>
<tr>
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<th>Cloudy</th>
<th>Suspended Particles</th>
<th>Other:</th>
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<tr>
<td>Describe:</td>
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### Water Temperature

<table>
<thead>
<tr>
<th>Water Temperature</th>
<th>F</th>
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<tbody>
<tr>
<td>Describe:</td>
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### Accumulated Materials

<table>
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<tr>
<th>Floatables</th>
<th>None</th>
<th>Sheen</th>
<th>Foam</th>
<th>Sewage</th>
<th>Litter</th>
<th>Other:</th>
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<tbody>
<tr>
<td>Describe Work Needed:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil in Oil Port</td>
<td>Y N</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Measurement:</td>
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<tr>
<td>Sample Collected:</td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Deposits</th>
<th>None</th>
<th>Sediment</th>
<th>Oily</th>
<th>Describe:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of Sediment:</td>
<td>N/A</td>
<td></td>
<td></td>
<td>Remaining Capacity</td>
<td>N/A</td>
</tr>
<tr>
<td>Describe Work Needed:</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Stains</th>
<th>Y N</th>
<th>Work Needed:</th>
<th>Y N</th>
<th>Describe:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetation Conditions:</td>
<td>Normal</td>
<td>Excessive Growth</td>
<td>Inhibited Growth</td>
<td>Describe:</td>
</tr>
<tr>
<td>Describe Work Needed:</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Erosion</th>
<th>None</th>
<th>Minor Erosion</th>
<th>Major Erosion</th>
<th>Erosion Protected</th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe Work Needed:</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

### Immediate Work Needed:

<table>
<thead>
<tr>
<th>Immediate Work Needed:</th>
<th>Y N</th>
<th>Describe:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Next Anticipated Work Date:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Inspection Comments / Recommendations

**Comments / Recommendations**

Reconstruction 2010

Area by outlet wet standing water from building sump pumps frequent discharge

Investigate why water is not being stored behind Agradrain

N 46 49.179
W 92 05.116
University of Minnesota Duluth

STORM WATER INSPECTION FORM

Outfall #: __________________________ Photograph Name: __________________________ Inspection Date: 11/4/2014

Pond Name: __________________________ Date of last inspection: 10/22/2013

Mechanical Structure #: ST4903 Type: Rain Garden

Location: LSBE North Side-North RG

Inspector: Erik J. Larson

Weather: Air Temperature: 41 Rain: Y N Date of Last Rain: 11/4/14 Sunny Cloudy

Describe drainage area: LSBE/Kirby Drive

Shared Use: Y N Describe:

Physical Observations

Condition of Device: Good Average Poor Work Needed: Y N

Any Materials Within Structure: Deteriorating: Y N Describe:

Releasing Pollution: Y N Describe:

Capacity of Pipe: Size of pipe: N/A Depth of Water: N/A Has Source of Flow Been Determined: Y N

Source of Water: N/A

Describe Storage Capacity: Minimal Less Than Half Greater Than Half Full Amount Remaining:

Flow: Performing Properly Full Overloaded Clogged Other:

Work Needed: Y N Describe:

Odor: None Sewage Sulfide Oil Gas Rancid-Sour Other:

Color: Normal Dark Brown Light Brown Other:

Turbidity: None Cloudy Suspended Particles Other:

Water Temperature: F Not Available

Accumulated Materials

Floatables: None Sheen Foam Sewage Litter Other Sample Collected: Y N

Oil in Oil Port: Y N N/A Measurement: Calculated:

Describe Work Needed:

Deposits: None Sediment Oily Describe: Sediment in forebay Sample Collected: Y N

Depth of Sediment: N/A Measurement: Remaining Capacity

Describe Work Needed: N/A Clean up sediment

Stains: Y N Work Needed: Y N Describe:

Vegetation Conditions: Normal Excessive Growth Inhibited Growth Describe:

Describe Work Needed: N/A

Erosion: None Minor Erosion Major Erosion Erosion Protected Y N

Describe Work Needed: N/A

Immediate Work Needed: Y N Describe: Sediment in forebay should be scooped out

Next Anticipated Work Date: Spring 2014

Inspection Comments / Recommendations

Comments / Recommendations

Completed Date

Rebuilt 2010, built in 2008 Y N

North inlet rock has sediment, needs cleaning Y N Y N

N 46 49.235
W 92 05.067

Printed - 1/6/2015
STORM WATER INSPECTION FORM

Outfall #: ______________________ Photograph Name: ___________________ Inspection Date: 11/4/2014

Pond Name: ___________________ Date of last inspection: 10/29/2013

Mechanical Structure #: ST4413 Type: Rain garden/ Native Planting Areas

Location: North/West side of CE Building

Inspector: Erik J. Larson


Describe drainage area: CE Roof (Green roof)/ CE Sidewalks

Shared Use: Y N Describe: ________________________________

Physical Observations

Condition of Device: Good Average Poor Work Needed: Y N

Describe Work Needed: N/A

Any Materials Within Structure: Deteriorating: Y N Describe:

Releasing Pollution: Y N Describe:

Capacity of Pipe: Size of pipe: N/A Depth of Water: N/A Has Source of Flow Been Determined: Y N

Source of Water: N/A

Describe Storage Capacity: Minimal Less Than Half Greater Than Half Full Amount Remaining: __________

Flow: Performing Properly Full Overloaded Clogged Other: Y N Describe:

Work Needed: Y N

Odor: None Sewage Sulfide Oil Gas Rancid-Sour Other: 

Color: Normal Dark Brown Light Brown Other: 

Turbidity: None Cloudy Suspended Particles Other: 

Water Temperature: F Not Available

Accumulated Materials

Floatables: None Sheen Foam Sewage Litter Other: Sample Collected: Y N

Oil in Oil Port: Y N N/A Measurement: Calculated: ______________

Describe Work Needed: N/A

Deposits: None Sediment Oily Describe: Sample Collected: Y N

Depth of Sediment: N/A Measurement: Remaining Capacity ______________

Describe Work Needed: N/A

Stains: Y N Work Needed: Y N Describe: Concrete splatter

Vegetation Conditions: Normal Excessive Growth Inhibited Growth Describe:

Describe Work Needed: N/A

Erosion: None Minor Erosion Major Erosion Erosion Protected Y N

Describe Work Needed: N/A

Immediate Work Needed: Y N Describe: 

Next Anticipated Work Date: 

Inspection Comments / Recommendations

Comments / Recommendations

Completed Date

Installed 2009 Y N

WaterMain Break Y N

Watch for sedimentation next year Y N

Replant Spring 2015 Y N

N 46 49.243 W 92 04.989
# STORM WATER INSPECTION FORM

**Outfall #:**  
**Photograph Name:** 11-ST4373  
**Inspection Date:** 11/4/2014  
**Pond Name:**  
**Mechanical Structure #:** ST4373  
**Type:** Pervious Pavers  
**Location:** Sciv  
** Inspector:** Erik J. Larson

**Weather:**  
- **Air Temperature:** 41  
- **Rain:** Y N  
- **Date of Last Rain:** 11/4/2014  
- **Date of Last Inspection:** 10/29/2013  
- **Weather Conditions:** Sunny Cloudy

**Describe drainage area:**

<table>
<thead>
<tr>
<th>Shared Use</th>
<th>Y N</th>
<th>Describe:</th>
</tr>
</thead>
</table>

**Physical Observations**

**Condition of Device:** Good

**Work Needed:** Y N

**Any Materials Within Structure:** Deteriorating

**Describe:**

**Releasing Pollution:** Y N

**Describe:**

**Capacity of Pipe:**

- **Size of Pipe:**
- **Depth of Water:**

**Has Source of Flow Been Determined:** Y N

**Source of Water:** N/A

**Describe Storage Capacity:** Minimal

**Less Than Half**

**Greater Than Half**

**Full**

<table>
<thead>
<tr>
<th>Amount Remaining:</th>
</tr>
</thead>
</table>

**Flow:**

- **Performing Properly**
- **Overloaded**

**Clogged**

**Other**

**Work Needed:** Y N

**Describe:**

From Concrete

**Odor:**

- **None**
- **Sewage**
- **Sulfide**
- **Oil**
- **Gas**
- **Rancid-Sour**
- **Other:**

**Color:**

- **Normal**
- **Dark Brown**
- **Light Brown**
- **Other:**

**Turbidity:**

- **None**
- **Cloudy**
- **Suspended Particles**
- **Other:**

**Water Temperature:**

F Not Available

**Accumulated Materials**

**Floatables:**

- **None**
- **Sheen**
- **Foam**
- **Sewage**
- **Litter**
- **Other**

**Sample Collected:** Y N

<table>
<thead>
<tr>
<th>Oil in Oil Port</th>
<th>Y N</th>
<th>Measurement:</th>
</tr>
</thead>
</table>

**Describe Work Needed:** N/A

**Deposits:**

- **None**
- **Sediment**
- **Oily**

**Describe:**

**Sample Collected:** Y N

<table>
<thead>
<tr>
<th>Depth of Sediment</th>
<th>N/A</th>
<th>Measurement:</th>
</tr>
</thead>
</table>

**Describe Work Needed:** N/A

**Stains:**

- **Y N**

**Work Needed:** Y N

**Describe:** Minor from construction

**Vegetation Conditions:**

- **Normal**
- **Excessive Growth**
- **Inhibited Growth**

**Describe:**

**Erosion:**

- **None**
- **Minor Erosion**
- **Major Erosion**
- **Erosion Protected**

**Describe Work Needed:** N/A

**Immediate Work Needed:** Y N

**Describe:**

**Next Anticipated Work Date:**

**Inspection Comments / Recommendations**

- **Concrete splatter under dumpster**
- **See loading dock**
- **Fill Surface with grit**

<table>
<thead>
<tr>
<th>Comments / Recommendations</th>
<th>Completed</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete splatter under dumpster</td>
<td>Y N</td>
<td></td>
</tr>
<tr>
<td>See loading dock</td>
<td>Y N</td>
<td></td>
</tr>
<tr>
<td>Fill Surface with grit</td>
<td>Y N</td>
<td></td>
</tr>
</tbody>
</table>

N 46 49.209
W 92 04.917
# Storm Water Inspection Form

**Outfall #**:                      **Photograph Name**:                      **Inspection Date**: 11/04/14

**Pond Name**:                      **Date of last inspection**: 10/22/13

**Mechanical Structure #**: ST-3143   **Type**: Cobalt Rain Garden

**Location**: Substation across from parking lot S-1

**Inspector**: Erik J. Larson

**Weather**: Air Temperature: 41° Rain: Y N  Date of Last Rain: 11/3/2014  Sunny  Cloudy

**Describe drainage area**: Substation and driveway

**Shared Use**: Y N

## Physical Observations

**Condition of Device**: Good  Average  Poor  Work Needed: Y N

Any Materials Within Structure: Deteriorating: Y N  Describe:

Releasing Pollution: Y N  Describe:

**Capacity of Pipe**: Size of pipe: N/A  Depth of Water: N/A  Has Source of Flow Been Determined: Y N

Source of Water: N/A

**Describe Storage Capacity**: Minimal  Less Than Half  Greater Than Half  Full  Amount Remaining: __________

**Flow**: Performing Properly  Full  Overloaded  Clogged  Other: __________

Work Needed: Y N  Describe:

**Odor**: None  Sewage  Sulfide  Oil  Gas  Rancid-Sour  Other: __________

**Color**: Normal  Dark Brown  Light Brown  Other: __________

**Turbidity**: None  Cloudy  Suspended Particles  Other: __________

**Water Temperature**: __________  F  Not Available

## Accumulated Materials

**Floatables**: None  Sheen  Foam  Sewage  Litter  Other: Sample Collected: Y N

Oil in Oil Port: Y N  N/A  Measurement: __________  Calculated: __________

Describe Work Needed: N/A

**Deposits**: None  Sediment  Oily  Describe: Sample Collected: Y N

Depth of Sediment: N/A  Measurement: __________  Remaining Capacity __________

Describe Work Needed: N/A

**Stains**: Y N  Work Needed: Y N  Describe:

**Vegetation Conditions**: Normal  Excessive Growth  Inhibited Growth  Describe:

Describe Work Needed: N/A

**Erosion**: None  Minor Erosion  Major Erosion  Erosion Protected  Y N ?

Describe Work Needed: N/A

**Immediate Work Needed**: Y N  Describe: Cut down tansy

## Inspection Comments / Recommendations

Comments / Recommendations

Invasive thistles

| N 46 49.316 | W 92 05.083 |

Completed  Date
Y  N  __________
Y  N  __________
Y  N  __________