Long Term Control Plan
Annual Post Construction Monitoring
Status Report
Reporting Period: July 2019 through June 2020
Amended Administrative Order
CWA-02-2014-3033
(Amends CWA-02-2012-3024)

September 2020
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A. RTC Monthly Performance Report
B. RTC Performance Measurements Email
1. INTRODUCTION

The Buffalo Sewer Authority (Authority) received approval of its Long Term Control Plan (LTCP) from the United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (NYSDEC) on March 18, 2014. The Authority entered into an Amended Administrative Order on April 16, 2014 (herein after referred to as the AO), with the USEPA. This AO establishes a schedule for implementation of the Authority’s LTCP, approved by the USEPA and NYSDEC.

The AO in part requires that the Authority submit written Annual Post Construction Monitoring (PCM) Status Reports to the USEPA and NYSDEC to be included with the Semi-Annual Status Report.

This report covers July 2019 through June 2020 which serves as Annual PCM Report No. 4.

2. DISCUSSION OF PCM TASKS BEGUN OR COMPELTED

Post construction monitoring of the Bird, Lang and Smith St. Real-Time Control (RTC) projects has continued in the last reporting period. For Bird and Lang RTCs, the number of SPP events and volume of overflow that the structures have prevented is being monitored. For Smith St. RTC, the total volume captured is being recorded. The monthly performance reports for the reporting period are included in Appendix A.

Post construction monitoring of Hazelwood, North Bailey, and Hertel at Deer RTC projects commenced in the last reporting period. The number of SPP events and volume of overflow that the structures have prevented is being monitored. The monthly performance reports for the reporting period are included in Appendix A.

Monthly KPI reports for Lang RTC were combined with Hazelwood RTC starting in August 2019. Operations at Hazelwood RTC are triggered by depth immediately upstream of the Lang RTC. In general, the Hazelwood RTC will start storing when the depth at Lang indicates wet weather flow. The Lang RTC control is based on the depth at the downstream SPP. In general, the Lang RTC will start storing when the depth at the SPP indicates wet weather flow.

Flow metering for the model calibration project has been used for preconstruction monitoring of the Willert Park Green Infrastructure project. Meters located in the sewershed have been reinstalled for post construction monitoring of the green infrastructure project. Monitoring will continue until April 2021 and analysis of results should be complete in summer 2021.

The Authority performs post-demolition inspections to ensure that vacant lots have had all impervious surfaces removed. In the reporting period, the Authority performed 1,251 post-demolition inspections.
3. RESULTS OF PCM EFFORTS

During the reporting period, a total of 56 SPP overflow events, or approximately 92.9 million gallons of overflow, have been prevented by the Bird, Lang, Hazelwood, North Bailey, and Hertel at Deer RTC projects. Since June 2017, a total of 153 SPP overflow events or approximately 201.4 million gallons of overflow, has been prevented by the Bird, Lang, Hazelwood, North Bailey, and Hertel at Deer RTC projects.

In October 2018, an email was sent to DEC & EPA with a detailed explanation of how we measure the performance of the RTCs. This email is provided in Attachment B.

The functionality of the Smith St. RTC differs from the other RTCs. It intercepts flows and sends them to the interceptor rather than just storing flows in-line. Upstream of the Smith St RTC are 41 SPPs that overflow into the Smith St. RTC storage area. These flows are now sent to the South Interceptor rather than the Buffalo River. During the reporting period, a total of 1,647.6 million gallons of overflow was captured by the Smith St. RTC project. Since July 2018, a total of 2,475.8 million gallons of overflow has been captured by the Smith St. RTC project.

4. MODEL UPDATES COMPLETED

The model calibration report has been completed and submitted for review. BSA is awaiting final approval of the report.

5. CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Oluwole A. McFoy, P.E., General Manager

Date
April 2020
Hertel at Deer RTC
KPI Report
# Prevented SPP Events

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/19/2020</td>
<td>3,883,334</td>
<td>100%</td>
</tr>
<tr>
<td>4/21/2020</td>
<td>186,938</td>
<td>100%</td>
</tr>
<tr>
<td>4/26/2020</td>
<td>935,711</td>
<td>100%</td>
</tr>
<tr>
<td>4/30/2020</td>
<td>3,902,397</td>
<td>100%</td>
</tr>
</tbody>
</table>

# Prevented SPP Volume

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/19/2020</td>
<td>3,883,334</td>
<td>100%</td>
</tr>
<tr>
<td>4/21/2020</td>
<td>186,938</td>
<td>100%</td>
</tr>
<tr>
<td>4/26/2020</td>
<td>935,711</td>
<td>100%</td>
</tr>
<tr>
<td>4/30/2020</td>
<td>3,902,397</td>
<td>100%</td>
</tr>
</tbody>
</table>

- **Number of Prevented SPP Overflow Events:** 4, 100%
- **Number of Occurred SPP Overflow Events:** 0, 0%
### RTC Storage Performance

<table>
<thead>
<tr>
<th>Depth, ft</th>
<th>Date/Time</th>
<th>Hertel North RTC Upstream Level (ft)</th>
<th>Hertel South RTC Upstream Level (ft)</th>
<th>Depth at SPP (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4/19/2020 13:20</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>1</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>2</td>
<td>4/19/2020 22:36</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>3</td>
<td>4/20/2020 3:24</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>4</td>
<td>4/20/2020 8:12</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>5</td>
<td>4/20/2020 13:00</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>6</td>
<td>4/20/2020 17:48</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>7</td>
<td>4/20/2020 22:36</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td>8</td>
<td>4/21/2020 3:24</td>
<td>8.0</td>
<td>8.0</td>
<td>8.0</td>
</tr>
<tr>
<td>9</td>
<td>4/21/2020 8:12</td>
<td>9.0</td>
<td>9.0</td>
<td>9.0</td>
</tr>
<tr>
<td>10</td>
<td>4/21/2020 13:00</td>
<td>10.0</td>
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<td>10.0</td>
</tr>
</tbody>
</table>

### RTC Gate Performance

<table>
<thead>
<tr>
<th>Gate Position, Percent Open</th>
<th>Date/Time</th>
<th>Hertel North RTC Gate 1 Position (percent)</th>
<th>Hertel North RTC Gate 2 Position (percent)</th>
<th>Hertel South RTC Gate 1 Position (%)</th>
<th>Hertel South RTC Gate 2 Position (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>4/19/2020 13:20</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>1.0</td>
<td>4/19/2020 17:48</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>2.0</td>
<td>4/19/2020 22:36</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>3.0</td>
<td>4/20/2020 3:24</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>4.0</td>
<td>4/20/2020 8:12</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>5.0</td>
<td>4/20/2020 13:00</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>6.0</td>
<td>4/20/2020 17:48</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>7.0</td>
<td>4/20/2020 22:36</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td>8.0</td>
<td>4/21/2020 3:24</td>
<td>8.0</td>
<td>8.0</td>
<td>8.0</td>
<td>8.0</td>
</tr>
<tr>
<td>9.0</td>
<td>4/21/2020 8:12</td>
<td>9.0</td>
<td>9.0</td>
<td>9.0</td>
<td>9.0</td>
</tr>
<tr>
<td>10.0</td>
<td>4/21/2020 13:00</td>
<td>10.0</td>
<td>10.0</td>
<td>10.0</td>
<td>10.0</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Rainfall (in.)</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>4/19/2020 13:20</td>
</tr>
<tr>
<td>0.1</td>
<td>4/19/2020 17:48</td>
</tr>
<tr>
<td>0.2</td>
<td>4/19/2020 22:36</td>
</tr>
<tr>
<td>0.3</td>
<td>4/20/2020 3:24</td>
</tr>
<tr>
<td>0.4</td>
<td>4/20/2020 8:12</td>
</tr>
<tr>
<td>0.5</td>
<td>4/20/2020 13:00</td>
</tr>
<tr>
<td>0.6</td>
<td>4/20/2020 17:48</td>
</tr>
<tr>
<td>0.7</td>
<td>4/20/2020 22:36</td>
</tr>
<tr>
<td>0.8</td>
<td>4/21/2020 3:24</td>
</tr>
<tr>
<td>0.9</td>
<td>4/21/2020 8:12</td>
</tr>
<tr>
<td>1.0</td>
<td>4/21/2020 13:00</td>
</tr>
</tbody>
</table>

### Analysis

- **Site:** Hertel at Deer RTC
- **Analysis Date:** 5/8/2020
- **Event Start Date/Time:** 4/19/2020 13:20
- **Event End Date/Time:** 4/21/2020 3:45
- **Total Rainfall Accumulation:** 0 in.
- **Storm Event Duration:** 38 hr.
- **Storm Type:** N/A

**Recommended Operational Changes/Notes:**

No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.
April 21, 2020

<table>
<thead>
<tr>
<th>Site: Hertel at Deer RTC</th>
<th>Analysis Date: 5/8/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time All Gates Returned to Normal: 4/22/2020 1:00</td>
<td>Event End Date/Time: 4/22/2020 1:00</td>
</tr>
<tr>
<td>Gate Activation Trigger Depth: 1.55 (South Side) ft.</td>
<td></td>
</tr>
<tr>
<td>Return to Normal Depth: 1.04 (South Side) ft.</td>
<td></td>
</tr>
<tr>
<td>Minimum Distance to Top of Weir: 4.69 ft.</td>
<td></td>
</tr>
<tr>
<td>Volume Stored: 186,938 Gal.</td>
<td></td>
</tr>
<tr>
<td>Unused Storage Volume: 3,709,280 Gal.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percent Capture</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overflow Volume:</td>
<td>0 Gal.</td>
</tr>
<tr>
<td>Overflow Volume Prevented:</td>
<td>186,938 Gal.</td>
</tr>
<tr>
<td>SPP Activation Prevented:</td>
<td>Yes</td>
</tr>
<tr>
<td>If No, what is the overflow volume when storage was available upstream?</td>
<td>NA Gal.</td>
</tr>
<tr>
<td>If No, could SPP activation have been prevented?</td>
<td>NA</td>
</tr>
</tbody>
</table>

**RTC Storage Performance**

**RTC Gate Performance**

**Rainfall Accumulation**

**Recommended Operational Changes/Notes:**
No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.
### Analysis Date:
5/8/2020

### Event Start Date/Time:
4/26/2020 3:00

### Event End Date/Time:
4/29/2020 2:35

### Storm Event Duration:
72 hr.

### Storm Type:
Less than 1 year

### Site:
Hertel at Deer RTC

### Analyst Name, Organization:
Rucha Shah, Arcadis

### Total Rainfall Accumulation:
0.4 in.

### Percent Capture:
100%

### Overflow Volume:
0 Gal.

### Overflow Volume Prevented:
935,711 Gal.

### SPP Activation Prevented:
Yes

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Hertel North RTC Upstream Level (ft)</th>
<th>Hertel South RTC Upstream Level (ft)</th>
<th>Depth at SPP (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/26/2020 2:30</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>4/26/2020 14:30</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>4/27/2020 2:30</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>4/28/2020 2:30</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Hertel North Weir Height (ft)</th>
<th>Hertel South Weir Height (ft)</th>
<th>SPP Weir Height (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/26/2020 2:30</td>
<td>0.0</td>
<td>0.0</td>
<td>0.1</td>
</tr>
<tr>
<td>4/26/2020 14:30</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>4/27/2020 2:30</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>4/28/2020 2:30</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/26/2020 2:26</td>
<td>0.0</td>
</tr>
<tr>
<td>4/26/2020 14:29</td>
<td>0.1</td>
</tr>
<tr>
<td>4/27/2020 2:29</td>
<td>0.3</td>
</tr>
<tr>
<td>4/27/2020 14:29</td>
<td>0.4</td>
</tr>
<tr>
<td>4/28/2020 2:28</td>
<td>0.5</td>
</tr>
</tbody>
</table>

### Minimum Distance to Top of Weir:
3.26 ft.

### Time All Gates Active:
4/26/2020 3:00

### Time All Gates Returned to Normal:
4/29/2020 2:35

### Gate Activation Trigger Depth:
1.51 (South Side) ft.

### Return to Normal Depth:
1.01 (South Side) ft.

### Percent Capture:
100%

### Overflow Volume:
0 Gal.

### Overflow Volume Prevented:
935,711 Gal.

### SPP Activation Prevented:
Yes

### If No, what is the overflow volume when storage was available upstream?
NA Gal.

### If No, could SPP activation have been prevented?
NA

### RTC Storage Performance

### RTC Gate Performance

### Rainfall data sourced from BSA rain gauge station at South Buffalo.

### Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.
April 30, 2020

**Site:** Hertel at Deer RTC

**Analysis Date:** 5/8/2020

**Event Start Date/Time:** 4/30/2020 6:50

**Event End Date/Time:** 5/3/2020 4:00

**Analyst Name, Organization:** Rucha Shah, Arcadis

**Total Rainfall Accumulation:** 0.91 in.

**Storm Event Duration:** 72 hr.

**Storm Type:** Less than 1 year

---

**Percent Capture**: 100%

**Overflow Volume**: 0 Gal.

**Overflow Volume Prevented**: 3,902,397 Gal.

**SPP Activation Prevented**: Yes

**If No, what is the overflow volume when storage was available upstream?** NA Gal.

**If No, could SPP activation have been prevented?** NA

---

**RTC Storage Performance**

- Depth, ft.
- Date/Time

**RTC Gate Performance**

- Depth at SPP (ft)
- Date/Time

**Rainfall Accumulation**

- Rainfall (in.)
- Date/Time

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**Rainfall data sourced from BSA rain gauge station at South Buffalo.**

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**Recommended Operational Changes/Notes:**

- **RTC Storage Performance**
- **RTC Gate Performance**
- **Rainfall Accumulation**

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**Minimum Distance to Top of Weir:** 1.03 (South Side) ft.

**Gate Activation Trigger Depth:** 1.52 (South Side) ft.

**Return to Normal Depth:** 0.00 ft.

**Volume Stored:** 3,902,397 Gal.

**Unused Storage Volume:** 0 Gal.

---

**Hertel North RTC Upstream Level (ft)**

**Hertel South RTC Upstream Level (ft)**

**Hertel North Weir Height (ft)**

**Hertel South Weir Height (ft)**

**SPP Weir Height (ft)**

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**Hertel North RTC Gate 1 Position (percent)**

**Hertel North RTC Gate 2 Position (percent)**

**Hertel South RTC Gate 1 Position (%)**

**Hertel South RTC Gate 2 Position (%)**
May 2020
Hertel at Deer RTC
KPI Report
<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/11/2020</td>
<td>1,451,430</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/14/2020</td>
<td>138,207</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/15/2020</td>
<td>735,366</td>
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<tr>
<td>5/17/2020</td>
<td>4,991,847</td>
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<tr>
<td>5/22/2020</td>
<td>3,892,990</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/25/2020</td>
<td>3,946,542</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/28/2020</td>
<td>3,279,941</td>
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<td>100%</td>
</tr>
<tr>
<td>5/29/2020</td>
<td>3,915,728</td>
<td>419,335</td>
<td>90%</td>
</tr>
<tr>
<td>Date/Time</td>
<td>Site: Hertel at Deer RTC</td>
<td>Percent Capture</td>
<td>Overflow Volume</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------</td>
<td>-----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>5/11/2020 6:30</td>
<td>100%</td>
<td>0 Gal.</td>
<td>1,451,430 Gal.</td>
</tr>
</tbody>
</table>

**Recommended Operational Changes/Notes:**

**RTC Storage Performance**

- **Hertel North RTC Upstream Level (ft)**
- **Hertel South RTC Upstream Level (ft)**
- **Depth at SPP (ft)**
- **Hertel North Weir Height (ft)**
- **Hertel South Weir Height (ft)**
- **SPP Weir Height (ft)**

**RTC Gate Performance**

- **Hertel North RTC Gate 1 Position (percent)**
- **Hertel North RTC Gate 2 Position (percent)**
- **Hertel South RTC Gate 1 Position (%)**
- **Hertel South RTC Gate 2 Position (%)**

**Rainfall Accumulation**

- **Rainfall (in.)**

**Analysis Date:** 6/9/2020  
**Event Start Date/Time:** 5/11/2020 6:30  
**Event End Date/Time:** 5/12/2020 0:45  
**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0.3 in.  
**Storm Event Duration:** 18 hr.  
**Storm Type:** Less than one year
<table>
<thead>
<tr>
<th>Time All Gates Active:</th>
<th>5/14/2020 19:50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time All Gates Returned to Normal:</td>
<td>5/15/2020 0:20</td>
</tr>
<tr>
<td>Gate Activation Trigger Depth:</td>
<td>1.54 (South Side) ft.</td>
</tr>
<tr>
<td>Return to Normal Depth:</td>
<td>1.02 (South Side) ft.</td>
</tr>
<tr>
<td>Minimum Distance to Top of Weir:</td>
<td>4.73 ft.</td>
</tr>
<tr>
<td>Unused Storage Volume:</td>
<td>3,758,338 Gal.</td>
</tr>
<tr>
<td>Percent Capture</td>
<td>100%</td>
</tr>
<tr>
<td>Overflow Volume:</td>
<td>0 Gal.</td>
</tr>
<tr>
<td>SPP Activation Prevented:</td>
<td>Yes</td>
</tr>
<tr>
<td>If No, what is the overflow volume when storage was available upstream?</td>
<td>NA Gal.</td>
</tr>
<tr>
<td>If No, could SPP activation have been prevented?</td>
<td>NA</td>
</tr>
</tbody>
</table>

### RTC Storage Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Hertel North RTC Upstream Level (ft)</th>
<th>Hertel South RTC Upstream Level (ft)</th>
<th>Depth at SPP (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/14/2020 19:30</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5/14/2020 20:42</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5/14/2020 21:54</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5/14/2020 23:06</td>
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<tr>
<td>5/15/2020 0:18</td>
<td>0.0</td>
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</tbody>
</table>

### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Hertel North RTC Gate 1 Position (%)</th>
<th>Hertel North RTC Gate 2 Position (%)</th>
<th>Hertel South RTC Gate 1 Position (%)</th>
<th>Hertel South RTC Gate 2 Position (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/14/2020 19:30</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5/14/2020 20:42</td>
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<td>0.0</td>
</tr>
<tr>
<td>5/14/2020 21:54</td>
<td>0.0</td>
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<td>0.0</td>
</tr>
<tr>
<td>5/14/2020 23:06</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>5/15/2020 0:18</td>
<td>0.0</td>
<td>0.0</td>
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</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/14/2020 19:30</td>
<td>0.0</td>
</tr>
<tr>
<td>5/14/2020 20:42</td>
<td>0.0</td>
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<tr>
<td>5/14/2020 21:54</td>
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<tr>
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### RTC Storage Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/15/2020 18:00</td>
<td>1.0</td>
</tr>
<tr>
<td>5/15/2020 19:12</td>
<td>1.0</td>
</tr>
<tr>
<td>5/15/2020 20:24</td>
<td>1.0</td>
</tr>
<tr>
<td>5/15/2020 21:36</td>
<td>1.0</td>
</tr>
<tr>
<td>5/15/2020 22:48</td>
<td>1.0</td>
</tr>
<tr>
<td>5/16/2020 0:00</td>
<td>1.0</td>
</tr>
<tr>
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<td>1.0</td>
</tr>
<tr>
<td>5/16/2020 2:24</td>
<td>1.0</td>
</tr>
</tbody>
</table>

- **Depth, ft:**
  - Hertel North RTC Upstream Level (ft)
  - Hertel South RTC Upstream Level (ft)
  - Depth at SPP (ft)
  - Hertel North Weir Height (ft)
  - Hertel South Weir Height (ft)
  - SPP Weir Height (ft)

### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Gate Position, Percent Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/15/2020 18:00</td>
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<tr>
<td>5/15/2020 19:12</td>
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<td>5/15/2020 20:24</td>
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<tr>
<td>5/16/2020 1:12</td>
<td>100</td>
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<tr>
<td>5/16/2020 2:24</td>
<td>100</td>
</tr>
</tbody>
</table>

- **Gate Position, Percent Open:**
  - Hertel North RTC Gate 1 Position (percent)
  - Hertel North RTC Gate 2 Position (percent)
  - Hertel South RTC Gate 1 Position (%)
  - Hertel South RTC Gate 2 Position (%)

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation (in.)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.1</td>
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<tr>
<td>5/15/2020 22:48</td>
<td>0.1</td>
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<td>5/16/2020 0:00</td>
<td>0.1</td>
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<td>5/16/2020 1:12</td>
<td>0.1</td>
</tr>
<tr>
<td>5/16/2020 2:24</td>
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- **Rainfall Accumulation (in.):**
  - 0.1
  - 0.1
  - 0.1
  - 0.1
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  - 0.1
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  - 0.1
  - 0.1
  - 0.1

### Summary

- **May 15, 2020**
- **Site:** Hertel at Deer RTC
- **Analysis Date:** 6/9/2020
- **Event Start Date/Time:** 5/15/2020 18:25
- **Event End Date/Time:** 5/16/2020 2:55
- **Time All Gates Active:** 5/15/2020 18:25
- **Time All Gates Returned to Normal:** 5/16/2020 2:55
- **Gate Activation Trigger Depth:** 1.56 (South Side) ft.
- **Return to Normal Depth:** 1.01 (South Side) ft.
- **Minimum Distance to Top of Weir:** 3.58 ft.
- **Volume Stored:** 735,366 Gal.
- **Unused Storage Volume:** 3,162,234 Gal.
- **Total Rainfall Accumulation:** 0.1 in.
- **Storm Type:** Less than one year
- **Storm Event Duration:** 9 hr.
- **Percent Capture:** 100%
- **Overflow Volume:** 0 Gal.
- **Overflow Volume Prevented:** 735,366 Gal.
- **SPP Activation Prevented:** Yes
- **If No, what is the overflow volume when storage was available upstream?** NA Gal.
- **If No, could SPP activation have been prevented?** NA

---

**RTC Storage Performance Graph**

**RTC Gate Performance Graph**

**Rainfall Accumulation Graph**
May 17, 2020

Site: Hertel at Deer RTC

Analysis Date: 6/10/2020

Event Start Date/Time: 5/17/2020 17:40

Event End Date/Time: 5/18/2020 10:35

Event Start Date/Time: 5/17/2020 17:40

Event End Date/Time: 5/18/2020 10:35

Gate Activation Trigger Depth: 1.53 (South Side) ft.

Minimum Distance to Top of Weir: 0.00 ft.

Volume Stored: 4,991,847 Gal.

Percent Capture 100%

Overflow Volume: 0 Gal.

Overflow Volume Prevented: 4,991,847 Gal.

SPP Activation Prevented: Yes

If No, what is the overflow volume when storage was available upstream? NA Gal.

If No, could SPP activation have been prevented? NA

Rucha Shah, Arcadis

Total Rainfall Accumulation: 0.7 in.

Storm Event Duration: 19 hr.

Storm Type: Less than one year

Recommended Operational Changes/Notes:

Hertel South Upstream Level went out of range a few times but the site continued to operate normally by using the North Upstream level to make control decisions. Hertel South Upstream Level data was assumed for analysis during those times by using the good data obtained from EmNet as it follows a similar trend as the North Upstream Level.
### May 22, 2020 Analysis

<table>
<thead>
<tr>
<th>Analysis Date:</th>
<th>6/9/2020</th>
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<tbody>
<tr>
<td>Event Start Date/Time:</td>
<td>5/22/2020 23:20</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>5/24/2020 2:45</td>
</tr>
</tbody>
</table>

#### Site Information
- **Site:** Hertel at Deer RTC
- **Analysis Date:** 6/9/2020
- **Event Start Date/Time:** 5/22/2020 23:20
- **Event End Date/Time:** 5/24/2020 2:45

#### Event Details
- **1.59 ft.** (South Side)
- **1.03 ft.** (South Side)
- **Total Rainfall Accumulation:** 1.5 in.
- **Storm Type:** Less than one year
- **Storm Event Duration:** 29 hr.
- **Overflow Volume Prevented:** 3,892,990 Gal.
- **Recommendation:** Yes

#### Percent Capture
- **Percent Capture:** 100%
- **Overflow Volume:** 0 Gal.
- **Overflow Volume Prevented:** 3,892,990 Gal.
- **SPP Activation Prevented:** Yes
  - If No, what is the overflow volume when storage was available upstream? NA Gal.
  - If No, could SPP activation have been prevented? NA

#### RTC Storage Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>RTC North Storage Level (ft)</th>
<th>RTC South Storage Level (ft)</th>
<th>Depth at SPP (ft)</th>
</tr>
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<tbody>
<tr>
<td>5/22/2020 23:30</td>
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<td>0.0</td>
</tr>
<tr>
<td>5/22/2020 23:30</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>5/22/2020 23:30</td>
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<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
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<td>0.6</td>
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<tr>
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</tr>
<tr>
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<tr>
<td>5/22/2020 23:30</td>
<td>1.6</td>
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</tr>
</tbody>
</table>

#### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>RTC North Gate 1 Position (%)</th>
<th>RTC North Gate 2 Position (%)</th>
<th>RTC South Gate 1 Position (%)</th>
<th>RTC South Gate 2 Position (%)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.0</td>
<td>0.0</td>
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<tr>
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<td>20.0</td>
</tr>
<tr>
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<td>40.0</td>
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<tr>
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#### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/22/2020</td>
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</tr>
<tr>
<td>5/23/2020</td>
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</tr>
<tr>
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</tr>
<tr>
<td>6/01/2020</td>
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</tbody>
</table>

---

#### Analyst Information
- **Analyst Name, Organization:** Rucha Shah, Arcadis
- **Trigger Depth:** 1.59 ft. (South Side)
- **Return to Normal Depth:** 1.03 ft. (South Side)
- **Minimum Distance to Top of Weir:** 0.00 ft.
- **Volume Stored:** 3,892,990 Gal.
- **Unused Storage Volume:** 0 Gal.
- **Time All Gates Active:** 5/22/2020 23:20
- **Time All Gates Returned to Normal:** 5/24/2020 2:45

---

#### RTC Storage Performance Diagram

- **Depth, ft.:** 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- **Date/Time:** 5/22/2020 23:30, 5/23/2020 00:00, 5/23/2020 06:00, 5/23/2020 12:00, 5/23/2020 18:00, 5/24/2020 00:00

#### RTC Gate Performance Diagram

- **Gate Position, Percent Open:** 0, 20, 40, 60, 80, 100
- **Date/Time:** 5/22/2020 23:30, 5/23/2020 00:00, 5/23/2020 06:00, 5/23/2020 12:00, 5/23/2020 18:00, 5/24/2020 00:00

#### Rainfall Accumulation Diagram

- **Rainfall (in.):** 0.0, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0
- **Date/Time:** 5/22/2020 23:30, 5/23/2020 00:00, 5/23/2020 06:00, 5/23/2020 12:00, 5/23/2020 18:00, 5/24/2020 00:00
May 25, 2020

### RTC Storage Performance

- **Hertel North RTC Upstream Level (ft)**
- **Hertel South RTC Upstream Level (ft)**
- **Depth at SPP (ft)**
- **Hertel North Weir Height (ft)**
- **Hertel South Weir Height (ft)**
- **SPP Weir Height (ft)**

### RTC Gate Performance

- **Hertel North RTC Gate 1 Position (percent)**
- **Hertel North RTC Gate 2 Position (percent)**
- **Hertel South RTC Gate 1 Position (%)**
- **Hertel South RTC Gate 2 Position (%)**

### Rainfall Accumulation

- **Rainfall Accumulation (in.)**

---

### Summary

- **Site:** Hertel at Deer RTC
- **Analysis Date:** 6/9/2020
- **Event Start Date/Time:** 5/25/2020 6:40
- **Event End Date/Time:** 5/25/2020 23:30
- **Storm Type:** Less than one year
- **Percent Capture:** 100%
- **Overflow Volume:** 0 Gal.
- **Overflow Volume Prevented:** 3,946,542 Gal.
- **SPP Activation Prevented:** Yes
- **If No, what is the overflow volume when storage was available upstream?** NA Gal.
- **If No, could SPP activation have been prevented?** NA

---

### Rusta Shah, Arcadis

- **Overflow Volume Prevented:** 3,946,542 Gal.
- **Volume Stored:** 0 Gal.
- **Unused Storage Volume:** 0.00 Gal.
- **Storm Event Duration:** 18 hr.
- **Total Rainfall Accumulation:** 0.2 in.
### RTC Storage Performance

**Date/Time**
- May 28, 2020

**Depth, ft.**
- 0.0
- 0.1
- 0.2
- 0.3
- 0.4
- 0.5
- 0.6
- 0.7
- 0.8
- 0.9
- 1.0

**Depth at SPP (ft)**
- May 28, 2020
- May 29, 2020

**Hertel North RTC Upstream Level (ft)**
- May 28, 2020
- May 29, 2020

**Hertel South RTC Upstream Level (ft)**
- May 28, 2020
- May 29, 2020

**Hertel North Weir Height (ft)**
- May 28, 2020
- May 29, 2020

**Hertel South Weir Height (ft)**
- May 28, 2020
- May 29, 2020

**SPP Weir Height (ft)**
- May 28, 2020
- May 29, 2020

### RTC Gate Performance

**Date/Time**
- May 28, 2020

**Gate Position, Percent Open**
- 0%
- 20%
- 40%
- 60%
- 80%
- 100%

**Hertel North RTC Gate 1 Position (percent)**
- May 28, 2020
- May 29, 2020

**Hertel North RTC Gate 2 Position (percent)**
- May 28, 2020
- May 29, 2020

**Hertel South RTC Gate 1 Position (%)**
- May 28, 2020
- May 29, 2020

**Hertel South RTC Gate 2 Position (%)**
- May 28, 2020
- May 29, 2020

### Rainfall Accumulation

**Date/Time**
- May 28, 2020
- May 29, 2020

**Rainfall (in.)**
- 0.0
- 0.1
- 0.2
- 0.3
- 0.4
### RTC Storage Performance

<table>
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<tr>
<th>Date/Time</th>
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<td>5/29/2020 21:36</td>
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### RTC Gate Performance

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<th>Hertel North RTC Gate 1 Position (percent)</th>
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</tr>
<tr>
<td>5/30/2020 7:12</td>
<td></td>
</tr>
<tr>
<td>5/30/2020 12:00</td>
<td></td>
</tr>
<tr>
<td>5/30/2020 16:48</td>
<td></td>
</tr>
<tr>
<td>5/30/2020 21:36</td>
<td></td>
</tr>
</tbody>
</table>
June 2020
Hertel at Deer RTC
KPI Report
## Prevented SPP Events

<table>
<thead>
<tr>
<th>Event Date</th>
<th>Number of Prevented SPP Overflow Events</th>
<th>Number of Occurred SPP Overflow Events</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/2/2020</td>
<td>3</td>
<td>2</td>
<td>61%</td>
</tr>
<tr>
<td>6/10/2020</td>
<td>3</td>
<td>2</td>
<td>88%</td>
</tr>
<tr>
<td>6/22/2020</td>
<td>3</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>6/23/2020</td>
<td>3</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>6/27/2020</td>
<td>3</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>

## Prevented SPP Volume

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented (Gal.)</th>
<th>SPP Overflow Volume Occurred (Gal.)</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/2/2020</td>
<td>3,949,510</td>
<td>2,481,520</td>
<td>61%</td>
</tr>
<tr>
<td>6/10/2020</td>
<td>3,900,141</td>
<td>551,635</td>
<td>88%</td>
</tr>
<tr>
<td>6/22/2020</td>
<td>967,427</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>6/23/2020</td>
<td>3,931,361</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>6/27/2020</td>
<td>5,791,124</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Chart: Prevented SPP Events
- Number of Prevented SPP Overflow Events: 3 (60%) 2 (40%)
- Number of Occurred SPP Overflow Events: 2

### Chart: Prevented SPP Volume
- Prevented SPP Overflow Volume: 18,539,563 (86%)
- Occurred SPP Overflow Volume: 3,033,155 (14%)
June 2, 2020

<table>
<thead>
<tr>
<th>Site: Hertel at Deer RTC</th>
<th>Analysis Date: 7/6/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate Activation Trigger Depth: 1.03 (South Side) ft.</td>
<td></td>
</tr>
<tr>
<td>Return to Normal Depth: 9.06 (South Side) ft.</td>
<td></td>
</tr>
<tr>
<td>Minimum Distance to Top of Weir: 0.00 ft.</td>
<td></td>
</tr>
<tr>
<td>Volume Stored: 3,949,510 Gal.</td>
<td></td>
</tr>
<tr>
<td>Unused Storage Volume: 0 Gal.</td>
<td></td>
</tr>
</tbody>
</table>

Percent Capture | 61% |
Overflow Volume: 2,481,520 Gal. |
Overflow Volume Prevented: 3,949,510 Gal. |
SPP Activation Prevented: No |
If No, what is the overflow volume when storage was available upstream? NA Gal. |
If No, could SPP activation have been prevented? No |

Analyst Name, Organization: Rucha Shah, Arcadis |
Total Rainfall Accumulation: 1.9 in. |
Storm Event Duration: 57 hr. |
Storm Type: Less than one year |

Recommended Operational Changes/Notes:

---

**RTC Storage Performance**

**RTC Gate Performance**

**Rainfall Accumulation**
June 10, 2020

Site: Hertel at Deer RTC

Time All Gates Active: 6/10/2020 23:45
Time All Gates Returned to Normal: 6/11/2020 16:20

Analysis Date: 7/6/2020
Event Start Date/Time: 6/10/2020 23:45
Event End Date/Time: 6/11/2020 16:20

Gate Activation Trigger Depth: 1.50 (South Side) ft.
Return to Normal Depth: 1.07 (South Side) ft.
Minimum Distance to Top of Weir: 0.00 ft.
Volume Stored: 3,900,141 Gal.
Unused Storage Volume: 0 Gal.

Percent Capture: 88%
Overflow Volume: 551,635 Gal.
Overflow Volume Prevented: 3,900,141 Gal.
SPP Activation Prevented: No
If No, what is the overflow volume when storage was available upstream? NA Gal.
If No, could SPP activation have been prevented? No

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.7 in.
Storm Event Duration: 18 hr.
Storm Type: Less than one year

Recommended Operational Changes/Notes:

RTC Storage Performance

RTC Gate Performance

Rainfall Accumulation
### June 22, 2020

<table>
<thead>
<tr>
<th>Site:</th>
<th>Hertel at Deer RTC</th>
<th>Analysis Date:</th>
<th>7/6/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate Activation Trigger Depth:</td>
<td>1.28 (South Side) ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return to Normal Depth:</td>
<td>1.05 (South Side) ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Distance to Top of Weir:</td>
<td>3.24 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume Stored:</td>
<td>967,427 Gal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unused Storage Volume:</td>
<td>2,960,228 Gal.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Percent Capture | 100% | | |
| Overflow Volume: | 0 Gal. | | |
| Overflow Volume Prevented: | 967,427 Gal. | | |
| SPP Activation Prevented: | Yes | | |
| If No, what is the overflow volume when storage was available upstream? | NA Gal. | | |
| If No, could SPP activation have been prevented? | NA | | |

### Recommended Operational Changes/Notes:

- Rucha Shah, Arcadis
- Total Rainfall Accumulation: 0.1 in.
- Storm Event Duration: 5 hr.
- Storm Type: Less than one year

### RTC Storage Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Depth, ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/22/2020 17:00</td>
<td>0.00</td>
</tr>
<tr>
<td>6/22/2020 18:12</td>
<td>0.02</td>
</tr>
<tr>
<td>6/22/2020 19:24</td>
<td>0.04</td>
</tr>
<tr>
<td>6/22/2020 20:36</td>
<td>0.06</td>
</tr>
<tr>
<td>6/22/2020 21:48</td>
<td>0.08</td>
</tr>
</tbody>
</table>

### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Gate Position, Percent Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/22/2020 16:59</td>
<td>0</td>
</tr>
<tr>
<td>6/22/2020 19:23</td>
<td>100</td>
</tr>
<tr>
<td>6/22/2020 21:47</td>
<td>0</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/22/2020 17:00</td>
<td>0.00</td>
</tr>
<tr>
<td>6/22/2020 18:12</td>
<td>0.00</td>
</tr>
<tr>
<td>6/22/2020 19:24</td>
<td>0.00</td>
</tr>
<tr>
<td>6/22/2020 20:36</td>
<td>0.00</td>
</tr>
<tr>
<td>6/22/2020 21:48</td>
<td>0.10</td>
</tr>
</tbody>
</table>
June 23, 2020

<table>
<thead>
<tr>
<th>Site:</th>
<th>Hertel at Deer RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time All Gates Active:</td>
<td>6/23/2020 14:05</td>
</tr>
<tr>
<td>Time All Gates Returned to Normal:</td>
<td>6/23/2020 22:05</td>
</tr>
<tr>
<td>Gate Activation Trigger Depth:</td>
<td>1.29 (South Side) ft.</td>
</tr>
<tr>
<td>Return to Normal Depth:</td>
<td>1.11 (South Side) ft.</td>
</tr>
<tr>
<td>Minimum Distance to Top of Weir:</td>
<td>0.00 ft.</td>
</tr>
<tr>
<td>Volume Stored:</td>
<td>3,931,361 Gal.</td>
</tr>
<tr>
<td>Unused Storage Volume:</td>
<td>0 Gal.</td>
</tr>
</tbody>
</table>

| Percent Capture | 100% |
| Overflow Volume: | 0 Gal. |
| Overflow Volume Prevented: | 3,931,361 Gal. |
| SPP Activation Prevented: | Yes |
| If No, what is the overflow volume when storage was available upstream? | NA Gal. |
| If No, could SPP activation have been prevented? | NA |

**RTC Storage Performance**

**RTC Gate Performance**

**Rainfall Accumulation**
Site: Hertel at Deer RTC
Time All Gates Active: 6/27/2020 5:10
Time All Gates Returned to Normal: 6/28/2020 15:05
Gate Activation Trigger Depth: 1.29 (South Side) ft.
Return to Normal Depth: 1.03 (South Side) ft.
Minimum Distance to Top of Weir: 0.00 ft.
Volume Stored: 5,791,124 Gal.
Unused Storage Volume: 0 Gal.

Percent Capture: 100%
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 5,791,124 Gal.
SPP Activation Prevented: Yes

If No, what is the overflow volume when storage was available upstream? NA Gal.
If No, could SPP activation have been prevented? NA

RTC Storage Performance

RTC Gate Performance

Rainfall Accumulation
July 2019
Lang Ave. RTC
KPI Report

(Gates were in manual open due to maintenance issues with the upstream level sensor)
August 2019
Lang Ave. and
Hazelwood RTC
KPI Report
## Prevented SPP Events

- **Number of Prevented SPP Overflow Events:** 0
- **Number of Occurred SPP Overflow Events:** 1

## Prevented SPP Volume

- **Prevented SPP Overflow Volume (Gal.):** 1,253,873
- **Occurred SPP Overflow Volume (Gal.):** 5,746,633

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/21/2019</td>
<td>1,253,873</td>
<td>5,746,633</td>
<td>18%</td>
</tr>
</tbody>
</table>
August 21, 2019

RTC Site | Lang | Hazelwood
--- | --- | ---
Gate Activation Trigger Depth: | - ft. | 0.29 ft.
Return to Normal Depth: | - ft. | 1.63 ft.
Time Gate 1 Activated: | - | 8/21/2019 3:30
Time Gate 2 Activated: | - | 8/21/2019 3:30
Time Gate 1 Returned to Normal: | - | 8/21/2019 7:55
Time Gate 2 Returned to Normal: | - | 8/21/2019 7:55
Depth of Weir | 8.00 ft. | 8.40 ft.
Maximum Depth Reached: | - ft. | 8.40 ft.
Volume Stored: | - Gal. | 1,253,873 Gal.
Unused Storage Volume: | 861,799 Gal. | 0 Gal.

SPP:
Analysis Date: | 10/17/2019
Event Start Date/Time: | 8/21/2019 3:30
Event End Date/Time: | 8/21/2019 7:55

Analyst Name, Organization: | Rucha Shah, Arcadis
Total Rainfall Accumulation: | 1.75 in.
Storm Event Duration: | 5 hr.
Storm Type: | Less than 5 yr. storm

Recommended Operational Changes/Notes:
Lang was in emergency open mode for the entire month of August (waiting on an upstream level sensor replacement). Hazelwood was placed in emergency open mode from 8/2 to 8/17 and 8/24 to 8/26.

Percent Capture | 18%
Overflow Volume: | 5,746,633 Gal.
Overflow Volume Prevented: | 1,253,873 Gal.
SPP Activation Prevented: | No
If No, what is the overflow volume when storage was available upstream? | 5,746,633 Gal.
If No, could SPP activation have been prevented? | No
If Yes, could SPP activation have been prevented without Hazelwood storage? | NA
### Prevented SPP Events

- Prevented SPP Overflow Events: 0
- Occurred SPP Overflow Events: 6

<table>
<thead>
<tr>
<th>Event Date</th>
<th>Prevented SPP Overflow Volume (Gal.)</th>
<th>Occurred SPP Overflow Volume (Gal.)</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/2/2019</td>
<td>1,177,590</td>
<td>5,065,941</td>
<td>19%</td>
</tr>
<tr>
<td>9/11/2019</td>
<td>1,152,606</td>
<td>4,856,365</td>
<td>19%</td>
</tr>
<tr>
<td>9/11/2019</td>
<td>794,547</td>
<td>2,432,061</td>
<td>25%</td>
</tr>
<tr>
<td>9/14/2019</td>
<td>7,077</td>
<td>941,171</td>
<td>1%</td>
</tr>
<tr>
<td>9/23/2019</td>
<td>346,897</td>
<td>1,424,126</td>
<td>20%</td>
</tr>
<tr>
<td>9/26/2019</td>
<td>329,623</td>
<td>1,378,531</td>
<td>19%</td>
</tr>
</tbody>
</table>
### RTC Site SPP:

<table>
<thead>
<tr>
<th>RTC Site</th>
<th>Lang</th>
<th>Hazelwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate Activation Trigger Depth:</td>
<td>- ft.</td>
<td>1.50 ft.</td>
</tr>
<tr>
<td>Return to Normal Depth:</td>
<td>- ft.</td>
<td>1.14 ft.</td>
</tr>
<tr>
<td>Time Gate 1 Activated:</td>
<td>-</td>
<td>9/2/2019 3:45</td>
</tr>
<tr>
<td>Time Gate 2 Activated:</td>
<td>-</td>
<td>9/2/2019 3:45</td>
</tr>
<tr>
<td>Time Gate 1 Returned to Normal:</td>
<td>-</td>
<td>N/A</td>
</tr>
<tr>
<td>Time Gate 2 Returned to Normal:</td>
<td>-</td>
<td>N/A</td>
</tr>
<tr>
<td>Depth of Weir</td>
<td>8 ft.</td>
<td>8.4 ft.</td>
</tr>
<tr>
<td>Maximum Depth Reached:</td>
<td>0.00 ft.</td>
<td>8.40 ft.</td>
</tr>
<tr>
<td>Volume Stored:</td>
<td>0 Gal.</td>
<td>1,177,590 Gal.</td>
</tr>
<tr>
<td>Unused Storage Volume:</td>
<td>861,799 Gal.</td>
<td>0 Gal.</td>
</tr>
</tbody>
</table>

### SPP:

<table>
<thead>
<tr>
<th>SPP-</th>
<th>Hazelwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>10/14/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>9/2/2019 3:45</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>9/2/2019 8:00</td>
</tr>
</tbody>
</table>

### Analyst Name, Organization:

| Analyst Name, Organization: | Rucha Shah, Arcadis |

| Storm Type: | Less than 5 yr. storm |

### Rainfall Accumulation

#### RTC Storage Performance

- **Depth, ft.**
  - Lang RTC Upstream Level (ft)
  - Hazelwood RTC Upstream Level (ft)
  - Depth at SPP (ft)

- **Weir Height**
  - Lang Weir height (ft)
  - Hazelwood Weir height (ft)
  - SPP Weir height (ft)

### RTC Gate Performance

- **Gate Position, Percent Open**
  - Lang RTC Gate 1 Position (%)
  - Hazelwood RTC Gate 1 Position (%)
  - Lang RTC Gate 2 Position (%)
  - Hazelwood RTC Gate 2 Position (%)

### Recommended Operational Changes/Notes:

Lang was in emergency open mode for the entire month of September (waiting on an upstream level sensor replacement).
September 11, 2019

RTC Site

<table>
<thead>
<tr>
<th>Lang</th>
<th>Hazelwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTC Site</td>
<td></td>
</tr>
<tr>
<td>Gate Activation Trigger Depth:</td>
<td>- ft.</td>
</tr>
<tr>
<td>Return to Normal Depth:</td>
<td>- ft.</td>
</tr>
<tr>
<td>Time Gate 1 Activated:</td>
<td>-</td>
</tr>
<tr>
<td>Time Gate 2 Activated:</td>
<td>-</td>
</tr>
<tr>
<td>Time Gate 1 Returned to Normal:</td>
<td>-</td>
</tr>
<tr>
<td>Time Gate 2 Returned to Normal:</td>
<td>-</td>
</tr>
<tr>
<td>Depth of Weir</td>
<td>8 ft.</td>
</tr>
<tr>
<td>Maximum Depth Reached:</td>
<td>0.00 ft.</td>
</tr>
<tr>
<td>Volume Stored:</td>
<td>0 Gal.</td>
</tr>
<tr>
<td>Unused Storage Volume:</td>
<td>861,799 Gal.</td>
</tr>
</tbody>
</table>

| Percent Capture | 19% |
| Overflow Volume: | 4,856,365 Gal. |
| Overflow Volume Prevented: | 1,152,606 Gal. |
| SPP Activation Prevented: | No |
| If No, what is the overflow volume when storage was available? | 4856365 |
| If No, could SPP activation have been prevented? | No |
| If Yes, could SPP activation have been prevented without Hazelwood storage? | NA |

Recommended Operational Changes/Notes:
Lang was in emergency open mode for the entire month of September (waiting on an upstream level sensor replacement).
September 11, 2019

RTT Site | Lang | Hazelwood
---|---|---
Gate Activation Trigger Depth: | - ft. | 0.91 ft.
Return to Normal Depth: | - ft. | 4 ft.
Depth of Weir | 8 ft. | 8.4 ft.
Volume Stored: | 0 Gal. | 794,547 Gal.

SPP:
Analysis Date: | Hazelwood
---|---
Event Start Date/Time: | 9/11/2019 21:45
Event End Date/Time: | 9/12/2019 0:30

Analyst Name, Organization: | Rucha Shah, Arcadis
---|---
Storm Type: | Less than 1000 yr. storm
---|---

Percent Capture: | 25%
---|---
Overflow Volume: | 2,432,061 Gal.
Overflow Volume Prevented: | 794,547 Gal.
---|---
If No, what is the overflow volume when storage was available? | N/A
---|---
If Yes, could SPP activation have been prevented without Hazelwood storage? | No
---|---

Recommended Operational Changes/Notes:
Lang was in emergency open mode for the entire month of September (waiting on an upstream level sensor replacement).

---

RTC Storage Performance

---

RTC Gate Performance

---

Rainfall Accumulation

---

Depth, ft.  
Date/Time  
Lang RTC Upstream Level (ft)  
zazelwood RTC Upstream Level (ft)  
Depth at SPP (ft)  
Lang Weir eight (ft)  
zazelwood Weir eight (ft)  
SPP Weir eight (ft)

Gate Position, Percent Open  
Date/Time  
Lang RTC Gate 1 Position (%)  
zazelwood RTC Gate 1 Position (%)  
Lang RTC Gate 2 Position (%)  
zazelwood RTC Gate 2 Position (%)

Rainfall (in.)  
Date/Time  
9/11/19 21:36  
9/11/19 21:50  
9/11/19 22:04  
9/11/19 22:19  
9/11/19 22:33  
9/11/19 22:48  
9/11/19 23:02  
9/11/19 23:16  
9/11/19 23:31  
9/11/19 23:45  
9/12/19 0:00  
9/12/19 0:14  
9/12/19 0:28  
9/12/19 0:43

---

---
**RTC Storage Performance**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Lang RTC Upstream Level (ft)</th>
<th>Hazelwood RTC Upstream Level (ft)</th>
<th>Depth at SPP (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/14/19 1:26</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>9/14/19 1:40</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>9/14/19 1:56</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>9/14/19 2:09</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>9/14/19 2:24</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>9/14/19 2:36</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
</tbody>
</table>

**RTC Gate Performance**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Lang RTC Gate 1 Position (%)</th>
<th>Hazelwood RTC Gate 1 Position (%)</th>
<th>Lang RTC Gate 2 Position (%)</th>
<th>Hazelwood RTC Gate 2 Position (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/14/19 1:26</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9/14/19 1:40</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>9/14/19 1:56</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>9/14/19 2:09</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>9/14/19 2:24</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>9/14/19 2:36</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Rainfall Accumulation**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/14/19 0:00</td>
<td>0.0</td>
</tr>
<tr>
<td>9/14/19 1:26</td>
<td>0.0</td>
</tr>
<tr>
<td>9/14/19 1:40</td>
<td>0.0</td>
</tr>
<tr>
<td>9/14/19 1:56</td>
<td>0.0</td>
</tr>
<tr>
<td>9/14/19 2:09</td>
<td>0.0</td>
</tr>
<tr>
<td>9/14/19 2:24</td>
<td>0.0</td>
</tr>
<tr>
<td>9/14/19 2:36</td>
<td>0.0</td>
</tr>
<tr>
<td>9/14/19 3:00</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**September 14, 2019**

**RTC Site SPP:**
- Gate Activation Trigger Depth: - 2.38 ft. (Hazelwood)
- Return to Normal Depth: - 1.16 ft.
- Time Gate 1 Activated: - 9/14/2019 1:30
- Time Gate 2 Activated: - 9/14/2019 2:30
- Time Gate 1 Returned to Normal: - N/A
- Time Gate 2 Returned to Normal: - N/A
- Depth of Weir: 8 ft. (Lang), 8.4 ft. (Hazelwood)
- Maximum Depth Reached: 0.00 ft. (Lang), 2.44 ft. (Hazelwood)
- Volume Stored: 0 Gal. (Lang), 7,077 Gal. (Hazelwood)
- Unused Storage Volume: 861,799 Gal. (Lang), 1,091,413 Gal. (Hazelwood)
- Percent Capture: 1%
- Overflow Volume: 941,171 Gal.
- Overflow Volume Prevented: 7,077 Gal.
- SPP Activation Prevented: No
- If No, what is the overflow volume when storage was available? 941171
- If No, could SPP activation have been prevented without Hazelwood storage? Yes
- If Yes, could SPP activation have been prevented without Hazelwood storage? N/A

**SPP:**
- Analysis Date: 10/14/2019
- Event Start Date/Time: 9/14/2019 1:30
- Event End Date/Time: 9/14/2019 2:30
- Analyst Name, Organization: Rucha Shah, Arcadis
- Total Rainfall Accumulation: 0.8 in.
- Storm Event Duration: 1 hr.
- Storm Type: Less than 1 yr. storm

**Recommended Operational Changes/Notes:**
Lang was in emergency open mode for the entire month of September (waiting on an upstream level sensor replacement).
**RTC Site SPP:**

**Gate Activation Trigger Depth:** - 1.86 ft.

**Return to Normal Depth:** - 1.03 ft.

**Time Gate 1 Activated:** - 9/23/2019 18:00

**Time Gate 2 Activated:** - 9/23/2019 18:00

**Time Gate 1 Returned to Normal:** - N/A

**Time Gate 2 Returned to Normal:** - N/A

**Depth of Weir:** 8 ft.

**Maximum Depth Reached:** 4.63 ft.

**Volume Stored:** 346,897 Gal.

**Unused Storage Volume:** 861,799 Gal.

**Depth, ft.**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Lang RTC Upstream Level (ft)</th>
<th>azelwood RTC Upstream Level (ft)</th>
<th>Depth at SPP (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/23/19 17:45</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>9/23/19 18:00</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>9/23/19 18:14</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>9/23/19 18:28</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>9/23/19 18:43</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>9/23/19 19:00</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>9/23/19 19:14</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>9/23/19 19:28</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
</tbody>
</table>

**RTC Gate Position, Percent Open**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Lang RTC Gate 1 Position (%)</th>
<th>Lang RTC Gate 2 Position (%)</th>
<th>azelwood RTC Gate 1 Position (%)</th>
<th>azelwood RTC Gate 2 Position (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/23/19 17:45</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>9/23/19 18:00</td>
<td>20%</td>
<td>N/A</td>
<td>20%</td>
<td>N/A</td>
</tr>
<tr>
<td>9/23/19 18:14</td>
<td>40%</td>
<td>N/A</td>
<td>40%</td>
<td>N/A</td>
</tr>
<tr>
<td>9/23/19 18:28</td>
<td>60%</td>
<td>N/A</td>
<td>60%</td>
<td>N/A</td>
</tr>
<tr>
<td>9/23/19 18:43</td>
<td>80%</td>
<td>N/A</td>
<td>80%</td>
<td>N/A</td>
</tr>
<tr>
<td>9/23/19 19:00</td>
<td>100%</td>
<td>N/A</td>
<td>100%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Rainfall Accumulation**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/23/19 17:48</td>
<td>0.00</td>
</tr>
<tr>
<td>9/23/19 18:00</td>
<td>0.00</td>
</tr>
<tr>
<td>9/23/19 18:14</td>
<td>0.00</td>
</tr>
<tr>
<td>9/23/19 18:28</td>
<td>0.00</td>
</tr>
<tr>
<td>9/23/19 18:43</td>
<td>0.00</td>
</tr>
<tr>
<td>9/23/19 19:00</td>
<td>0.75</td>
</tr>
<tr>
<td>9/23/19 19:12</td>
<td>0.75</td>
</tr>
<tr>
<td>9/23/19 19:26</td>
<td>0.75</td>
</tr>
<tr>
<td>9/23/19 19:40</td>
<td>0.75</td>
</tr>
<tr>
<td>9/23/19 19:55</td>
<td>0.75</td>
</tr>
<tr>
<td>9/23/19 20:09</td>
<td>0.75</td>
</tr>
<tr>
<td>9/23/19 20:39</td>
<td>0.75</td>
</tr>
</tbody>
</table>

**Recommended Operational Changes/Notes:**

Lang was in emergency open mode for the entire month of September (waiting on an upstream level sensor replacement).
**RTC Site**

<table>
<thead>
<tr>
<th></th>
<th>Lang</th>
<th>Hazelwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate Activation Trigger Depth:</td>
<td>- ft.</td>
<td>1.12 ft.</td>
</tr>
<tr>
<td>Return to Normal Depth:</td>
<td>- ft.</td>
<td>1.01 ft.</td>
</tr>
<tr>
<td>Time Gate 1 Activated:</td>
<td>- ft.</td>
<td>9/26/2019 7:15</td>
</tr>
<tr>
<td>Time Gate 2 Activated:</td>
<td>- ft.</td>
<td>9/26/2019 7:15</td>
</tr>
<tr>
<td>Time Gate 1 Returned to Normal:</td>
<td>- ft.</td>
<td>N/A</td>
</tr>
<tr>
<td>Time Gate 2 Returned to Normal:</td>
<td>- ft.</td>
<td>N/A</td>
</tr>
<tr>
<td>Depth of Weir</td>
<td>8 ft.</td>
<td>8.4 ft.</td>
</tr>
<tr>
<td>Maximum Depth Reached:</td>
<td>0.00 ft.</td>
<td>4.14 ft.</td>
</tr>
<tr>
<td>Volume Stored:</td>
<td>0 Gal.</td>
<td>329,623 Gal.</td>
</tr>
</tbody>
</table>

**SPP**

<table>
<thead>
<tr>
<th></th>
<th>Hazelwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>10/14/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>9/26/2019 7:15</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>9/26/2019 8:45</td>
</tr>
</tbody>
</table>

**Analyst Name, Organization:**
Rucha Shah, Arcadis

**Storm Type:**
Less than 25 yr. storm

**Recommended Operational Changes/Notes:**
Lang was in emergency open mode for the entire month of September (waiting on an upstream level sensor replacement).
## Lang Ave & Hazelwood RTC Monthly Performance Report

### October 2019

#### Prevented SPP Events

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/2/2019</td>
<td>151,592</td>
<td>930,492</td>
<td>14%</td>
</tr>
<tr>
<td>10/15/2019</td>
<td>2,626</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>10/27/2019</td>
<td>2,009,059</td>
<td>4,988,677</td>
<td>29%</td>
</tr>
<tr>
<td>10/31/2019</td>
<td>1,926,816</td>
<td>9,846,798</td>
<td>16%</td>
</tr>
</tbody>
</table>

#### Prevented SPP Volume

<table>
<thead>
<tr>
<th>Event Date</th>
<th>Prevented SPP Overflow Volume (Gal.)</th>
<th>Occurred SPP Overflow Volume (Gal.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/2/2019</td>
<td>3,75%</td>
<td>1,25%</td>
</tr>
<tr>
<td>10/15/2019</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>10/27/2019</td>
<td>29%</td>
<td>71%</td>
</tr>
<tr>
<td>10/31/2019</td>
<td>16%</td>
<td>84%</td>
</tr>
</tbody>
</table>
**RTC Site SPP:**

<table>
<thead>
<tr>
<th>Decrement Activity</th>
<th>Date/Time</th>
<th>Lang RTC Upstream Level (ft)</th>
<th>Hazelwood RTC Upstream Level (ft)</th>
<th>Depth at SPP (ft)</th>
<th>Lang Weir (ft)</th>
<th>Hazelwood Weir (ft)</th>
<th>SPP Weir (ft)</th>
<th>Percent Capture</th>
<th>Overflow Volume</th>
<th>Overflow Volume Prevented</th>
<th>SPP Activation Prevented</th>
<th>If No, what is the overflow volume when storage was available upstream?</th>
<th>If No, could SPP activation have been prevented?</th>
<th>If Yes, could SPP activation have been prevented without Hazelwood storage?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- ft.</td>
<td>10/2/2019 5:15</td>
<td>0.58</td>
<td>0.60</td>
<td>-</td>
<td>0.62</td>
<td>0.64</td>
<td>0.66</td>
<td>14%</td>
<td>930,492 Gal.</td>
<td>151,592 Gal.</td>
<td>No</td>
<td>930,492 Gal.</td>
<td>Yes</td>
<td>NA</td>
</tr>
<tr>
<td>- ft.</td>
<td>10/2/2019 6:15</td>
<td>0.58</td>
<td>0.60</td>
<td>-</td>
<td>0.62</td>
<td>0.64</td>
<td>0.66</td>
<td>14%</td>
<td>930,492 Gal.</td>
<td>151,592 Gal.</td>
<td>No</td>
<td>930,492 Gal.</td>
<td>Yes</td>
<td>NA</td>
</tr>
</tbody>
</table>
October 15, 2019

RTC Site SPP:
Gate Activation Trigger Depth:
- ft. - ft.
Return to Normal Depth:
- ft. 0.06 ft.
Time Gate 1 Activated:
- 10/15/2019 11:35
Time Gate 1 Returned to Normal:
- 10/15/2019 11:55
Time Gate 2 Activated:
- 10/15/2019 11:15
Time Gate 1 Returned to Normal:
- 10/15/2019 11:55
Time Gate 2 Returned to Normal:
- 10/15/2019 11:55
Depth of Weir
8.00 ft. 8.40 ft.
Maximum Depth Reached:
(0.02) ft. 0.07 ft.
Volume Stored:
- Gal. 2,626 Gal.
Unused Storage Volume:
861,799 Gal. 1,263,545 Gal.

<table>
<thead>
<tr>
<th>Percent Capture</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overflow Volume</td>
<td>0 Gal.</td>
</tr>
<tr>
<td>Overflow Volume Prevented</td>
<td>2,626 Gal.</td>
</tr>
<tr>
<td>SPP Activation Prevented</td>
<td>Yes</td>
</tr>
</tbody>
</table>

If No, what is the overflow volume when storage was available upstream? NA Gal.
If No, could SPP activation have been prevented? NA
If Yes, could SPP activation have been prevented without Hazelwood storage? Yes

RTC Storage Performance

RTC Gate Performance

Rainfall Accumulation
### RTC Storage Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Lang RTC Upstream Level (ft)</th>
<th>Hazelwood RTC Upstream Level (ft)</th>
<th>Depth at SPP (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/27/19 3:00</td>
<td>8.00</td>
<td>8.80</td>
<td>8.40</td>
</tr>
<tr>
<td>10/27/19 5:24</td>
<td>8.00</td>
<td>8.80</td>
<td>8.40</td>
</tr>
<tr>
<td>10/27/19 7:49</td>
<td>8.00</td>
<td>8.80</td>
<td>8.40</td>
</tr>
</tbody>
</table>

### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Lang RTC Gate 1 Position (%)</th>
<th>Hazelwood RTC Gate 1 Position (%)</th>
<th>Lang RTC Gate 2 Position (%)</th>
<th>Hazelwood RTC Gate 2 Position (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/27/19 3:00</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>10/27/19 5:24</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>10/27/19 7:49</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/27/19 2:24</td>
<td>0.1</td>
</tr>
<tr>
<td>10/27/19 4:48</td>
<td>0.1</td>
</tr>
<tr>
<td>10/27/19 7:12</td>
<td>0.1</td>
</tr>
<tr>
<td>10/27/19 9:36</td>
<td>0.7</td>
</tr>
</tbody>
</table>

### Summary

- **Percent Capture:** 29%
- **Overflow Volume:** 4,988,677 Gal.
- **Overflow Volume Prevented:** 2,009,059 Gal.
- **SPP Activation Prevented:** No

**If No, what is the overflow volume when storage was available upstream?** 4,988,677 Gal.

**If No, could SPP activation have been prevented without Hazelwood storage?** No

**If Yes, could SPP activation have been prevented without Hazelwood storage?** NA
October 31, 2019

<table>
<thead>
<tr>
<th>RTC Site</th>
<th>Lang</th>
<th>Hazelwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate Activation Trigger Depth:</td>
<td>1.47 ft.</td>
<td>2.52 ft.</td>
</tr>
<tr>
<td>Return to Normal Depth:</td>
<td>0.75 ft.</td>
<td>1.35 ft.</td>
</tr>
<tr>
<td>Time Gate 1 Activated:</td>
<td>10/31/2019 13:55</td>
<td>10/31/2019 15:00</td>
</tr>
<tr>
<td>Time Gate 2 Activated:</td>
<td>10/31/2019 13:55</td>
<td>10/31/2019 15:00</td>
</tr>
<tr>
<td>Time Gate 1 Returned to Normal:</td>
<td>11/1/2019 0:00</td>
<td>10/31/2019 22:40</td>
</tr>
<tr>
<td>Time Gate 2 Returned to Normal:</td>
<td>11/1/2019 0:00</td>
<td>10/31/2019 22:40</td>
</tr>
<tr>
<td>Depth of Weir</td>
<td>8.00 ft.</td>
<td>8.40 ft.</td>
</tr>
<tr>
<td>Maximum Depth Reached:</td>
<td>8.00 ft.</td>
<td>8.40 ft.</td>
</tr>
<tr>
<td>Volume Stored:</td>
<td>843,896.72 Gal.</td>
<td>1,082,919 Gal.</td>
</tr>
<tr>
<td>Unused Storage Volume:</td>
<td>0 Gal.</td>
<td>0 Gal.</td>
</tr>
<tr>
<td>Percent Capture</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Overflow Volume:</td>
<td>9,846,798 Gal.</td>
<td></td>
</tr>
<tr>
<td>Overflow Volume Prevented:</td>
<td>1,926,816 Gal.</td>
<td></td>
</tr>
<tr>
<td>SPP Activation Prevented:</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>If No, what is the overflow volume when storage was available upstream?</td>
<td>NA Gal.</td>
<td></td>
</tr>
<tr>
<td>If No, could SPP activation have been prevented?</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>If yes, could SPP activation have been prevented without Hazelwood storage?</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

Analyst Name, Organization: Rucha Shah, Arcadis

Storm Type: Less than 5 yr. storm

Recommended Operational Changes/Notes:

---

**RTC Storage Performance**

- Depth, ft.
- Date/Time: 10/31/19 14:45, 10/31/19 17:09, 10/31/19 19:33, 10/31/19 21:57
- Lang RTC Upstream Level (ft)
- Hazelwood RTC Upstream Level (ft)
- Depth at SPP (ft)
- Lang Weir eight (ft)
- Hazelwood Weir eight (ft)

**RTC Gate Performance**

- Gate Position, Percent Open
- Date/Time: 10/31/19 14:45, 10/31/19 17:09, 10/31/19 19:33, 10/31/19 21:57
- Lang RTC Gate 1 Position (percent)
- Lang RTC Gate 2 Position (percent)
- Hazelwood RTC Gate 1 Position (%)
- Hazelwood RTC Gate 2 Position (%)

**Rainfall Accumulation**

- Rainfall (in.)
- Date/Time: 10/31/19 12:00, 10/31/19 14:24, 10/31/19 16:48, 10/31/19 19:12, 10/31/19 21:36, 11/1/2019 0:00
November 2019
Lang Ave. and Hazelwood RTC
KPI Report (no gate activations)
January 2020
Lang Ave. and Hazelwood RTC
KPI Report
(no events this month)
February 2020
Lang Ave. and Hazelwood RTC KPI Report (no gate activations)
March 2020
Lang Ave. and Hazelwood RTC
KPI Report (no gate activations)
April 2020
Lang Ave. and Hazelwood RTC
KPI Report (no gate activations)
June 2020
Lang Ave. and Hazelwood RTC KPI Report
## Lang Ave & Hazelwood RTC Monthly Performance Report June 2020

### Prevented SPP Volume

- **Prevented SPP Overflow Volume (Gal.):** 2,994,423
- **Occurred SPP Overflow Volume (Gal.):** -

### Table: Prevented and Occurred SPP Overflow Events

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/2/2020</td>
<td>1,487,882</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>6/11/2020</td>
<td>875,736</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>6/23/2020</td>
<td>630,805</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Notes:
- Prevented SPP Overflow:
  - 6/2/2020: 1,487,882
  - 6/11/2020: 875,736
  - 6/23/2020: 630,805
- Occurred SPP Overflow: -
**RTC Site SPP:**

- **Gate Activation Trigger Depth:** 1.32 ft.
- **Return to Normal Depth:** 0.79 ft.
- **Time Gate 1 Activated:** 6/2/2020 22:40
- **Time Gate 2 Activated:** 6/2/2020 22:40
- **Time Gate 1 Returned to Normal:** 6/3/2020 4:15
- **Time Gate 2 Returned to Normal:** 6/3/2020 4:15
- **Depth of Weir:** 8.00 ft.
- **Maximum Depth Reached:** 8.40 ft.
- **Volume Stored:** 847,803 Gal.
- **Unused Storage Volume:** 0 Gal.
- **Depth at SPP (ft):** 8.00 ft.
- **Rainfall Accumulation (in.):** 1 in.
- **Storm Event Duration:** 6 hr.
- **Storm Type:** Less than one year

**SPP:**
- **Analysis Date:** 7/3/2020
- **Event Start Date/Time:** 6/2/2020 22:40
- **Event End Date/Time:** 6/3/2020 4:15

**Analyst Name, Organization:** Rucha Shah, Arcadis

**Recommended Operational Changes/Notes:**
Overflow volume for the event will be estimated and filled at a later date, if applicable. Lang SPP depth sensor is not working and good data to estimate Lang SPP level is not available.

**RTC Storage Performance**

- **Lang RTC Upstream Level (ft):**
- **Hazelwood RTC Upstream Level (ft):**
- **Depth at SPP (ft):**

**RTC Gate Performance**

- **Lang RTC Gate 1 Position (percent):**
- **Lang RTC Gate 2 Position (percent):**
- **Hazelwood RTC Gate 1 Position (%):**
- **Hazelwood RTC Gate 2 Position (%):**

**Rainfall Accumulation**

- **Date/Time:** 6/2/2020 22:00 to 6/3/2020 4:00
- **Rainfall Accumulation (in.):**

---

**Percent Capture:** 100%

**Overflow Volume:** NA Gal.

**Overflow Volume Prevented:** 1,487,882 Gal.

**SPP Activation Prevented:** NA

If No, what is the overflow volume when storage was available upstream? NA Gal.

If No, could SPP activation have been prevented? NA

If Yes, could SPP activation have been prevented without Hazelwood storage? No

---

### Graph Details

- **Depth, ft.**
- **Gate Position, Percent Open**
- **Rainfall Accumulation (in.)**
- **Date/Time**

---

**RTC Site**

<table>
<thead>
<tr>
<th>Site</th>
<th>Lang</th>
<th>Hazelwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate Act. Trigger Depth</td>
<td>1.32 ft.</td>
<td>5.55 ft.</td>
</tr>
<tr>
<td>Return to Normal Depth</td>
<td>0.79 ft.</td>
<td>8.31 ft.</td>
</tr>
<tr>
<td>Time Gate 1 Activated</td>
<td>6/2/2020 22:40</td>
<td>6/2/2020 23:30</td>
</tr>
<tr>
<td>Time Gate 2 Activated</td>
<td>6/2/2020 22:40</td>
<td>6/2/2020 23:30</td>
</tr>
<tr>
<td>Time Gate 1 Returned to Normal</td>
<td>6/3/2020 4:15</td>
<td>6/3/2020 3:00</td>
</tr>
<tr>
<td>Time Gate 2 Returned to Normal</td>
<td>6/3/2020 4:15</td>
<td>6/3/2020 3:00</td>
</tr>
<tr>
<td>Depth of Weir</td>
<td>8.00 ft.</td>
<td>8.40 ft.</td>
</tr>
<tr>
<td>Maximum Depth Reached</td>
<td>8.00 ft.</td>
<td>8.40 ft.</td>
</tr>
<tr>
<td>Volume Stored</td>
<td>847,803 Gal.</td>
<td>640,080 Gal.</td>
</tr>
<tr>
<td>Unused Storage Volume</td>
<td>0 Gal.</td>
<td>0 Gal.</td>
</tr>
</tbody>
</table>

**RTC Storage Performance**

- **Lang RTC Upstream Level (ft):**
- **Hazelwood RTC Upstream Level (ft):**
- **Depth at SPP (ft):**

**RTC Gate Performance**

- **Lang RTC Gate 1 Position (percent):**
- **Lang RTC Gate 2 Position (percent):**
- **Hazelwood RTC Gate 1 Position (%):**
- **Hazelwood RTC Gate 2 Position (%):**

**Rainfall Accumulation**

- **Date/Time:** 6/2/2020 22:00 to 6/3/2020 4:00
- **Rainfall Accumulation (in.):**

---

** RTC Storage Performance**

** RTC Gate Performance**

** Rainfall Accumulation**
June 11, 2020

RTC Site: Lang, Hazelwood

<table>
<thead>
<tr>
<th>RTC Site</th>
<th>Lang</th>
<th>Hazelwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate Activation Trigger Depth:</td>
<td>- ft.</td>
<td>2.46 ft.</td>
</tr>
<tr>
<td>Return to Normal Depth:</td>
<td>- ft.</td>
<td>0.48 ft.</td>
</tr>
<tr>
<td>Time Gate 1 Activated:</td>
<td>6/11/2020 0:15</td>
<td>6/11/2020 0:15</td>
</tr>
<tr>
<td>Time Gate 2 Activated:</td>
<td>-</td>
<td>6/11/2020 2:50</td>
</tr>
<tr>
<td>Time Gate 1 Returned to Normal:</td>
<td>-</td>
<td>6/11/2020 2:50</td>
</tr>
<tr>
<td>Time Gate 2 Returned to Normal:</td>
<td>-</td>
<td>6/11/2020 2:50</td>
</tr>
<tr>
<td>Depth of Weir</td>
<td>8.00 ft.</td>
<td>8.40 ft.</td>
</tr>
<tr>
<td>Maximum Depth Reached:</td>
<td>- ft.</td>
<td>7.55 ft.</td>
</tr>
<tr>
<td>Volume Stored:</td>
<td>0 Gal.</td>
<td>875,736 Gal.</td>
</tr>
</tbody>
</table>

SPP:

| Analysis Date: | 7/3/2020 |
| Event Start Date/Time: | 6/11/2020 0:15 |
| Event End Date/Time: | 6/11/2020 2:50 |

| Analyst Name, Organization: | Rucha Shah, Arcadis |
| Total Rainfall Accumulation: | 0.5 in. |
| Storm Event Duration: | 3 hr. |
| Storm Type: | Less than one year |

Recommended Operational Changes/Notes:
No data available for Lang for this event. Overflow volume for the event will be estimated and filled at a later date, if applicable. Lang SPP depth sensor is not working and good data to estimate Lang SPP level is not available.

---

**RTC Storage Performance**

- Lang RTC Upstream Level (ft)
- Hazelwood RTC Upstream Level (ft)
- Depth at SPP (ft)
- Lang Weir Height (ft)
- Hazelwood Weir Height (ft)
- SPP Weir Height (ft)

**RTC Gate Performance**

- Lang RTC Gate 1 Position (percent)
- Hazelwood RTC Gate 1 Position (%)
- Lang RTC Gate 2 Position (percent)
- Hazelwood RTC Gate 2 Position (%)

**Rainfall Accumulation**

- Date/Time: 6/11/2020 0:00 to 6/11/2020 2:52
- Rainfall Accumulation (in.)
June 23, 2020

RTC Site SPP:
Gate Activation Trigger Depth: 1.55 ft. - ft.
Return to Normal Depth: 0.72 ft. - ft.
Time Gate 1 Activated: 6/23/2020 15:25 N/A
Time Gate 2 Activated: 6/23/2020 15:25 N/A
Time Gate 1 Returned to Normal: 6/23/2020 17:20 N/A
Time Gate 2 Returned to Normal: 6/23/2020 17:20 N/A
Depth of Weir 8.00 ft. 8.40 ft.
Maximum Depth Reached: 6.30 ft. 2.22 ft.
Volume Stored: 478,862 Gal. 151,943 Gal.

Depth, ft.

Date/Time

RTC Storage Performance

Lang RTC Upstream Level (ft)
Hazelwood RTC Upstream Level (ft)
Depth at SPP (ft)
Lang Weir height (ft)
Hazelwood Weir Height (ft)
SPP Weir height (ft)

RTC Gate Performance

Lang RTC Gate 1 Position (percent)
Lang RTC Gate 2 Position (percent)
azelwood RTC Gate 1 Position (percent)
azelwood RTC Gate 2 Position (percent)

Rainfall Accumulation

Date/Time

Rainfall (in.)

Date/Time

RTC Gate Performance

Lang RTC Gate 1 Position (percent)
Lang RTC Gate 2 Position (percent)
azelwood RTC Gate 1 Position (percent)
azelwood RTC Gate 2 Position (percent)

Rainfall Accumulation

Date/Time

Rainfall (in.)

Date/Time

RTC Gate Performance

Lang RTC Gate 1 Position (percent)
Lang RTC Gate 2 Position (percent)
azelwood RTC Gate 1 Position (percent)
azelwood RTC Gate 2 Position (percent)

Rainfall Accumulation

Date/Time

Rainfall (in.)

Date/Time

RTC Gate Performance

Lang RTC Gate 1 Position (percent)
Lang RTC Gate 2 Position (percent)
azelwood RTC Gate 1 Position (percent)
azelwood RTC Gate 2 Position (percent)

Rainfall Accumulation

Date/Time

Rainfall (in.)

Date/Time

RTC Gate Performance

Lang RTC Gate 1 Position (percent)
Lang RTC Gate 2 Position (percent)
azelwood RTC Gate 1 Position (percent)
azelwood RTC Gate 2 Position (percent)

Rainfall Accumulation

Date/Time

Rainfall (in.)

Date/Time

RTC Gate Performance

Lang RTC Gate 1 Position (percent)
Lang RTC Gate 2 Position (percent)
azelwood RTC Gate 1 Position (percent)
azelwood RTC Gate 2 Position (percent)

Rainfall Accumulation

Date/Time

Rainfall (in.)

Date/Time

RTC Site SPP:
Gate Activation Trigger Depth: 1.55 ft. - ft.
Return to Normal Depth: 0.72 ft. - ft.
Time Gate 1 Activated: 6/23/2020 15:25 N/A
Time Gate 2 Activated: 6/23/2020 15:25 N/A
Time Gate 1 Returned to Normal: 6/23/2020 17:20 N/A
Time Gate 2 Returned to Normal: 6/23/2020 17:20 N/A
Depth of Weir 8.00 ft. 8.40 ft.
Maximum Depth Reached: 6.30 ft. 2.22 ft.
Volume Stored: 478,862 Gal. 151,943 Gal.

Percent Capture
Overflow Volume: NA Gal.
Overflow Volume Prevented: 630,805 Gal.
SPP Activation Prevented:
If No, what is the overflow volume when storage was available upstream? NA Gal.
If No, could SPP activation have been prevented? NA
If Yes, could SPP activation have been prevented without Hazelwood storage? Yes

Recommended Operational Changes/Notes:
Overflow volume for the event will be estimated and filled at a later date, if applicable. Lang SPP depth sensor is not working and good data to estimate Lang SPP level is not available.

SPP:
Analysis Date: 7/3/2020
Event Start Date/Time: 6/23/2020 15:25
Event End Date/Time: 6/23/2020 17:20

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.9 in.
Storm Event Duration: 3 hr.
Storm Type: Less than one year
July 2019
Smith St. RTC
KPI Report
### Smith St. RTC Monthly Performance Report  
**July 2019**

<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/1/2019</td>
<td>126,377,833</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>7/7/2019</td>
<td>19,271,353</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>7/10/2019</td>
<td>96,456,708</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>7/16/2019</td>
<td>48,313,702</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>7/19/2019</td>
<td>93,791,670</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>7/23/2019</td>
<td>57,044,115</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>7/27/2019</td>
<td>68,496,355</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>509,751,736</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The June report includes a preceding event that ends on July 1st.
July 1, 2019

Site: Smith RTC
Analysis Date: 8/6/2019
Event Start Date/Time: 7/1/2019 23:40
Event End Date/Time: 7/7/2019 3:00

Time Lead Dewatering Valve Closed: 7/2/2019 2:00
Time Lead Dewatering Valve Opened: 7/7/2019 3:15
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.50 ft.
Event Drain Flow Threshold: 1.25 MGD

Did seiche occur during wet weather? Yes
*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.
Rainfall events occurred on July 6, 2019.
**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**

Rainfall data sourced from Buffalo Airport rain gauge website.

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*
July 10, 2019

Site: Smith RTC
Analysis Date: 8/6/2019
Event Start Date/Time: 7/10/2019 10:25
Event End Date/Time: 7/15/2019 18:10

Analyst Name, Organization: Nick Pasquini, Arcadis
Total Rainfall Accumulation: NA
Storm Event Duration: NA
Storm Type: NA

Time Lead Dewatering Valve Closed: 7/11/2019 8:00
Time Lead Dewatering Valve Opened: 7/13/2019 17:10
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.83 ft.
Event Drain Flow Threshold: 1.25 MGD

Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.

---

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
July 16, 2019

Site: Smith RTC
Analysis Date: 8/6/2019
Event Start Date/Time: 7/16/2019 1:45
Event End Date/Time: 7/18/2019 19:05

Time Lead Dewatering Valve Closed: 7/16/2019 2:45
Time Lead Dewatering Valve Opened: 7/17/2019 21:25
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.65 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 48,313,702 Gal.

Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.
July 19, 2019

Site: Smith RTC
Analysis Date: 8/6/2019
Event Start Date/Time: 7/19/2019 1:10
Event End Date/Time: 7/23/2019 0:55

Time Lead Dewatering Valve Closed: 7/19/2019 4:50
Time Lead Dewatering Valve Opened: 7/22/2019 20:10

Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 1.13 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 93,791,670 Gal.

Did seiche occur during wet weather? No

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.
July 23, 2019

Site: Smith RTC
Analysis Date: 7/23/2019 7:00
Event Start Date/Time: 7/26/2019 14:55
Event End Date/Time: 8/6/2019 NA

Analyst Name, Organization: Nick Pasquini, Arcadis
Total Rainfall Accumulation: NA
Storm Event Duration: NA
Storm Type: NA

Time Lead Dewatering Valve Closed: 7/24/2019 21:25
Time Lead Dewatering Valve Opened: NA
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -0.11 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 57,044,115 Gal.

Did seiche occur during wet weather? No

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.
July 27, 2019

Site: Smith RTC
Analysis Date: 8/6/2019
Event Start Date/Time: 7/27/2019 6:35
Event End Date/Time: 7/31/2019 20:20

Time Lead Dewatering Valve Closed: 7/28/2019 4:20
Time Lead Dewatering Valve Opened: 7/30/2019 12:50
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.83 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 68,496,355 Gal.

Did seiche occur during wet weather? No

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.
## Smith St. RTC Monthly Performance Report
### August 2019

<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/1/2019</td>
<td>58,545</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>8/5/2019</td>
<td>56,126,828</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>8/17/2019</td>
<td>23,875,519</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>8/21/2019</td>
<td>15,810,658</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>8/27/2019</td>
<td>10,522,401</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>106,393,951</strong></td>
<td><strong>Yes</strong></td>
<td><strong>1.25</strong></td>
</tr>
</tbody>
</table>
**August 1, 2019**

- **Site:** Smith RTC
- **Analysis Date:** 9/12/2019
- **Event Start Date/Time:** 8/1/2019 14:30
- **Event End Date/Time:** 8/1/2019 16:45

**Analysis Details:**
- **Time Lead Dewatering Valve Closed:** NA
- **Time Lead Dewatering Valve Opened:** #N/A
- **Elevation of Weir:** -0.45 ft.
- **Maximum Elevation Reached of Smith St. CSO:** -6.33 ft.
- **Event Drain Flow Threshold:** 1.25 MGD
- **Total Volume Captured:** 58,545 Gal.
- **Did seiche occur during wet weather?** Yes

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**Recommended Operational Changes/Notes:**
Rainfall data sourced from Buffalo Airport rain gauge website.
No rainfall data was recorded during this storm event. This was likely caused by a localized storm.

---

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
August 5, 2019

<table>
<thead>
<tr>
<th>Event</th>
<th>Date/Time</th>
<th>Duration</th>
<th>Elevation</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>8/5/2019 6:25</td>
<td>102 hrs</td>
<td>0.45 ft</td>
<td>56,126,828 Gal</td>
</tr>
<tr>
<td>End</td>
<td>8/10/2019 0:40</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*
August 17, 2019

<table>
<thead>
<tr>
<th>Site:</th>
<th>Smith RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>9/12/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>8/17/2019 10:45</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>8/19/2019 23:35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyst Name, Organization:</th>
<th>Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>1.93 in.</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>Less than one year</td>
</tr>
<tr>
<td>Storm Type:</td>
<td></td>
</tr>
</tbody>
</table>

Time Lead Dewatering Valve Closed: 8/17/2019 11:15
Time Lead Dewatering Valve Opened: 8/19/2019 15:15
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 1.49 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 23,875,519 Gal.
Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Rainfall data sourced from Buffalo Airport rain gauge website.

---

**RTC Structure Performance**

- DV1 % Closed
- DV2 % Closed
- South Int. Level
- Weir Elevation
- DS Weir Level
- Smith St. CSO Level

**Drain Flow to South Interceptor**

- Drain Flow to South Interceptor
- 1.25 MGD Threshold

**Rainfall Accumulation**

- Rainfall (in.)
- Date/Time
Site: Smith RTC
Analysis Date: 9/12/2019
Event Start Date/Time: 8/21/2019 1:30
Event End Date/Time: 8/22/2019 22:55

Time Lead Dewatering Valve Closed: 8/21/2019 1:35
Time Lead Dewatering Valve Opened: 8/21/2019 14:30
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 2.15 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 15,810,658 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
August 27, 2019

Site: Smith RTC
Analysis Date: 9/12/2019
Event Start Date/Time: 8/27/2019 6:45
Event End Date/Time: 8/30/2019 19:00

Total Rainfall Accumulation: 0.42 in.
Storm Event Duration: 27 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 8/28/2019 18:20
Time Lead Dewatering Valve Opened: 8/30/2019 6:45
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.78 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 10,522,401 Gal.

Did seiche occur during wet weather? Yes

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.

---

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/1/2019</td>
<td>5,031,826</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>9/4/2019</td>
<td>5,864,580</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>9/11/2019</td>
<td>895,917</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>9/12/2019</td>
<td>3,357,369</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>9/14/2019</td>
<td>11,524,473</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>9/23/2019</td>
<td>9,011,055</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>9/26/2019</td>
<td>6,201,408</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>9/28/2019</td>
<td>723,354</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>42,609,982</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**RTC Structure Performance**

- DV1 % Closed
- DV2 % Closed
- South Int. Level
- Weir Elevation
- DS Weir Level
- Smith St. CSO Level

**Drain Flow to South Interceptor**

- Drain Flow (MGD)

**Rainfall Accumulation**

**September 1, 2019**

**Site:** Smith RTC  
**Organization:** Rucha Shah, Arcadis

**Analysis Date:** 10/11/2019  
**Event Start Date/Time:** 9/1/2019 19:45  
**Event End Date/Time:** 9/2/2019 18:05

**Time Lead Dewatering Valve Closed:** 9/1/2019 20:10  
**Time Lead Dewatering Valve Opened:** 9/2/2019 13:40  
**Elevation of Weir:** -0.45 ft.  
**Maximum Elevation Reached of Smith St. CSO:** 0.01 ft.  
**Event Drain Flow Threshold:** 1.25 MGD  
**Total Volume Captured:** 5,031,826 Gal.

- **Did seiche occur during wet weather?** No

- **Note:** If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

**Recommended Operational Changes/Notes:**

Rainfall data sourced from Buffalo Airport rain gauge website.
**September 4, 2019**

<table>
<thead>
<tr>
<th>Site:</th>
<th>Smith RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Name, Organization:</td>
<td>Rucha Shah, Arcadis</td>
</tr>
<tr>
<td>Analysis Date:</td>
<td>10/11/2019</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0.21 in.</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>9/4/2019 3:10</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>9/4/2019 10:45</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>8 hrs.</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>Less than 1 year</td>
</tr>
<tr>
<td>Time Lead Dewatering Valve Closed</td>
<td>9/4/2019 6:35</td>
</tr>
<tr>
<td>Time Lead Dewatering Valve Opened</td>
<td>9/4/2019 7:25</td>
</tr>
<tr>
<td>Elevation of Weir</td>
<td>-0.45 ft.</td>
</tr>
<tr>
<td>Maximum Elevation Reached of Smith St. CSO:</td>
<td>0.46 ft.</td>
</tr>
<tr>
<td>Event Drain Flow Threshold</td>
<td>1.25 MGD</td>
</tr>
<tr>
<td>Total Volume Captured</td>
<td>5,864,580 Gal.</td>
</tr>
<tr>
<td>Did seiche occur during wet weather?</td>
<td>No</td>
</tr>
</tbody>
</table>

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
September 11, 2019

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.54 in.
Storm Event Duration: 20 hrs.
Storm Type: Less than 1 year

Time Lead Dewatering Valve Closed: 9/11/2019 22:30
Time Lead Dewatering Valve Opened: #N/A
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -1.51 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 895,917 Gal.

Did seiche occur during wet weather? Yes

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Rainfall data sourced from Buffalo Airport rain gauge website.

---

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
Site: Smith RTC
Analysis Date: 10/11/2019
Event Start Date/Time: 9/12/2019 2:10
Event End Date/Time: 9/12/2019 12:50

Total Rainfall Accumulation: 0.72 in.
Storm Event Duration: 11 hrs.
Type: Less than 1 year

Time Lead Dewatering Valve Closed: 9/12/2019 2:05
Time Lead Dewatering Valve Opened: 9/12/2019 2:30

Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -0.87 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 3,357,369 Gal.
Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

**Recommended Operational Changes/Notes:**
Rainfall data sourced from Buffalo Airport rain gauge website.

---

### RTC Structure Performance

- DV1 % Closed
- DV2 % Closed
- South Int. Level
- Weir Elevation
- DS Weir Level
- Smith St. CSO Level

### Drain Flow to South Interceptor

1.25 MGD Threshold

### Rainfall Accumulation
Event Duration: 21 hrs.
Total Rainfall Accumulation: 0.79 in.
Storm Type: Less than 1 year

Total Volume Captured: 11,524,473 Gal.

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Rainfall data sourced from Buffalo Airport rain gauge website.
### RTC Structure Performance

<table>
<thead>
<tr>
<th>Time</th>
<th>DV1 % Closed</th>
<th>DV2 % Closed</th>
<th>South Int. Level</th>
<th>Weir Elevation</th>
<th>DS Weir Level</th>
<th>Smith St. CSO Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/23/19 4:48</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/23/19 7:12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/23/19 9:36</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/23/19 12:00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/23/19 14:24</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/23/19 16:48</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/23/19 16:48</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/23/19 19:12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/23/19 21:36</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/24/19 0:00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/24/19 2:24</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
<tr>
<td>9/24/19 4:48</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1.2</td>
<td>-0.45</td>
</tr>
</tbody>
</table>

### Drain Flow to South Interceptor

- **1.25 MGD Threshold**

<table>
<thead>
<tr>
<th>Time</th>
<th>Drain Flow (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/23/19 4:48</td>
<td>0</td>
</tr>
<tr>
<td>9/23/19 7:12</td>
<td>0</td>
</tr>
<tr>
<td>9/23/19 9:36</td>
<td>0</td>
</tr>
<tr>
<td>9/23/19 12:00</td>
<td>0</td>
</tr>
<tr>
<td>9/23/19 14:24</td>
<td>0</td>
</tr>
<tr>
<td>9/23/19 16:48</td>
<td>0</td>
</tr>
<tr>
<td>9/23/19 19:12</td>
<td>0</td>
</tr>
<tr>
<td>9/23/19 21:36</td>
<td>0</td>
</tr>
<tr>
<td>9/24/19 0:00</td>
<td>0</td>
</tr>
<tr>
<td>9/24/19 2:24</td>
<td>0</td>
</tr>
<tr>
<td>9/24/19 4:48</td>
<td>0</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

- **9/23/19 4:48**
- **9/23/19 9:36**
- **9/23/19 12:00**
- **9/23/19 14:24**
- **9/23/19 16:48**
- **9/23/19 19:12**
- **9/23/19 21:36**
- **9/24/19 0:00**
- **9/24/19 2:24**
- **9/24/19 4:48**
September 26, 2019

<table>
<thead>
<tr>
<th>Site: Smith RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 10/11/2019</td>
<td>Total Rainfall Accumulation: 0.67 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 9/26/2019 8:00</td>
<td>Storm Event Duration: 10 hrs.</td>
</tr>
<tr>
<td>Event End Date/Time: 9/26/2019 18:20</td>
<td>Storm Type: Less than 1 year</td>
</tr>
</tbody>
</table>

- Time Lead Dewatering Valve Closed: 9/26/2019 18:15
- Time Lead Dewatering Valve Opened: *N/A*
- Elevation of Weir: -0.45 ft.
- Maximum Elevation Reached of Smith St. CSO: -4.32 ft.
- Event Drain Flow Threshold: 1.25 MGD
- Total Volume Captured: 6,201,408 Gal.
- Did seiche occur during wet weather? No

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

---

**Recommended Operational Changes/Notes:**
Rainfall data sourced from Buffalo Airport rain gauge website.

---

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
Analyst Name, Organization: Rucha Shah, Arcadis

Total Rainfall Accumulation: NA
Storm Event Duration: Less than 1 year

Rainfall data sourced from Buffalo Airport rain gauge website. No rainfall was recorded at South Buffalo rain gauge during this storm event. It was likely caused by a localized storm.

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.
### Smith St. RTC Monthly Performance Report

<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/1/2019</td>
<td>1,998,632</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>10/2/2019</td>
<td>4,205,646</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>10/3/2019</td>
<td>152,166</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>10/12/2019</td>
<td>12,565,898</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>10/16/2019</td>
<td>2,430,261</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>10/17/2019</td>
<td>4,859,143</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>26,211,746</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Site: Analyst Name, Organization:
Analysis Date: 11/13/2019
Event Start Date/Time: 10/1/2019 18:45
Event End Date/Time: 10/1/2019 22:05

Time Lead Dewatering Valve Closed
Time Lead Dewatering Valve Opened
Elevation of Weir
Maximum Elevation Reached of Smith St. CSO:
Event Drain Flow Threshold
Total Volume Captured
Did seiche occur during wet weather?

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:

Rainfall data sourced from Buffalo Airport rain gauge website.

Communication was lost from October 19 for the rest of the month of October.
**October 2, 2019**

**Site:** Smith RTC  
**Analysis Date:** 11/13/2019  
**Event Start Date/Time:** 10/2/2019 5:30  
**Event End Date/Time:** 10/2/2019 15:25  

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0 in.  
**Storm Event Duration:** 8 hrs.  
**Storm Type:** Less than 1 year

**Time Lead Dewatering Valve Closed:** 10/2/2019 5:55  
**Time Lead Dewatering Valve Opened:** 10/2/2019 11:10  
**Elevation of Weir:** -0.45 ft.  
**Maximum Elevation Reached of Smith St. CSO:** -0.23 ft.  
**Event Drain Flow Threshold:** 1.25 MGD  
**Total Volume Captured:** 4,205,646 Gal.  
**Did seiche occur during wet weather?** No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

---

**Recommended Operational Changes/Notes:**  
Rainfall data sourced from Buffalo Airport rain gauge website. No rainfall was recorded at South Buffalo rain gauge during this storm event. It was likely caused by a localized storm. Communication was lost from October 19 for the rest of the month of October.

---

**RTC Structure Performance**

---

**Drain Flow to South Interceptor**

---

**Rainfall Accumulation**
October 3, 2019

<table>
<thead>
<tr>
<th>Site:</th>
<th>Smith RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>11/13/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>10/3/2019 12:45</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>10/3/2019 16:20</td>
</tr>
</tbody>
</table>

**Analyst Name, Organization:** Rucha Shah, Arcadis

| Total Rainfall Accumulation: | 0.18 in.                      |
| Storm Event Duration:       | 4 hrs.                        |
| Storm Type:                 | Less than 1 year              |

| Time Lead Dewatering Valve Closed | 10/3/2019 13:10 |
| Time Lead Dewatering Valve Opened | 10/3/2019 15:35 |

Elevation of Weir: -0.45 ft.

Maximum Elevation Reached of Smith St. CSO: -5.69 ft.

Event Drain Flow Threshold: 1.25 MGD

Total Volume Captured: 153,166 Gal.

Did seiche occur during wet weather? No

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

---

**RTC Structure Performance**

- DV1 % Closed
- DV2 % Closed
- South Int. Level
- Weir Elevation
- DS Weir Level
- Smith St. CSO Level

---

**Drain Flow to South Interceptor**

Drain Flow to South Interceptor threshold: 1.25 MGD

---

**Rainfall Accumulation**

Rainfall data sourced from Buffalo Airport rain gauge website.

Communication was lost from October 19 for the rest of the month of October.
October 12, 2019

Site: Smith RTC
Analysis Date: 11/13/2019
Event Start Date/Time: 10/12/2019 6:25
Event End Date/Time: 10/12/2019 21:50

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.02 in.
Storm Event Duration: 4 hrs.
Storm Type: Less than 1 year

Time Lead Dewatering Valve Closed: 10/12/2019 6:30
Time Lead Dewatering Valve Opened: 10/12/2019 7:40
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 1.85 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 12,565,898 Gal.

Did seiche occur during wet weather? No

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Communication was lost from October 19 for the rest of the month of October.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.

---

**RTC Structure Performance**

---

**Drain Flow to South Interceptor**

---

**Rainfall Accumulation**
**RTC Structure Performance**

- DV1 % Closed
- DV2 % Closed
- South Int. Level
- Elevation (%)
- Smith St. CSO Level

**Drain Flow to South Interceptor**

- Drain Flow (MGD)
- 1.25 MGD Threshold

**Rainfall Accumulation**

- Date/Time
- Rainfall (in.)

---

**October 16, 2019**

**Site:** Smith RTC  
**Analysis Date:** 11/13/2019  
**Event Start Date/Time:** 10/16/2019 9:40  
**Event End Date/Time:** 10/16/2019 11:40

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0.76 in.  
**Storm Event Duration:** Less than 1 year

**Time Lead Dewatering Valve Closed:** 10/16/2019 11:30  
**Time Lead Dewatering Valve Opened:** N/A  
**Elevation of Weir:** -0.45 ft.  
**Maximum Elevation Reached of Smith St. CSO:** -2.36 ft.  
**Event Drain Flow Threshold:** 1.25 MGD  
**Total Volume Captured:** 2,430,261 Gal.

**Did seiche occur during wet weather?** Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

Rainfall data sourced from Buffalo Airport rain gauge website.

Communication was lost from October 19 for the rest of the month of October.
October 17, 2019

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*
November 2019
Smith St. RTC
KPI Report
<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/21/2019</td>
<td>5,298,334</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>11/24/2019</td>
<td>47,864</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>11/28/2019</td>
<td>4,097,292</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>9,443,490</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Rainfall data sourced from Buffalo Airport rain gauge website. No rainfall was recorded at South Buffalo rain gauge during this storm event. It was likely caused by a localized storm.

Communication was lost from November 1 to November 5.

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.
Rainfall data sourced from Buffalo Airport rain gauge website. No rainfall was recorded at South Buffalo rain gauge during this storm event. It was likely caused by a localized storm.
November 28, 2019

**Site:** Analyst Name, Organization:

**Analysis Date:** 12/9/2019

**Event Start Date/Time:** 11/28/2019 1:45

**Event End Date/Time:** 11/28/2019 7:00

**Total Rainfall Accumulation:** 0 in.

**Storm Event Duration:** 6 hrs.

**Storm Type:** N/A

**Time Lead Dewatering Valve Closed:** 11/28/2019 1:30

**Time Lead Dewatering Valve Opened:** 11/28/2019 2:05

**Elevation of Weir:** -0.45 ft.

**Maximum Elevation Reached of Smith St. CSO:** -0.43 ft.

**Event Drain Flow Threshold:** 1.25 MGD

**Total Volume Captured:** 4,097,292 Gal.

**Did seiche occur during wet weather?** No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

---

**RTC Structure Performance**

- **DV1 % Closed**
- **DV2 % Closed**
- **South Int. Level**
- **Weir Elevation**
- **DS Weir Level**
- **Smith St. CSO Level**

---

**Drain Flow to South Interceptor**

- **Drain Flow (MGD)**

---

**Rainfall Accumulation**

- **Rainfall (in.)**

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from Buffalo Airport rain gauge website. No rainfall was recorded at South Buffalo rain gauge during this storm event. It was likely caused by a localized storm.
<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/1/2019</td>
<td>2,172,480</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/1/2019</td>
<td>2,196,125</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/2/2019</td>
<td>33,323</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/3/2019</td>
<td>20,204,863</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/6/2019</td>
<td>269,557</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/9/2019</td>
<td>629,189</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/11/2019</td>
<td>6,727,808</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/14/2019</td>
<td>524,336</td>
<td>No</td>
<td>1.25</td>
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<tr>
<td>12/15/2019</td>
<td>7,671,561</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/16/2019</td>
<td>34,242</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/18/2019</td>
<td>1,551,444</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/19/2019</td>
<td>27,022</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/29/2019</td>
<td>1,979,610</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>12/30/2019</td>
<td>7,348,967</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>51,370,527</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
December 1, 2019

**Site:** Smith RTC  
**Analysis Date:** 1/6/2020  
**Event Start Date/Time:** 12/1/2019 11:15  
**Event End Date/Time:** 12/1/2019 12:45

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 1.19 in.  
**Storm Event Duration:** Less than two years

**Time Lead Dewatering Valve Closed:** 12/1/2019 12:35  
**Time Lead Dewatering Valve Opened:** N/A  
**Elevation of Weir:** -0.45 ft.  
**Maximum Elevation Reached of Smith St. CSO:** -0.44 ft.  
**Event Drain Flow Threshold:** 1.25 MGD  
**Total Volume Captured:** 2,172,480 Gal.

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**Recommended Operational Changes/Notes:** Rainfall data sourced from Buffalo Airport rain gauge website.

---

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
December 1, 2019

Analyst Name, Organization: Rucha Shah, Arcadis

Total Rainfall Accumulation: 0.1 in.
Storm Event Duration: Less than one year

Rainfall data sourced from Buffalo Airport rain gauge website.

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.
Site: Analyst Name, Organization: Smith RTC, Rucha Shah, Arcadis
Analysis Date: 1/6/2020
Event Start Date/Time: 12/2/2019 14:35
Event End Date/Time: 12/2/2019 15:00
Total Rainfall Accumulation: 0.02 in.
Storm Event Duration: 1 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: NA
Time Lead Dewatering Valve Opened: NA
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -6.93 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 33,323 Gal.
Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

---

**RTC Structure Performance**

![RTC Structure Performance Graph](image)

**Drain Flow to South Interceptor**

![Drain Flow Graph](image)

**Rainfall Accumulation**

![Rainfall Graph](image)

Rainfall data sourced from Buffalo Airport rain gauge website.
December 3, 2019

Site: Smith RTC
Analysis Date: 1/6/2020
Event Start Date/Time: 12/3/2019 22:20
Event End Date/Time: 12/5/2019 1:35

Analyser Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 1.28 in.
Storm Event Duration: 27 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 12/4/2019 4:55
Time Lead Dewatering Valve Opened: 12/4/2019 4:55
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -4.14 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 20,204,863 Gal.

Did seiche occur during wet weather? No

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**

Rainfall data sourced from Buffalo Airport rain gauge website.
Site: Smith RTC
Analysis Date: 1/6/2020
Event Start Date/Time: 12/6/2019 11:15
Event End Date/Time: 12/6/2019 15:45

Total Rainfall Accumulation: 0.08 in.
Storm Event Duration: Less than one year
Storm Type: 5 hrs.

Time Lead Dewatering Valve Closed: NA
Time Lead Dewatering Valve Opened: 12/6/2019 11:15
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -6.73 ft.
Event Drain Flow Threshold: 1.25 MGD

Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
December 9, 2019

Site: Smith RTC
Analysis Date: 1/6/2020
Event Start Date/Time: 12/9/2019 13:30
Event End Date/Time: 12/10/2019 6:20

Time Lead Dewatering Valve Closed: NA
Time Lead Dewatering Valve Opened: #N/A
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -6.13 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 629,189 Gal.

Dewatering Valve Position (% Closed)

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.
**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**

**December 11, 2019**

| Time Lead Dewatering Valve Closed | 12/11/2019 10:35 |
| Time Lead Dewatering Valve Opened  | 12/11/2019 18:35 |
| Elevation of Weir                  | -0.45 ft. |
| Maximum Elevation Reached of Smith St. CSO: | 1.54 ft. |
| Event Drain Flow Threshold         | 1.25 MGD |
| Total Volume Captured              | 6,727,808 Gal. |
| Did seiche occur during wet weather? | No |

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**Recommended Operational Changes/Notes:**
Rainfall data sourced from Buffalo Airport rain gauge website.
December 14, 2019

Site: Smith RTC
Analysis Date: 1/6/2020
Event Start Date/Time: 12/14/2019 10:40
Event End Date/Time: 12/14/2019 10:50

Time Lead Dewatering Valve Closed: NA
Time Lead Dewatering Valve Opened: #N/A
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -6.67 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 524,336 Gal.

Did seiche occur during wet weather? No

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**

---

**December 15, 2019**

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<thead>
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<th>Drain Flow (MGD)</th>
<th>1.25 MGD Threshold</th>
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<tr>
<td>12/15/2019 13:12</td>
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<td>12/15/2019 15:36</td>
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<tr>
<td>12/15/2019 19:12</td>
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**Rainfall Accumulation**

**Drain Flow to South Interceptor**

**RTC Structure Performance**

---

**January 6, 2020**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Drain Flow (MGD)</th>
<th>1.25 MGD Threshold</th>
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<tr>
<td>12/15/2019 13:12</td>
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<tr>
<td>12/15/2019 14:24</td>
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<td>12/15/2019 15:36</td>
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<tr>
<td>12/15/2019 19:12</td>
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**Rainfall Accumulation**

**Drain Flow to South Interceptor**

**RTC Structure Performance**

---

**January 6, 2020**

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<th>Date/Time</th>
<th>Drain Flow (MGD)</th>
<th>1.25 MGD Threshold</th>
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<td>12/15/2019 14:24</td>
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<td>12/15/2019 15:36</td>
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<tr>
<td>12/15/2019 19:12</td>
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</tbody>
</table>

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**Rainfall Accumulation**

**Drain Flow to South Interceptor**

**RTC Structure Performance**
December 16, 2019

**RTC Structure Performance**

- DV1 % Closed
- DV2 % Closed
- South Int. Level
- Weir Elevation
- DS Weir Level
- Smith St. CSO Level

**Drain Flow to South Interceptor**

- Drain Flow to South Interceptor
- 1.25 MGD Threshold

**Rainfall Accumulation**

- Rainfall Accumulation
- Date/Time
December 18, 2019

**Site**: Smith RTC

**Analysis Date**: 1/6/2020

**Event Start Date/Time**: 12/18/2019 3:10

**Event End Date/Time**: 12/18/2019 19:55

**Analyst Name, Organization**: Rucha Shah, Arcadis

**Total Rainfall Accumulation**: 0 in.

**Storm Event Duration**: 5 hr.

**Storm Type**: NA

**Time Lead Dewatering Valve Closed**: 12/18/2019 8:40

**Time Lead Dewatering Valve Opened**: #N/A

**Elevation of Weir**: -0.45 ft.

**Maximum Elevation Reached of Smith St. CSO**: -3.43 ft.

**Event Drain Flow Threshold**: 1.25 MGD

**Total Volume Captured**: 1,551,444 Gal.

**Did seiche occur during wet weather?**: No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

---

**RTC Structure Performance**

**DV1 % Closed**

**DV2 % Closed**

**South Int. Level**

**Weir Elevation**

**DS Weir Level**

**Smith St. CSO Level**

---

**Drain Flow to South Interceptor**

**Drain Flow (MGD)**

1.25 MGD Threshold

---

**Rainfall Accumulation**

---

Rainfall data sourced from Buffalo Airport rain gauge website. No rainfall was recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.
### December 19, 2019

**Site:** Smith RTC  
**Analysis Date:** 1/6/2020  
**Event Start Date/Time:** 12/19/2019 18:05  
**Event End Date/Time:** 12/19/2019 19:20  

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0 in.  
**Storm Event Duration:** 1.5 hr.  
**Storm Type:** NA

| Event Lead Dewatering Valve Closed | NA |
| Event Lead Dewatering Valve Opened | N/A |
| Elevation of Weir | -0.45 ft. |
| Maximum Elevation Reached of Smith St. | -7.04 ft. |
| CSO: | 1.25 MGD |
| Total Volume Captured | 27,022 Gal. |
| Did seiche occur during wet weather? | No |

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**Recommended Operational Changes/Notes:**
Rainfall data sourced from Buffalo Airport rain gauge website. No rainfall was recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm or probable snow melt.

### RTC Structure Performance

![RTC Structure Performance Graph](image)

### Drain Flow to South Interceptor

![Drain Flow to South Interceptor Graph](image)

### Rainfall Accumulation

![Rainfall Accumulation Graph](image)
Site: Smith RTC  
Analysis Date: 1/6/2020  
Event Start Date/Time: 12/29/2019 14:50  
Event End Date/Time: 12/30/2019 1:55

Analyst Name, Organization: Rucha Shah, Arcadis  
Total Rainfall Accumulation: 0.84 in.  
Storm Event Duration: 23 hr.  
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: NA  
Time Lead Dewatering Valve Opened: N/A  
Elevation of Weir: -0.45 ft.  
Maximum Elevation Reached of Smith St. CSO: -6.27 ft.  
Event Drain Flow Threshold: 1.25 MGD  
Total Volume Captured: 1,979,610 Gal.

Did seiche occur during wet weather? No

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Rainfall data sourced from Buffalo Airport rain gauge website.

---

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/2020</td>
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<td>1.25</td>
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<tr>
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<tr>
<td>1/7/2020</td>
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<td>1.25</td>
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<tr>
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<td>1.25</td>
</tr>
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<td>1/14/2020</td>
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<td>1.25</td>
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<tr>
<td>1/16/2020</td>
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<td>1/18/2020</td>
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<td>1/19/2020</td>
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<td>1/29/2020</td>
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<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>74,983,911</strong></td>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>Total Volume Captured (gal)</strong></td>
</tr>
</tbody>
</table>
January 1, 2020

Site: Smith RTC  
Analysis Date: 2/3/2020  
Event Start Date/Time: 1/1/2020 2:10  
Event End Date/Time: 1/1/2020 7:55

Analyst Name, Organization: Rucha Shah, Arcadis  
Total Rainfall Accumulation: in.  
Storm Event Duration: NA  
Storm Type: NA

Time Lead Dewatering Valve Closed: NA  
Time Lead Dewatering Valve Opened: #N/A  
Elevation of Weir: -0.45 ft.  
Maximum Elevation Reached of Smith St. CSO: -3.87 ft.  
Event Drain Flow Threshold: 1.25 MGD  
Total Volume Captured: 1,785,354 Gal.

Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge. No rain observed but temperatures hovered around freezing, indicating possible snowmelt.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
January 6, 2020

Site: Smith RTC
Analysis Date: 2/3/2020
Event Start Date/Time: 1/6/2020 2:05
Event End Date/Time: 1/7/2020 1:00

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: NA
Storm Event Duration: NA
Storm Type: NA

Time Lead Dewatering Valve Closed: 1/6/2020 2:25
Time Lead Dewatering Valve Opened: 1/6/2020 20:15
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.86 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 19,113,517 Gal.

Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website. No rain observed during event, but rain recorded late in the day on January 5. Temperatures for most of Jan. 6 were above 35 degrees, indicating snow melt could also have occurred.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
January 7, 2020

| Event Start Date/Time: | 1/7/2020 22:25 |
| Event End Date/Time:   | 1/8/2020 9:15  |

**Time Lead Dewatering Valve Closed:** 1/7/2020 22:35

**Time Lead Dewatering Valve Opened:** 1/8/2020 5:40

**Elevation of Weir:** -0.45 ft.

**Maximum Elevation Reached of Smith St. CSO:** 0.56 ft.

**Event Drain Flow Threshold:** 1.25 MGD

**Total Volume Captured:** 8,308,115 Gal.

**Did seiche occur during wet weather?** No

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**RTC Structure Performance**

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**Drain Flow to South Interceptor**

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**Rainfall Accumulation**

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*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*
January 11, 2020

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**Site:** Smith RTC  
**Analysis Date:** 2/3/2020  
**Event Start Date/Time:** 1/11/2020 0:40  
**Event End Date/Time:** 1/12/2020 17:05

---

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0.93 in.  
**Storm Event Duration:** 32 hrs.  
**Storm Type:** <1 yr.

---

**Time Lead Dewatering Valve Closed:** 1/11/2020 15:15  
**Time Lead Dewatering Valve Opened:** 1/12/2020 13:05  
**Elevation of Weir:** -0.45 ft.  
**Maximum Elevation Reached of Smith St. CSO:** 5.07 ft.  
**Event Drain Flow Threshold:** 1.25 MGD  
**Total Volume Captured:** 3,471,252 Gal.

---

**Did seiche occur during wet weather?** Yes

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*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

---

**Recommended Operational Changes/Notes:** Rainfall data sourced from Buffalo Airport rain gauge website.

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**RTC Structure Performance**

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**Drain Flow to South Interceptor**

---

**Rainfall Accumulation**
Site: Smith RTC
Analysis Date: 2/3/2020
Event Start Date/Time: 1/14/2020 17:45
Event End Date/Time: 1/14/2020 22:45

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: in.
Storm Event Duration: NA
Storm Type: NA

Time Lead Dewatering Valve Closed: NA
Time Lead Dewatering Valve Opened: NA
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -0.63 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 4,201,748 Gal.
Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge. No rain recorded, but temperatures were in the upper 30’s and 40’s all day, suggesting a snowmelt event.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
January 16, 2020

Site: Smith RTC
Analysis Date: 2/3/2020
Event Start Date/Time: 1/16/2020 3:40
Event End Date/Time: 1/16/2020 21:25

Time Lead Dewatering Valve Closed: 1/16/2020 4:15
Time Lead Dewatering Valve Opened: 1/16/2020 7:40
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.34 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 9,188,855 Gal.

Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
January 18, 2020

Site: Smith RTC
Analysis Date: 2/3/2020
Event Start Date/Time: 1/18/2020 14:00
Event End Date/Time: 1/18/2020 20:35

Time Lead Dewatering Valve Closed: 1/18/2020 19:50
Time Lead Dewatering Valve Opened: N/A
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 2.23 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 268,324 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.
January 19, 2020

**Site:** Smith RTC

**Analysis Date:** 2/3/2020

**Event Start Date/Time:** 1/19/2020 3:15

**Event End Date/Time:** 1/19/2020 19:30

**Analyst Name, Organization:** Rucha Shah, Arcadis

**Total Rainfall Accumulation:** in.

**Storm Event Duration:** NA

**Storm Type:** NA

---

**Time Lead Dewatering Valve Closed:** 1/19/2020 3:00

**Time Lead Dewatering Valve Opened:** 1/19/2020 11:45

**Elevation of Weir:** -0.45 ft.

**Maximum Elevation Reached of Smith St. CSO:** 2.08 ft.

**Event Drain Flow Threshold:** 1.25 MGD

**Total Volume Captured:** 10,127,520 Gal.

**Did seiche occur during wet weather?** Yes

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*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

---

**RTC Structure Performance**

---

**Drain Flow to South Interceptor**

---

**Rainfall Accumulation**
**January 25, 2020**

**Site:** Smith RTC  
**Analysis Date:** 2/3/2020  
**Event Start Date/Time:** 1/25/2020 0:15  
**Event End Date/Time:** 1/27/2020 3:30  
**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0.46 in.  
**Storm Event Duration:** <1 yr.  
**Storm Type:** 

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<table>
<thead>
<tr>
<th>Time Lead Dewatering Valve Closed</th>
<th>1/25/2020 0:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Lead Dewatering Valve Opened</td>
<td>1/27/2020 3:45</td>
</tr>
<tr>
<td>Elevation of Weir</td>
<td>-0.45 ft.</td>
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<tr>
<td>Maximum Elevation Reached of Smith St. CSO:</td>
<td>0.51 ft.</td>
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<td>Total Drain Flow Threshold</td>
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<td>Event Drain Flow Threshold</td>
<td>1.25 MGD</td>
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<tr>
<td>Total Volume Captured</td>
<td>18,504,189 Gal.</td>
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<td>Did seiche occur during wet weather?</td>
<td>Yes</td>
</tr>
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</table>

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**Recommended Operational Changes/Notes:**
Rainfall data sourced from BSA’s South Buffalo rain gauge. SouthInterceptor level sensors from January 24, 2020 for the rest of the month affected gate activations.

---

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
**RTC Structure Performance**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>DV1 % Closed</th>
<th>DV2 % Closed</th>
<th>South Int. Level</th>
<th>Weir Elevation</th>
<th>DS Weir Level</th>
<th>Smith St. CSO Level</th>
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</thead>
<tbody>
<tr>
<td>1/29/20 18:15</td>
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<tr>
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<tr>
<td>1/29/20 18:43</td>
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</table>

**Drain Flow to South Interceptor**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Drain Flow (MGD)</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
<tr>
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**Rainfall Accumulation**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation (in.)</th>
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<tbody>
<tr>
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<tr>
<td>1/29/20 18:22</td>
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</tbody>
</table>

*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

---

**Site:** Smith RTC  
**Analysis Date:** 2/3/2020  
**Event Start Date/Time:** 1/29/2020 18:20  
**Event End Date/Time:** 1/29/2020 18:30  
**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0 in.  
**Storm Event Duration:** 0.2 hrs.  
**Storm Type:** NA  

**Time Lead Dewatering Valve Closed:** 1/29/2020 18:15  
**Time Lead Dewatering Valve Opened:** N/A  
**Elevation of Weir:** -0.45 ft.  
**Maximum Elevation Reached of Smith St. CSO:** -6.32 ft.  
**Event Drain Flow Threshold:** 1.25 MGD  
**Total Volume Captured:** 15,037 Gal.  
**Did seiche occur during wet weather?** No  

**Recommended Operational Changes/Notes:**  
Rainfall data sourced from Buffalo Airport rain gauge website. No rainfall was recorded for this event. It was likely caused by a localized storm.
February 2020
Smith St. RTC
KPI Report
<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/2/2020</td>
<td>4,523,246</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>2/8/2020</td>
<td>19,394</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>2/10/2020</td>
<td>3,774,818</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>2/11/2020</td>
<td>7,043,327</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>2/13/2020</td>
<td>91,413</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>2/15/2020</td>
<td>5,504,963</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>2/18/2020</td>
<td>10,841,235</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>2/21/2020</td>
<td>14,252,048</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>2/26/2020</td>
<td>263,210</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>2/28/2020</td>
<td>51,892</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>46,365,546</strong></td>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>46,365,546</strong></td>
</tr>
</tbody>
</table>
**February 2, 2020**

**Site:** Smith RTC  
**Analysis Date:** 3/10/2020  
**Event Start Date/Time:** 2/2/2020 6:35  
**Event End Date/Time:** 2/2/2020 22:10

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0.42 in.  
**Storm Event Duration:** 16 hrs.  
**Storm Type:** Less than one year

| Time Lead Dewatering Valve Closed | 2/2/2020 6:30 |
| Time Lead Dewatering Valve Opened | 2/2/2020 21:55 |
| Elevation of Weir | 0.45 ft. |
| Maximum Elevation Reached of Smith St. CSO | 0.11 ft. |
| Event Drain Flow Threshold | 1.25 MGD |
| Total Volume Captured | 4,523,246 Gal. |

**Did seiche occur during wet weather?**  
No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**Recommended Operational Changes/Notes:**
Rainfall data sourced from BSA’s South Buffalo rain gauge.

---

### RTC Structure Performance

- DV1 % Closed  
- DV2 % Closed  
- South Int. Level  
- Weir Elevation  
- DS Weir Level  
- Smith St. CSO Level

---

### Drain Flow to South Interceptor

- Drain Flow (MGD)  
- 1.25 MGD Threshold

---

### Rainfall Accumulation

- Date/Time  
- Rainfall (in.)
February 8, 2020

**RTC Structure Performance**

**Rainfall Accumulation**

**Drain Flow to South Interceptor**

### Site:

- **Smith RTC**

### Analyst Name, Organization:

- **Rucha Shah, Arcadis**

### Analysis Date:

- **3/10/2020**

### Event Start Date/Time:

- **2/8/2020 7:55**

### Event End Date/Time:

- **2/8/2020 8:30**

### Total Rainfall Accumulation:

- **0 in.**

### Storm Event Duration:

- **1 hr.**

### Storm Type:

- **NA**

### Time Lead Dewatering Valve Closed

- **2/8/2020 7:40**

### Time Lead Dewatering Valve Opened

- **2/8/2020 7:50**

### Elevation of Weir

- **-0.45 ft.**

### Maximum Elevation Reached of Smith St. CSO:

- **-6.63 ft.**

### Event Drain Flow Threshold

- **1.25 MGD**

### Total Volume Captured

- **19,394 Gal.**

### Did seiche occur during wet weather?

- **No**

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

---

Rainfall data sourced from BSA’s South Buffalo rain gauge. No rainfall recorded at South Buffalo rain gauge during this storm event. Valve 2 was manually set to 100% closed due to south interceptor level issue.
February 10, 2020

Site: Smith RTC
Analysis Date: 3/10/2020
Event Start Date/Time: 2/10/2020 1:55
Event End Date/Time: 2/10/2020 18:45

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.1 in.
Storm Event Duration: 17 hr.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 2/10/2020 1:30
Time Lead Dewatering Valve Opened: 2/10/2020 18:00
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -2.74 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 3,774,818 Gal.

Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge. Valve 2 manually set to 100% closed due to south interceptor level issue.
**February 11, 2020**

<table>
<thead>
<tr>
<th>Site:</th>
<th>Smith RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Name, Organization:</td>
<td>Rucha Shah, Arcadis</td>
</tr>
<tr>
<td>Analysis Date:</td>
<td>3/10/2020</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0.02 in.</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>2/11/2020 16:55</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>12 hr.</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>2/12/2020 3:55</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>Less than one year</td>
</tr>
</tbody>
</table>

**Time Lead Dewatering Valve Closed** | 2/11/2020 20:40 |
**Time Lead Dewatering Valve Opened** | 2/12/2020 3:10 |
**Elevation of Weir** | -0.45 ft. |
**Maximum Elevation Reached of Smith St. CSO:** | 0.26 ft. |
**Event Drain Flow Threshold** | 1.25 MGD |
**Total Volume Captured** | 7,043,327 Gal. |
**Did seiche occur during wet weather?** | No |

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

### RTC Structure Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>DV1 % Closed</th>
<th>DV2 % Closed</th>
<th>South Int. Level</th>
<th>Weir Elevation</th>
<th>DS Weir Level</th>
<th>Smith St. CSO Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/11/20 16:45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/11/20 19:09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/11/20 21:33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/11/20 23:57</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/12/20 2:21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/12/20 4:45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Drain Flow to South Interceptor

**Drain Flow (MGD)**

- **1.25 MGD Threshold**

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/11/20 16:45</td>
<td></td>
</tr>
<tr>
<td>2/11/20 19:09</td>
<td></td>
</tr>
<tr>
<td>2/11/20 21:33</td>
<td></td>
</tr>
<tr>
<td>2/11/20 23:57</td>
<td></td>
</tr>
<tr>
<td>2/12/20 2:21</td>
<td></td>
</tr>
<tr>
<td>2/12/20 4:45</td>
<td></td>
</tr>
</tbody>
</table>

Rainfall data sourced from BSA’s South Buffalo rain gauge. Valve 2 manually set to 100% closed due to south interceptor level issue.
**February 13, 2020**

**Site:** Smith RTC  
**Analysis Date:** 3/10/2020  
**Event Start Date/Time:** 2/13/2020 5:45  
**Event End Date/Time:** 2/13/2020 22:20

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0.18 in.  
**Storm Event Duration:** 18 hr.  
**Storm Type:** Less than one year

**Time Lead Dewatering Valve Closed** 2/13/2020 5:30  
**Time Lead Dewatering Valve Opened** 2/13/2020 21:40  
**Elevation of Weir** -0.45 ft.  
**Maximum Elevation Reached of Smith St. CSO:** -0.01 ft.  
**Event Drain Flow Threshold** 1.25 MGD  
**Total Volume Captured** 91,413 Gal.  
**Did seiche occur during wet weather?** Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**Recommended Operational Changes/Notes:** Rainfall data sourced from BSA’s South Buffalo rain gauge. Gates were manually set to 25%/100% closed due to south interceptor level issue.
**February 15, 2020**

### Site:
- Smith RTC

### Analyst Name, Organization:
- Rucha Shah, Arcadis

### Analysis Date:
- 3/10/2020

### Event Start Date/Time:
- 2/15/2020 23:50

### Event End Date/Time:
- 2/16/2020 17:20

### Total Rainfall Accumulation:
- 0 in.

### Storm Event Duration:
- 18 hr.

### Storm Type:
- NA

---

**Time Lead Dewatering Valve Closed:**
- 2/15/2020 23:30

**Time Lead Dewatering Valve Opened:**
- 2/16/2020 12:30

**Elevation of Weir:**
- -0.45 ft.

**Maximum Elevation Reached of Smith St. CSO:**
- 0.65 ft.

**Event Drain Flow Threshold:**
- 1.25 MGD

**Total Volume Captured:**
- 5,504,963 Gal.

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA’s South Buffalo rain gauge. No rainfall recorded at South Buffalo rain gauge during this storm event. But temperatures hovered around freezing, indicating possible snowmelt. Gates were manually set to 25%/100% closed due to south interceptor level issue.
**February 18, 2020**

<table>
<thead>
<tr>
<th>Site:</th>
<th>Smith RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>3/10/2020</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>2/18/2020 10:50</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>2/19/2020 9:10</td>
</tr>
</tbody>
</table>

**Analyst Name, Organization:** Rucha Shah, Arcadis

**Total Rainfall Accumulation:** 0 in.

**Storm Event Duration:** 23 hr.

**Storm Type:** NA

**Recommended Operational Changes/Notes:**
Rainfall data sourced from BSA’s South Buffalo rain gauge. No rainfall recorded at South Buffalo rain gauge during this storm event. But temperatures were higher than the previous day, indicating possible snowmelt. Gates were manually set to 25%/100% closed due to south interceptor level issue.

---

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*
February 21, 2020

Site: Smith RTC
Analyst Name, Organization: Rucha Shah, Arcadis
Analysis Date: 3/10/2020
Total Rainfall Accumulation: 0 in.
Event Start Date/Time: 2/21/2020 13:15
Storm Event Duration: 27 hr.
Event End Date/Time: 2/22/2020 16:05
Storm Type: NA

Time Lead Dewatering Valve Closed: 2/21/2020 13:00
Time Lead Dewatering Valve Opened: 2/22/2020 14:15
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.48 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 14,252,048 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Rainfall data sourced from BSA’s South Buffalo rain gauge. No rainfall recorded at South Buffalo rain gauge during this storm event. But temperature hovered around freezing, indicating possible snowmelt. Gates were manually set to 25%/100% closed due to south interceptor level issue.
**RTC Structure Performance**

---

**Drain Flow to South Interceptor**

---

**Rainfall Accumulation**

---

**February 26, 2020**

**Site:** Smith RTC

**Analysis Date:** 3/10/2020

**Event Start Date/Time:** 2/26/2020 20:55

**Event End Date/Time:** 2/27/2020 4:10

**Analyst Name, Organization:** Rucha Shah, Arcadis

**Total Rainfall Accumulation:** 0.5 in.

**Storm Event Duration:** 8 hr.

**Storm Type:** Less than one year

**Time Lead Dewatering Valve Closed:** 2/26/2020 20:30

**Time Lead Dewatering Valve Opened:** 2/27/2020 2:55

**Elevation of Weir:** -0.45 ft.

**Maximum Elevation Reached of Smith St. CSO:** 0.75 ft.

**Event Drain Flow Threshold:** 1.25 MGD

**Total Volume Captured:** 263,210 Gal.

**Did seiche occur during wet weather?** Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Rainfall data sourced from BSA’s South Buffalo rain gauge. Gates were manually set to 25%/100% closed due to south interceptor level issue.
February 28, 2020

Site: Smith RTC  
Analysis Date: 3/10/2020  
Event Start Date/Time: 2/28/2020 2:30  
Event End Date/Time: 2/28/2020 3:00

Analyst Name, Organization: Rucha Shah, Arcadis  
Total Rainfall Accumulation: 0 in.  
Storm Event Duration: 1 hr.  
Storm Type: NA

Time Lead Dewatering Valve Closed: 2/28/2020 2:30
Time Lead Dewatering Valve Opened: #N/A
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.51 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 51,892 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm. Gates were manually set to 25%/100% closed due to south interceptor level issue. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.
## Smith St. RTC Monthly Performance Report

### March 2020

<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/2/2020</td>
<td>576,829</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>3/10/2020</td>
<td>162,075</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>3/13/2020</td>
<td>135,991</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>3/20/2020</td>
<td>284,031</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>3/28/2020</td>
<td>195,440</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>3/29/2020</td>
<td>352,978</td>
<td>Yes</td>
<td>1.25</td>
</tr>
</tbody>
</table>

**Total Volume Captured (gal)**: 1,707,344
March 2, 2020

Site: Smith RTC
Analysis Date: 4/7/2020
Event Start Date/Time: 3/2/2020 14:30
Event End Date/Time: 3/4/2020 4:10

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.56 in.
Storm Event Duration: 39 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 3/2/2020 14:00
Time Lead Dewatering Valve Opened: 3/4/2020 5:00
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.38 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 576,829 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.

---

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation

---

---
**March 10, 2020**

**Site:** Smith RTC  
**Analysis Date:** 4/7/2020  
**Event Start Date/Time:** 3/10/2020 12:40  
**Event End Date/Time:** 3/10/2020 17:05

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0.28 in.  
**Storm Event Duration:** 7 hrs.  
**Storm Type:** Less than one year

<table>
<thead>
<tr>
<th>Time Lead Dewatering Valve Closed</th>
<th>3/10/2020 11:30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Lead Dewatering Valve Opened</td>
<td>3/10/2020 16:45</td>
</tr>
<tr>
<td>Elevation of Weir</td>
<td>-0.45 ft.</td>
</tr>
<tr>
<td>Maximum Elevation Reached of Smith St. CSO</td>
<td>-0.06 ft.</td>
</tr>
<tr>
<td>Event Drain Flow Threshold</td>
<td>1.25 MGD</td>
</tr>
<tr>
<td>Total Volume Captured</td>
<td>162,075 Gal.</td>
</tr>
<tr>
<td>Did seiche occur during wet weather?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA’s South Buffalo rain gauge.

Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.

---

**RTC Structure Performance**

---

**Drain Flow to South Interceptor**

---

**Rainfall Accumulation**
Site: Smith RTC  
Analysis Date: 4/7/2020  
Event Start Date/Time: 3/13/2020 7:45  
Event End Date/Time: 3/13/2020 10:05  

Analyst Name, Organization: Rucha Shah, Arcadis  
Total Rainfall Accumulation: 0.2 in.  
Storm Event Duration: 5 hrs.  
Storm Type: Less than one year  

Time Lead Dewatering Valve Closed: 3/13/2020 7:30  
Time Lead Dewatering Valve Opened: 3/13/2020 10:40  
Elevation of Weir: -0.45 ft.  
Maximum Elevation Reached of Smith St. CSO: 0.72 ft.  
Event Drain Flow Threshold: 1.25 MGD  
Total Volume Captured: 135,991 Gal.  
Did seiche occur during wet weather? Yes  

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:  
Rainfall data sourced from BSA’s South Buffalo rain gauge.  
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.
March 20, 2020

Site: Smith RTC
Analysis Date: 4/7/2020
Event Start Date/Time: 3/20/2020 2:00
Event End Date/Time: 3/20/2020 14:55

Time Lead Dewatering Valve Closed: 3/20/2020 2:00
Time Lead Dewatering Valve Opened: 3/20/2020 15:50
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 0.24 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 284,031 Gal.
Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
March 28, 2020

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.5 in.
Storm Event Duration: 6 hrs.
Storm Type: Less than one year

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
**March 29, 2020**

**Site:** Smith RTC  
**Analysis Date:** 4/7/2020  
**Event Start Date/Time:** 3/29/2020 6:00  
**Event End Date/Time:** 3/30/2020 23:15

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 1.1 in.  
**Storm Event Duration:** 45 hrs.  
**Storm Type:** Less than one year

| Time Lead Dewatering Valve Closed | 3/29/2020 5:30 |
| Time Lead Dewatering Valve Opened | 3/31/2020 0:45 |
| Elevation of Weir | -0.45 ft. |
| Maximum Elevation Reached of Smith St. CSO | 1.15 ft. |
| Event Drain Flow Threshold | 1.25 MGD |
| Total Volume Captured | 352,978 Gal. |

**Did seiche occur during wet weather?** Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA’s South Buffalo rain gauge.

Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.

---

**RTC Structure Performance**

![RTC Structure Performance](image)

**Drain Flow to South Interceptor**

![Drain Flow to South Interceptor](image)

**Rainfall Accumulation**

![Rainfall Accumulation](image)
<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/9/2020</td>
<td>86,891</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>4/13/2020</td>
<td>444,924</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>4/14/2020</td>
<td>71,350,389</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>4/18/2020</td>
<td>37,181,474</td>
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<tr>
<td>4/20/2020</td>
<td>69,510,751</td>
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<td>1.25</td>
</tr>
<tr>
<td>4/26/2020</td>
<td>2,772,741</td>
<td>No</td>
<td>1.25</td>
</tr>
<tr>
<td>4/29/2020</td>
<td>19,173,611</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>200,520,781</strong></td>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>Total Volume Captured (gal)</strong></td>
</tr>
</tbody>
</table>


April 9, 2020

Site: Smith RTC
Analysis Date: 5/7/2020
Event Start Date/Time: 4/9/2020 17:05
Event End Date/Time: 4/9/2020 23:45

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.02 in.
Storm Event Duration: 8 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 4/9/2020 16:30
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 1.12 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 86,891 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:

Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.

RTC Structure Performance

Drain Flow to South Interceptor

Rainfall Accumulation
April 13, 2020

Site: Smith RTC
Analysis Date: 5/7/2020
Event Start Date/Time: 4/13/2020 3:55
Event End Date/Time: 4/13/2020 23:45

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.53 in.
Storm Event Duration: 20 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 4/13/2020 3:30
Time Lead Dewatering Valve Opened: 4/13/2020 22:50
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 3.82 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 444,924 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.
**April 14, 2020**

**Site:** Smith RTC  
**Analysis Date:** 5/7/2020  
**Event Start Date/Time:** 4/14/2020 5:45  
**Event End Date/Time:** 4/17/2020 9:10  

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0.09 in.  
**Storm Event Duration:** 76 hrs.  
**Storm Type:** Less than one year  

**Time Lead Dewatering Valve Closed:** 4/14/2020 5:30  
**Time Lead Dewatering Valve Opened:** 4/14/2020 14:40  
**Elevation of Weir:** -0.45 ft.  
**Maximum Elevation Reached of Smith St. CSO:** 1.35 ft.  
**Event Drain Flow Threshold:** 1.25 MGD  
**Total Volume Captured:** 71,350,389 Gal.  
**Did seiche occur during wet weather?** Yes  

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.*

**Recommended Operational Changes/Notes:**
Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period. BSA changed valve setting to 75%/100% closed.

---

**RTC Structure Performance**

**Drain Flow to South Interceptor**

**Rainfall Accumulation**
Rainfall data sourced from BSA’s South Buffalo rain gauge.

Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.
April 20, 2020

Site: Smith RTC
Analysis Date: 5/7/2020
Event Start Date/Time: 4/20/2020 0:55
Event End Date/Time: 4/22/2020 23:05

Site: Smith RTC
Analysis Date: 5/7/2020
Event Start Date/Time: 4/20/2020 0:55
Event End Date/Time: 4/22/2020 23:05

Time Lead Dewatering Valve Closed: 4/20/2020 0:30
Time Lead Dewatering Valve Opened: 4/20/2020 0:30
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 1.55 ft.
Event Drain Flow Threshold: 1.25 MGD

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.
Site: Smith RTC
Analysis Date: 5/7/2020
Event Start Date/Time: 4/26/2020 14:00
Event End Date/Time: 4/28/2020 6:20

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.13 in.
Storm Event Duration: 42 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 4/26/2020 14:00
Time Lead Dewatering Valve Opened: 4/26/2020 14:00
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -3.85 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 2,772,741 Gal.

Did seiche occur during wet weather? No

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.
April 29, 2020

Site: Smith RTC
Analysis Date: 5/7/2020
Event Start Date/Time: 4/29/2020 21:25
Event End Date/Time: 4/30/2020 23:35

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.87 in.
Storm Event Duration: 27 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 4/29/2020 21:00
Time Lead Dewatering Valve Opened: 4/29/2020 21:00
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -0.48 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 19,173,611 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

---

Recommended Operational Changes/Notes:

Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.

---

RTC Structure Performance

---

Drain Flow to South Interceptor

---

Rainfall Accumulation
<table>
<thead>
<tr>
<th>Event Date</th>
<th>Volume Captured (gal)</th>
<th>Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)</th>
<th>Event drain flow threshold (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/2/2020</td>
<td>94,053,020</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>6/7/2020</td>
<td>69,787,826</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>6/21/2020</td>
<td>3,634,433</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>6/23/2020</td>
<td>53,519,100</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td>6/26/2020</td>
<td>33,014,645</td>
<td>Yes</td>
<td>1.25</td>
</tr>
<tr>
<td><strong>Total Volume Captured (gal)</strong></td>
<td><strong>254,009,024</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
June 2, 2020

Site: Smith RTC
Analysis Date: 7/3/2020
Event Start Date/Time: 6/2/2020 1:05
Event End Date/Time: 6/6/2020 23:50

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 1.72 in.
Storm Event Duration: 120 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 6/2/2020 0:00
Time Lead Dewatering Valve Opened: 6/2/2020 0:00
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 3.15 ft.
Event Drain Flow Threshold: 1.25 MGD

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.

---

**RTC Structure Performance**

---

**Drain Flow to South Interceptor**

---

**Rainfall Accumulation**
June 7, 2020

Site: Smith RTC
Analysis Date: 7/3/2020
Event Start Date/Time: 6/7/2020 4:00
Event End Date/Time: 6/13/2020 0:55

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 1.65 in.
Storm Event Duration: 142 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 6/7/2020 4:00
Time Lead Dewatering Valve Opened: 6/7/2020 4:00
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 1.77 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 69,787,826 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Rainfall data sourced from BSA’s South Buffalo rain gauge.

Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period. Drain flow spiked to an out of range value of 32,766 MGD on 6/11/20.
Rucha Shah, Arcadis
7/3/2020
Smith RTC
6/21/2020 23:15
6/22/2020 20:45
0.16 in.
23 hrs.
Less than one year

Smith RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.

Rainfall data sourced from BSA’s South Buffalo rain gauge.

Dewatering Valve Closed: 6/21/2020 23:00
Dewatering Valve Opened: 6/21/2020 23:00
Weir Elevation: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: -1.28 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 3,634,433 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.
June 23, 2020

Site: Smith RTC
Analysis Date: 7/3/2020
Event Start Date/Time: 6/23/2020 3:20
Event End Date/Time: 6/26/2020 13:05

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 0.87 in.
Storm Event Duration: 83 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 6/23/2020 3:00
Time Lead Dewatering Valve Opened: 6/23/2020 3:00
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 1.90 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 53,519,100 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith St RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.
June 26, 2020

Site: Smith RTC
Analysis Date: 7/3/2020
Event Start Date/Time: 6/26/2020 22:40
Event End Date/Time: 6/29/2020 17:50

Analyst Name, Organization: Rucha Shah, Arcadis
Total Rainfall Accumulation: 1.08 in.
Storm Event Duration: 69 hrs.
Storm Type: Less than one year

Time Lead Dewatering Valve Closed: 6/26/2020 22:00
Time Lead Dewatering Valve Opened: 6/26/2020 22:00
Elevation of Weir: -0.45 ft.
Maximum Elevation Reached of Smith St. CSO: 1.37 ft.
Event Drain Flow Threshold: 1.25 MGD
Total Volume Captured: 33,014,645 Gal.

Did seiche occur during wet weather? Yes

*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA’s South Buffalo rain gauge.
Smith RTC was in emergency manual mode for the entire month because the south interceptor level sensor was out of range. The south interceptor level reflects an elevation reading of 32753.1 ft for this time period.
### Number of Prevented SPP Overflow Events

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/11/2020</td>
<td>86,555</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/17/2020</td>
<td>315,084</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/23/2020</td>
<td>524,887</td>
<td>3,546</td>
<td>99%</td>
</tr>
<tr>
<td>5/28/2020</td>
<td>299,891</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/29/2020</td>
<td>882,850</td>
<td>1,018,511</td>
<td>46%</td>
</tr>
</tbody>
</table>
May 11, 2020

Site: North Bailey RTC
Analysis Date: 6/10/2020
Event Start Date/Time: 5/11/2020 6:30
Event End Date/Time: 5/11/2020 7:35

Gate Activation Trigger Depth: 2.38 ft.
Return to Normal Depth: 2.21 ft.
Time Gate 1 Activated: 5/11/2020 6:30
Time Gate 2 Activated: 5/11/2020 6:30
Time Gate 1 Returned to Normal: 5/11/2020 7:35
Time Gate 2 Returned to Normal: 5/11/2020 7:30

Percent Capture: 100%
Depth of Weir: 5.91 ft.
Maximum Depth Reached: 3.28 ft.
Volume Stored: 86,555 Gal.
Unused Storage Volume: 311,979 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 86,555 Gal.
SPP Activation Prevented: Yes

If No, what is the overflow volume when storage was available? N/A
Could SPP activation have been prevented? N/A

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.

---

RTC Gate Performance

Rainfall Accumulation

---

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/11/2020 6:00</td>
<td>0.00</td>
</tr>
<tr>
<td>5/11/2020 6:14</td>
<td>0.05</td>
</tr>
<tr>
<td>5/11/2020 6:28</td>
<td>0.10</td>
</tr>
<tr>
<td>5/11/2020 6:43</td>
<td>0.15</td>
</tr>
<tr>
<td>5/11/2020 7:12</td>
<td>0.20</td>
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<tr>
<td>5/11/2020 7:26</td>
<td>0.25</td>
</tr>
<tr>
<td>5/11/2020 7:40</td>
<td>0.30</td>
</tr>
<tr>
<td>5/11/2020 7:55</td>
<td>0.35</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/11/2020 6:00</td>
<td>0.00</td>
</tr>
<tr>
<td>5/11/2020 6:14</td>
<td>0.05</td>
</tr>
<tr>
<td>5/11/2020 6:28</td>
<td>0.10</td>
</tr>
<tr>
<td>5/11/2020 6:43</td>
<td>0.15</td>
</tr>
<tr>
<td>5/11/2020 7:12</td>
<td>0.20</td>
</tr>
<tr>
<td>5/11/2020 7:26</td>
<td>0.25</td>
</tr>
<tr>
<td>5/11/2020 7:40</td>
<td>0.30</td>
</tr>
<tr>
<td>5/11/2020 7:55</td>
<td>0.35</td>
</tr>
</tbody>
</table>
May 17, 2020

Site: North Bailey RTC
Analysis Date: 6/10/2020
Event Start Date/Time: 5/17/2020 19:55
Event End Date/Time: 5/18/2020 1:45

Gate Activation Trigger Depth: 2.14 ft.
Return to Normal Depth: 2.05 ft.
Time Gate 1 Activated: 5/17/2020 19:55
Time Gate 2 Activated: 5/17/2020 19:55
Time Gate 1 Returned to Normal: 5/18/2020 1:45
Time Gate 2 Returned to Normal: 5/18/2020 1:35
Percent Capture: 100%
Depth of Weir: 5.91 ft.
Maximum Depth Reached: 3.85 ft.
Volume Stored: 315,084 Gal.
Unused Storage Volume: 251,832 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 315,084 Gal.
SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available?: N/A
Could SPP activation have been prevented?: N/A

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.
### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Gate Position, Percent Open</th>
<th>Date/Time</th>
<th>Gate Position, Percent Open</th>
<th>Date/Time</th>
<th>Gate Position, Percent Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/23/2020 0:00</td>
<td>0.00</td>
<td>5/23/2020 1:12</td>
<td>0.05</td>
<td>5/23/2020 2:24</td>
<td>0.10</td>
</tr>
<tr>
<td>5/23/2020 3:36</td>
<td>0.20</td>
<td>5/23/2020 4:48</td>
<td>0.25</td>
<td>5/23/2020 6:00</td>
<td>0.30</td>
</tr>
<tr>
<td>5/23/2020 6:00</td>
<td>0.35</td>
<td>5/23/2020 7:00</td>
<td>0.40</td>
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<td></td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/23/2020 0:00</td>
<td>0.00</td>
</tr>
<tr>
<td>5/23/2020 1:12</td>
<td>0.05</td>
</tr>
<tr>
<td>5/23/2020 2:24</td>
<td>0.10</td>
</tr>
<tr>
<td>5/23/2020 3:36</td>
<td>0.15</td>
</tr>
<tr>
<td>5/23/2020 4:48</td>
<td>0.20</td>
</tr>
<tr>
<td>5/23/2020 6:00</td>
<td>0.25</td>
</tr>
</tbody>
</table>

### Summary

- **Rainfall data sourced from BSA rain gauge station at South Buffalo.**
- **SPP Activation Prevented:** No
- **Could SPP activation have been prevented?** No
- **Analyst Name, Organization:** Rucha Shah, Arcadis
- **Event Start Date/Time:** 5/23/2020 0:40
- **Event End Date/Time:** 5/23/2020 6:40
- **Storm Type:** Less than 1 yr. storm
- **Total Rainfall Accumulation:** 0.34 in.
- **Storm Event Duration:** 7 hr.

---

**RTC Gate 1 Position (%)**

**RTC Gate 2 Position (%)**

**North Bailey Upstream Lvl (ft)**

**SPP Weir Height (ft)**

**Max Chamber Depth (ft)**

---

**Gate Activation Trigger Depth:** 2.37 ft.

**Return to Normal Depth:** 2.08 ft.

**Time Gate 1 Activated:** 5/23/2020 0:40

**Time Gate 2 Activated:** 5/23/2020 0:40

**Time Gate 1 Returned to Normal:** 5/23/2020 6:40

**Time Gate 2Returned to Normal:** 5/23/2020 6:35

**Percent Capture:** 99%

**Depth of Weir:** 5.91 ft.

**Maximum Depth Reached:** 5.91 ft.

**Volume Stored:** 524,887 Gal.

**Unused Storage Volume:** 52,885 Gal.

**Overflow Volume:** 3,546 Gal.

**Overflow Volume Prevented:** 524,887 Gal.
May 28, 2020

Site: North Bailey RTC
Analysis Date: 6/10/2020
Event Start Date/Time: 5/28/2020 12:40
Event End Date/Time: 5/28/2020 16:55

Gate Activation Trigger Depth: 2.36 ft.
Return to Normal Depth: 2.07 ft.
Time Gate 1 Activated: 5/28/2020 12:40
Time Gate 2 Activated: 5/28/2020 12:40
Time Gate 1 Returned to Normal: 5/28/2020 16:55
Time Gate 2 Returned to Normal: 1/0/1900 0:00

Percent Capture: 100%
Depth of Weir: 5.91 ft.
Maximum Depth Reached: 5.14 ft.
Volume Stored: 299,891 Gal.
Unused Storage Volume: 100,449 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 299,891 Gal.
SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available? N/A
Could SPP activation have been prevented? N/A

Rainfall data sourced from BSA rain gauge station at South Buffalo.
## Analyst Name, Organization:
Rucha Shah, Arcadis

### May 29, 2020

<table>
<thead>
<tr>
<th>Site:</th>
<th>North Bailey RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>6/10/2020</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>5/29/2020 11:50</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>5/29/2020 20:55</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0.87 in.</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>7 hr.</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>Less than 1 yr. storm</td>
</tr>
</tbody>
</table>

### Gate Activation

- **Gate Activation Trigger Depth:** 1.66 ft.
- **Return to Normal Depth:** 2.04 ft.
- **Time Gate 1 Activated:** 5/29/2020 11:50
- **Time Gate 2 Activated:** 5/29/2020 11:50
- **Time Gate 1 Returned to Normal:** 5/29/2020 20:55
- **Time Gate 2 Returned to Normal:** 5/29/2020 20:50

### Percent Capture

- **Percent Capture:** 46%
- **Depth of Weir:** 5.91 ft.
- **Maximum Depth Reached:** 5.91 ft.

### Volume Storage

- **Volume Stored:** 882,850 Gal.
- **Unused Storage Volume:** 0 Gal.
- **Overflow Volume:** 1,018,511 Gal.
- **Overflow Volume Prevented:** 882,850 Gal.
- **SPP Activation Prevented:** No

**If No, what is the overflow volume when storage was available?**
NA

**Could SPP activation have been prevented?**
No

### RTC Gate Performance

**Date/Time**
- 5/29/2020 11:00
- 5/29/2020 12:12
- 5/29/2020 13:24
- 5/29/2020 14:36
- 5/29/2020 15:48
- 5/29/2020 17:00
- 5/29/2020 18:12
- 5/29/2020 19:24
- 5/29/2020 20:36
- 5/29/2020 21:48

### Rainfall Accumulation

**Date/Time**
- 5/29/2020 11:00
- 5/29/2020 12:12
- 5/29/2020 13:24
- 5/29/2020 14:36
- 5/29/2020 15:48
- 5/29/2020 17:00
- 5/29/2020 18:12
- 5/29/2020 19:24
- 5/29/2020 20:36
- 5/29/2020 21:48

### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.
### Prevented SPP Events

- Number of Prevented SPP Overflow Events: 3
- Number of Occurred SPP Overflow Events: 4

### Prevented SPP Volume

- Prevented SPP Overflow Volume (Gal.): 2,781,615
- Occurred SPP Overflow Volume (Gal.)*: 3,614,118

### Event Date

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/2/2020</td>
<td>552,443</td>
<td>2,249,899</td>
<td>20%</td>
</tr>
<tr>
<td>6/3/2020</td>
<td>168,834</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>6/10/2020</td>
<td>415,489</td>
<td>978</td>
<td>100%</td>
</tr>
<tr>
<td>6/23/2020</td>
<td>470,819</td>
<td>1,153,971</td>
<td>29%</td>
</tr>
<tr>
<td>6/27/2020</td>
<td>430,271</td>
<td>209,270</td>
<td>67%</td>
</tr>
<tr>
<td>6/28/2020</td>
<td>379,234</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>6/28/2020</td>
<td>364,525</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>
June 2, 2020

Site: North Bailey RTC
Analysis Date: 7/6/2020
Event Start Date/Time: 6/2/2020 23:15
Event End Date/Time: 6/3/2020 3:40

Gate Activation Trigger Depth: 1.56 ft.
Return to Normal Depth: 8.19 ft.
Time Gate 1 Activated: 6/2/2020 23:15
Time Gate 2 Activated: 6/2/2020 23:15
Time Gate 1 Returned to Normal: 6/3/2020 3:40
Time Gate 2 Returned to Normal: 6/3/2020 3:35

Percent Capture: 20%
Depth of Weir: 5.91 ft.
Maximum Depth Reached: 5.91 ft.
Volume Stored: 552,443 Gal.
Unused Storage Volume: 0 Gal.
Overflow Volume: 2,249,899 Gal.
Overflow Volume Prevented: 552,443 Gal.
SPP Activation Prevented: No

If No, what is the overflow volume when storage was available? NA
Could SPP activation have been prevented? No

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

RTC Gate Performance

Rainfall Accumulation
June 3, 2020

**Site:** North Bailey RTC

**Analyst Name, Organization:** Rucha Shah, Arcadis

**Total Rainfall Accumulation:** 0 in.

**Storm Event Duration:** 3 hr.

**Storm Type:** N/A

---

**Gate Activation Trigger Depth:** 2.33 ft.

**Return to Normal Depth:** 2.04 ft.

**Time Gate 1 Activated:** 6/3/2020 7:20

**Time Gate 2 Activated:** 6/3/2020 7:20

**Time Gate 1 Returned to Normal:** 6/3/2020 9:05

**Time Gate 2 Returned to Normal:** 6/3/2020 8:55

**Percent Capture**

**Depth of Weir**

**Maximum Depth Reached:** 4.01 ft.

**Volume Stored:** 168,834 Gal.

**Unused Storage Volume:** 234,206 Gal.

**Overflow Volume:** 0 Gal.

**Overflow Volume Prevented:** 168,834 Gal.

**SPP Activation Prevented:** Yes

**If No, what is the overflow volume when storage was available?** N/A

**Could SPP activation have been prevented?** N/A

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall was recorded during this event. It was likely caused due to rainfall recorded in the previous storm event on June 2.
June 3, 2020

<table>
<thead>
<tr>
<th>Site:</th>
<th>North Bailey RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Name, Organization:</td>
<td>Rucha Shah, Arcadis</td>
</tr>
<tr>
<td>Analysis Date:</td>
<td>7/6/2020</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>6/3/2020 15:35</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>6/3/2020 17:45</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0 in.</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>3 hr.</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Gate Activation Trigger Depth: 2.19 ft.
Return to Normal Depth: 2.22 ft.
Time Gate 1 Activated: 6/3/2020 15:35
Time Gate 2 Activated: 6/3/2020 15:35
Time Gate 1 Returned to Normal: 6/3/2020 17:45
Time Gate 2 Returned to Normal: 6/3/2020 17:40
Percent Capture: 100%
Depth of Weir: 5.91 ft.
Maximum Depth Reached: 5.91 ft.
Volume Stored: 415,489 Gal.
Unused Storage Volume: 0 Gal.
Overflow Volume: 978 Gal.
Overflow Volume Prevented: 415,489 Gal.
SPP Activation Prevented: No
If No, what is the overflow volume when storage was available? NA
Could SPP activation have been prevented? No

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall was recorded during this event. It was likely caused due to rainfall recorded in the previous storm event on June 2.

---

RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>RTC Gate 1 Position (%)</th>
<th>RTC Gate 2 Position (%)</th>
<th>North ailey Upstream Lvl (ft)</th>
<th>North ailey SPP Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/3/2020 15:00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>6/3/2020 15:28</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>6/3/2020 15:57</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
</tr>
<tr>
<td>6/3/2020 16:26</td>
<td>0.30</td>
<td>0.30</td>
<td>0.30</td>
<td>0.30</td>
</tr>
<tr>
<td>6/3/2020 16:55</td>
<td>0.40</td>
<td>0.40</td>
<td>0.40</td>
<td>0.40</td>
</tr>
<tr>
<td>6/3/2020 17:24</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>6/3/2020 17:52</td>
<td>0.60</td>
<td>0.60</td>
<td>0.60</td>
<td>0.60</td>
</tr>
</tbody>
</table>

---

Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/3/2020 15:00</td>
<td>0.00</td>
</tr>
<tr>
<td>6/3/2020 15:28</td>
<td>0.00</td>
</tr>
<tr>
<td>6/3/2020 15:57</td>
<td>0.00</td>
</tr>
<tr>
<td>6/3/2020 16:26</td>
<td>0.00</td>
</tr>
<tr>
<td>6/3/2020 16:55</td>
<td>0.00</td>
</tr>
<tr>
<td>6/3/2020 17:24</td>
<td>0.00</td>
</tr>
<tr>
<td>6/3/2020 17:52</td>
<td>0.00</td>
</tr>
</tbody>
</table>
### RTC Gate Performance

- **Gate 1 Position (%):**
  - 6/10/2020 23:00: 0%
  - 6/11/2020 0:12: 2%
  - 6/11/2020 1:24: 12%
  - 6/11/2020 2:36: 66%
  - 6/11/2020 3:48: 88%

- **Gate 2 Position (%):**
  - 6/10/2020 23:00: 0%
  - 6/11/2020 0:12: 10%
  - 6/11/2020 1:24: 22%
  - 6/11/2020 2:36: 78%
  - 6/11/2020 3:48: 88%

### Rainfall Accumulation

- **Rainfall (in.):**
  - 6/10/2020 23:00: 0.00
  - 6/11/2020 0:12: 0.20
  - 6/11/2020 1:24: 0.40
  - 6/11/2020 2:36: 0.60
  - 6/11/2020 3:48: 0.80

### Depth

- **Depth:**
  - 6/10/2020 23:00: 0.00
  - 6/11/2020 0:12: 0.20
  - 6/11/2020 1:24: 0.40
  - 6/11/2020 2:36: 0.60
  - 6/11/2020 3:48: 0.80

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

**Gate Activation Trigger Depth:** 1.53 ft.

**Return to Normal Depth:** 2.26 ft.

**Time Gate 1 Activated:** 6/10/2020 23:20

**Time Gate 2 Activated:** 6/10/2020 23:20

**Time Gate 1 Returned to Normal:** 6/11/2020 3:10

**Time Gate 2 Returned to Normal:** 6/11/2020 3:15

**Percent Capture:** 29%

**Depth of Weir:** 5.91 ft.

**Maximum Depth Reached:** 5.91 ft.

**Volume Stored:** 470,819 Gal.

**Unused Storage Volume:** 0 Gal.

**Overflow Volume:** 1,153,971 Gal.

**Overflow Volume Prevented:** 470,819 Gal.

**SPP Activation Prevented:** No

If No, what is the overflow volume when storage was available? NA

Could SPP activation have been prevented? No

---

**Site:** North Bailey RTC

**Analysis Date:** 7/6/2020

**Event Start Date/Time:** 6/10/2020 23:20

**Event End Date/Time:** 6/11/2020 3:15

**Total Rainfall Accumulation:** 1.55 in.

**Storm Event Duration:** 5 hr.

**Storm Type:** Less than 2 yrs. Storm

**Analyst Name, Organization:** Rucha Shah, Arcadis
### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/23/2020 15:00</td>
<td>0.00</td>
</tr>
<tr>
<td>6/23/2020 16:12</td>
<td>0.00</td>
</tr>
<tr>
<td>6/23/2020 17:24</td>
<td>0.00</td>
</tr>
<tr>
<td>6/23/2020 18:36</td>
<td>0.00</td>
</tr>
<tr>
<td>6/23/2020 19:48</td>
<td>8.00</td>
</tr>
</tbody>
</table>

- **RTC Gate 1 Position (%):**
- **RTC Gate 2 Position (%):**
- **North alley Upstream Lvl (ft):**
- **SPP Weir height (ft):**
- **Max Chamber Depth (ft):**

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/23/2020 15:00</td>
<td>0.00</td>
</tr>
<tr>
<td>6/23/2020 16:12</td>
<td>0.00</td>
</tr>
<tr>
<td>6/23/2020 17:24</td>
<td>0.00</td>
</tr>
<tr>
<td>6/23/2020 18:36</td>
<td>0.00</td>
</tr>
<tr>
<td>6/23/2020 19:48</td>
<td>0.80</td>
</tr>
</tbody>
</table>

- **Rainfall data sourced from BSA rain gauge station at South Buffalo.**

### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.
Site: North Bailey RTC
Analysis Date: 7/6/2020
Event Start Date/Time: 6/27/2020 6:30
Event End Date/Time: 6/27/2020 8:45

Gate Activation Trigger Depth: 2.40 ft.
Return to Normal Depth: 2.04 ft.
Time Gate 1 Activated: 6/27/2020 6:30
Time Gate 2 Activated: 6/27/2020 6:30
Time Gate 1 Returned to Normal: 6/27/2020 8:45
Time Gate 2 Returned to Normal: 6/27/2020 8:40
Percent Capture: 100%
Depth of Weir: 5.91 ft.
Maximum Depth Reached: 5.78 ft.
Volume Stored: 379,234 Gal.
Unused Storage Volume: 17,488 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 379,234 Gal.
SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available? N/A
Could SPP activation have been prevented? N/A

Rainfall data sourced from BSA rain gauge station at South Buffalo.

RTC Gate Performance

Rainfall Accumulation
Site: North Bailey RTC  
Analysis Date: 7/6/2020  
Event Start Date/Time: 6/28/2020 2:35  
Event End Date/Time: 6/28/2020 4:00  

| Gate Activation Trigger Depth: | 1.88 ft. |
| Return to Normal Depth: | 2.23 ft. |
| Time Gate 1 Activated: | 6/28/2020 2:35 |
| Time Gate 2 Activated: | 6/28/2020 2:35 |
| Time Gate 1 Returned to Normal: | 6/28/2020 4:00 |
| Time Gate 2 Returned to Normal: | 6/28/2020 3:55 |
| Percent Capture: | 100% |
| Depth of Weir: | 5.91 ft. |
| Maximum Depth Reached: | 5.32 ft. |
| Volume Stored: | 364,525 Gal. |
| Unused Storage Volume: | 77,643 Gal. |
| Overflow Volume: | 0 Gal. |
| Overflow Volume Prevented: | 364,525 Gal. |
| SPP Activation Prevented: | Yes |
| If No, what is the overflow volume when storage was available? | N/A |
| Could SPP activation have been prevented? | N/A |

**RTC Gate Performance**

**Rainfall Accumulation**

Rainfall data sourced from BSA rain gauge station at South Buffalo.
July 2019
Bird Ave. RTC
KPI Report
Bird Ave. RTC Monthly Performance Report

**Prevented SPP Events**
- Number of Prevented SPP Overflow Events: 5, 100%
- Number of Occurred SPP Overflow Events: 0, 0%

**Prevented SPP Volume**
- Prevented SPP Overflow Volume (Gal.): 100%
- Occurred SPP Overflow Volume (Gal.)*: 0%

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/2/2019</td>
<td>565,927</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>7/6/2019</td>
<td>577,499</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>7/17/2019</td>
<td>579,843</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>7/19/2019</td>
<td>558,624</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>7/30/2019</td>
<td>614,018</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>

Total Prevented SPP Events: 5
Total Occurred SPP Events: 0
Total Prevented SPP Volume: 2,895,911 Gal.
Total Occurred SPP Volume (Gal.)*: -

Percent Capture: 100%
**July 2, 2019**

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>8/5/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>7/2/2019 20:35</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>7/3/2019 0:20</td>
</tr>
<tr>
<td>Analyst Name, Organization:</td>
<td>Nick Pasquini, Arcadis</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>NA</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>NA</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Gate Activation Trigger Depth:** 1.69 ft.

**Return to Normal Depth:** 1.65 ft.

- **Time Gate 1 Activated:** 7/2/2019 20:35
- **Time Gate 2 Activated:** 7/2/2019 20:35
- **Time Gate 1 Returned to Normal:** 7/3/2019 0:20
- **Time Gate 2 Returned to Normal:** 7/3/2019 0:20

- **Gate Position, Percent Open**

- **Percent Capture:** 100%
- **Depth of Weir:** 8.15 ft.
- **Maximum Depth Reached:** 6.75 ft.

- **Volume Stored:** 565,927 Gal.
- **Unused Storage Volume:** 328,914 Gal.
- **Overflow Volume:** 0 Gal.
- **Overflow Volume Prevented:** 565,927 Gal.

- **SPP Activation Prevented:** Yes

- **If No, what is the overflow volume when storage was available?** NA
- **Could SPP activation have been prevented?** NA

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from Buffalo Airport rain gauge website.

No rainfall was recorded during the event. However, two 0.01-inch of rainfall events were observed during the day. The event was likely caused by a localized storm.

---

**RTC Gate Performance**

- **Gate Position, Percent Open**

- **Date/Time**

---

**Rainfall Accumulation**

- **Date/Time**

---
**July 6, 2019**

<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Nick Pasquini, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 8/5/2019</td>
<td>Total Rainfall Accumulation: 0.7 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 7/6/2019 11:30</td>
<td>Storm Event Duration: 2 hrs.</td>
</tr>
<tr>
<td>Event End Date/Time: 7/6/2019 17:50</td>
<td>Storm Type: Less than one year</td>
</tr>
</tbody>
</table>

Gate Activation Trigger Depth: 1.61 ft.
Return to Normal Depth: 1.09 ft.
Time Gate 1 Activated: 7/6/2019 11:30
Time Gate 2 Activated: 7/6/2019 11:30
Time Gate 1 Returned to Normal: 7/6/2019 17:50
Time Gate 2 Returned to Normal: 7/6/2019 17:50

Percent Capture: 100%
Depth of Weir: 8.15 ft.
Maximum Depth Reached: 6.80 ft.
Volume Stored: 577,499 Gal.
Unused Storage Volume: 318,453 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 577,499 Gal.
SPP Activation Prevented: Yes

If No, what is the overflow volume when storage was available? NA
Could SPP activation have been prevented? NA

**Recommended Operational Changes/Notes:**
Rainfall data sourced from Buffalo Airport rain gauge website.
A storm event of 0.4 inches from 10:30 am to 11:00 am preceded the opening of gate.

### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Gate Position, Percent Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/6/2019 10:48</td>
<td>RTC Gate 1 Position (%)</td>
</tr>
<tr>
<td>7/6/2019 12:00</td>
<td>RTC Gate 2 Position (%)</td>
</tr>
<tr>
<td>7/6/2019 13:12</td>
<td>Upstream Level (ft)</td>
</tr>
<tr>
<td>7/6/2019 14:24</td>
<td>SPP Weir Depth (ft)</td>
</tr>
<tr>
<td>7/6/2019 15:36</td>
<td>Max Chamber Depth (ft)</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/6/2019 10:48</td>
<td></td>
</tr>
<tr>
<td>7/6/2019 12:00</td>
<td></td>
</tr>
<tr>
<td>7/6/2019 13:12</td>
<td></td>
</tr>
<tr>
<td>7/6/2019 14:24</td>
<td></td>
</tr>
<tr>
<td>7/6/2019 15:36</td>
<td></td>
</tr>
<tr>
<td>7/6/2019 16:48</td>
<td></td>
</tr>
<tr>
<td>7/6/2019 18:00</td>
<td></td>
</tr>
<tr>
<td>7/6/2019 19:12</td>
<td></td>
</tr>
</tbody>
</table>
**July 17, 2019**

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>8/5/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>7/17/2019 9:15</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>7/17/2019 15:00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyst Name, Organization:</th>
<th>Nick Pasquini, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0.4 in.</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>Less than one year</td>
</tr>
</tbody>
</table>

**Gate Activation Trigger Depth:** 1.59 ft.
**Return to Normal Depth:** 0.87 ft.
**Time Gate 1 Activated:** 7/17/2019 9:15
**Time Gate 2 Activated:** 7/17/2019 9:15
**Time Gate 1 Returned to Normal:** 7/17/2019 15:00
**Time Gate 2 Returned to Normal:** 7/17/2019 15:00
**Percent Capture:** 100%
**Depth of Weir:** 8.15 ft.
**Maximum Depth Reached:** 6.81 ft.

**Volume Stored:** 579,843 Gal.
**Unused Storage Volume:** 316,350 Gal.
**Overflow Volume:** 0 Gal.
**Overflow Volume Prevented:** 579,843 Gal.
**SPP Activation Prevented:** Yes

**If No, what is the overflow volume when storage was available?** NA
**Could SPP activation have been prevented?** NA

**Rainfall data sourced from Buffalo Airport rain gauge website.**

---

**RTC Gate Performance**

- **RTC Gate 1 Position (%):**
- **RTC Gate 2 Position (%):**
- **SPP Depth (ft):**
- **Upstream Level (ft):**
- **SPP Weir Depth (ft):**
- **Max Chamber Depth (ft):**

---

**Rainfall Accumulation**

- **Rainfall (in.):**
**July 19, 2019**

<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Nick Pasquini, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 8/5/2019</td>
<td>Total Rainfall Accumulation: 0.2 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 7/19/2019 14:55</td>
<td>Storm Event Duration: 1 hrs.</td>
</tr>
<tr>
<td>Event End Date/Time: 7/19/2019 19:20</td>
<td>Storm Type: Less than one year</td>
</tr>
</tbody>
</table>

- **Gate Activation Trigger Depth:** 0.41 ft.
- **Return to Normal Depth:** 1.11 ft.
- **Time Gate 1 Activated:** 7/19/2019 14:55
- **Time Gate 2 Activated:** 7/19/2019 14:55
- **Time Gate 1 Returned to Normal:** 7/19/2019 19:20
- **Time Gate 2 Returned to Normal:** 7/19/2019 19:20
- **Percent Capture:** 100%
- **Depth of Weir:** 8.15 ft.
- **Maximum Depth Reached:** 6.77 ft.
- **Volume Stored:** 558,624 Gal.
- **Unused Storage Volume:** 324,741 Gal.
- **Overflow Volume:** 0 Gal.
- **Overflow Volume Prevented:** 558,624 Gal.
- **SPP Activation Prevented:** Yes
- **If No, what is the overflow volume when storage was available?** NA
- **Could SPP activation have been prevented?** NA

**Recommended Operational Changes/Notes:**
Rainfall data sourced from Buffalo Airport rain gauge website.

Gates were activated twice during the storm event, the initial activation were the gates opening and immediately closing.

**RTC Gate Performance**

**Rainfall Accumulation**
July 30, 2019

Site: Bird RTC  
Analysis Date: 8/5/2019  
Event Start Date/Time: 7/29/2019 23:35  
Event End Date/Time: 7/30/2019 17:40  

Gate Activation Trigger Depth: 1.59 ft.  
Return to Normal Depth: 0.98 ft.  
Time Gate 1 Activated: 7/29/2019 23:35  
Time Gate 2 Activated: 7/29/2019 23:35  
Time Gate 1 Returned to Normal: 7/30/2019 17:40  
Time Gate 2 Returned to Normal: 7/30/2019 17:40  
Percent Capture: 100%  
Depth of Weir: 8.15 ft.  
Maximum Depth Reached: 6.97 ft.  
Volume Stored: 614,018 Gal.  
Overflow Volume: 0 Gal.  
Overflow Volume Prevented: 614,018 Gal.  
SPP Activation Prevented: Yes  

If No, what is the overflow volume when storage was available? NA  
Could SPP activation have been prevented? NA  

Recommended Operational Changes/Notes:
Rainfall data sourced from Buffalo Airport rain gauge website.

RTC Gate Performance

Rainfall Accumulation
August 2019
Bird Ave. RTC
KPI Report
## Bird Ave. RTC Monthly Performance Report August 2019

### Prevented SPP Events
- Number of Prevented SPP Overflow Events: 3
- Percent Capture: 4, 3%
- Number of Occurred SPP Overflow Events: 4

### Prevented SPP Volume
- Prevented SPP Overflow Volume (Gal.): 1,434,897
- Percent Capture: 90%
- Occurred SPP Overflow Volume (Gal.)*: 12,527,756

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/8/2019</td>
<td>197,175</td>
<td>354,600</td>
<td>36%</td>
</tr>
<tr>
<td>8/13/2019</td>
<td>147,797</td>
<td>87,953</td>
<td>63%</td>
</tr>
<tr>
<td>8/17/2019</td>
<td>102,608</td>
<td>56,034</td>
<td>65%</td>
</tr>
<tr>
<td>8/18/2019</td>
<td>10,299</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>8/19/2019</td>
<td>29,225</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>8/21/2019</td>
<td>897,824</td>
<td>12,029,169</td>
<td>7%</td>
</tr>
<tr>
<td>8/28/2019</td>
<td>49,969</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>
### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>RTC Gate 1 Position (%)</th>
<th>RTC Gate 2 Position (%)</th>
<th>SPP Depth (ft)</th>
<th>Upstream Level (ft)</th>
<th>SPP Weir Depth (ft)</th>
<th>Max Chamber Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/8/2019 10:33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/8/2019 10:40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/8/2019 10:48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/8/2019 10:55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/8/2019 11:02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/8/2019 11:09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/8/2019 11:16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/8/2019 10:33</td>
<td>0.00</td>
</tr>
<tr>
<td>8/8/2019 10:40</td>
<td>0.00</td>
</tr>
<tr>
<td>8/8/2019 10:48</td>
<td>0.00</td>
</tr>
<tr>
<td>8/8/2019 10:55</td>
<td>0.00</td>
</tr>
<tr>
<td>8/8/2019 11:02</td>
<td>0.00</td>
</tr>
<tr>
<td>8/8/2019 11:09</td>
<td>0.00</td>
</tr>
<tr>
<td>8/8/2019 11:16</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

No rainfall was recorded during the event. However, 0.1-inch of rainfall was recorded earlier in the day which contributed to this event. Gate 2 was at 100% open for the entire month of August.
<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 9/11/2019</td>
<td>Total Rainfall Accumulation: 0.9904</td>
</tr>
<tr>
<td>Event Start Date/Time: 8/8/2019 16:30</td>
<td>Storm Event Duration: 2 hrs.</td>
</tr>
<tr>
<td>Event End Date/Time: 8/8/2019 18:40</td>
<td>Storm Type: Less than one year</td>
</tr>
</tbody>
</table>

**Gate Activation Trigger Depth:** 1.95 ft.  
**Return to Normal Depth:** 1.54 ft.  
**Time Gate 1 Activated:** 3/18/2019 11:15  
**Time Gate 2 Activated:** 8/8/2019 18:40  
**Time Gate 1 Returned to Normal:** N/A  
**Time Gate 2 Returned to Normal:** N/A  
**Percent Capture:** 36%  
**Depth of Weir:** 8.15 ft.  
**Maximum Depth Reached:** 4.57 ft.  
**Volume Stored:** 197,175 Gal.  
**Unused Storage Volume:** 692,367 Gal.  
**Overflow Volume:** 354,600 Gal.  
**Overflow Volume Prevented:** 197,175 Gal.  
**SPP Activation Prevented:** No  
**If No, what is the overflow volume when storage was available?** 354,600 Gal.  
**Could SPP activation have been prevented?** Yes  

**RTC Gate Performance**

**Rainfall Accumulation**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Gate 2 was at 100% open for the entire month of August.
**August 13, 2019**

**Site:** Bird RTC  
**Analysis Date:** 9/11/2019  
**Event Start Date/Time:** 8/13/2019 5:00  
**Event End Date/Time:** 8/13/2019 7:20  

**Gate Activation Trigger Depth:** 2.68 ft.  
**Return to Normal Depth:** - ft.  
**Time Gate 1 Activated:** 3/27/2139 12:30  
**Time Gate 2 Activated:** 8/13/2019 7:20  
**Time Gate 1 Returned to Normal:** N/A  
**Time Gate 2 Returned to Normal:** N/A  
**Percent Capture:** 63%  
**Depth of Weir:** 8.15 ft.  
**Maximum Depth Reached:** 4.40 ft.  
**Volume Stored:** 147,797 Gal.  
**Unused Storage Volume:** 713,097 Gal.  
**Overflow Volume:** 87,953 Gal.  
**Overflow Volume Prevented:** 147,797 Gal.  

**SPP Activation Prevented:** No  
**If No, what is the overflow volume when storage was available?** 87,953  
**Could SPP activation have been prevented?** Yes

---

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 0  
**Storm Event Duration:** NA  
**Storm Type:** NA

**Recommended Operational Changes/Notes:**
Rainfall data sourced from BSA rain gauge station at South Buffalo.

No rainfall was recorded during the event. However, 0.1-inch of rainfall was recorded earlier in the day which contributed to this event. Gate 2 was at 100% open for the entire month of August.
August 17, 2019

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>9/11/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>8/17/2019 9:50</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>8/17/2019 12:45</td>
</tr>
<tr>
<td>Analyst Name, Organization:</td>
<td>Rucha Shah, Arcadis</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>Less than 2 years</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>1.22 in</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>3 hrs.</td>
</tr>
</tbody>
</table>

**RTC Gate Performance**

- **RTC Gate 1 Position (%):**
- **RTC Gate 2 Position (%):**
- **SPP Depth (ft):**
- **Upstream Level (ft):**
- **SPP Weir Depth (ft):**
- **Max Chamber Depth (ft):**

**Rainfall Accumulation**

- **Rainfall (in):**

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Gate 2 was at 100% open for the entire month of August.

---

**Gate Activation Trigger Depth:** 2.28 ft.
**Return to Normal Depth:** 1.44 ft.
**Time Gate 1 Activated:** 4/4/2139 22:40
**Time Gate 2 Activated:** 8/17/2019 12:45
**Time Gate 1 Returned to Normal:** N/A
**Time Gate 2 Returned to Normal:** N/A
**Percent Capture:** 65%
**Depth of Weir:** 8.15 ft.
**Maximum Depth Reached:** 3.81 ft.
**Volume Stored:** 102,608 Gal.
**Unused Storage Volume:** 776,499 Gal.
**Overflow Volume:** 56,034 Gal.
**Overflow Volume Prevented:** 102,608 Gal.
**SPP Activation Prevented:** No

If No, what is the overflow volume when storage was available?
56,034

Could SPP activation have been prevented?
Yes
August 18, 2019

Gate Activation Trigger Depth: 2.79 ft.
Return to Normal Depth: 1.46 ft.
Time Gate 1 Activated: 4/6/2139 16:10
Time Gate 2 Activated: 8/18/2019 9:05
Time Gate 1 Returned to Normal: N/A
Time Gate 2 Returned to Normal: N/A
Percent Capture: 100%
Depth of Weir: 8.15 ft.
Maximum Depth Reached: 2.96 ft.
Volume Stored: 10,299 Gal.
Unused Storage Volume: 844,517 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 10,299 Gal.
SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available? NA
Could SPP activation have been prevented? NA

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.
Gate 2 was at 100% open for the entire month of August.
RTC Gate Performance

Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/19/2019 2:38</td>
<td>0.3 in</td>
</tr>
<tr>
<td>8/19/2019 2:52</td>
<td>0.4 in</td>
</tr>
<tr>
<td>8/19/2019 3:07</td>
<td>0.5 in</td>
</tr>
<tr>
<td>8/19/2019 3:21</td>
<td>0.6 in</td>
</tr>
<tr>
<td>8/19/2019 3:36</td>
<td>0.7 in</td>
</tr>
<tr>
<td>8/19/2019 3:50</td>
<td>0.8 in</td>
</tr>
<tr>
<td>8/19/2019 4:04</td>
<td>0.9 in</td>
</tr>
<tr>
<td>8/19/2019 4:19</td>
<td>1.0 in</td>
</tr>
<tr>
<td>8/19/2019 4:33</td>
<td>1.1 in</td>
</tr>
<tr>
<td>8/19/2019 4:48</td>
<td>1.2 in</td>
</tr>
<tr>
<td>8/19/2019 5:02</td>
<td>1.2 in</td>
</tr>
</tbody>
</table>

Gate Activation Trigger Depth: 2.88 ft.
Return to Normal Depth: 1.54 ft.
Time Gate 1 Activated: 4/8/2019 7:40
Time Gate 2 Activated: 8/19/2019 4:45
Time Gate 1 Returned to Normal: N/A
Time Gate 2 Returned to Normal: N/A

Percent Capture: 100%
Depth of Weir: 8.15 ft.
Maximum Depth Reached: 2.29 ft.
Volume Stored: (29,225) Gal.
Unused Storage Volume: 878,726 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: (29,225) Gal.

SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available? NA
Could SPP activation have been prevented? NA

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.
Gate 2 was at 100% open for the entire month of August.
August 21, 2019

Site: Bird RTC
Analysis Date: 9/11/2019
Event Start Date/Time: 8/21/2019 3:30
Event End Date/Time: 8/21/2019 8:40

Gate Activation Trigger Depth: 1.20 ft.
Return to Normal Depth: - ft.
Time Gate 1 Activated: 8/21/2019 3:30
Time Gate 2 Activated: 1/0/1900 0:00
Time Gate 1 Returned to Normal: N/A
Time Gate 2 Returned to Normal: N/A
Percent Capture: 7%
Depth of Weir: 8.15 ft.
Maximum Depth Reached: 8.15 ft.
Volume Stored: 897,824 Gal.
Unused Storage Volume: 0 Gal.
Overflow Volume: 12,029,169 Gal.
Overflow Volume Prevented: 897,824 Gal.
SPP Activation Prevented: No
If No, what is the overflow volume when storage was available? 0
Could SPP activation have been prevented? No

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Gate 2 was at 100% open for the entire month of August.

### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>RTC Gate 1 Position (%)</th>
<th>RTC Gate 2 Position (%)</th>
<th>SPP Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/21/2019 2:24</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>8/21/2019 3:36</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>8/21/2019 4:48</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>8/21/2019 6:00</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>8/21/2019 7:12</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>8/21/2019 8:24</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>8/21/2019 9:36</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/21/2019 2:24</td>
<td>0.1</td>
</tr>
<tr>
<td>8/21/2019 3:36</td>
<td>0.2</td>
</tr>
<tr>
<td>8/21/2019 4:48</td>
<td>0.3</td>
</tr>
<tr>
<td>8/21/2019 6:00</td>
<td>0.4</td>
</tr>
<tr>
<td>8/21/2019 7:12</td>
<td>0.5</td>
</tr>
<tr>
<td>8/21/2019 8:24</td>
<td>0.6</td>
</tr>
<tr>
<td>8/21/2019 9:36</td>
<td>0.6</td>
</tr>
</tbody>
</table>
August 28, 2019

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Gate 2 was at 100% open for the entire month of August.
September 2019
Bird Ave. RTC
KPI Report
### Prevented SPP Events

- **Number of Prevented SPP Overflow Events**: 4
- **Number of Occurred SPP Overflow Events**: 3

### Prevented SPP Volume

- **Prevented SPP Overflow Volume (Gal.)**: 2,209,669
- **Occurred SPP Overflow Volume (Gal.)**

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/1/2019</td>
<td>895,953</td>
<td>563,946</td>
<td>61%</td>
</tr>
<tr>
<td>9/2/2019</td>
<td>894,184</td>
<td>4,446,013</td>
<td>17%</td>
</tr>
<tr>
<td>9/11/2019</td>
<td>120,274</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>9/12/2019</td>
<td>4,319</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>9/14/2019</td>
<td>116,699</td>
<td>48,764</td>
<td>71%</td>
</tr>
<tr>
<td>9/23/2019</td>
<td>61,094</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>9/26/2019</td>
<td>109,140</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>
### September 1, 2019

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>11/18/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>9/1/2019 18:50</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>9/1/2019 23:15</td>
</tr>
<tr>
<td>Analyst Name, Organization:</td>
<td>Angela Hintz, Arcadis</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>1.65 in.</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>5 hr.</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>Less than 2 yr storm</td>
</tr>
</tbody>
</table>

#### RTC Gate Performance

- **Gate Activation Trigger Depth:** 1.61 ft.
- **Return to Normal Depth:** 1.51 ft.
- **Time Gate 1 Activated:** 9/1/2019 18:50
- **Time Gate 2 Activated:** N/A
- **Time Gate 1 Returned to Normal:** 9/1/2019 23:15
- **Time Gate 2 Returned to Normal:** N/A
- **Percent Capture:** 61%
- **Depth of Weir:** 8.15 ft.
- **Maximum Depth Reached:** 8.15 ft.
- **Volume Stored:** 895,953 Gal.
- **Unused Storage Volume:** 0 Gal.
- **Overflow Volume:** 563,946 Gal.
- **Overflow Volume Prevented:** 895,953 Gal.
- **SPP Activation Prevented:** No
- **If No, what is the overflow volume when storage was available?** 0
- **Could SPP activation have been prevented?** No

#### Rainfall Accumulation

- **Date/Time:** 9/1/2019 18:00 to 9/2/2019 0:00
- **Rainfall (in.):**
  - 0 to 0.2 in.
  - 0.2 to 0.4 in.
  - 0.4 to 0.6 in.
  - 0.6 to 0.8 in.
  - 0.8 to 1.0 in.
  - 1.0 to 1.2 in.
  - 1.2 to 1.4 in.
  - 1.4 to 1.6 in.
  - 1.6 to 1.8 in.

#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Gate 2 was stuck at 100% open for most of the month of September.
### Storm Event Data Summary

**September 2, 2019**

**Site:** Bird RTC  
**Analysis Date:** 11/18/2019  
**Event Start Date/Time:** 9/2/2019 3:15  
**Event End Date/Time:** 9/2/2019 10:55

| Gate Activation Trigger Depth: | 0.84 ft. |
| Return to Normal Depth:       | 1.51 ft. |
| Time Gate 1 Activated:         | 9/2/2019 3:15 |
| Time Gate 2 Activated:         | N/A |
| Time Gate 1 Returned to Normal:| 9/2/2019 10:55 |
| Time Gate 2 Returned to Normal:| N/A |
| Percent Capture               | 17% |
| Depth of Weir                  | 8.15 ft. |
| Maximum Depth Reached:         | 8.15 ft. |
| Volume Stored                  | 894,184 Gal. |
| Unused Storage Volume:         | 0 Gal. |
| Overflow Volume:               | 4,446,013 Gal. |
| Overflow Volume Prevented:     | 894,184 Gal. |
| SPP Activation Prevented:      | No |
| If No, what is the overflow volume when storage was available? | 0 |
| Could SPP activation have been prevented? | No |

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. It was likely caused by a localized storm.

Gate 2 was stuck at 100% open for most of the month of September.

---

**RTC Gate Performance**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Bird RTC Gate 1 Position (percent)</th>
<th>Bird RTC Gate 2 Position (percent)</th>
<th>Bird SPP Depth (ft)</th>
<th>Bird RTC Upstream Level (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/2/2019 2:24</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9/2/2019 3:36</td>
<td>100</td>
<td>90</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>9/2/2019 4:48</td>
<td>60</td>
<td>40</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>9/2/2019 6:00</td>
<td>40</td>
<td>20</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>9/2/2019 7:12</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9/2/2019 8:24</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9/2/2019 9:36</td>
<td>100</td>
<td>90</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9/2/2019 10:48</td>
<td>60</td>
<td>40</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>9/2/2019 12:00</td>
<td>40</td>
<td>20</td>
<td>0.3</td>
<td>0.3</td>
</tr>
</tbody>
</table>

**Rainfall Accumulation**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/2/2019 2:24</td>
<td>0.1</td>
</tr>
<tr>
<td>9/2/2019 3:36</td>
<td>0.2</td>
</tr>
<tr>
<td>9/2/2019 4:48</td>
<td>0.3</td>
</tr>
<tr>
<td>9/2/2019 6:00</td>
<td>0.4</td>
</tr>
<tr>
<td>9/2/2019 7:12</td>
<td>0.5</td>
</tr>
<tr>
<td>9/2/2019 8:24</td>
<td>0.6</td>
</tr>
<tr>
<td>9/2/2019 9:36</td>
<td>0.7</td>
</tr>
<tr>
<td>9/2/2019 10:48</td>
<td>0.8</td>
</tr>
<tr>
<td>9/2/2019 12:00</td>
<td>0.9</td>
</tr>
</tbody>
</table>
September 11, 2019

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Name, Organization:</td>
<td>Angela Hintz, Arcadis</td>
</tr>
<tr>
<td>Analysis Date:</td>
<td>11/18/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>9/11/2019 21:40</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>9/11/2019 23:35</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0.47 in.</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>2 hr</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>Less than 1 yr storm</td>
</tr>
</tbody>
</table>

Gate Activation Trigger Depth: 1.69 ft.
Return to Normal Depth: 1.52 ft.
Time Gate 1 Activated: 9/11/2019 21:40
Time Gate 2 Activated: 9/11/2019 21:40
Time Gate 1 Returned to Normal: 9/11/2019 23:35
Time Gate 2 Returned to Normal: 9/11/2019 23:30
Percent Capture: 100%
Depth of Weir: 8.15 ft.
Maximum Depth Reached: 3.83 ft.
Volume Stored: 120,274 Gal.
Unused Storage Volume: 774,567 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 120,274 Gal.
SPP Activation Prevented: Yes

If No, what is the overflow volume when storage was available? N/A
Could SPP activation have been prevented? N/A

Gate 2 was stuck at 100% open for most of the month of September.

Rainfall data sourced from BSA rain gauge station at South Buffalo.

---

**RTC Gate Performance**

**Rainfall Accumulation**

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date</td>
<td>11/18/2019</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>9/12/2019 10:25</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>9/12/2019 11:25</td>
</tr>
</tbody>
</table>

**Analyst Name, Organization:** Angela Hintz, Arcadis  
**Total Rainfall Accumulation:** 0.36 in.  
**Storm Event Duration:** 2 hr  
**Storm Type:** Less than 1 yr storm  

<table>
<thead>
<tr>
<th>Gate Activation Trigger Depth:</th>
<th>1.57 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return to Normal Depth:</td>
<td>1.52 ft.</td>
</tr>
<tr>
<td>Time Gate 1 Activated:</td>
<td>9/12/2019 10:25</td>
</tr>
<tr>
<td>Time Gate 2 Activated:</td>
<td>N/A</td>
</tr>
<tr>
<td>Time Gate 1 Returned to Normal:</td>
<td>9/12/2019 11:25</td>
</tr>
<tr>
<td>Time Gate 2 Returned to Normal:</td>
<td>N/A</td>
</tr>
<tr>
<td>Percent Capture</td>
<td>100%</td>
</tr>
<tr>
<td>Depth of Weir</td>
<td>8.15 ft.</td>
</tr>
<tr>
<td>Maximum Depth Reached:</td>
<td>1.84 ft.</td>
</tr>
<tr>
<td>Volume Stored</td>
<td>4,319 Gal.</td>
</tr>
<tr>
<td>Unused Storage Volume:</td>
<td>892,098 Gal.</td>
</tr>
<tr>
<td>Overflow Volume</td>
<td>0 Gal.</td>
</tr>
<tr>
<td>Overflow Volume Prevented:</td>
<td>4,319 Gal.</td>
</tr>
<tr>
<td>SPP Activation Prevented:</td>
<td>Yes</td>
</tr>
<tr>
<td>If No, what is the overflow volume when storage was available?</td>
<td>N/A</td>
</tr>
<tr>
<td>Could SPP activation have been prevented?</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Recommended Operational Changes/Notes:**  
Rainfall data sourced from BSA rain gauge station at South Buffalo.  
Gate 1 did not close all the way, instead was stuck at about 22% open. Gate 2 was stuck at 100% open for most of the month of September.

![RTC Gate Performance](image)

![Rainfall Accumulation](image)
September 14, 2019

| Site: Bird RTC |
| Analysis Date: 11/18/2019 |
| Event Start Date/Time: 9/14/2019 1:15 |
| Event End Date/Time: 9/14/2019 3:20 |

| Analyst Name, Organization: Angela Hintz, Arcadis |
| Total Rainfall Accumulation: 0.79 in. |
| Storm Event Duration: 3 hr |
| Storm Type: Less than 1 yr storm |

| Gate Activation Trigger Depth: 1.29 ft. |
| Return to Normal Depth: 1.41 ft. |
| Time Gate 1 Activated: 9/14/2019 1:15 |
| Time Gate 2 Activated: N/A |
| Time Gate 1 Returned to Normal: 9/14/2019 3:20 |
| Time Gate 2 Returned to Normal: N/A |
| Percent Capture: 71% |
| Depth of Weir: 8.15 ft. |
| Maximum Depth Reached: 3.76 ft. |
| Overflow Volume: 48,764 Gal. |
| SPP Activation Prevented: No |

| If No, what is the overflow volume when storage was available? | 48764 |
| Could SPP activation have been prevented? | Yes |

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.
Gate 2 was stuck at 100% open for most of the month of September.

---

RTC Gate Performance

Rainfall Accumulation
### RTC Gate Performance

![RTC Gate Performance Graph]

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Bird RTC Gate 1 Position (percent)</th>
<th>Bird RTC Gate 2 Position (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/23/2019 15:07</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>9/23/2019 16:19</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>9/23/2019 17:31</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>9/23/2019 18:43</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>9/23/2019 19:55</td>
<td>80%</td>
<td>20%</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

![Rainfall Accumulation Graph]

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/23/2019 16:19</td>
<td>0.01</td>
</tr>
<tr>
<td>9/23/2019 17:31</td>
<td>0.02</td>
</tr>
<tr>
<td>9/23/2019 18:43</td>
<td>0.05</td>
</tr>
<tr>
<td>9/23/2019 19:55</td>
<td>0.06</td>
</tr>
<tr>
<td>9/23/2019 21:07</td>
<td>0.06</td>
</tr>
</tbody>
</table>

### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Gate 2 was stuck at 100% open for most of the month of September.
**September 26, 2019**

**Site:** Bird RTC

**Analysis Date:** 11/18/2019

**Event Start Date/Time:** 9/26/2019 7:05

**Event End Date/Time:** 9/26/2019 9:15

**Analyst Name, Organization:** Angela Hintz, Arcadis

**Total Rainfall Accumulation:** 0.66 in.

**Storm Event Duration:** 2 hr

**Storm Type:** Less than 2 yr storm

---

**Gate Activation Trigger Depth:** 1.37 ft.

**Return to Normal Depth:** 1.42 ft.

**Time Gate 1 Activated:** 9/26/2019 7:05

**Time Gate 2 Activated:** N/A

**Time Gate 1 Returned to Normal:** 9/26/2019 9:15

**Time Gate 2 Returned to Normal:** N/A

**Percent Capture:** 100%

**Depth of Weir:** 8.15 ft.

**Maximum Depth Reached:** 3.68 ft.

**Volume Stored:** 109,140 Gal.

**Unused Storage Volume:** 788,685 Gal.

**Overflow Volume:** 0 Gal.

**Overflow Volume Prevented:** 109,140 Gal.

**SPP Activation Prevented:** Yes

**If No, what is the overflow volume when storage was available?** N/A

**Could SPP activation have been prevented?** N/A

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Gate 2 was stuck at 100% open for most of the month of September.

---

**RTC Gate Performance**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Bird RTC Gate 1 Position (percent)</th>
<th>Bird RTC Gate 2 Position (percent)</th>
<th>Bird SPP Depth (ft)</th>
<th>Bird RTC Upstream Level (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/26/2019 6:43</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>9/26/2019 7:55</td>
<td>100%</td>
<td>100%</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>9/26/2019 9:07</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

---

**Rainfall Accumulation**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/26/2019 6:43</td>
<td>N/A</td>
</tr>
<tr>
<td>9/26/2019 7:55</td>
<td>0.6</td>
</tr>
<tr>
<td>9/26/2019 9:07</td>
<td>0.66</td>
</tr>
</tbody>
</table>
October 2019
Bird Ave. RTC
KPI Report
## Prevented SPP Events

- **Number of Prevented SPP Overflow Events**: 3 (100%)
- **Number of Occurred SPP Overflow Events**: 0 (0%)

## Prevented SPP Volume

- **Prevented SPP Overflow Volume (Gal.)**: 9,312,845
- **Occurred SPP Overflow Volume (Gal.)***: 0

## Event Summary

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/16/2019</td>
<td>-</td>
<td>6,376</td>
<td>0%</td>
</tr>
<tr>
<td>10/26/2019</td>
<td>-</td>
<td>2,778,901</td>
<td>0%</td>
</tr>
<tr>
<td>10/31/2019</td>
<td>-</td>
<td>6,527,568</td>
<td>0%</td>
</tr>
</tbody>
</table>
**October 16, 2019**

**Site:** Bird RTC  
**Analysis Date:** 11/13/2019  
**Event Start Date/Time:** 10/16/2019 10:35  
**Event End Date/Time:** 10/16/2019 10:55

**Gate Activation Trigger Depth:** N/A ft.  
**Return to Normal Depth:** N/A ft.  
**Time Gate 1 Activated:** N/A  
**Time Gate 2 Activated:** N/A  
**Time Gate 1 Returned to Normal:** N/A  
**Time Gate 2 Returned to Normal:** N/A  
**Percent Capture:** N/A  
**Depth of Weir:** 8.15 ft.  
**Maximum Depth Reached:** 2.79 ft.  
**Volume Stored:** N/A Gal.  
**Unused Storage Volume:** 1,015,032 Gal.  
**Overflow Volume:** 6,376 Gal.  
**Overflow Volume Prevented:** N/A Gal.  
**SPP Activation Prevented:** N/A  
**If No, what is the overflow volume when storage was available?** 6,376  
**Could SPP activation have been prevented?** Yes

### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Gate Position, Percent Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/16/2019 2:24</td>
<td>10-20</td>
</tr>
<tr>
<td>10/16/2019 9:36</td>
<td>30-40</td>
</tr>
<tr>
<td>10/16/2019 16:48</td>
<td>60-70</td>
</tr>
<tr>
<td>10/17/2019 0:00</td>
<td>20-30</td>
</tr>
<tr>
<td>10/17/2019 7:12</td>
<td>50-60</td>
</tr>
<tr>
<td>10/17/2019 14:24</td>
<td>80-90</td>
</tr>
<tr>
<td>10/17/2019 21:36</td>
<td>50-60</td>
</tr>
<tr>
<td>10/18/2019 4:48</td>
<td>20-30</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/16/2019 2:24</td>
<td>0.0</td>
</tr>
<tr>
<td>10/16/2019 9:36</td>
<td>0.0</td>
</tr>
<tr>
<td>10/16/2019 16:48</td>
<td>0.0</td>
</tr>
<tr>
<td>10/17/2019 0:00</td>
<td>0.5</td>
</tr>
<tr>
<td>10/17/2019 7:12</td>
<td>1.0</td>
</tr>
<tr>
<td>10/17/2019 14:24</td>
<td>1.5</td>
</tr>
<tr>
<td>10/17/2019 21:36</td>
<td>2.0</td>
</tr>
</tbody>
</table>

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Gate 1 and 2 were stuck open for the whole month of October, resulting in no storage.
**RTC Gate Performance**

- **Bird RTC Gate 1 Position (percent)**
- **Bird RTC Gate 2 Position (percent)**
- **Bird SPP Depth (ft)**
- **Bird RTC Upstream Level (ft)**
- **SPP Weir Depth (ft)**
- **Max Chamber Depth (ft)**

**Rainfall Accumulation**

- **Rainfall (in.)**
- **Date/Time**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/26/2019 19:12</td>
<td>0.1</td>
</tr>
<tr>
<td>10/27/2019 0:00</td>
<td>0.2</td>
</tr>
<tr>
<td>10/27/2019 4:48</td>
<td>0.3</td>
</tr>
<tr>
<td>10/27/2019 9:36</td>
<td>0.4</td>
</tr>
<tr>
<td>10/27/2019 14:24</td>
<td>0.5</td>
</tr>
<tr>
<td>10/27/2019 19:12</td>
<td>0.6</td>
</tr>
</tbody>
</table>

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Gate 1 and 2 were stuck open for the whole month of October.

---

**October 26, 2019**

<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 11/13/2019</td>
<td>Total Rainfall Accumulation: 0.86 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 10/27/2019 3:20</td>
<td>Storm Event Duration: 12 hr.</td>
</tr>
<tr>
<td>Event End Date/Time: 10/27/2019 7:00</td>
<td>Storm Type: Less than 1 yr storm</td>
</tr>
</tbody>
</table>

**Gate Activation Trigger Depth:** N/A ft.

**Return to Normal Depth:** N/A ft.

**Time Gate 1 Activated:** N/A

**Time Gate 2 Activated:** N/A

**Time Gate 1 Returned to Normal:** N/A

**Time Gate 2 Returned to Normal:** N/A

**Percent Capture:** 0%

**Depth of Weir:** 8.15 ft.

**Maximum Depth Reached:** 8.01 ft.

**Volume Stored:** 0 Gal.

**Unused Storage Volume:** 1,116,122 Gal.

**Overflow Volume:** 2,778,901 Gal.

**Overflow Volume Prevented:** 0 Gal.

**SPP Activation Prevented:** No

**If No, what is the overflow volume when storage was available?** 2,778,901

**Could SPP activation have been prevented?** Yes

---

**Graphs:**

- **RTC Gate Performance** graph showing gate positions and percent open over time.
- **Rainfall Accumulation** graph showing rainfall accumulation over time.
### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Gate Position, Percent Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/31/2019 11:00</td>
<td>60%</td>
</tr>
<tr>
<td>10/31/2019 13:24</td>
<td>80%</td>
</tr>
<tr>
<td>10/31/2019 15:48</td>
<td>90%</td>
</tr>
<tr>
<td>10/31/2019 18:12</td>
<td>90%</td>
</tr>
<tr>
<td>10/31/2019 20:36</td>
<td>60%</td>
</tr>
<tr>
<td>10/31/2019 23:00</td>
<td>40%</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/31/2019 11:00</td>
<td>0.05</td>
</tr>
<tr>
<td>10/31/2019 13:24</td>
<td>0.56</td>
</tr>
<tr>
<td>10/31/2019 15:48</td>
<td>0.56</td>
</tr>
<tr>
<td>10/31/2019 18:12</td>
<td>0.56</td>
</tr>
<tr>
<td>10/31/2019 20:36</td>
<td>0.56</td>
</tr>
<tr>
<td>10/31/2019 23:00</td>
<td>0.56</td>
</tr>
</tbody>
</table>
November 2019
Bird Ave. RTC
KPI Report
## Prevented SPP Events

- **Number of Prevented SPP Overflow Events**: 2 (100%)
- **Number of Occurred SPP Overflow Events**: 0 (0%)

## Prevented SPP Volume

- **Prevented SPP Overflow Volume (Gal.)**: 88,777
- **Occurred SPP Overflow Volume (Gal.)**: -

### Event Details

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/4/2019</td>
<td>60,228</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>11/22/2019</td>
<td>28,549</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>
Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this event.

In this event, Gate 2 modulated from being 95% open to fully closed and then seems to have been stuck open at 40% for the rest of the month of November. Gate 1 was fully open for this event.

Communication was lost from November 5 to November 20. Upstream level sensor had flatlined at 0.57 ft. for the whole month of November. Since November 20th, Gate 1 was stuck open at 100% and Gate 2 was stuck open at 40% for the rest of the month of November.

Could SPP activation have been prevented? Yes.

Rucha Shah, Arcadis

Recommended Operational Changes/Notes:
### Gate Activation Trigger Depth:
N/A ft.

### Return to Normal Depth:
2.17 ft.

### Time Gate 1 Activated:
N/A

### Time Gate 2 Activated:
N/A

### Time Gate 1 Returned to Normal:
N/A

### Time Gate 2 Returned to Normal:
N/A

### Percent Capture:
100%

### Depth of Weir:
8.15 ft.

### Maximum Depth Reached:
2.62 ft.

### Volume Stored:
28,549 Gal.

### Unused Storage Volume:
1,029,560 Gal.

### Overflow Volume:
0 Gal.

### Overflow Volume Prevented:
28,549 Gal.

### SPP Activation Prevented:
Yes

### Communication was lost from November 5 to November 20. Upstream level sensor had flatlined at 0.57 ft. for the whole month of November.

Gate 1 modulated during this event and Gate 2 only modulated between approximately 0% and 45% open.

---

### RTC Gate Performance

---

### Rainfall Accumulation

---
**Prevented SPP Events**

- Prevented SPP Overflow Events: 2, 100%
- Number of Prevented SPP Overflow Events: 0%
- Number of Occurred SPP Overflow Events: 0%

**Prevented SPP Volume**

- Prevented SPP Overflow Volume (Gal.): 100%
- Occurred SPP Overflow Volume (Gal.)*: 0%

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/1/2019</td>
<td>-</td>
<td>1,513,154</td>
<td>0%</td>
</tr>
<tr>
<td>12/14/2019</td>
<td>-</td>
<td>253,651</td>
<td>0%</td>
</tr>
</tbody>
</table>
Rainfall data sourced from BSA rain gauge station at South Buffalo. Upstream and downstream level sensors were flatlined, and Gate 2 was stuck open at approximately 44% for the entire month of December.
### December 14, 2019

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site:</td>
<td>Bird RTC</td>
</tr>
<tr>
<td>Analysis Date:</td>
<td>1/7/2020</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>12/14/2019 11:50</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>12/14/2019 13:20</td>
</tr>
<tr>
<td>Analyst Name, Organization:</td>
<td>Rucha Shah</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0.92 in.</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>6 hr.</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>Less than 1 yr storm</td>
</tr>
</tbody>
</table>

**Gate Activation Trigger Depth:** - ft.

**Return to Normal Depth:** - ft.

**Time Gate 1 Activated:** N/A

**Time Gate 2 Activated:** N/A

**Time Gate 1 Returned to Normal:** N/A

**Time Gate 2 Returned to Normal:** N/A

**Percent Capture:** 0%

**Depth of Weir:** 8.15 ft.

**Maximum Depth Reached:** 0.57 ft.

**Volume Stored:** 0 Gal.

**Unused Storage Volume:** 1,119,246 Gal.

**Overflow Volume:** 253,651 Gal.

**Overflow Volume Prevented:** 0 Gal.

**SPP Activation Prevented:** No

**If No, what is the overflow volume when storage was available?** 253,651

**Could SPP activation have been prevented?** Yes

---

**RTC Gate Performance**

![RTC Gate Performance Chart](chart1.png)

**Rainfall Accumulation**

![Rainfall Accumulation Chart](chart2.png)

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo. Upstream and downstream level sensors were flatlined, and Gate 2 was stuck open at approximately 44% for the entire month of December.
January 2020
Bird Ave. RTC
KPI Report
### Prevented SPP Events

- **Number of Prevented SPP Overflow Events**: 1, 100%
- **Number of Occurred SPP Overflow Events**: 0, 0%

### Prevented SPP Volume

- **Prevented SPP Overflow Volume (Gal.)**: 9,218
- **Occurred SPP Overflow Volume (Gal.)**: 0%

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/25/2020</td>
<td>-</td>
<td>9,218</td>
<td>0%</td>
</tr>
</tbody>
</table>
January 25, 2020

<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 2/3/2020</td>
<td>Total Rainfall Accumulation: 0.12 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 1/25/2020 12:15</td>
<td>Storm Event Duration: 1 hr.</td>
</tr>
<tr>
<td>Event End Date/Time: 1/25/2020 14:25</td>
<td>Storm Type: &lt;1 yr.</td>
</tr>
</tbody>
</table>

Gate Activation Trigger Depth: - ft.
Return to Normal Depth: - ft.
Time Gate 1 Activated: N/A
Time Gate 2 Activated: N/A
Time Gate 1 Returned to Normal: N/A
Time Gate 2 Returned to Normal: N/A
Percent Capture: 0%
Depth of Weir: 8.15 ft.
Maximum Depth Reached: 8.15 ft.
Volume Stored: 0 Gal.
Unused Storage Volume: 1,116,122 Gal.
Overflow Volume: 9,218 Gal.
Overflow Volume Prevented: 0 Gal.
SPP Activation Prevented: No
If No, what is the overflow volume when storage was available? 9,218
Could SPP activation have been prevented? Yes

**RTC Gate Performance**

**Rainfall Accumulation**

Rainfall data sourced from BSA rain gauge at Quarry. Gate 1 was manually open at 100% and Gate 2 was stuck open at approximately 45% for the entire month of January.
February 2020
Bird Ave. RTC
KPI Report
### Prevented SPP Events

- **1, 100%**
- **0, 0%**

### Prevented SPP Volume

- **100%**
- **0%**

<table>
<thead>
<tr>
<th>Number of Prevented SPP Overflow Events</th>
<th>Number of Occurred SPP Overflow Events</th>
<th>Prevented SPP Overflow Volume (Gal.)</th>
<th>Occurred SPP Overflow Volume (Gal.)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>732,212</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/26/2020</td>
<td>732,212</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>
February 26, 2020

<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 3/11/2020</td>
<td>Total Rainfall Accumulation: 0.5 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 2/26/2020 20:15</td>
<td>Storm Event Duration: 10 hr.</td>
</tr>
<tr>
<td>Event End Date/Time: 2/27/2020 5:30</td>
<td>Storm Type: &lt;1 yr.</td>
</tr>
</tbody>
</table>

Gate Activation Trigger Depth: 1.59 ft.
Return to Normal Depth: 0.96 ft.
Time Gate 1 Activated: 2/26/2020 20:15
Time Gate 2 Activated: 2/26/2020 20:15
Time Gate 1 Returned to Normal: 2/27/2020 5:30
Time Gate 2 Returned to Normal: 2/27/2020 5:20
Percent Capture: 100%
Depth of Weir: 8.15 ft.
Maximum Depth Reached: 6.78 ft.
Volume Stored: 732,212 Gal.
Unused Storage Volume: 362,151 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 732,212 Gal.
SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available? N/A
Could SPP activation have been prevented? N/A

Rainfall data sourced from BSA rain gauge station at South Buffalo.

### RTC Gate Performance

- **Bird RTC Gate 1 Position (percent)**
- **Bird RTC Gate 2 Position (percent)**
- **Bird SPP Depth (ft)**
- **Bird RTC Upstream Level (ft)**

### Rainfall Accumulation
### Prevented SPP Events

- Number of Prevented SPP Overflow Events: 7, 100%
- Number of Occurred SPP Overflow Events: 0, 0%

### Prevented SPP Volume

- Prevented SPP Overflow Volume (Gal.): 100%
- Occurred SPP Overflow Volume (Gal.)*: 0%

### Table: Prevented SPP Overflow Events and Volume

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/2/2020</td>
<td>718,154</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>3/3/2020</td>
<td>713,502</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>3/10/2020</td>
<td>706,627</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>3/13/2020</td>
<td>680,224</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>3/20/2020</td>
<td>914,700</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>3/28/2020</td>
<td>700,185</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>3/29/2020</td>
<td>575,969</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Volume (Gal.): 5,009,361
March 2, 2020

<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 4/8/2020</td>
<td>Total Rainfall Accumulation: 0.32 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 3/2/2020 14:05</td>
<td>Storm Event Duration: 13 hr.</td>
</tr>
<tr>
<td>Event End Date/Time: 3/3/2020 3:05</td>
<td>Storm Type: &lt;1 yr.</td>
</tr>
</tbody>
</table>

Gate Activation Trigger Depth: 1.69 ft.
Return to Normal Depth: 1.52 ft.
Time Gate 1 Activated: 3/2/2020 14:05
Time Gate 2 Activated: 3/2/2020 14:05
Time Gate 1 Returned to Normal: 3/3/2020 3:05
Time Gate 2 Returned to Normal: 3/3/2020 3:00
Percent Capture: 100%
Depth of Weir: 8.15 ft.
Maximum Depth Reached: 6.74 ft.
Volume Stored: 718,154 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 718,154 Gal.
SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available? N/A
Could SPP activation have been prevented? N/A

Rainfall data sourced from BSA rain gauge station at South Buffalo.
March 3, 2020

**Site:** Bird RTC
**Analysis Date:** 4/8/2020
**Event Start Date/Time:** 3/3/2020 12:05
**Event End Date/Time:** 3/4/2020 5:15

**Gate Activation Trigger Depth:** 2.40 ft.
**Return to Normal Depth:** 1.53 ft.
**Time Gate 1 Activated:** 3/3/2020 12:05
**Time Gate 2 Activated:** 3/3/2020 12:05
**Time Gate 1 Returned to Normal:** 3/4/2020 5:15
**Time Gate 2 Returned to Normal:** 3/4/2020 5:10

**Percent Capture:** 100%
**Depth of Weir:** 8.15 ft.
**Maximum Depth Reached:** 6.90 ft.
**Volume Stored:** 713,502 Gal.
**Unused Storage Volume:** 333,248 Gal.
**Overflow Volume:** 0 Gal.
**Overflow Volume Prevented:** 713,502 Gal.
**SPP Activation Prevented:** Yes

**If No, what is the overflow volume when storage was available?** N/A
**Could SPP activation have been prevented?** N/A

**Recommended Operational Changes/Notes:**
Rainfall data sourced from BSA rain gauge station at South Buffalo.

**RTC Gate Performance**

**Rainfall Accumulation**
### Rainfall Data

**Event Details:**
- **Site:** Bird RTC
- **Analysis Date:** 4/8/2020
- **Event Start Date/Time:** 3/10/2020 9:45
- **Event End Date/Time:** 3/10/2020 19:25
- **Total Rainfall Accumulation:** 0.4 in.
- **Storm Event Duration:** 10 hr.
- **Storm Type:** <1 yr.

**Gate Activation Details:**
- **Gate Activation Trigger Depth:** 1.58 ft.
- **Return to Normal Depth:** 1.71 ft.
- **Time Gate 1 Activated:** 3/10/2020 9:45
- **Time Gate 2 Activated:** 3/10/2020 9:45
- **Time Gate 1 Returned to Normal:** 3/10/2020 19:25
- **Time Gate 2 Returned to Normal:** 3/10/2020 19:20

**Percent Capture:**
- **Depth of Weir:** 8.15 ft.
- **Maximum Depth Reached:** 6.67 ft.

**Volume Storage:**
- **Volume Stored:** 706,627 Gal.
- **Unused Storage Volume:** 388,170 Gal.
- **Overflow Volume:** 0 Gal.
- **Overflow Volume Prevented:** 706,627 Gal.

**SPP Activation:**
- **SPP Activation Prevented:** Yes

**Recommended Operational Changes/Notes:**
Rainfall data sourced from BSA rain gauge station at South Buffalo.
Rainfall data sourced from BSA rain gauge station at South Buffalo.
### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Depth (ft)</th>
<th>Bird RTC Gate 1 Position (percent)</th>
<th>Bird RTC Gate 2 Position (percent)</th>
<th>Bird SPP Depth (ft)</th>
<th>Bird RTC Upstream Level (ft)</th>
<th>SPP Weir Depth (ft)</th>
<th>Max Chamber Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/20/2020 1:26</td>
<td>8</td>
<td>0.0</td>
<td>0.0</td>
<td>8</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3/20/2020 3:50</td>
<td>6</td>
<td>0.1</td>
<td>0.2</td>
<td>6</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3/20/2020 6:14</td>
<td>4</td>
<td>0.3</td>
<td>0.4</td>
<td>4</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3/20/2020 8:38</td>
<td>2</td>
<td>0.5</td>
<td>0.6</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3/20/2020 11:02</td>
<td>1</td>
<td>0.7</td>
<td>0.8</td>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3/20/2020 13:26</td>
<td>0</td>
<td>1.0</td>
<td>1.1</td>
<td>0</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/20/2020 1:26</td>
<td>0.00</td>
</tr>
<tr>
<td>3/20/2020 3:50</td>
<td>0.00</td>
</tr>
<tr>
<td>3/20/2020 6:14</td>
<td>0.00</td>
</tr>
<tr>
<td>3/20/2020 8:38</td>
<td>0.00</td>
</tr>
<tr>
<td>3/20/2020 11:02</td>
<td>0.00</td>
</tr>
<tr>
<td>3/20/2020 13:26</td>
<td>0.60</td>
</tr>
</tbody>
</table>

### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.
<table>
<thead>
<tr>
<th>Event Start Date/Time:</th>
<th>3/28/2020 10:15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storm Event Duration:</td>
<td>8 hr.</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>&lt;1 yr.</td>
</tr>
</tbody>
</table>

- **Gate Activation Trigger Depth:** 2.14 ft.
- **Return to Normal Depth:** 1.81 ft.
- **Time Gate 1 Activated:** 3/28/2020 10:15
- **Time Gate 2 Activated:** 3/28/2020 10:15
- **Time Gate 1 Returned to Normal:** 3/28/2020 18:00
- **Time Gate 2 Returned to Normal:** 3/28/2020 18:00
- **Percent Capture:** 100%
- **Depth of Weir:** 8.15 ft.
- **Maximum Depth Reached:** 6.77 ft.
- **Volume Stored:** 700,185 Gal.
- **Unused Storage Volume:** 364,535 Gal.
- **Overflow Volume:** 0 Gal.
- **Overflow Volume Prevented:** 700,185 Gal.
- **SPP Activation Prevented:** Yes

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

---

**RTC Gate Performance**

- **Bird RTC Gate 1 Position (percent)**
- **Bird RTC Gate 2 Position (percent)**
- **Bird RTC Upstream Level (ft)**
- **SPP Weir Depth (ft)**
- **Max Chamber Depth (ft)**

**Rainfall Accumulation**
### RTC Gate Performance

**Date/Time**
- 3/29/2020 5:02
- 3/29/2020 7:26
- 3/29/2020 9:50
- 3/29/2020 12:14
- 3/29/2020 14:38
- 3/29/2020 17:02
- 3/29/2020 19:26
- 3/29/2020 21:50

<table>
<thead>
<tr>
<th>Depth</th>
<th>Gate Position, Percent Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.2</td>
<td>20</td>
</tr>
<tr>
<td>0.4</td>
<td>40</td>
</tr>
<tr>
<td>0.6</td>
<td>60</td>
</tr>
<tr>
<td>0.8</td>
<td>80</td>
</tr>
<tr>
<td>1</td>
<td>100</td>
</tr>
</tbody>
</table>

**Gate Position, Percent Open**
- **Bird RTC Gate 1 Position (percent)**
- **Bird RTC Gate 2 Position (percent)**
- **Bird SPP Depth (ft)**
- **Bird RTC Upstream Level (ft)**
- **SPP Weir Depth (ft)**
- **Max Chamber Depth (ft)**

### Rainfall Accumulation

**Date/Time**
- 3/29/2020 5:02
- 3/29/2020 7:26
- 3/29/2020 9:50
- 3/29/2020 12:14
- 3/29/2020 14:38
- 3/29/2020 17:02
- 3/29/2020 19:26
- 3/29/2020 21:50

<table>
<thead>
<tr>
<th>Rainfall (in.)</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3/29/2020 5:02</td>
</tr>
<tr>
<td>0</td>
<td>3/29/2020 7:26</td>
</tr>
<tr>
<td>0</td>
<td>3/29/2020 9:50</td>
</tr>
<tr>
<td>0.2</td>
<td>3/29/2020 12:14</td>
</tr>
<tr>
<td>1.1</td>
<td>3/29/2020 14:38</td>
</tr>
<tr>
<td>1.1</td>
<td>3/29/2020 17:02</td>
</tr>
<tr>
<td>1.1</td>
<td>3/29/2020 19:26</td>
</tr>
<tr>
<td>1.1</td>
<td>3/29/2020 21:50</td>
</tr>
</tbody>
</table>

### Recommended Operational Changes/Notes
- Rainfall data sourced from BSA rain gauge station at South Buffalo.
- No issues identified.
- No SPP activation prevented.
April 2020
Bird Ave. RTC
KPI Report
**Prevented SPP Events**

- Number of Prevented SPP Overflow Events: 4 (100%)
- Number of Occurred SPP Overflow Events: 0 (0%)

**Prevented SPP Volume**

- Prevented SPP Overflow Volume (Gal.): 2,373,207
- Occurred SPP Overflow Volume (Gal.)*: -

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/7/2020</td>
<td>236,477</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>4/13/2020</td>
<td>743,675</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>4/19/2020</td>
<td>684,875</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>4/30/2020</td>
<td>708,180</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>
April 7, 2020

<table>
<thead>
<tr>
<th>Site: Analyst Name, Organization:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird RTC  Rucha Shah, Arcadis</td>
</tr>
<tr>
<td>Analysis Date:</td>
</tr>
<tr>
<td>5/8/2020</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
</tr>
<tr>
<td>4/7/2020 23:05</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
</tr>
<tr>
<td>4/8/2020 1:10</td>
</tr>
</tbody>
</table>

| Total Rainfall Accumulation:       |
| 0.25 in.                           |

| Storm Event Duration:             |
| 3 hr.                             |

| Storm Type:                       |
| <1 yr.                            |

| Gate Activation Trigger Depth:    |
| 1.95 ft.                          |
| Return to Normal Depth:           |
| 1.85 ft.                          |
| Time Gate 1 Activated:            |
| 4/7/2020 23:05                    |
| Time Gate 2 Activated:            |
| 4/7/2020 23:05                    |
| Time Gate 1 Returned to Normal:   |
| 4/8/2020 1:10                     |
| Time Gate 2 Returned to Normal:   |
| 4/8/2020 1:10                     |
| Percent Capture                   |
| 100%                              |
| Depth of Weir                     |
| 8.15 ft.                          |
| Maximum Depth Reached:            |
| 4.29 ft.                          |
| Volume Stored:                    |
| 236,477 Gal.                      |
| Unused Storage Volume:            |
| 839,768 Gal.                      |
| Overflow Volume:                  |
| 0 Gal.                            |
| Overflow Volume Prevented:        |
| 236,477 Gal.                      |
| SPP Activation Prevented:         |
| Yes                               |
| If No, what is the overflow volume when storage was available? |
| N/A                               |
| Could SPP activation have been prevented? |
| N/A                               |

**RTC Gate Performance**

**Rainfall Accumulation**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

Recommended Operational Changes/Notes:
**April 13, 2020**

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Name, Organization:</td>
<td>Rucha Shah, Arcadis</td>
</tr>
<tr>
<td>Analysis Date:</td>
<td>5/8/2020</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0.59 in.</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>4/13/2020 3:15</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>8 hr.</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>4/13/2020 21:55</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>&lt;1 yr.</td>
</tr>
</tbody>
</table>

| Gate Activation Trigger Depth: | 2.14 ft. |
| Return to Normal Depth: | 1.63 ft. |
| Time Gate 1 Activated: | 4/13/2020 3:15 |
| Time Gate 2 Activated: | 4/13/2020 3:15 |
| Time Gate 1 Returned to Normal: | 4/13/2020 21:55 |
| Time Gate 2 Returned to Normal: | 4/13/2020 21:50 |
| Percent Capture: | 100% |
| Depth of Weir: | 8.15 ft. |
| Maximum Depth Reached: | 6.95 ft. |
| Volume Stored: | 743,675 Gal. |
| Unused Storage Volume: | 321,046 Gal. |
| Overflow Volume: | 0 Gal. |
| Overflow Volume Prevented: | 743,675 Gal. |
| SPP Activation Prevented: | Yes |
| If No, what is the overflow volume when storage was available? | N/A |
| Could SPP activation have been prevented? | N/A |

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

---

**RTC Gate Performance**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Bird RTC Gate 1 Position (percent)</th>
<th>Bird RTC Gate 2 Position (percent)</th>
<th>Bird SPP Depth (ft)</th>
<th>Bird RTC Upstream Level (ft)</th>
<th>SPP Weir Depth (ft)</th>
<th>Max Chamber Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/13/2020 2:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/13/2020 4:54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/13/2020 7:18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/13/2020 9:42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/13/2020 12:06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/13/2020 14:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/13/2020 16:54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/13/2020 19:18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/13/2020 21:42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Rainfall Accumulation**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/13/2020 2:30</td>
<td>0</td>
</tr>
<tr>
<td>4/13/2020 4:54</td>
<td>0.1</td>
</tr>
<tr>
<td>4/13/2020 7:18</td>
<td>0.2</td>
</tr>
<tr>
<td>4/13/2020 9:42</td>
<td>0.3</td>
</tr>
<tr>
<td>4/13/2020 12:06</td>
<td>0.4</td>
</tr>
<tr>
<td>4/13/2020 14:30</td>
<td>0.5</td>
</tr>
<tr>
<td>4/13/2020 16:54</td>
<td>0.6</td>
</tr>
<tr>
<td>4/13/2020 19:18</td>
<td>0.7</td>
</tr>
<tr>
<td>4/13/2020 21:42</td>
<td>0.8</td>
</tr>
</tbody>
</table>
### Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/19/2020 13:30</td>
<td>0</td>
</tr>
<tr>
<td>4/19/2020 14:42</td>
<td>1</td>
</tr>
<tr>
<td>4/19/2020 15:54</td>
<td>2</td>
</tr>
<tr>
<td>4/19/2020 17:06</td>
<td>3</td>
</tr>
<tr>
<td>4/19/2020 18:18</td>
<td>4</td>
</tr>
<tr>
<td>4/19/2020 19:30</td>
<td>5</td>
</tr>
<tr>
<td>4/19/2020 20:42</td>
<td>6</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/19/2020 13:30</td>
<td>0.1</td>
</tr>
<tr>
<td>4/19/2020 14:42</td>
<td>0.2</td>
</tr>
<tr>
<td>4/19/2020 15:54</td>
<td>0.3</td>
</tr>
<tr>
<td>4/19/2020 17:06</td>
<td>0.4</td>
</tr>
<tr>
<td>4/19/2020 18:18</td>
<td>0.5</td>
</tr>
<tr>
<td>4/19/2020 19:30</td>
<td>0.6</td>
</tr>
<tr>
<td>4/19/2020 20:42</td>
<td>0.7</td>
</tr>
</tbody>
</table>
**RTC Gate Performance**

- **Bird RTC Gate 1 Position (percent)**
- **Bird RTC Gate 2 Position (percent)**
- **Bird SPP Depth (ft)**
- **Bird RTC Upstream Level (ft)**
- **SPP Weir Depth (ft)**
- **Max Chamber Depth (ft)**

**Rainfall Accumulation**

Rainfall data sourced from BSA rain gauge station at South Buffalo.
Bird Ave. RTC Monthly Performance Report  May 2020

Prevented SPP Events

- Number of Prevented SPP Overflow Events: 7 (100%)
- Number of Occurred SPP Overflow Events: 0 (0%)

Prevented SPP Volume

- Prevented SPP Overflow Volume (Gal.): 4,918,626
- Occurred SPP Overflow Volume (Gal.): -

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented</th>
<th>SPP Overflow Volume Occurred</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/11/2020</td>
<td>241,853</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/15/2020</td>
<td>460,203</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/17/2020</td>
<td>1,434,157</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/22/2020</td>
<td>691,811</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/25/2020</td>
<td>681,559</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/28/2020</td>
<td>629,946</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>5/29/2020</td>
<td>779,097</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>
May 11, 2020

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>6/9/2020</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>5/11/2020 6:35</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>5/11/2020 8:55</td>
</tr>
<tr>
<td>Analyst Name, Organization:</td>
<td>Rucha Shah, Arcadis</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0.22 in.</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>3 hr.</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>&lt;1 yr.</td>
</tr>
</tbody>
</table>

**Gate Activation Trigger Depth:** 1.65 ft.

**Return to Normal Depth:** 1.73 ft.

**Time Gate 1 Activated:** 5/11/2020 6:35

**Time Gate 2 Activated:** 5/11/2020 6:35

**Time Gate 1 Returned to Normal:** 5/11/2020 8:55

**Time Gate 2 Returned to Normal:** 5/11/2020 8:50

**Percent Capture**

**Depth of Weir**

**Maximum Depth Reached:** 4.22 ft.

**Volume Stored:** 241,853 Gal.

**Unused Storage Volume:** 849,828 Gal.

**Overflow Volume:** 0 Gal.

**Overflow Volume Prevented:** 241,853 Gal.

**SPP Activation Prevented:** Yes

If No, what is the overflow volume when storage was available?

**Could SPP activation have been prevented?**

N/A

---

**RTC Gate Performance**

**Rainfall Accumulation**

Rainfall data sourced from BSA rain gauge station at South Buffalo.
May 15, 2020

Site: Bird RTC
Analysis Date: 6/9/2020
Event Start Date/Time: 5/15/2020 18:45
Event End Date/Time: 5/15/2020 22:20

Gate Activation Trigger Depth: 1.74 ft.
Return to Normal Depth: 1.66 ft.
Time Gate 1 Activated: 5/15/2020 18:45
Time Gate 2 Activated: 5/15/2020 18:45
Time Gate 1 Returned to Normal: 5/15/2020 22:20
Time Gate 2 Returned to Normal: 5/15/2020 22:15
Percent Capture 100%
Depth of Weir 8.15 ft.
Maximum Depth Reached: 5.55 ft.
Volume Stored: 460,203 Gal.
Unused Storage Volume: 627,203 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 460,203 Gal.
SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available? N/A
Could SPP activation have been prevented? Yes

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.

RTC Gate Performance

Rainfall Accumulation
<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 6/9/2020</td>
<td>Total Rainfall Accumulation: 1.27 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 5/17/2020 19:25</td>
<td>Storm Event Duration: 17 hr.</td>
</tr>
<tr>
<td>Event End Date/Time: 5/18/2020 12:40</td>
<td>Storm Type: &lt; 1 yr.</td>
</tr>
</tbody>
</table>

### Gate Activation
- Trigger Depth: 1.59 ft.
- Return to Normal Depth: 1.69 ft.
- Time Gate 1 Activated: 5/17/2020 19:25
- Time Gate 2 Activated: 5/17/2020 19:25
- Time Gate 1 Returned to Normal: 5/18/2020 12:40
- Time Gate 2 Returned to Normal: 5/18/2020 12:35

### Percent Capture
- Depth of Weir: 8.15 ft.
- Maximum Depth Reached: 6.83 ft.
- Percent Capture: 100%

### Volume Storage
- Volume Stored: 1,434,157 Gal.
- Overflow Volume: 0 Gal.
- Overflow Volume Prevented: 1,434,157 Gal.

### SPP Activation
- SPP Activation Prevented: Yes
- If No, what is the overflow volume when storage was available? N/A
- Could SPP activation have been prevented? N/A

---

**RTC Gate Performance**

- Bird RTC Gate 1 Position (percent)
- Bird RTC Gate 2 Position (percent)
- Bird SPP Depth (ft)
- Bird RTC Upstream Level (ft)
- SPP Weir Depth (ft)
- Max Chamber Depth (ft)

**Rainfall Accumulation**

Rainfall data sourced from BSA rain gauge station at South Buffalo.
May 22, 2020

<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 6/9/2020</td>
<td>Total Rainfall Accumulation: 0.95 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 5/22/2020 23:10</td>
<td>Storm Event Duration: 11 hr.</td>
</tr>
<tr>
<td>Event End Date/Time: 5/23/2020 9:05</td>
<td>Storm Type: &lt;1 yr.</td>
</tr>
</tbody>
</table>

- **Gate Activation Trigger Depth:** 2.30 ft.
- **Return to Normal Depth:** 1.73 ft.
- **Time Gate 1 Activated:** 5/22/2020 23:10
- **Time Gate 2 Activated:** 5/22/2020 23:10
- **Time Gate 1 Returned to Normal:** 5/23/2020 9:05
- **Time Gate 2 Returned to Normal:** 5/23/2020 9:00
- **Percent Capture:** 100%
- **Depth of Weir:** 8.15 ft.
- **Maximum Depth Reached:** 6.78 ft.
- **Volume Stored:** 691,811 Gal.
- **Unused Storage Volume:** 362,151 Gal.
- **Overflow Volume:** 0 Gal.
- **Overflow Volume Prevented:** 691,811 Gal.
- **SPP Activation Prevented:** Yes

**Recommended Operational Changes/Notes:**
Rainfall data sourced from BSA rain gauge station at South Buffalo.

**RTC Gate Performance**

**Rainfall Accumulation**
May 25, 2020

Site: Bird RTC  
Analysis Date: 6/9/2020  
Event Start Date/Time: 5/25/2020 6:40  
Event End Date/Time: 5/25/2020 12:05

Gate Activation Trigger Depth: 2.90 ft.  
Return to Normal Depth: 1.53 ft.  
Time Gate 1 Activated: 5/25/2020 6:40  
Time Gate 2 Activated: 5/25/2020 6:40  
Time Gate 1 Returned to Normal: 5/25/2020 12:05  
Time Gate 2 Returned to Normal: 5/25/2020 12:00

Percent Capture: 100%  
Depth of Weir: 8.15 ft.  
Maximum Depth Reached: 6.94 ft.  
Volume Stored: 681,559 Gal.  
Unused Storage Volume: 323,494 Gal.  
Overflow Volume: 0 Gal.  
Overflow Volume Prevented: 681,559 Gal.  
SPP Activation Prevented: Yes

Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.
**May 28, 2020**

<table>
<thead>
<tr>
<th>Site:</th>
<th>Bird RTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Name, Organization:</td>
<td>Rucha Shah, Arcadis</td>
</tr>
<tr>
<td>Analysis Date:</td>
<td>6/9/2020</td>
</tr>
<tr>
<td>Event Start Date/Time:</td>
<td>5/28/2020 12:45</td>
</tr>
<tr>
<td>Event End Date/Time:</td>
<td>5/28/2020 17:00</td>
</tr>
<tr>
<td>Total Rainfall Accumulation:</td>
<td>0.46 in.</td>
</tr>
<tr>
<td>Storm Event Duration:</td>
<td>5 hr.</td>
</tr>
<tr>
<td>Storm Type:</td>
<td>&lt;1 yr.</td>
</tr>
</tbody>
</table>

| Gate Activation Trigger Depth: | 1.66 ft. |
| Return to Normal Depth: | 1.72 ft. |
| Time Gate 1 Activated: | 5/28/2020 12:45 |
| Time Gate 2 Activated: | 5/28/2020 12:45 |
| Time Gate 1 Returned to Normal: | 5/28/2020 17:00 |
| Time Gate 2 Returned to Normal: | 5/28/2020 16:55 |
| Percent Capture: | 100% |
| Depth of Weir: | 8.15 ft. |
| Maximum Depth Reached: | 6.35 ft. |
| Volume Stored: | 629,946 Gal. |
| Unused Storage Volume: | 461,275 Gal. |
| Overflow Volume: | 0 Gal. |
| Overflow Volume Prevented: | 629,946 Gal. |
| SPP Activation Prevented: | Yes |
| If No, what is the overflow volume when storage was available? | N/A |
| Could SPP activation have been prevented? | N/A |

**RTC Gate Performance**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Gate Position, Percent Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/28/2020 12:30</td>
<td>Bird RTC Gate 1 Position (percent)</td>
</tr>
<tr>
<td>5/28/2020 13:42</td>
<td>Bird RTC Gate 2 Position (percent)</td>
</tr>
<tr>
<td>5/28/2020 14:54</td>
<td>Bird RTC Upstream Level (ft)</td>
</tr>
<tr>
<td>5/28/2020 16:06</td>
<td>Bird SPP Depth (ft)</td>
</tr>
<tr>
<td>5/28/2020 17:18</td>
<td>Bird SPP Weir Depth (ft)</td>
</tr>
<tr>
<td>5/28/2020 17:18</td>
<td>Max Chamber Depth (ft)</td>
</tr>
</tbody>
</table>

**Rainfall Accumulation**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/28/2020 12:30</td>
<td>0.1</td>
</tr>
<tr>
<td>5/28/2020 13:42</td>
<td>0.2</td>
</tr>
<tr>
<td>5/28/2020 14:54</td>
<td>0.3</td>
</tr>
<tr>
<td>5/28/2020 16:06</td>
<td>0.4</td>
</tr>
<tr>
<td>5/28/2020 17:18</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Rainfall data sourced from BSA rain gauge station at South Buffalo.
### RTC Gate Performance

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/29/2020 11:00</td>
<td>0</td>
</tr>
<tr>
<td>5/29/2020 13:24</td>
<td>0</td>
</tr>
<tr>
<td>5/29/2020 15:48</td>
<td>0</td>
</tr>
<tr>
<td>5/29/2020 18:12</td>
<td>0</td>
</tr>
<tr>
<td>5/29/2020 20:36</td>
<td>0</td>
</tr>
<tr>
<td>5/29/2020 23:00</td>
<td>0</td>
</tr>
<tr>
<td>5/30/2020 1:24</td>
<td>0</td>
</tr>
</tbody>
</table>

### Rainfall Accumulation

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/29/2020 11:00</td>
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<tr>
<td>5/29/2020 13:24</td>
<td>0.3</td>
</tr>
<tr>
<td>5/29/2020 15:48</td>
<td>0.5</td>
</tr>
<tr>
<td>5/29/2020 18:12</td>
<td>0.7</td>
</tr>
<tr>
<td>5/29/2020 20:36</td>
<td>0.8</td>
</tr>
<tr>
<td>5/29/2020 23:00</td>
<td>0.9</td>
</tr>
<tr>
<td>5/30/2020 1:24</td>
<td>1.0</td>
</tr>
</tbody>
</table>

---

**May 29, 2020**

<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 6/9/2020</td>
<td>Total Rainfall Accumulation: 0.87 in.</td>
</tr>
<tr>
<td>Event Start Date/Time: 5/29/2020 11:50</td>
<td>Storm Event Duration: 15 hr.</td>
</tr>
<tr>
<td>Event End Date/Time: 5/30/2020 0:55</td>
<td>Storm Type: &lt;1 yr.</td>
</tr>
<tr>
<td>Gate Activation Trigger Depth: 1.92 ft.</td>
<td>Recommended Operational Changes/Notes: Rainfall data sourced from BSA rain gauge station at South Buffalo.</td>
</tr>
<tr>
<td>Return to Normal Depth: 1.69 ft.</td>
<td></td>
</tr>
<tr>
<td>Time Gate 1 Activated: 5/29/2020 11:50</td>
<td></td>
</tr>
<tr>
<td>Time Gate 2 Activated: 5/29/2020 11:50</td>
<td></td>
</tr>
<tr>
<td>Time Gate 1 Returned to Normal: 5/30/2020 0:55</td>
<td></td>
</tr>
<tr>
<td>Time Gate 2 Returned to Normal: 5/30/2020 0:50</td>
<td></td>
</tr>
<tr>
<td>Percent Capture: 100%</td>
<td></td>
</tr>
<tr>
<td>Depth of Weir: 8.15 ft.</td>
<td></td>
</tr>
<tr>
<td>Maximum Depth Reached: 7.04 ft.</td>
<td></td>
</tr>
<tr>
<td>Volume Stored: 779,097 Gal.</td>
<td></td>
</tr>
<tr>
<td>Unused Storage Volume: 298,844 Gal.</td>
<td></td>
</tr>
<tr>
<td>Overflow Volume: 0 Gal.</td>
<td></td>
</tr>
<tr>
<td>Overflow Volume Prevented: 779,097 Gal.</td>
<td></td>
</tr>
<tr>
<td>SPP Activation Prevented: Yes</td>
<td></td>
</tr>
<tr>
<td>If No, what is the overflow volume when storage was available? N/A</td>
<td></td>
</tr>
<tr>
<td>Could SPP activation have been prevented? N/A</td>
<td></td>
</tr>
</tbody>
</table>

**RTC Gate Performance**

- **Bird RTC Gate 1 Position (percent)**
- **Bird RTC Gate 2 Position (percent)**
- **Bird SPP Depth (ft)**
- **Bird RTC Upstream Level (ft)**
- **-SPP Weir Depth (ft)**
- **-Max Chamber Depth (ft)**

**Rainfall Accumulation**

- **Rainfall (in.)**

---

**Gate Position, Percent Open**

- **Gate 1 Position (percent)**
- **Gate 2 Position (percent)**
- **SPP Depth (ft)**
- **Upstream Level (ft)**
- **Max Chamber Depth (ft)**

---

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

---

**Gate Position, Percent Open**

- **Gate 1 Position (percent)**
- **Gate 2 Position (percent)**
- **SPP Depth (ft)**
- **Upstream Level (ft)**
- **Max Chamber Depth (ft)**

---

**RTC Gate Performance**

- **Depth (ft)**
- **Date/Time**

---

**Rainfall Accumulation**

- **Rainfall (in.)**
- **Date/Time**
### Prevented SPP Events

- Number of Prevented SPP Overflow Events: 2
- Number of Occurred SPP Overflow Events: 2

### Prevented SPP Volume

- Prevented SPP Overflow Volume (Gal.): 3,340,877
- Occurred SPP Overflow Volume (Gal.)*: 4,645,396

<table>
<thead>
<tr>
<th>Event Date</th>
<th>SPP Overflow Volume Prevented (Gal.)</th>
<th>SPP Overflow Volume Occurred (Gal.)</th>
<th>Percent Capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/2/2020</td>
<td>1,091,682</td>
<td>4,237,257</td>
<td>20%</td>
</tr>
<tr>
<td>6/10/2020</td>
<td>787,366</td>
<td>408,139</td>
<td>66%</td>
</tr>
<tr>
<td>6/27/2020</td>
<td>754,613</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>6/28/2020</td>
<td>707,216</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>
**June 2, 2020**

**Site:** Bird RTC  
**Analysis Date:** 7/6/2020  
**Event Start Date/Time:** 6/2/2020 23:00  
**Event End Date/Time:** 6/3/2020 23:00

**Gate Activation Trigger Depth:** 1.94 ft.  
**Return to Normal Depth:** 1.58 ft.  
**Time Gate 1 Activated:** 6/2/2020 23:00  
**Time Gate 2 Activated:** 6/2/2020 23:00  
**Time Gate 1 Returned to Normal:** 6/3/2020 23:00  
**Time Gate 2 Returned to Normal:** 6/3/2020 22:55

**Percent Capture:** 20%  
**Depth of Weir:** 8.15 ft.  
**Maximum Depth Reached:** 8.15 ft.  
**Volume Stored:** 1,076,815 Gal.  
**Unused Storage Volume:** 0 Gal.  
**Overflow Volume:** 4,237,257 Gal.  
**Overflow Volume Prevented:** 1,076,815 Gal.  
**SPP Activation Prevented:** No

**If No, what is the overflow volume when storage was available?** No

**Could SPP activation have been prevented?** No

**Rainfall data sourced from BSA rain gauge station at South Buffalo.**

**Recommended Operational Changes/Notes:**

**RTC Gate Performance**

**Rainfall Accumulation**
June 10, 2020

**Site:** Bird RTC  
**Analysis Date:** 7/6/2020  
**Event Start Date/Time:** 6/10/2020 23:30  
**Event End Date/Time:** 6/11/2020 5:20

**Analyst Name, Organization:** Rucha Shah, Arcadis  
**Total Rainfall Accumulation:** 1.55 in.  
**Storm Event Duration:** 6 hr.  
**Storm Type:** <2 yrs.

**Gate Activation Trigger Depth:** 1.95 ft.  
**Return to Normal Depth:** 1.79 ft.  
**Time Gate 1 Activated:** 6/10/2020 23:30  
**Time Gate 2 Activated:** 6/10/2020 23:30  
**Time Gate 1 Returned to Normal:** 6/11/2020 5:20  
**Time Gate 2 Returned to Normal:** 6/11/2020 5:15

**Percent Capture** 66%  
**Depth of Weir:** 8.15 ft.  
**Maximum Depth Reached:** 7.08 ft.  
**Volume Stored:** 787,366 Gal.  
**Unused Storage Volume:** 288,879 Gal.  
**Overflow Volume:** 408,139 Gal.  
**Overflow Volume Prevented:** 787,366 Gal.  
**SPP Activation Prevented:** No  
**If No, what is the overflow volume when storage was available?** 408,139  
**Could SPP activation have been prevented?** No

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**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

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**RTC Gate Performance**

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**Rainfall Accumulation**
Site: Bird RTC
Analysis Date: 7/6/2020
Event Start Date/Time: 6/27/2020 5:25
Event End Date/Time: 6/27/2020 13:30

Gate Activation Trigger Depth: 1.68 ft.
Return to Normal Depth: 1.74 ft.
Time Gate 1 Activated: 6/27/2020 5:25
Time Gate 2 Activated: 6/27/2020 5:25
Time Gate 1 Returned to Normal: 6/27/2020 13:30
Time Gate 2 Returned to Normal: 6/27/2020 13:30
Percent Capture 100%
Depth of Weir 8.15 ft.
Maximum Depth Reached: 6.89 ft.
Volume Stored: 754,613 Gal.
Unused Storage Volume: 335,677 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 754,613 Gal.
SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available? N/A
Could SPP activation have been prevented? N/A

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.

June 27, 2020

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Rainfall Accumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/27/2020 5:00</td>
<td>0.00 in.</td>
</tr>
<tr>
<td>6/27/2020 6:12</td>
<td>0.20 in.</td>
</tr>
<tr>
<td>6/27/2020 7:24</td>
<td>0.42 in.</td>
</tr>
<tr>
<td>6/27/2020 8:36</td>
<td>0.63 in.</td>
</tr>
<tr>
<td>6/27/2020 9:48</td>
<td>0.84 in.</td>
</tr>
<tr>
<td>6/27/2020 11:00</td>
<td>1.05 in.</td>
</tr>
</tbody>
</table>

Rainfall Accumulation

RTC Gate Performance

- Bird RTC Gate 1 Position (percent)
- Bird RTC Gate 2 Position (percent)
- Bird SPP Depth (ft)
- Bird RTC Upstream Level (ft)
- SPP Weir Depth (ft)
- Max Chamber Depth (ft)
June 28, 2020

<table>
<thead>
<tr>
<th>Site: Bird RTC</th>
<th>Analyst Name, Organization: Rucha Shah, Arcadis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date: 7/6/2020</td>
<td>Total Rainfall Accumulation: 0.11 in.</td>
</tr>
<tr>
<td>Event End Date/Time: 6/28/2020 7:20</td>
<td>Storm Type: &lt;1 yr.</td>
</tr>
</tbody>
</table>

Gate Activation Trigger Depth: 1.62 ft.
Return to Normal Depth: 1.88 ft.
Time Gate 1 Activated: 6/28/2020 2:55
Time Gate 2 Activated: 6/28/2020 2:55
Time Gate 1 Returned to Normal: 6/28/2020 7:20
Time Gate 2 Returned to Normal: 6/28/2020 7:15
Percent Capture 100%
Depth of Weir 8.15 ft.
Maximum Depth Reached: 6.68 ft.
Volume Stored: 707,216 Gal.
Unused Storage Volume: 385,823 Gal.
Overflow Volume: 0 Gal.
Overflow Volume Prevented: 707,216 Gal.
SPP Activation Prevented: Yes
If No, what is the overflow volume when storage was available? N/A
Could SPP activation have been prevented? N/A

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.

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![RTC Gate Performance](chart1.png)

![Rainfall Accumulation](chart2.png)
In response to your red comment below, you are correct. We double checked and this calculation is actually completed when computing the Reduced Overflow Volume. This step was just omitted from the explanation below. The initial starting volume (what is in the pipe when the gates close) is subtracted from the total volume stored. The volume when the gates close is small (about 2% of the total volume), but it is still accounted for.

Catherine H. Knab, P.E., PMP
Principal Sanitary Engineer
Buffalo Sewer Authority
1038 City Hall, 65 Niagara Square
Buffalo, NY 14202
(716) 851-4664 Ext. 4203

> >> "Locey, Robert (DEC)" <robert.locey@dec.ny.gov> 10/26/2018 2:20 PM >>>
Cati – I have one comment below in red.

Also, regarding the Hazelwood project, I checked my emails and didn’t see anything from Mark Jarmuz at CHA, so please send me a copy of the engineering report and plans. Thanks.
Hello all,

As just discussed, I'm forwarding the email below with a detailed explanation on how we measure the performance of the RTCs.

---

**Catherine H. Knab, P.E., PMP**
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Buffalo, NY 14202
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>>> Tim Ruggaber <truggaber@emnet.net> 10/24/2018 1:22 PM >>>
Hi Cati,

Please see my response below.

The KPIs for the Bird, Lang, and Smith RTC locations are determined based on the performance of the actual system (using the monitoring data from each site) and does not use the SWMM model.

The process is as follows for the Bird and Lang sites:

- During the post construction monitoring period, a real time level monitor was deployed at the respective downstream SPP for a one year period. It was removed at the end of the one year period.
- A neural network was created to create a correlation between the conditions at the RTC structure and at the SPP based on the data from the one year PCM period. This neural network is now used to calculate the conditions at the SPP based on putting the data from the RTC structure into the neural network. With this approach, the depths upstream and downstream of the RTC structure (which are currently available) are used to determine the depth at the SPP (which is not currently available) based on the relationships established during the PCM period.
With the neural network SPP data, we can determine if the SPP overflowed during the storm event or not. If it did overflow, we determine the overflow volume by the head over the weir.

We calculate the volume stored in at the RTC location by looked at the maximum depth recorded at the structure (This should be the maximum depth minus the depth that the pipe could contain at the RTC structure without overflowing at the SPP. The entire maximum depth wouldn’t be available for storage unless the pipe at the RTC structure was empty when the SPP first starts to overflow.) for the storm event and relating that depth to a corresponding volume stored in the upstream pipes. It is assumed that this volume would have overflowed if it was not captured at the RTC structure.

If the neural network SPP data shows that an event did not happen and the data from RTC structure showed that volume was stored, it was determined that the SPP would have overflowed if the RTC structure was not in place. Hence, an SPP activation was prevented, and the volume of overflow prevented was equal to the volume stored.

If the neural network SPP data shows that an event did happen, then the RTC structure did not prevent an activation, and the volume stored is equal to the amount of overflow reduction for that storm.

For Smith, we monitor the flow that goes from the storage area into the South Interceptor. By summing this flow, we determine the volume of flow that enters the South Interceptor, all of which would have otherwise overflowed.