



**ONEIDA COUNTY DEPARTMENT OF  
WATER QUALITY & WATER POLLUTION CONTROL**

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**Anthony J. Picente, Jr.**  
County Executive

**Steven P. Devan, P.E.**  
Commissioner

April 28, 2017

Gregg Townsend, P.E.  
Regional Engineer  
NYS Department of Environmental Conservation  
317 Washington Street  
Watertown, NY 13601

**UNITED PARCEL SERVICE**

Koon Tang, P.E., Director  
Bureau of Water Permits  
Division of Water  
NYS Department of Environmental Conservation  
625 Broadway, 4<sup>th</sup> Floor  
Albany, NY 12233

Re: Oneida County Sewer District  
Quarterly Progress Report – 1st Quarter 2017

Consent Order No. R6-20060823-67

Dear Mr. Townsend and Mr. Tang:

On behalf of Oneida County, I am providing for your review and comment Oneida County's Quarterly Progress Report for the 1<sup>st</sup> Quarter – 2017 as required per Section XIII – Reporting Requirements of the Consent Order. This document summarizes the status and progress of work completed between January 1, 2017 and March 31, 2017 in support of Consent Order compliance requirements.

Please feel free to contact me should you have any questions or need additional information.

Sincerely,

**THE ONEIDA COUNTY DEPARTMENT OF  
WATER QUALITY & WATER POLLUTION CONTROL**

Steven P. Devan, P.E.  
Commissioner

Enclosure: Quarterly Progress Report – 1<sup>st</sup> Quarter 2017

ecc: Anthony J. Picente, Jr. - Oneida County Executive  
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**SANITARY SEWER COLLECTION SYSTEM  
QUARTERLY PROGRESS REPORT  
1ST QUARTER – 2017  
ONEIDA COUNTY SEWER DISTRICT**

**NYSDEC Consent Order R620060823-67**



Prepared for

Oneida County Department of Water Quality  
& Water Pollution Control

Steven P. Devan, P.E., Commissioner  
51 Leland Avenue  
Utica, NY 13502

April 28, 2017



Cazenovia, NY



Syracuse, NY



Utica, NY

**Sanitary Sewer Collection System  
Quarterly Progress Report  
1st Quarter - 2017  
Oneida County Sewer District  
NYSDEC Consent Order R620060823-67**

Prepared for:

**Oneida County Department of Water Quality &  
Water Pollution Control**

Prepared by:

**O'Brien & Gere Engineers, Inc.  
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Utica, NY 13501**

April 28, 2017

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## 1.0 INTRODUCTION

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### 1.1 HISTORICAL BACKGROUND

The Oneida County Sewer District (District) was formed in 1965 through an act by the former Oneida County Board of Supervisors. It is administered by Oneida County through the Oneida County Department of Water Quality and Water Pollution Control (WQ&WPC), which is responsible for the operation of the District's facilities and personnel. District facilities include 45-miles of interceptor sewers, the Sauquoit Creek Pumping Station (SCPS), the Barnes Avenue Pumping Station, and the Water Pollution Control Plant (WPCP). The District services 15 municipalities, nine of which are within the SCPS Basin. These municipalities own and operate their own collection systems.

### 1.2 PURPOSE

The New York State Department of Environmental Conservation (NYSDEC) and Oneida County (County) entered a Consent Order (No. R620060823-67) due to sanitary sewer overflows (SSO) at the SCPS. In addition to the required mitigation of those SSO's, the Consent Order, with an effective date of December 12, 2011, requires the submission of Quarterly Progress Reports. The intent of this Quarterly Progress Report is to summarize the work that has been undertaken by the County between January 1, 2017 and March 31, 2017 (1<sup>st</sup> Quarter of 2017) in support of the Consent Order compliance requirements.

## 2.0 ENGINEERING INVESTIGATIONS AND EVALUATIONS

During the 1<sup>st</sup> Quarter of 2017, the County completed the following tasks related to engineering investigations and evaluations.

### 2.1 COLLECTION SYSTEM

#### 2.1.1 Manhole Inspections

The manhole inspection program was completed in 2012. There were no additional manhole inspections completed during the 1<sup>st</sup> Quarter of 2017.

#### 2.1.2 Sanitary Sewer Televising

There are approximately 216-miles of sanitary sewer within the SCPS basin (30-miles of District interceptor sewer plus 186-miles of municipal sewer). In 2011, the County contracted with a firm (National Water Main Cleaning Co.) to perform closed circuit televising (CCTV) of these sanitary sewers. Televising data was collected electronically in the field using the nationally standardized Pipe Assessment and Certification Program (PACP) and incorporated into the County's data management software.

The 2011 initial televising contract resulted in approximately 79%, or 171-miles of the 216-miles of sewers being televised. The remaining 21%, or 47-miles of sewers, were not inspected at that time due to: heavy debris in quantities beyond the scope of the contractual cleaning effort; small diameter pipe inhibiting effective CCTV inspections; lack of easement access to manholes and sewers, and buried manholes. These obstacles are primarily maintenance related and are being addressed through the District-wide Capacity, Management, Operations, and Maintenance (CMOM) program currently in various stages of implementation. Efforts are being made to CCTV and inspect additional sewers as a component of current and future sewer rehabilitation contracts.

During the 1<sup>st</sup> Quarter 2017, approximately 1.5-miles of sewer was televised under Sewer Rehabilitation Contract 10. Including the original CCTV contract, and subsequent CMOM and rehabilitation related CCTV, a total of approximately 183-miles of sewer, or 85% of the total sewers in the SCPS basin have been televised.

#### 2.1.3 Dye Testing

The dye testing program was completed in 2012. There was no additional dye testing performed during 1<sup>st</sup> Quarter 2017.

### 2.2 TREATMENT FACILITIES

Most of the investigations and evaluations have been completed. The WPCP, SCPS and New Force Main are in various stages of design, review, bidding, and construction. Table 2.1 summarizes how the work has been segregated and the status of each of the various planned construction contracts. Note: Contract numbers identified for the work at the WPCP and the SCPS/Force Main (C-1 through C-8), do not correlate to the sanitary sewer rehabilitation contracts (Contracts 2-14).

A phosphorus evaluation is currently being conducted to characterize the WPCP's seasonal influent and effluent phosphorus concentrations, and to evaluate phosphorus removal technologies. The sampling and laboratory analysis was completed during 3<sup>rd</sup> Quarter 2016. A draft report is near completion and will be reviewed with the County in the 2<sup>nd</sup> Quarter of 2017.

Table 2.1

Oneida County Sewer District Summary of Contracts 1Q 2017									
Water Pollution Control Plant and Sauquoit Creek Pumping Station/Force Main									
Contract No.	Title of Contract	Components of System Addressed	Status of Design	Status of DEC Review	Status of other Agency Reviews	Estimated Advertisement	Estimated <sup>(1)</sup> Construction Start	Construction Progress	Estimated Construction Complete
1	Incinerator No. 2 Demolition	Demolition of Incinerator No. 2	Final	Approved	n/a	Bidding occurred during 1Q 2016; however, due to the outcome of bids, the demolition was added to Contract 2 by addendum on May 25, 2016.			
2	WPCP Solids Handling Upgrades	2 new egg-shaped digesters, 1 secondary digester w/gas holding cover, new waste activated sludge pumps, refurbish 4 gravity thickeners, new stand-by lime stabilization system, 2 new belt filter presses	Final	Approved	n/a	Advertised April 4, 2016	Notice to Proceed September 27, 2016	Excavation and Pile Foundation installation for Lime Stabilization Building, Egg-Shaped Primary Digesters, and Secondary Digester; Base slabs/walls for Digesters; Relocation of 24-in. Process Drain; Demo of select Belt Filter Press Equipment; Demolition of Incinerator No. 2	April 2019
3A	Electrical Equipment Pre-Purchase (Digester 15kV)	Pre-purchase of major electrical components such as switch gears, transformers, and supporting power distribution equipment	Final	n/a	n/a	April 2017	Equipment delivery November 2017	n/a	n/a
4	Sauquoit Creek Force Main Upgrades	New 48-inch force main and rehabilitation of the existing force main, new flow metering and flow control vaults	Final	Approved	Approved	June 2017	September 2017	n/a	March 2020
5	Sauquoit Creek Pumping Station Upgrades	Replacement of existing pump station mechanical screen contained in a new screen building, 2 screenings washer/compactors and conveyor; replacement of existing standby generator capable of operating the station to pump peak flow during a power outage; electrical/HVAC upgrades; flow distribution structure at the WPCP	Final	Approved	n/a	Advertised November 15, 2016; bid opening February 16, 2017	May 2017	n/a	November 2018
5.1	Barnes Avenue Pumping Station Upgrades	Relocation of pumping station to south side of CSX Railroad right-of-way; new, smaller, sustainable pumping station sized to accommodate actual flow rates	0%	n/a	n/a	December 2017	May 2018	n/a	January 2019

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Summary of Contracts 1Q 2017									
Water Pollution Control Plant and Sauquoit Creek Pumping Station/Force Main									
Contract No.	Title of Contract	Components of System Addressed	Status of Design	Status of DEC Review	Status of other Agency Reviews	Estimated Advertisement	Estimated <sup>(1)</sup> Construction Start	Construction Progress	Estimated Construction Complete
6	WPCP Headworks Upgrades	New screening facility and pump station dedicated to sanitary flows from North Utica & Starch Factory Creek Interceptors; repurpose existing raw waste building for combined flow from City of Utica; new grit removal facilities; remodeling of the administrative building including new laboratory, control room, offices, training room, etc.	Final	Approved	Pending National Grid approval, Stage A submitted in February 2016	March 2017	July 2017	n/a	February 2020
7	WPCP Primary Treatment Upgrade/Disinfection	New rectangular primary settling tanks to replace existing circular tanks; new high rate disinfection system for wet weather combined sewer flows; new HRD outfall	Final	Submitted December 9, 2016	n/a	July 2017	October 2017	n/a	December 2021
8	WPCP Secondary Treatment Process Upgrades	Replacement of existing blowers with more efficient units, replacement of existing aeration tank diffusers, refurbishment of the existing final settling tanks	30%	Estimated submittal December 2018	n/a	January 2019	May 2019	n/a	December 2021





### 3.0 MANAGEMENT PROGRAMS

#### 3.1 COMPUTERIZED MANAGEMENT AND MAINTENANCE SYSTEM

The County purchased a Computerized Management and Maintenance System (CMMS) software system (Lucity) in 2009. This software is used to manage the sewer system data (mapping, inspections, etc.) obtained to date by the County. At the same time that the software was acquired, the County invested in computer hardware upgrades to support the CMMS. The County's Geographic Information System (GIS) Coordinator manages the system.

The County continues to utilize the CMMS for tracking and documenting sewer rehabilitation work, and uploading and managing new PACP data provided by the County's CCTV and sewer rehabilitation contractors on a regular basis.

The Consultant Team utilizes the CMMS in support of the sanitary sewer rehabilitation design efforts to identify defects and develop rehabilitation methodologies.

The County continues to maximize the use of its current CMMS software. At the same time, the County, with the assistance of the Consultant Team, continues to assess ways to optimize the CMMS with the long term expanded asset management needs for the wastewater system. As a result, the County has begun to explore potential alternative software. It is anticipated this research of alternative software systems will continue as opportunities become available.

#### 3.2 FLOW MONITORING PROGRAM

The County worked closely with the Dormitory Authority of the State of New York (DASNY) to secure the \$950,000 Economic Development Assistance Program (EDAP) funding allocation to support the extensive flow monitoring program proposed by the County and approved by NYSDEC on August 24, 2012.

The EDAP funds were ultimately made available by DASNY to the County in March 2014. Procurement of the flow monitoring equipment was advertised on June 9, 2014. Contract was awarded on September 10, 2014 to ADS Environmental Services, LLC (ADS). ADS completed the installation of 63 flow meters and five rain gauges in 2015. Two of the meters were installed to monitor flow to the County's Barnes Ave Pumping Station. The other two are used to monitor flow in two of the City of Utica's combined sewers to aid in hydraulic model calibration and confirmation. The flow meters and rain gauges have been consistently collecting flow data since their installation.

Flow metering reporting made available to the County by ADS indicates sanitary sewer rehabilitation, including manhole rehabilitation that has been completed to date, may be having a positive effect on the amount of I/I entering the sanitary sewer system.

Raw flow monitoring data, consisting of 15-minute measurements of depth and velocity, are reviewed by ADS technicians who are able to assess the reliability of the data, and "scrub" out data that is deemed not accurate based on inconsistencies in the expected predictable relationship between depth, velocity, and rate of flow.

ADS technicians input the cleaned-up data into Sliicer, which is ADS' proprietary flow analyzing software. Sliicer enables the flow monitoring technician to define "typical" rain events for both summer and winter seasons, and analyze the rain event's effect on the flow in the sanitary sewer as measured by the flow monitors. This forms the basis of evaluating the quantity of Rain Derived I/I, or RDII.

A critical piece of information that is needed for the effective use of Sliicer, or any other wet-weather analysis tool, is rainfall. Based on the data collected by the rain gauge installed at the SCPS, 2015 was characterized by a lack of significant rainfall which affected the ability to draw conclusions from the data. However, 2016 had more significant rain events occur throughout the year, which leads to more effective wet-weather analysis utilizing Sliicer. Tabular rainfall data from the SCPS rain gauge for 2016 is included in Appendix A.

Utilizing rainfall and flow data from 2016 and early 2017, Sliicer was used to define the relationship between rainfall and flow in the sewers, also known as flow vs. rainfall, or Q vs. i. Q vs. i plots are created by placing individual data points on a graph, where the x-axis represents total rainfall depth and the y-axis represents the total RDII volume in the sewer. RDII volume is derived through decomposition of the hydrograph into its component parts of base flow, base infiltration, inflow, and infiltration. Individual storms are plotted on the graph, with each data point representing the total measured rainfall depth and calculated RDII for specific storms. Sliicer then fits a line to the data points, thereby creating the Q vs. i plot. Where flow monitors were installed in the same locations in 2008 as the current installations, a comparison of the slope of the Q vs. i plots can be made for both winter and summer storms. The flatter the slope of the line, the less RDII is entering the sewer.

A review of the Q vs. i plots indicates that basins where sewer rehabilitation has been completed were less reactive to RDII in summer of 2016 and winter of 2017, compared to 2008, before rehabilitation was completed. The exception in the selected basins is the plot for SCI1 summer events. SCI1 represents a meter installed in the Sauquoit Creek Interceptor just downstream from the Village of Clayville, which is at the extreme upstream end of the interceptor. SCI1-summer shows a very slight increase in RDII (8,000 gallons of RDII) from 2008 to 2016. ADS indicates that this condition is due to SCI1 being a basin that is generally not affected by RDII, making pre-vs. post-rehabilitation comparisons more difficult. A review of the SCI1-winter plot seems to support this conclusion, whereas the winter 2008 to winter 2017 RDII reduction is on the order of 100,000 gallons of RDII for the 2.3-inch storm.

The quantity of I/I removed due to sewer rehabilitation completed to date can be approximated by calculating the difference between the 2.3-inch rain lines projected to the y-axis. For example, a review of the plots for SCI-4 (meter installed in the Sauquoit Creek Interceptor, just before the SCPS) indicates a reduction of approximately 13 million gallons of RDII during winter storms (including rain on snow events), and 8 million gallons of RDII during summer storms. This data appears to support the anecdotal reports from County staff regarding fewer overflow events at the SCPS. Hydrographs and Q vs. i plots for basins where rehabilitation has occurred are included in Appendix B.

### **3.3 PRIVATE PROPERTY INFLOW AND INFILTRATION REDUCTION PROGRAM**

The document titled “Preliminary Planning Document – Private Property Inflow and Infiltration Reduction Program” was submitted to NYSDEC on June 29, 2012 as required by Schedule A - Section B.2 of the Consent Order. The County, working through the Steering Committee, created a working group of appropriate private property inflow and infiltration (PPII)-oriented community representatives to map out a phased implementation plan.

In support of a potential pilot project to address private property I/I, lateral CCTV is being performed in select locations during the on-going sewer rehabilitation projects. CCTV data is received from the sewer rehabilitation contractor and reviewed for completeness. Analysis continues to identify I/I defects.

### **3.4 CAPACITY, MANAGEMENT, OPERATIONS AND MAINTENANCE PROGRAM**

The document titled “Preliminary Planning Document – Proposed CMOM Framework – Sauquoit Creek Pumping Station Basin Communities” was submitted to NYSDEC on June 29, 2012 as required by Schedule A – Section B.3 of the Consent Order. The County, working through the Steering Committee, created a working group of appropriate CMOM-oriented community representatives to map out a phased implementation plan.

As stated in Section 3.3, the Working Group structure was modified to focus on community-specific needs and meetings have been adjusted accordingly.

Focus during the 1<sup>st</sup> Quarter of 2017 has been on advancing the bidding and construction of several consent order compliance projects. This included the bidding of Sewer Rehabilitation Contract 14, Sauquoit Creek Pumping Station Upgrade Contract C-5, WPCP Headworks Upgrades Contract C-6, and the preparation of

procurement bid package C-3A 15kV Unit Substation to be installed at the WPCP. Advancement of the CMOM program will continue through the remainder of 2017 as the aggressive bidding transitions to construction.

## 4.0 SCHEDULE/MILESTONE DATES

### 4.1 APPROVED SCHEDULE

The following table represents the approved schedule as defined by the Consent Order (note that there were no changes to this schedule during the 1<sup>st</sup> Quarter of 2017):

Description	Consent Order, Schedule "A" Date	Status
<b><u>Engineering Investigations and Evaluations</u></b>		
Dye Testing and Storm Sewer Report	June 30, 2012	Complete, Submitted June 29, 2012
Manhole Evaluation Report – Phase II	June 30, 2012	Complete, Submitted June 29, 2012
SCPS Evaluation Report	August 31, 2012	Complete, Approved November 28, 2012
WPCP Evaluation Report	August 31, 2012	Complete, Approved November 28, 2012
Treatment System Supplement (Report)	60 days after approval of WPCP Evaluation Report	Complete, Submitted January 25, 2013
Sewer CCTV Inspection Report – Phase II	April 30, 2013	Complete, Submitted April 25, 2013
Sewer CCTV Inspection Report – Phase III	April 30, 2014	Complete, Submitted April 29, 2014
Collection System Supplement (Report)	May 31, 2014 (extension granted to July 1, 2014)	Complete, Submitted June 30, 2014 Approved December 18, 2014
<b><u>Management Programs</u></b>		
Flow Monitoring Program	March 31, 2012	
Private Property I/I Reduction Program	June 30, 2012	Complete, Submitted June 29, 2012
CMOM Program	June 30, 2012	Complete, Submitted June 29, 2012
PPII Reduction Program Implementation	May 31, 2013	Began implementation in 4 <sup>th</sup> Quarter 2012
CMOM Implementation	May 31, 2013	Began implementation in 4 <sup>th</sup> Quarter 2012
Asset Management Plan	December 31, 2021	Pending
<b><u>Remedial Measures</u></b>		
Semi-Permanent Alternative-Construction	December 31, 2016	Final design and permitting. A formal request to modify this date and eliminate the semi- permanent alternative was submitted to NYSDEC on 9/6/2016.

Description	Consent Order, Schedule "A" Date	Status
SSO Mitigation-Consent Order Compliance	December 31, 2021	In progress
<b>Reporting</b>		
Annual Work Plan	January 31, Annually	Submitted annually
Quarterly Progress Report	Quarterly	Submitted quarterly

Note: I/I – Inflow and Infiltration

## 4.2 MILESTONES

During the 1<sup>st</sup> Quarter of 2017, the following milestone dates were met:

- Continuing to make progress toward compliance milestones.
- The original Schedule "A" date for the completion of the construction of the Semi-Permanent Alternative was December 31, 2016. A formal request was submitted to the NYSDEC in September 2016 to eliminate the Semi-Permanent Alternative and to modify the December 31, 2016 Consent Order interim milestone date. The Semi-Permanent Alternative was found to no longer provide the value originally anticipated due to enhancements to the project construction schedule at the WPCP and the benefits seen from the progression of sewer rehabilitation contracts. During subsequent conversations with the Regional Water Engineer, the request was made to provide the dollar equivalents in expedited sewer rehabilitation contracts (to be completed in 2017) for the planned savings that would be realized from the Semi-Permanent Alternative. That information was presented in a letter dated November 22, 2016 to the NYSDEC. Verbal concurrence from the Regional Water Engineer regarding the County's November 2016 letter was provided in December 2016, with indication that a Consent Order modification will be forthcoming incorporating the sewer rehabilitation schedule outlined in the November letter, while eliminating the requirement for the Semi-Permanent Alternative. The formalizing of this Consent Order modification is being resolved between NYSDEC and Oneida County Law Department.

## 5.0 SEWER REHABILITATION

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Sewer rehabilitation work financed under CWSRF Project No. C6-6070-08-00, C6-6070-08-10, and C6-6071-02-00 continued to progress. Projects are being tracked by contract number. The rehabilitation contracts are being undertaken in order to reduce the amount of inflow and infiltration entering the system due to defects in interceptor sewers, mainline sewers, lateral connections and manhole structures. Work under these sewer rehabilitation contracts typically includes: a mix of CIPP lining; pipe joint and lateral grouting; open cut repairs; spot repairs; manhole repairs/replacement; and supplemental CCTV inspections. The status and details of the rehabilitation contracts to date are presented in Table 5.1.

Table 5.1

Oneida County Sewer District										
Summary of Contracts 1Q 2017										
Sewer Rehabilitation Contracts										
Contract No.*	Title of Contract	Project Location/Description	CWSRF Project No.	Status of Design	Status of DEC/EFC/COUNTY Review	Miles of Rehabilitation <sup>(2)</sup>	Estimated I/I Reduction (gal/day)	Current Contract Amount <sup>(1)</sup>	Contractor	Contract Status
2	Sanitary Sewer Manhole Rehabilitation - Phase 2	<u>District-wide</u> : Rehabilitation of approximately 1,278 sanitary sewer manholes	C6-6070-08-00	Final	Approved	47	5,411,910	\$ 1,529,131.73	Green Mountain Pipeline Services	Project Complete; Closed Out
3	Sanitary Sewer Mainline Rehabilitation - Phase 1	<u>Villages of New York Mills, Oriskany, New Hartford, Whitesboro, and Yorkville; Towns of New Hartford and Whitestown</u>	C6-6070-08-00	Final	Approved	13	1,503,360	\$ 1,916,428.54	Insituform	Project Complete; Closed Out
4	Sewer Separation - Clinton/Henderson Street, NY Mills	<u>NY Mills</u> : Storm/Sanitary sewer separation	C6-6070-08-00	Final	Approved	2	264,000	\$ 155,007.51	JJ Lane Construction	Project Complete; Closed Out
5	Sewer Repairs and Rehabilitation	<u>Villages of Whitesboro, New Hartford, Yorkville, New York Mills</u> : Storm/Sanitary sewer repairs and rehabilitation; manhole replacement and UV-CIPP lining.	C6-6070-08-00	Final	Approved	1	120,000	\$ 411,841.66	Central Paving	Project Complete; Closed Out
6	Sanitary Sewer Mainline Rehabilitation - Phase 2	<u>Villages of New Hartford and Clayville; Towns of New Hartford and Paris; City of Utica</u>	C6-6070-08-00	Final	Approved	15	1,130,000	\$ 2,086,525.00	Green Mountain Pipeline Services	Project Complete; Close out pending Final Paperwork submission
7	Sanitary Sewer Mainline Rehabilitation - Phase 3	<u>Towns of New Hartford and Whitestown</u> : Glenhaven area (HHI-1 and WHN-31), the area west of the Whitesboro Parkway School and south of Clinton Street area (WHN-33), and Kellogg Road area (NHD-18)	C6-6070-08-00	Final	Approved	13	630,000	\$ 2,060,644.00	Green Mountain Pipeline Services	Project Complete; Close out pending Final Paperwork submission
8	Sanitary Sewer Mainline Rehabilitation - Phase 4	<u>Town of New Hartford</u> : Paris Road area (NHD-23)	C6-6070-08-00	Final	Approved	14	249,000	\$ 1,143,410.78	National Water Main Cleaning Co.	Project Complete: Closed Out
10	Sanitary Sewer Mainline Rehabilitation - Phase 5	<u>Town of Whitestown and Village of Whitesboro</u> : area west of Henderson St., north of Mud Creek, south of Clinton St. and east of Clinton Rd; and areas of V. of Whitesboro that have not been previously rehabbed	C6-6070-08-10	Final	Approved	17	1,120,000	\$ 3,429,370.00	Green Mountain Pipeline Services	Project is under construction; expected to be complete by end of 2Q 2017



Table 5.1

Oneida County Sewer District										
Summary of Contracts 1Q 2017										
Sewer Rehabilitation Contracts										
Contract No.*	Title of Contract	Project Location/Description	CWSRF Project No.	Status of Design	Status of DEC/EFC/COUNTY Review	Miles of Rehabilitation <sup>(2)</sup>	Estimated I/I Reduction (gal/day)	Current Contract Amount <sup>(1)</sup>	Contractor	Contract Status
11	Sanitary Sewer Mainline Rehabilitation - Phase 6	<u>Town of New Hartford/Hamlet of Washington Mills:</u> Chapman Rd, Higby Rd., and Mohawk St. as well as side streets in T. of New Hartford (NHD-20)	C6-6070-08-10	Final	Approved	7	260,640	\$ 632,029.26	National Water Main Cleaning Co.	Project Complete; Closed Out
12 <sup>(3)</sup>	Sewer Rehabilitation Project	<u>Village of Yorkville:</u> areas of the Village not previously rehabbed (YKV-1)	C6-6071-02-00	Final	Approved	11	824,832	\$ 3,552,280.00	National Water Main Cleaning Co.	Notice to Proceed issued March 30, 2017; Project under construction, estimated completion October 2017.
13	Sanitary Sewer Mainline Rehabilitation - Phase 8	<u>Town of New Hartford:</u> residential subdivisions along Routes 12B and Merritt Place, situated south of Route 5B and Seneca Turnpike, and north of Sherrill Brook Park (NHD-6)	C6-6070-08-10	Final	Approved	5	280,000	\$ 802,838.50	National Water Main Cleaning Co.	Notice to Proceed issued March 1, 2017. Project under construction estimated completion - October 2017.
14	Sanitary Sewer Mainline Rehabilitation - Phase 9	<u>Town of New Hartford:</u> Commercial district along Seneca Turnpike surrounding Sangertown Square Shopping Mall, south to a residential area situated between Seneca Turnpike and Clinton Rd., and a small residential area south of Clinton Rd. along Merritt Place (NHD-9)	C6-6070-08-10	Final	Approved	7	360,000	\$ 995,407.25	National Water Main Cleaning Co.	Project awarded April 17, 2017; Estimated construction start - June 2017. Estimated construction completion - November 2017.
16	Sanitary Sewer Mainline Rehabilitation - Phase 10	<u>Town of Whitestown:</u> Residential area along Westmoreland Rd. and West St., south of the NYS Thruway, and north of Clinton Rd. (WHN-34, WHN-35, WHN-12 & WHN-36)	C6-6070-08-10	90%	Expected to be submitted 2Q 2017	8	410,000	\$ 1,600,000.00	TBD	Project expected to be publicly bid during 2Q 2017

\* - Contract 9 - Flow Monitoring Contract

(1) - Values are subject to change upon submission of final contractor close-out documentation. Some entries are contract bid amounts and will be updated when project closes out.

(2)- In order to estimate the manhole repairs in equivalent miles, the following calculation was used:  
In the April 2012, Engineering Report, Sauquoit Creek Pumping Station Basin – Phase I-Mainline Pipe Rehabilitation – Contract No. 3, the length of line to be rehabilitated was 13-miles, and the corresponding flow to be removed is 1,503,360 gal/day, which calculates to 116,000 gpd/mile. Using the same 116,000 gpd/mile figure for Contract No. 2, an estimated 5,411,910 gal/day divided by 116,000 gpd/mile, is equivalent to 47-miles of rehabilitated sewers.

(3) - formerly Contract 12 - Sanitary Sewer Mainline Rehabilitation - Phase 7. Financed by the Village of Yorkville.

**BOLD** - Value represents the Engineers estimate





## 6.0 ASSESSMENT OF REHABILITATION EFFECTIVENESS

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See Section 3.2 above for a discussion of the status of flow monitoring. Based on the completed work, and using estimated values of inflow and infiltration (I/I) removals provided in the Offset Plan and/or the approved Basis of Design engineering reports for the respective projects, the estimated reductions in I/I for each rehabilitation contract are shown in Table 5.1.

## 7.0 COMPLETED CAPITAL PROJECTS/FACILITY UPGRADES

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Status of all capital projects and facility upgrades is provided in Table 2.1 and Table 5.1.

**8.0 I/I OFFSET PROJECTS/NEW FLOWS**

During the 1<sup>st</sup> Quarter of 2017, the following additions and subtractions to the I/I Offset Credit Bank were recorded by the County. All amounts are reported in gallons per day (gpd) after the application of the 5:1 offset ratio.

Community	Starting Balance	Credits Added	Location	Credits Used	Ending Balance
Town of New Hartford	469,209		Jack's Way, Lot 40 Applewood (328.000-2-1)	320	468,249
			42 Overland Dr. Cherrywood (328.000-2-26)	320	
			52 Cherrywood Blvd. Cherrywood (328.000-2-26)	320	
Town of Paris	96,680	0		0	96,680
Town of Whitestown	135,426	0		0	135,426
Village of Clayville	28,829	0		0	28,829
Village of New Hartford	59,510	0		0	59,510
Village of New York Mills	163,787	0		0	163,787
Village of Oriskany	103,466	0		0	103,466
Village of Whitesboro	163,599	0		0	163,599
Village of Yorkville	160,282	0		0	160,282
Oneida County Business Park	43,027	0		0	43,027
Oneida County Sewer District	24,710	0		0	24,710
<b>Totals</b>	<b>1,448,525</b>	<b>0</b>		<b>960</b>	<b>1,447,565</b>

## 9.0 KEY PERSONNEL CHANGES

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Key personnel changes, as they relate to the SSO Mitigation/Consent Order compliance project, are interpreted to be those staff members whose addition to or deletion from the project would be viewed by the County to either add resources, or be a detriment to progress. Project staff includes County, satellite community, and Consultant Team personnel. The following is a summary of changes.

### 9.1 COUNTY STAFF

During the 1<sup>st</sup> Quarter of 2017, there were no changes of key personnel to report.

### 9.2 SATELLITE COMMUNITY STAFF

During the 1<sup>st</sup> Quarter of 2017, there were no changes of key personnel to report.

### 9.3 CONSULTANT TEAM STAFF

During the 1<sup>st</sup> Quarter of 2017, there were no changes of key personnel to report.

## 10.0 ADMINISTRATIVE ITEMS

### 10.1 WORK AUTHORIZATIONS

The following work orders were authorized during the 1<sup>st</sup> Quarter of 2017.

- Work Order 26 – Amendment 2 – Sauquoit Creek Force Main and Pumping Station Upgrades – Construction Phase Services
- Work Order 28 – Amendment 4 – Community Outreach (FY 2017)
- Work Order 29 – Amendment 4 – Private Property I/I Reduction Program – Phase 5 (FY 2017)
- Work Order 30 – Amendment 4 – Program Administration (FY 2017)
- Work Order 37 – Hydraulic Model Update 2017

### 10.2 PROJECT FINANCING

The following listing is from the CWSRF 2017 Final Intended Use Plan (IUP), issued in November 2016 for the County:

CWSRF PROJECT #	PROJECT NAME	TOTAL IUP AMOUNT
<b>C6-6070-08-00</b> <b>(Long-term financed)</b>	I/I CORR [9 CONTRIBUTING COMMUNITIES] Phase 1 and 2a	<sup>(1)</sup> \$10,078,438 (includes \$4M Principal Forgiveness)
<b>C6-6070-08-10</b> <b>(Balance of unexpended funds from Original C6-6070-08-00 financing)</b>	Planning, Design, and Construction of I/I Correction to Improve Mohawk River	\$11,586,562
<b>C6-6070-08-01</b> <b>(Multi-year)</b>	I/I CORR [SSO - 9 Contributing Communities] Phase 2b-3	\$59,500,000
<b>C6-6070-08-02</b> <b>(Long-term financed)</b>	FM, PS REHAB [DESIGN AND PERMITTING PHASE] Phase 5a	<sup>(1)</sup> \$2,524,071
<b>C6-6070-08-03</b> <b>(Multi-year)</b>	I/I CORR [SSO] Phase 4	\$9,520,000
<b>C6-6070-08-04</b> <b>(Annual List – closing on STF pending)</b>	Wastewater Improvements [CONSTRUCTION PHASE] Phases 5b and 6c	\$117,000,000
<b>C6-6070-08-05</b> <b>(Annual List)<sup>(2)</sup></b>	STP UP (Phases 6a and 6d)	\$110,600,000
<b>C6-6070-08-06</b> <b>(Annual List – STF)</b>	STP UP [SOLIDS HANDLING SYSTEMS DESIGN AND CONSTRUCTION]	\$35,000,000

(1) - CWSRF Project Financing has closed, is no longer listed in IUP, but reflect the amount Oneida County is now repaying.

(2) – At the request of NYSEFC, Oneida County has agreed to move this financing to the “multi-year” list for the upcoming 2017 Intended Use Plan.

#### 10.2.1 Construction of the Sauquoit Creek Pumping Station, New Force Main and WPCP Solids Handling Upgrades (CWSRF No. C6-6070-08-04)-\$117 Million

Financing has been approved by NYSEFC. Closing on the Short Term Financing is being coordinated with NYSEFC and will occur based on projected cash flow need.

**10.2.2 Village of Yorkville Sewer Rehabilitation Project (CWSRF No. C6-6071-02-00) - \$4.2 Million**

The Village of Yorkville is directly funding and undertaking this project to repair, rehabilitate, replace, and/or reconstruct deteriorated sewers owned and operated by the Village which are tributary to the Sauquoit Creek Pumping Station. Work will include manhole rehabilitation, sanitary sewer rehabilitation (CIPP, grouting, spot repairs, etc.), sanitary sewer replacement/reconstruction and stormwater system improvements to accommodate I/I removal. This work will supplement work previously financed by Oneida County.

The Village of Yorkville was awarded CWSRF hardship financing (\$3.5 million) and a Water Infrastructure Grant (\$1.05 million). The Village closed on their financing in January 2017.

## APPENDIX A – RAINFALL DATA

## Daily Tabular Report

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
01/01/2016						0.04
01/02/2016						
01/03/2016						0.04
01/04/2016						
01/05/2016						
01/06/2016						
01/07/2016						
01/08/2016						
01/09/2016						0.04
01/10/2016						0.77
01/11/2016						
01/12/2016						
01/13/2016						0.01
01/14/2016						0.07
01/15/2016						0.02
01/16/2016						0.38
01/17/2016						0.01
01/18/2016						
01/19/2016						
01/20/2016						0.07
01/21/2016						
01/22/2016						
01/23/2016						
01/24/2016						
01/25/2016						
01/26/2016						0.07
01/27/2016						
01/28/2016						
01/29/2016						0.05
01/30/2016						0.01
01/31/2016						
02/01/2016						
02/02/2016						
02/03/2016						0.97
02/04/2016						
02/05/2016						
02/06/2016						
02/07/2016						



Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
02/08/2016						
02/09/2016						
02/10/2016						0.18
02/11/2016						
02/12/2016						0.14
02/13/2016						
02/14/2016						
02/15/2016						
02/16/2016					0.81	
02/17/2016					0.03	
02/18/2016					0.02	
02/19/2016						
02/20/2016					0.07	
02/21/2016					0.01	
02/22/2016						
02/23/2016						
02/24/2016					0.83	
02/25/2016					0.34	
02/26/2016					0.01	
02/27/2016					0.01	
02/28/2016						
02/29/2016					0.09	
03/01/2016						
03/02/2016					0.15	
03/03/2016						
03/04/2016						
03/05/2016						
03/06/2016						
03/07/2016						
03/08/2016						
03/09/2016					0.01	
03/10/2016					0.70	
03/11/2016					0.04	
03/12/2016						
03/13/2016						
03/14/2016					0.24	
03/15/2016						
03/16/2016					0.44	
03/17/2016					0.14	
03/18/2016					0.31	
03/19/2016						
03/20/2016						
03/21/2016						
03/22/2016					0.01	

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
03/23/2016						0.12
03/24/2016						0.02
03/25/2016						0.16
03/26/2016						
03/27/2016						
03/28/2016						0.74
03/29/2016						0.01
03/30/2016						
03/31/2016						0.08
04/01/2016						0.43
04/02/2016						0.05
04/03/2016						0.09
04/04/2016						
04/05/2016						0.25
04/06/2016						
04/07/2016						0.60
04/08/2016						0.19
04/09/2016						
04/10/2016						
04/11/2016						0.94
04/12/2016						0.19
04/13/2016						
04/14/2016						
04/15/2016						
04/16/2016						
04/17/2016						
04/18/2016						
04/19/2016						
04/20/2016						
04/21/2016						
04/22/2016						0.03
04/23/2016						
04/24/2016						
04/25/2016						
04/26/2016						0.64
04/27/2016						
04/28/2016						
04/29/2016						0.04
04/30/2016						
05/01/2016						0.33
05/02/2016						0.80
05/03/2016						
05/04/2016						0.03
05/05/2016						

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
05/06/2016						0.33
05/07/2016						
05/08/2016						0.12
05/09/2016						
05/10/2016						
05/11/2016						
05/12/2016						
05/13/2016						0.33
05/14/2016						0.31
05/15/2016						0.12
05/16/2016						
05/17/2016						
05/18/2016						
05/19/2016						
05/20/2016						
05/21/2016						0.01
05/22/2016						0.04
05/23/2016						
05/24/2016						
05/25/2016						
05/26/2016						
05/27/2016						
05/28/2016						
05/29/2016						0.29
05/30/2016						0.01
05/31/2016						
06/01/2016						
06/02/2016						0.05
06/03/2016						
06/04/2016						
06/05/2016						1.68
06/06/2016						0.01
06/07/2016						0.30
06/08/2016						0.03
06/09/2016						
06/10/2016						
06/11/2016						0.71
06/12/2016						
06/13/2016						0.02
06/14/2016						
06/15/2016						
06/16/2016						
06/17/2016						
06/18/2016						

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
06/19/2016						
06/20/2016						
06/21/2016						0.74
06/22/2016						0.14
06/23/2016						
06/24/2016						
06/25/2016						
06/26/2016						
06/27/2016					0.20	
06/28/2016					1.52	
06/29/2016						
06/30/2016						
07/01/2016					0.33	
07/02/2016						
07/03/2016						
07/04/2016						
07/05/2016						
07/06/2016						
07/07/2016						
07/08/2016					0.35	
07/09/2016					0.53	
07/10/2016					0.17	
07/11/2016						
07/12/2016						
07/13/2016					0.02	
07/14/2016					0.79	
07/15/2016					0.30	
07/16/2016						
07/17/2016						
07/18/2016						
07/19/2016						
07/20/2016						
07/21/2016						
07/22/2016						
07/23/2016					0.08	
07/24/2016					0.01	
07/25/2016					0.15	
07/26/2016					0.01	
07/27/2016						
07/28/2016						
07/29/2016						
07/30/2016						
07/31/2016						
08/01/2016						

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
08/02/2016						
08/03/2016						
08/04/2016						
08/05/2016						
08/06/2016						
08/07/2016						
08/08/2016						
08/09/2016						
08/10/2016						
08/11/2016						0.47
08/12/2016						0.27
08/13/2016						2.28
08/14/2016						
08/15/2016						
08/16/2016						0.80
08/17/2016						0.05
08/18/2016						0.02
08/19/2016						
08/20/2016						
08/21/2016						0.65
08/22/2016						0.01
08/23/2016						
08/24/2016						
08/25/2016						0.09
08/26/2016						0.05
08/27/2016						
08/28/2016						0.15
08/29/2016						0.01
08/30/2016						
08/31/2016						
09/01/2016						
09/02/2016						
09/03/2016						
09/04/2016						0.01
09/05/2016						
09/06/2016						
09/07/2016						
09/08/2016						0.38
09/09/2016						0.03
09/10/2016						
09/11/2016						0.11
09/12/2016						
09/13/2016						0.01
09/14/2016						

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
09/15/2016						
09/16/2016						0.01
09/17/2016						0.11
09/18/2016						1.01
09/19/2016						0.12
09/20/2016						
09/21/2016						0.01
09/22/2016						
09/23/2016						
09/24/2016						
09/25/2016						0.01
09/26/2016						0.11
09/27/2016						0.01
09/28/2016						
09/29/2016						
09/30/2016						0.34
10/01/2016						0.43
10/02/2016						0.11
10/03/2016						0.05
10/04/2016						
10/05/2016						0.01
10/06/2016						0.01
10/07/2016						
10/08/2016						0.12
10/09/2016						
10/10/2016						
10/11/2016						
10/12/2016						
10/13/2016						0.25
10/14/2016						
10/15/2016						
10/16/2016						
10/17/2016						
10/18/2016						
10/19/2016						
10/20/2016						0.02
10/21/2016						1.95
10/22/2016						0.52
10/23/2016						0.13
10/24/2016						0.01
10/25/2016						
10/26/2016						
10/27/2016						0.64
10/28/2016						0.12

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
10/29/2016						0.17
10/30/2016						0.09
10/31/2016						
11/01/2016						
11/02/2016						0.02
11/03/2016						1.05
11/04/2016						0.01
11/05/2016						
11/06/2016						
11/07/2016						
11/08/2016						
11/09/2016						0.17
11/10/2016						
11/11/2016						0.08
11/12/2016						
11/13/2016						
11/14/2016						
11/15/2016						0.29
11/16/2016						0.28
11/17/2016						0.01
11/18/2016						
11/19/2016						0.03
11/20/2016						0.36
11/21/2016						
11/22/2016						
11/23/2016						
11/24/2016						
11/25/2016						
11/26/2016						
11/27/2016						
11/28/2016						
11/29/2016						
11/30/2016						
12/01/2016						
12/02/2016						
12/03/2016						
12/04/2016						
12/05/2016						0.32
12/06/2016						0.01
12/07/2016						0.24
12/08/2016						0.02
12/09/2016						
12/10/2016						0.04
12/11/2016						0.02

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
12/12/2016						0.15
12/13/2016						
12/14/2016						0.01
12/15/2016						
12/16/2016						0.01
12/17/2016						
12/18/2016						0.28
12/19/2016						0.01
12/20/2016						
12/21/2016						
12/22/2016						0.23
12/23/2016						
12/24/2016						0.03
12/25/2016						0.01
12/26/2016						0.12
12/27/2016						0.16
12/28/2016						0.07
12/29/2016						
12/30/2016						0.07
12/31/2016						0.18
01/01/2017						0.31
01/02/2017						
01/03/2017						0.62
01/04/2017						0.11
01/05/2017						
01/06/2017						0.05
01/07/2017						0.03
01/08/2017						
01/09/2017						
01/10/2017						
01/11/2017						0.02
01/12/2017						0.38
01/13/2017						0.02
01/14/2017						
01/15/2017						
01/16/2017						
01/17/2017						0.12
01/18/2017						0.33
01/19/2017						0.08
01/20/2017						
01/21/2017						
01/22/2017						
01/23/2017						0.14
01/24/2017						1.18



Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
01/25/2017						0.07
01/26/2017						0.14
01/27/2017						0.09
01/28/2017						
01/29/2017						
01/30/2017						
01/31/2017						
02/01/2017						0.14
02/02/2017						0.07
02/03/2017						0.01
02/04/2017						0.05
02/05/2017						0.01
02/06/2017						0.01
02/07/2017						1.03
02/08/2017						0.11
02/09/2017						0.01
02/10/2017						0.03
02/11/2017						0.01
02/12/2017						
02/13/2017						
02/14/2017						0.01
02/15/2017						0.29
02/16/2017						
02/17/2017						0.02
02/18/2017						
02/19/2017						
02/20/2017						
02/21/2017						
02/22/2017						
02/23/2017						
02/24/2017						0.02
02/25/2017						0.95
02/26/2017						
02/27/2017						
02/28/2017						
03/01/2017						0.15
03/02/2017						
03/03/2017						
03/04/2017						
03/05/2017						
03/06/2017						
03/07/2017						0.55
03/08/2017						0.34
03/09/2017						0.01

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
03/10/2017						
03/11/2017						
03/12/2017						
03/13/2017						
03/14/2017						
03/15/2017						
03/16/2017						0.01
03/17/2017						0.26
03/18/2017						
03/19/2017						
03/20/2017						
03/21/2017						
03/22/2017						
03/23/2017						
03/24/2017						0.09
03/25/2017						0.42
03/26/2017						0.01
03/27/2017						0.33
03/28/2017						0.01
03/29/2017						
03/30/2017						0.08
03/31/2017						1.48
04/01/2017						0.10
04/02/2017						0.00
04/03/2017						0.00
04/04/2017						1.47
04/05/2017						0.03
04/06/2017						0.86
04/07/2017						0.38
04/08/2017						0.01
04/09/2017						0.00
04/10/2017						0.00
04/11/2017						0.10
04/12/2017						0.00
04/13/2017						0.00
04/14/2017						0.00
04/15/2017						
04/16/2017						
04/17/2017						
04/18/2017						
04/19/2017						0.76
04/20/2017						0.20
04/21/2017						0.69
04/22/2017						0.00

Date	Rain (in)					
	Time	Min	Time	Max	Avg	Total
04/23/2017						0.00
04/24/2017						0.00
04/25/2017						0.15
04/26/2017						0.00
04/27/2017						0.00

Report Summary For The Period 01/01/2016 - 04/27/2017

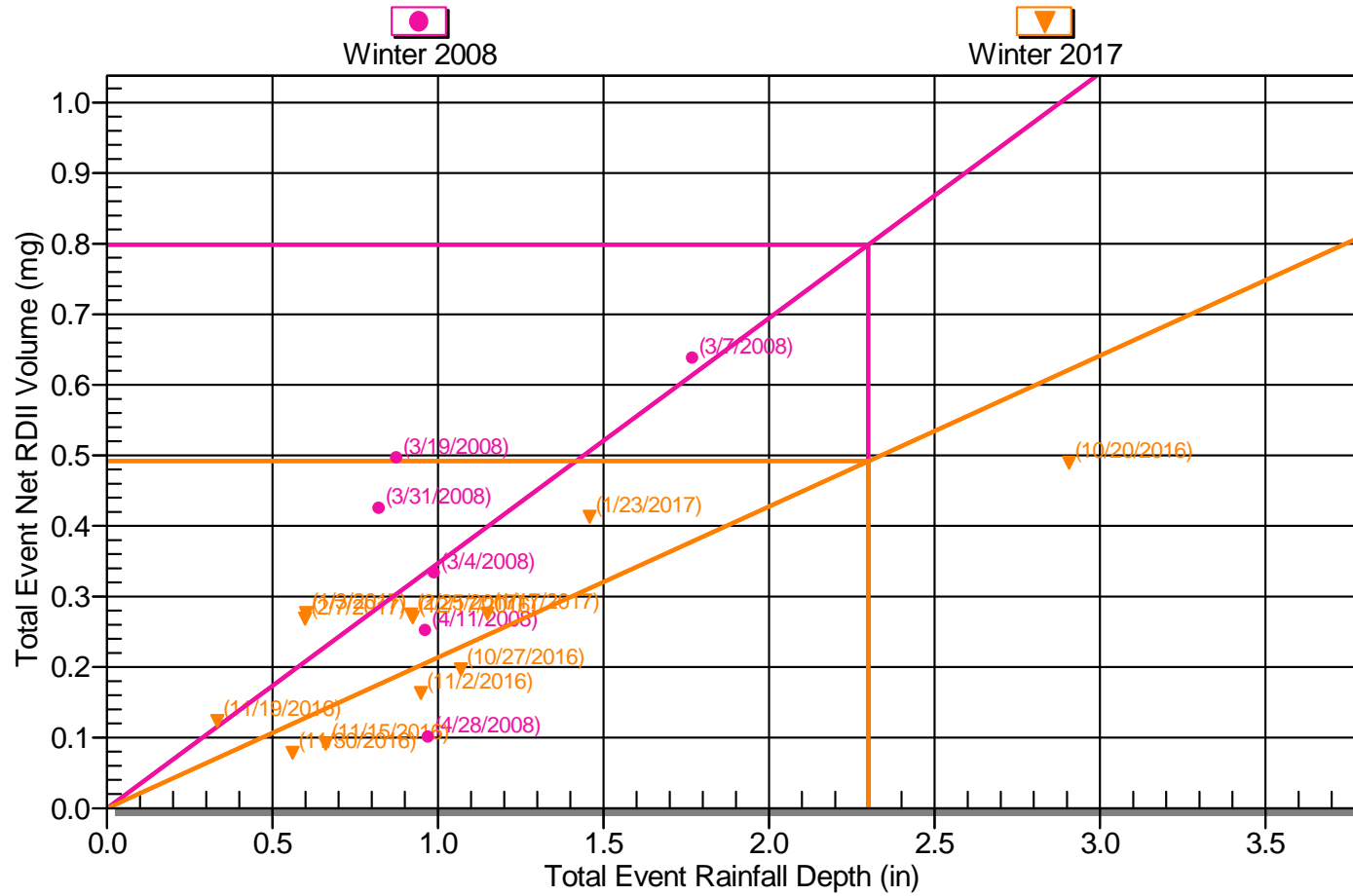
	Rain (in)
Total	53.55
Avg	

## APPENDIX B – FLOW DATA: Q vs i Plots

# Oneida Q vs i Plots

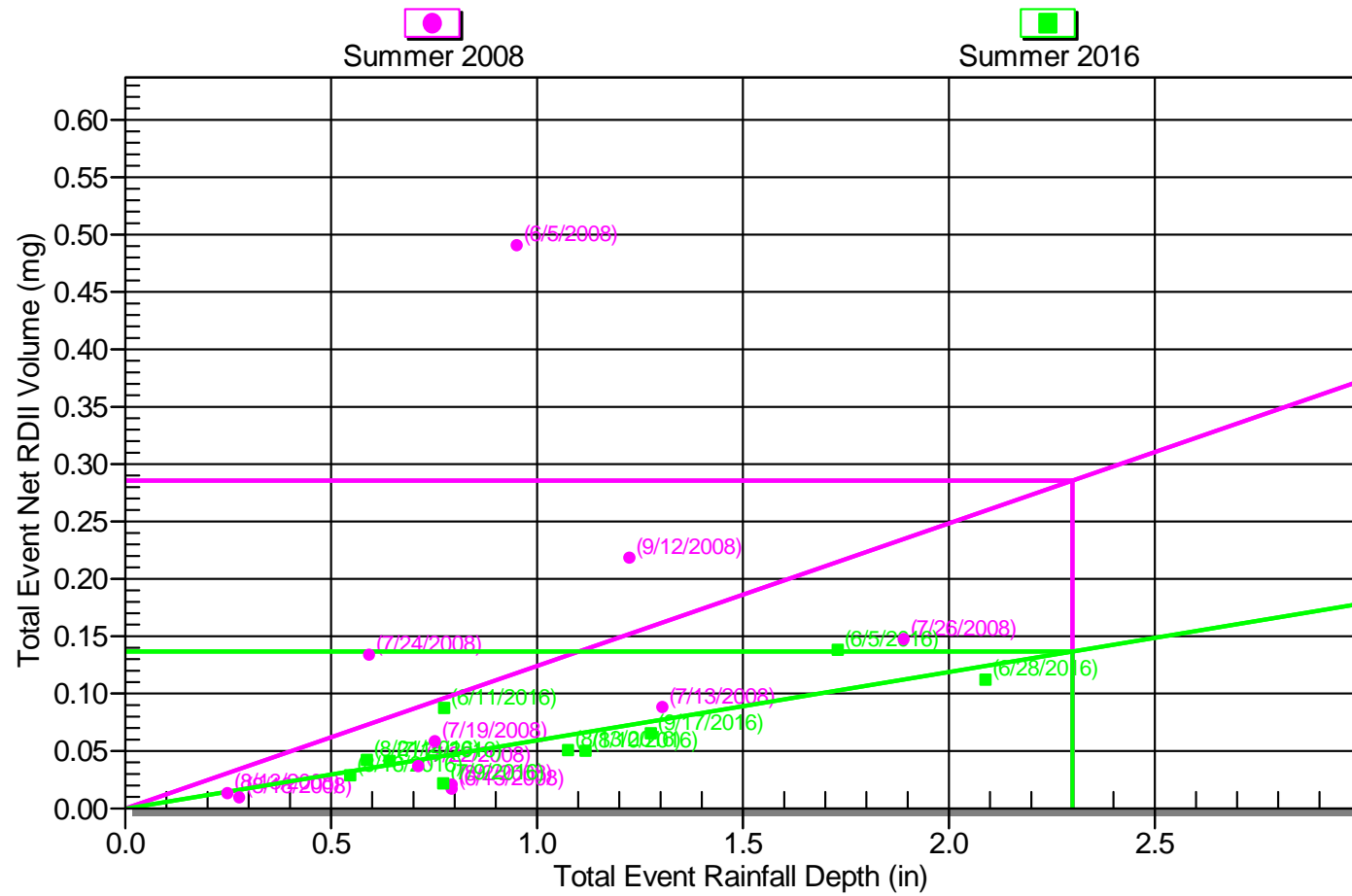
# Q vs i - Oneida\_NHD18

Total Event Net RDII Volume vs. Rainfall Depth



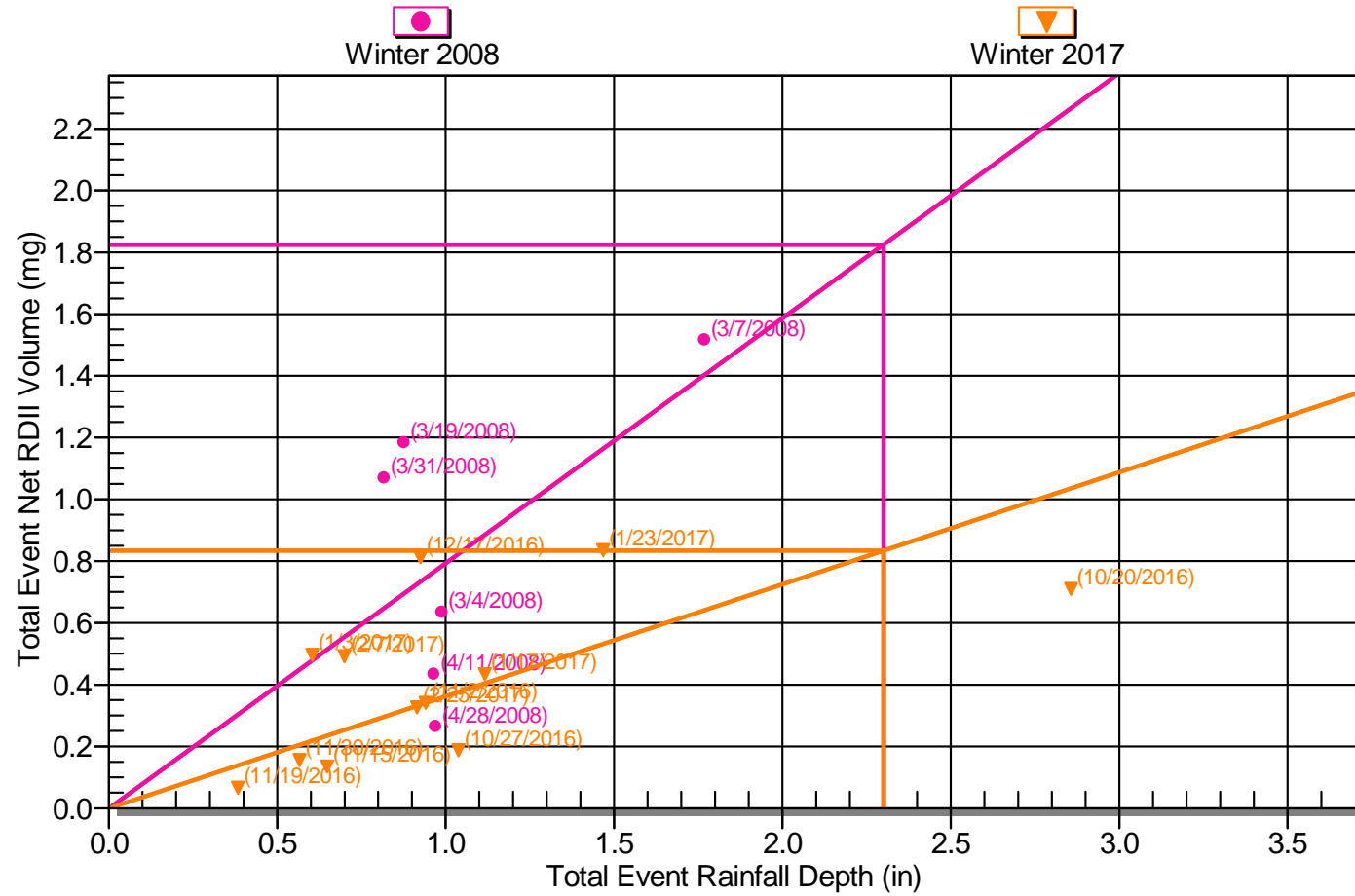
# Q vs i - Oneida\_NHD18

Total Event Net RDII Volume vs. Rainfall Depth



### Total Event Net RDII Volume vs. Rainfall Depth

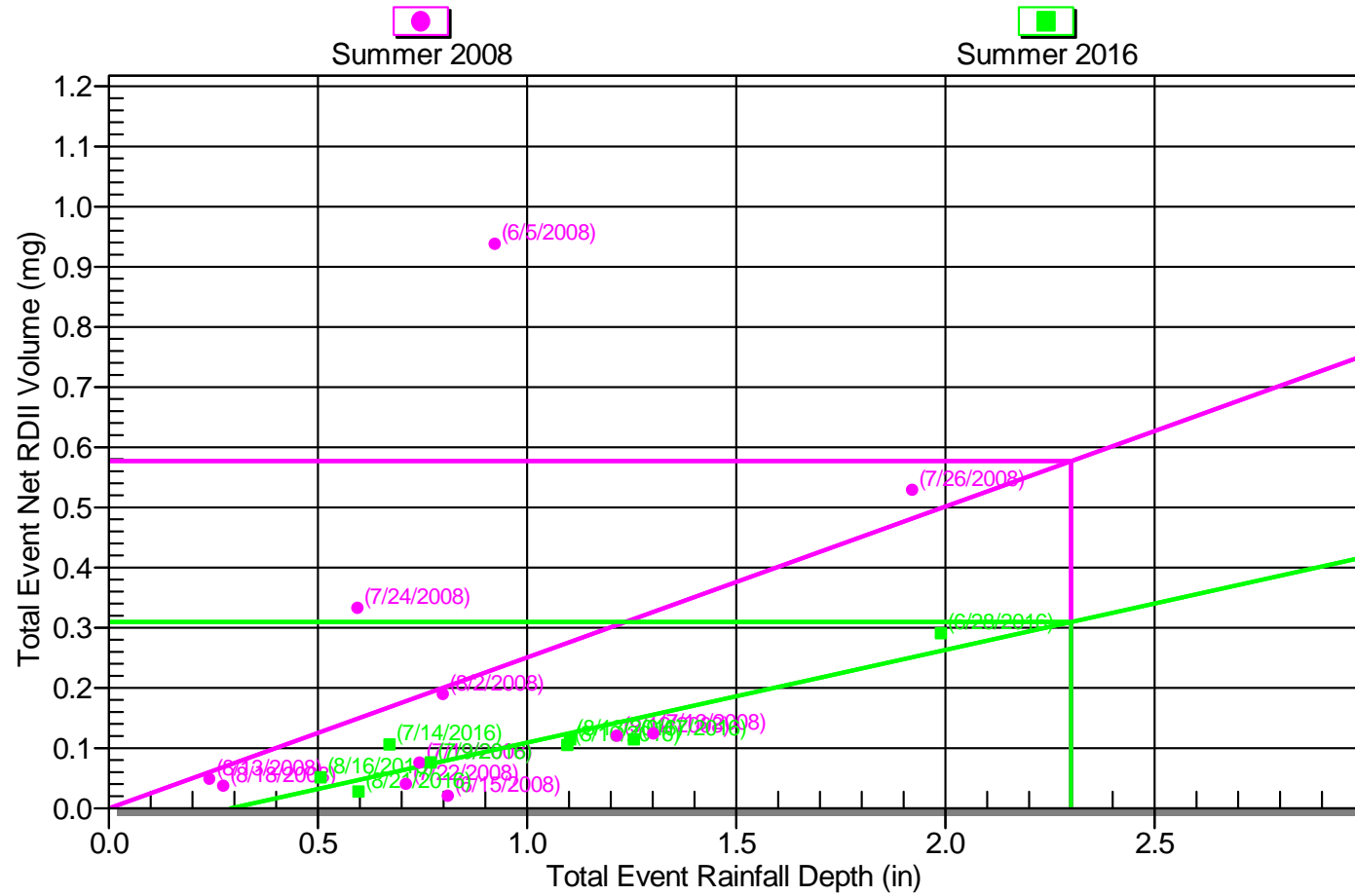
### Total Event Net RDII Volume vs. Rainfall Depth





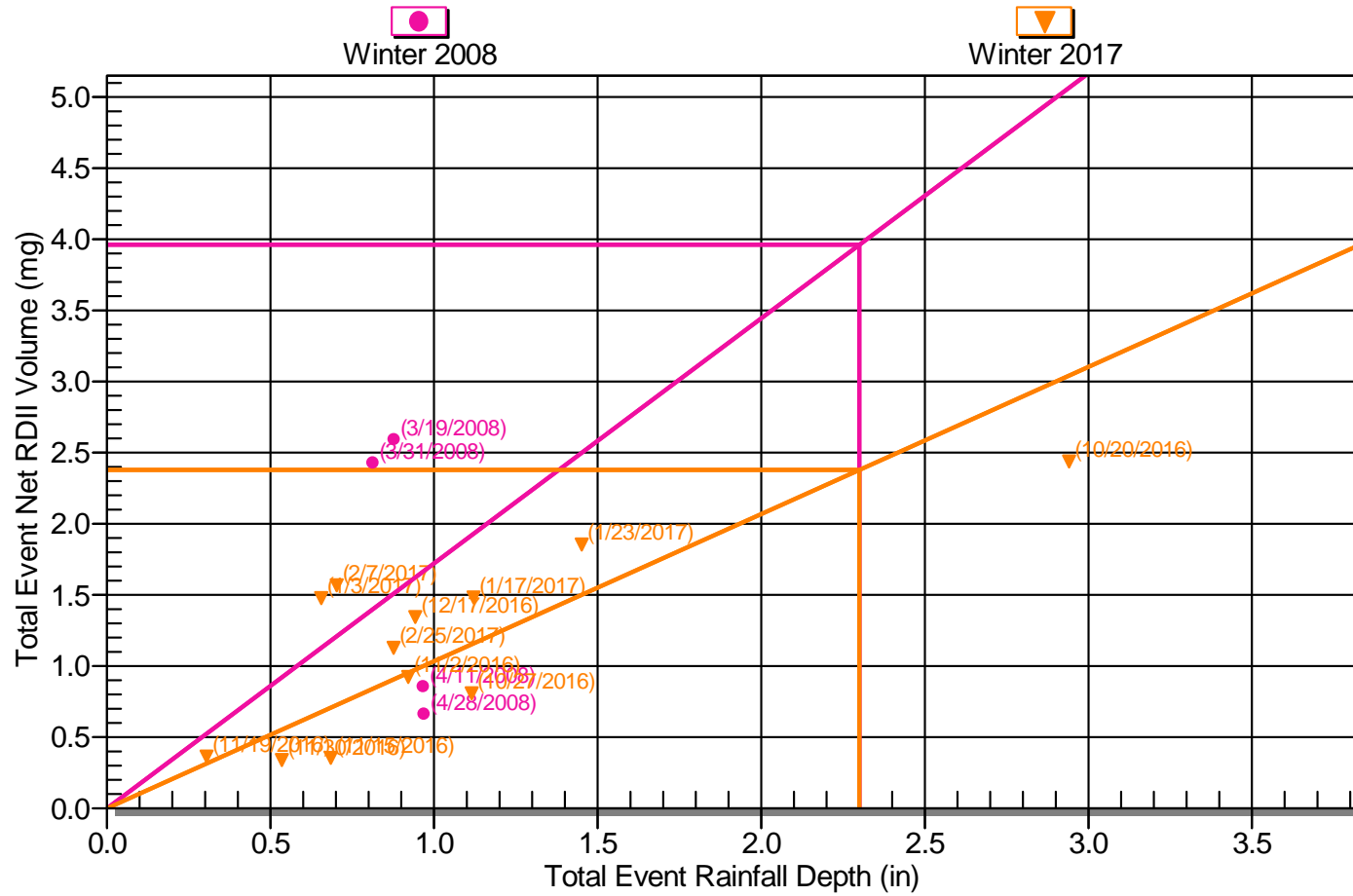
# Q vs i - Oneida\_NHD20

Total Event Net RDII Volume vs. Rainfall Depth



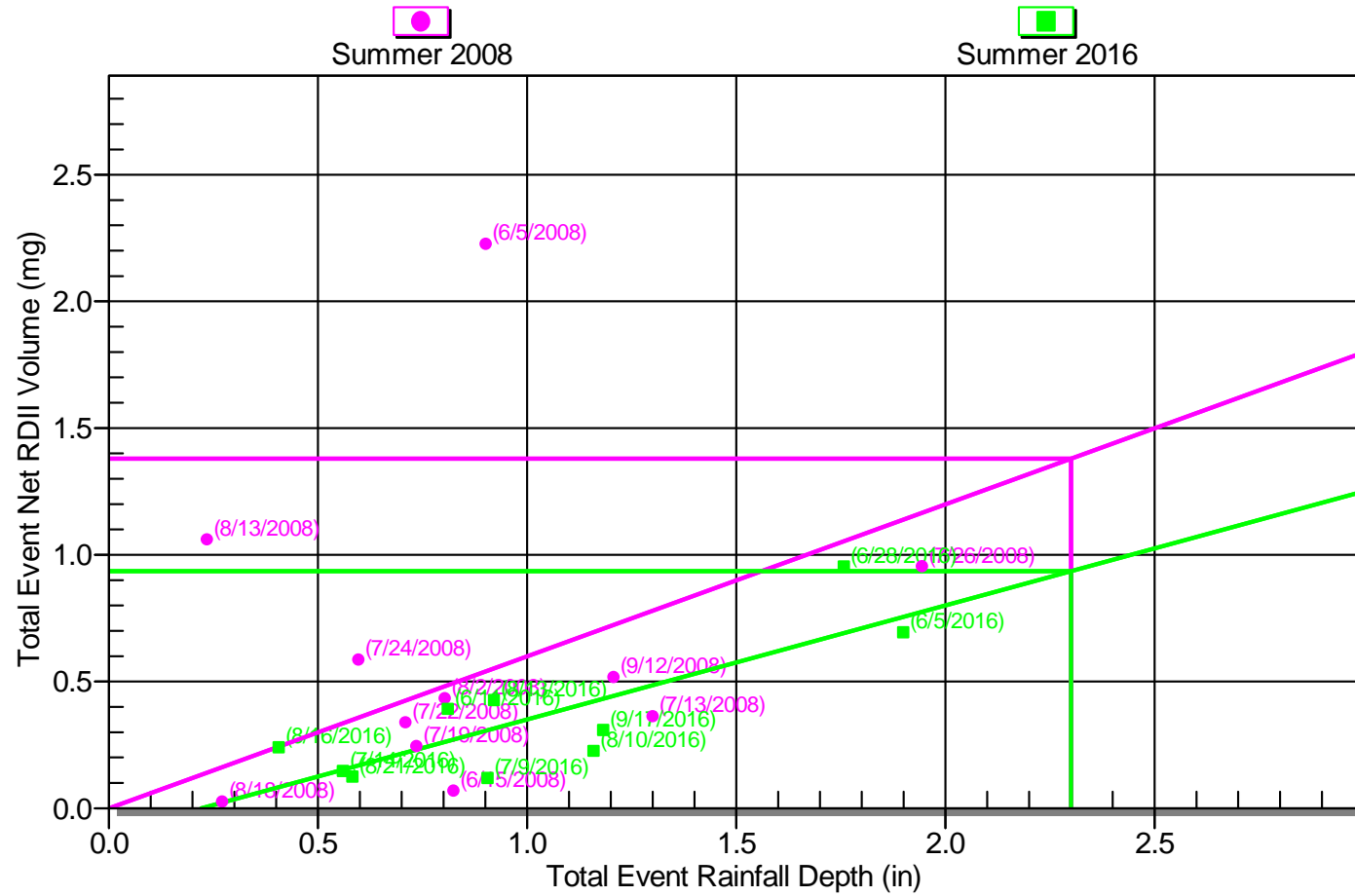
# Q vs i - Oneida\_NHD23

Total Event Net RDII Volume vs. Rainfall Depth



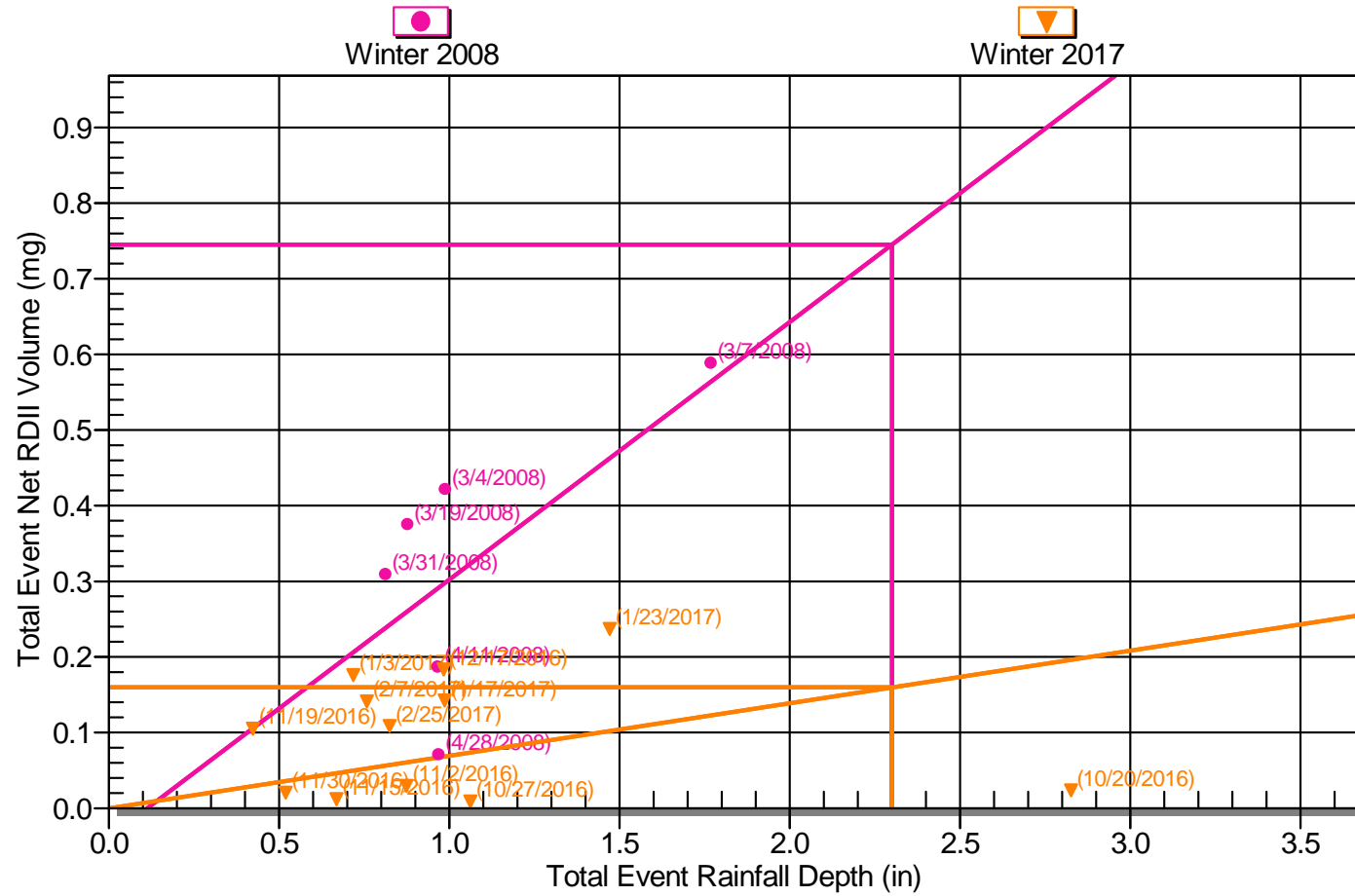
# Q vs i - Oneida\_NHD23

Total Event Net RDII Volume vs. Rainfall Depth



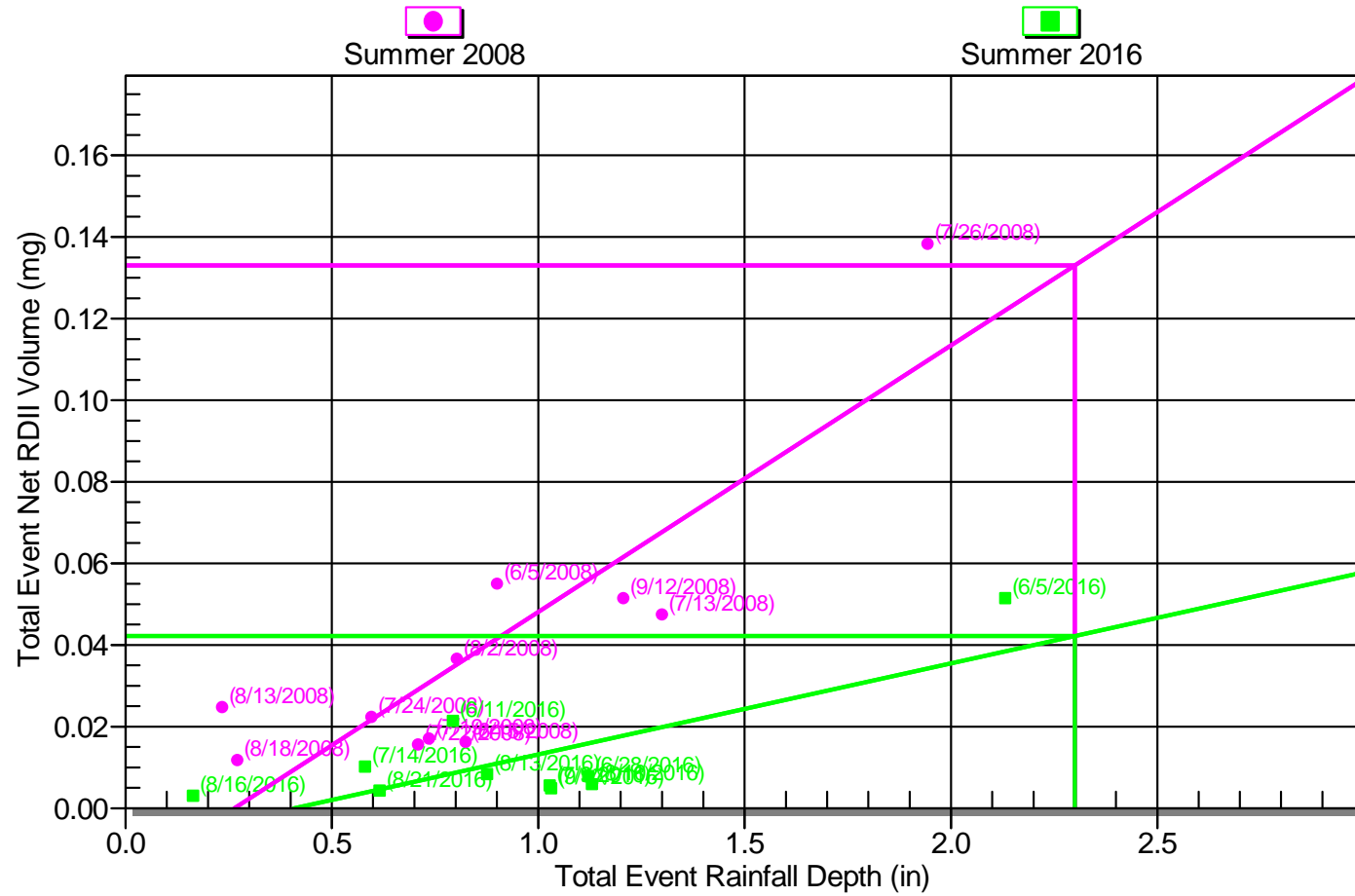
# Q vs i - Oneida\_PRS4

Total Event Net RDII Volume vs. Rainfall Depth



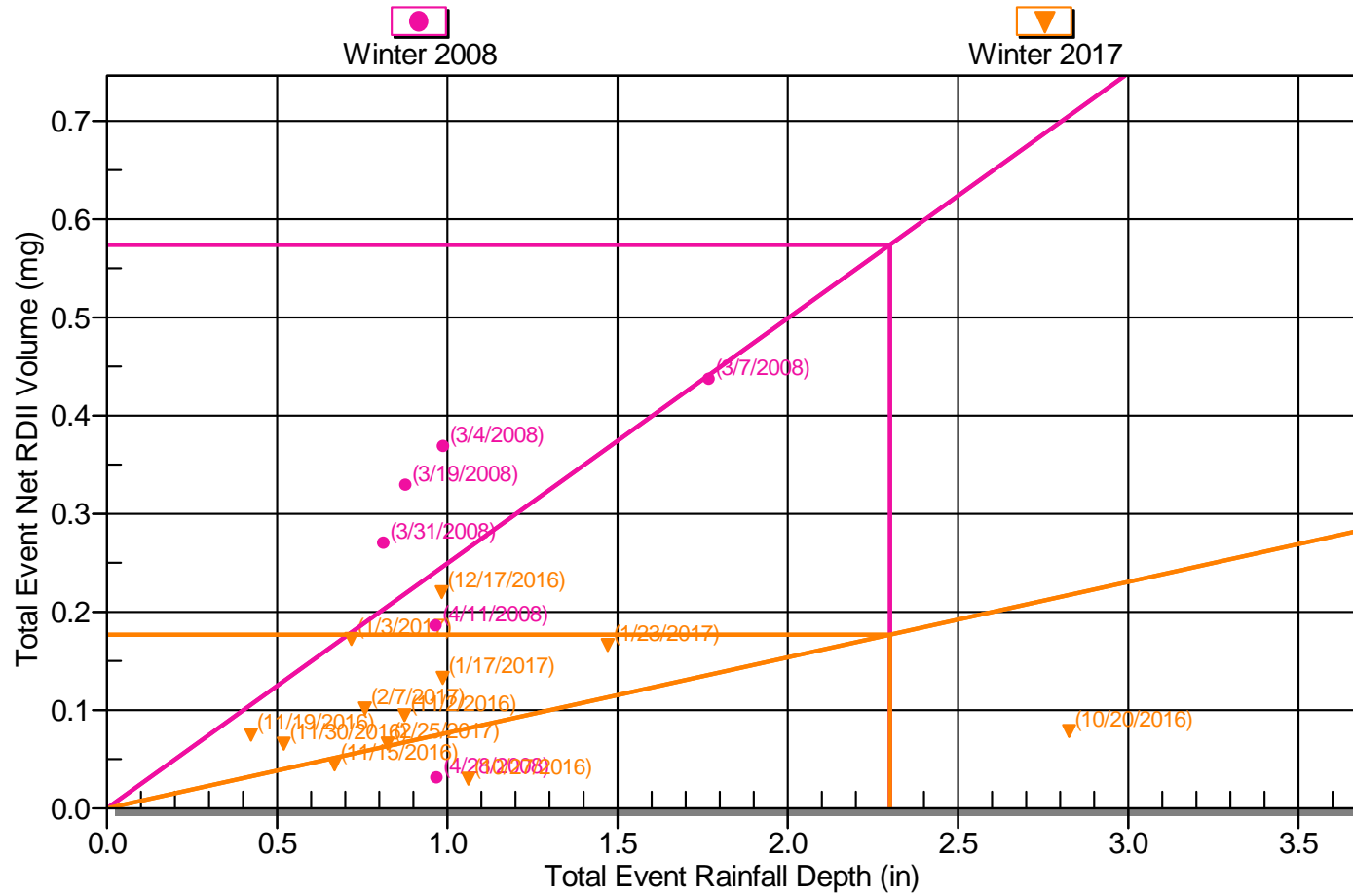
# Q vs i - Oneida\_PRS4

Total Event Net RDII Volume vs. Rainfall Depth



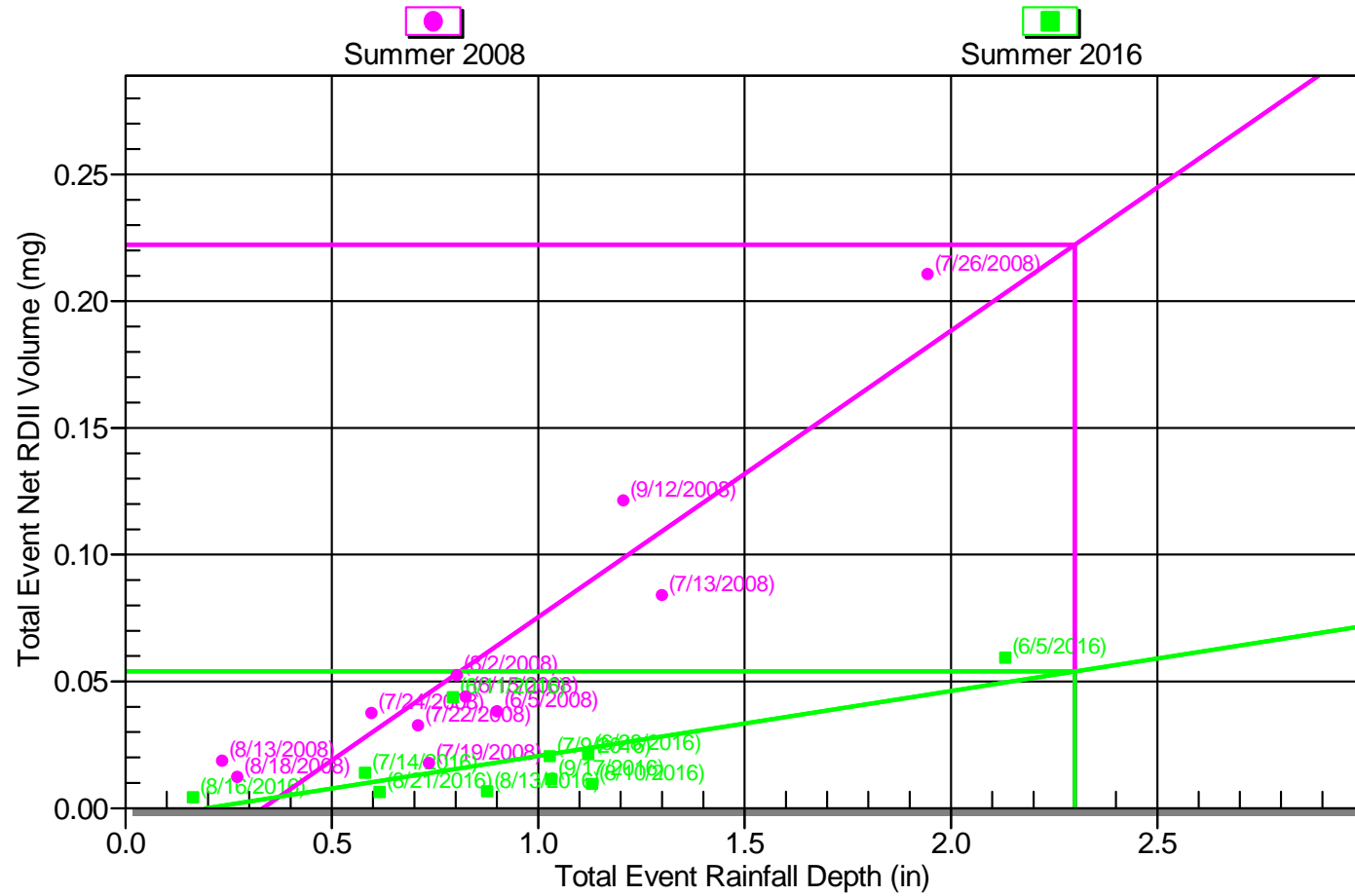
# Q vs i - Oneida\_PRS5

Total Event Net RDII Volume vs. Rainfall Depth



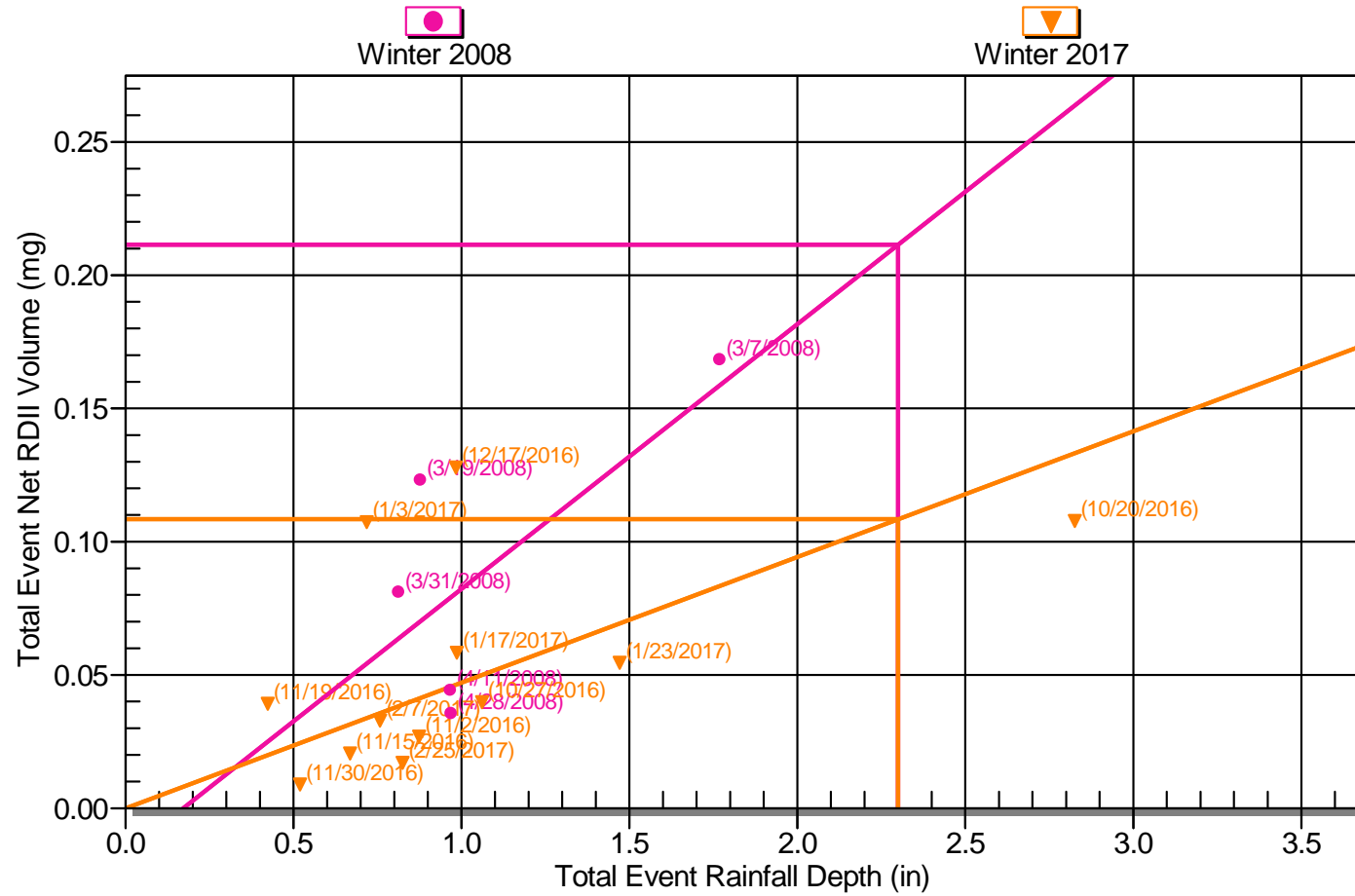
# Q vs i - Oneida\_PRS5

Total Event Net RDII Volume vs. Rainfall Depth



# Q vs i - Oneida\_SCI1

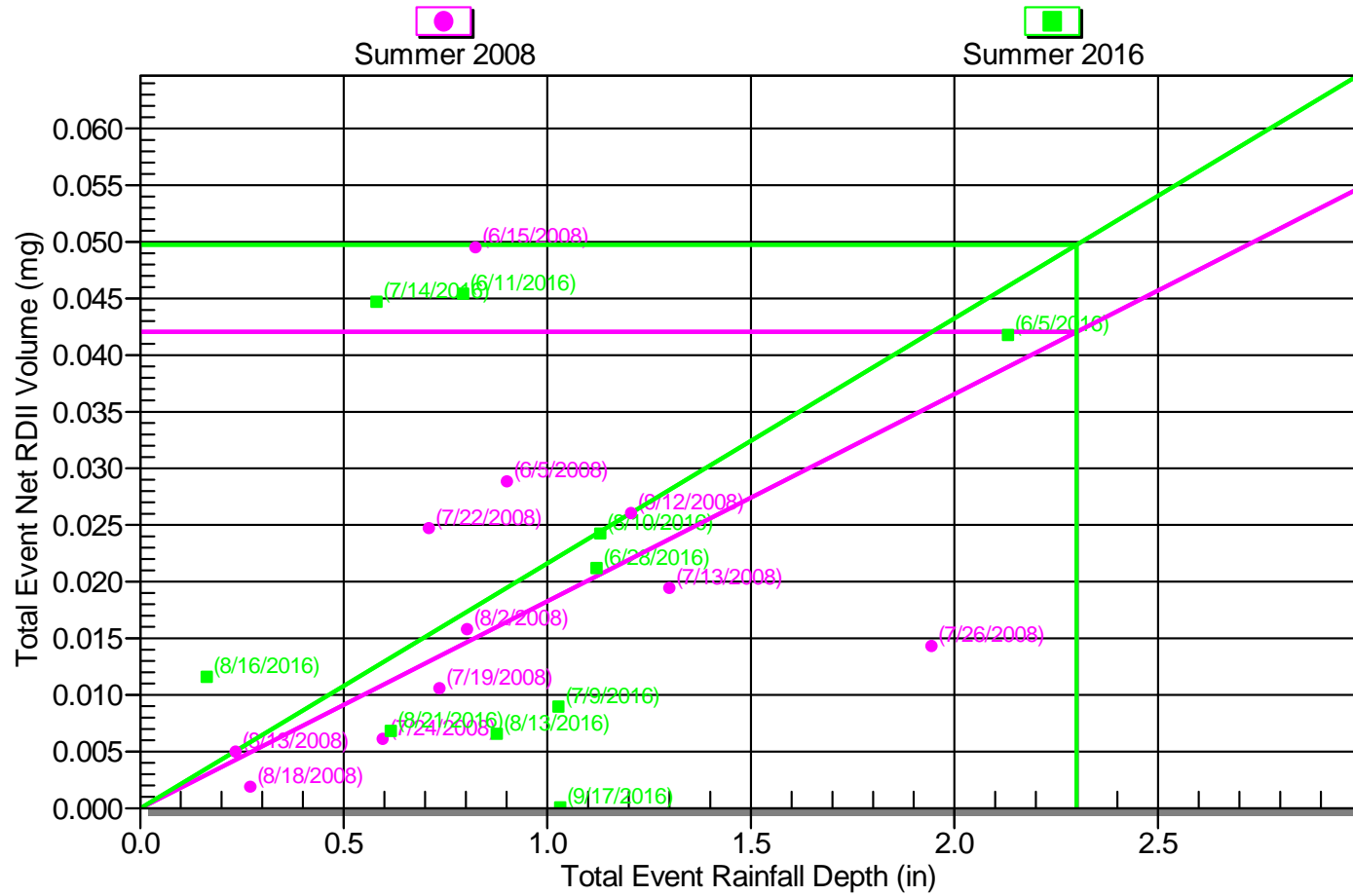
Total Event Net RDII Volume vs. Rainfall Depth





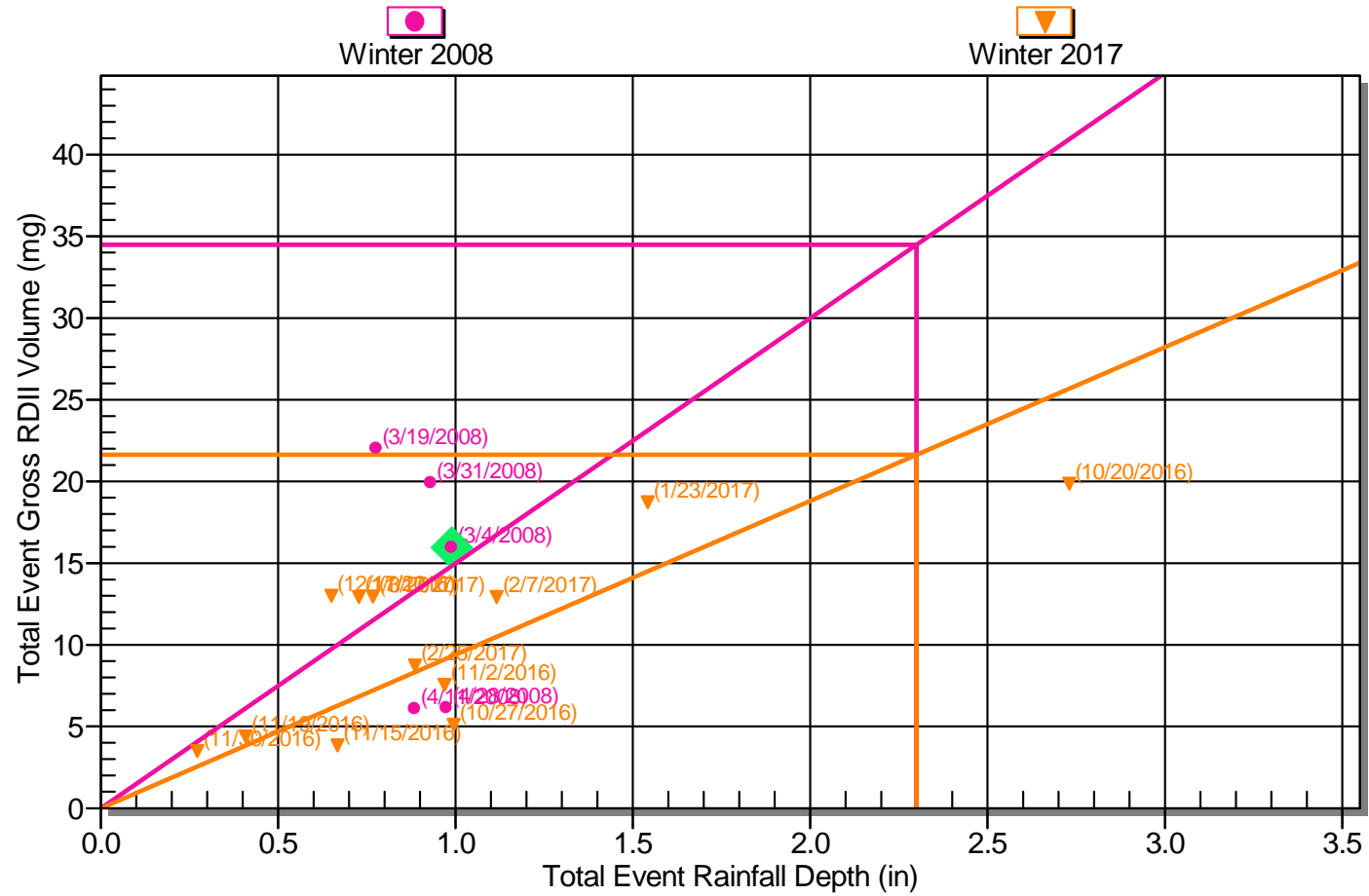
# Q vs i - Oneida\_SCI1

Total Event Net RDII Volume vs. Rainfall Depth



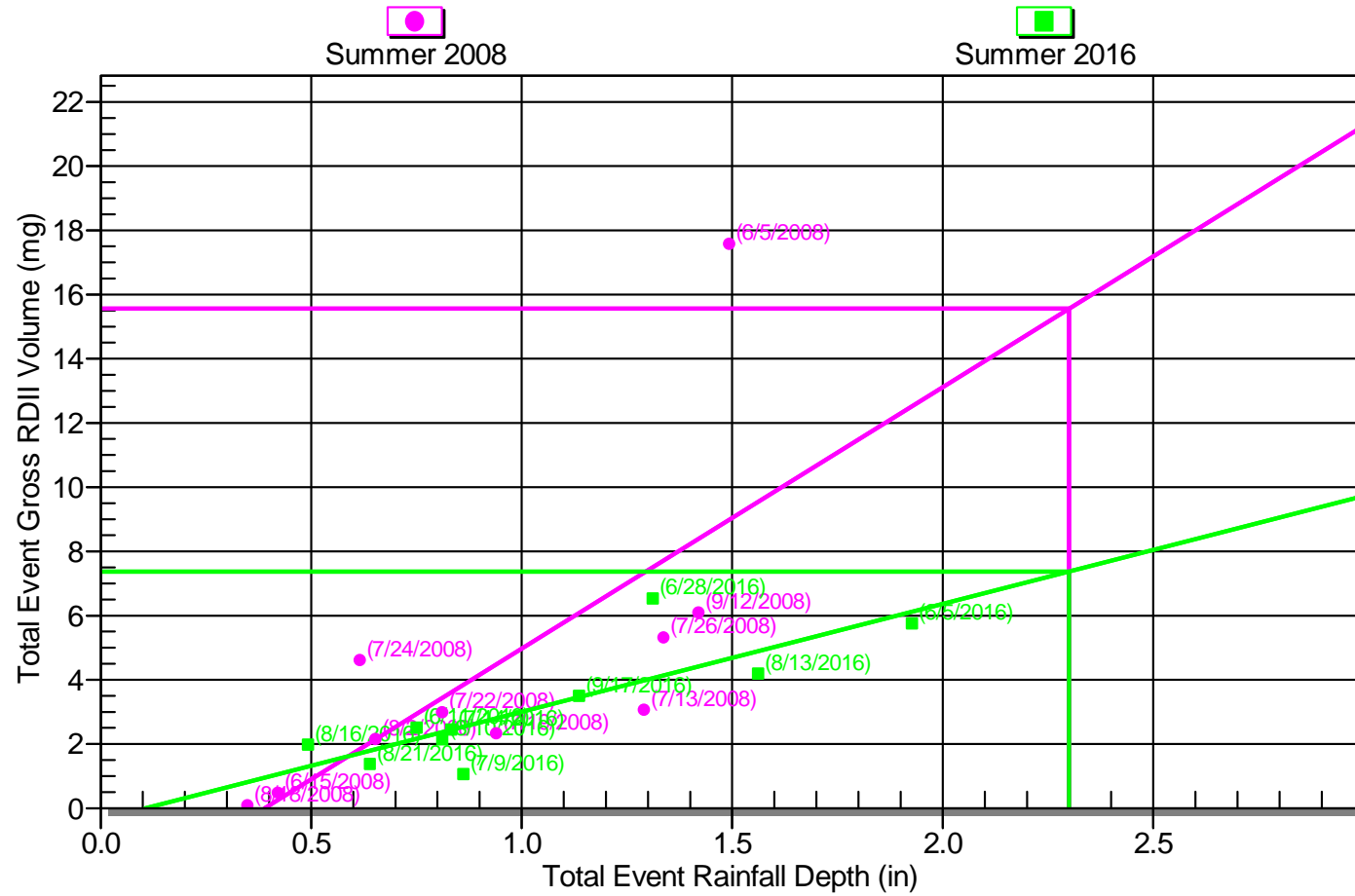
# Q vs i - Oneida\_SCI4

Total Event Gross RDII Volume vs. Rainfall Depth



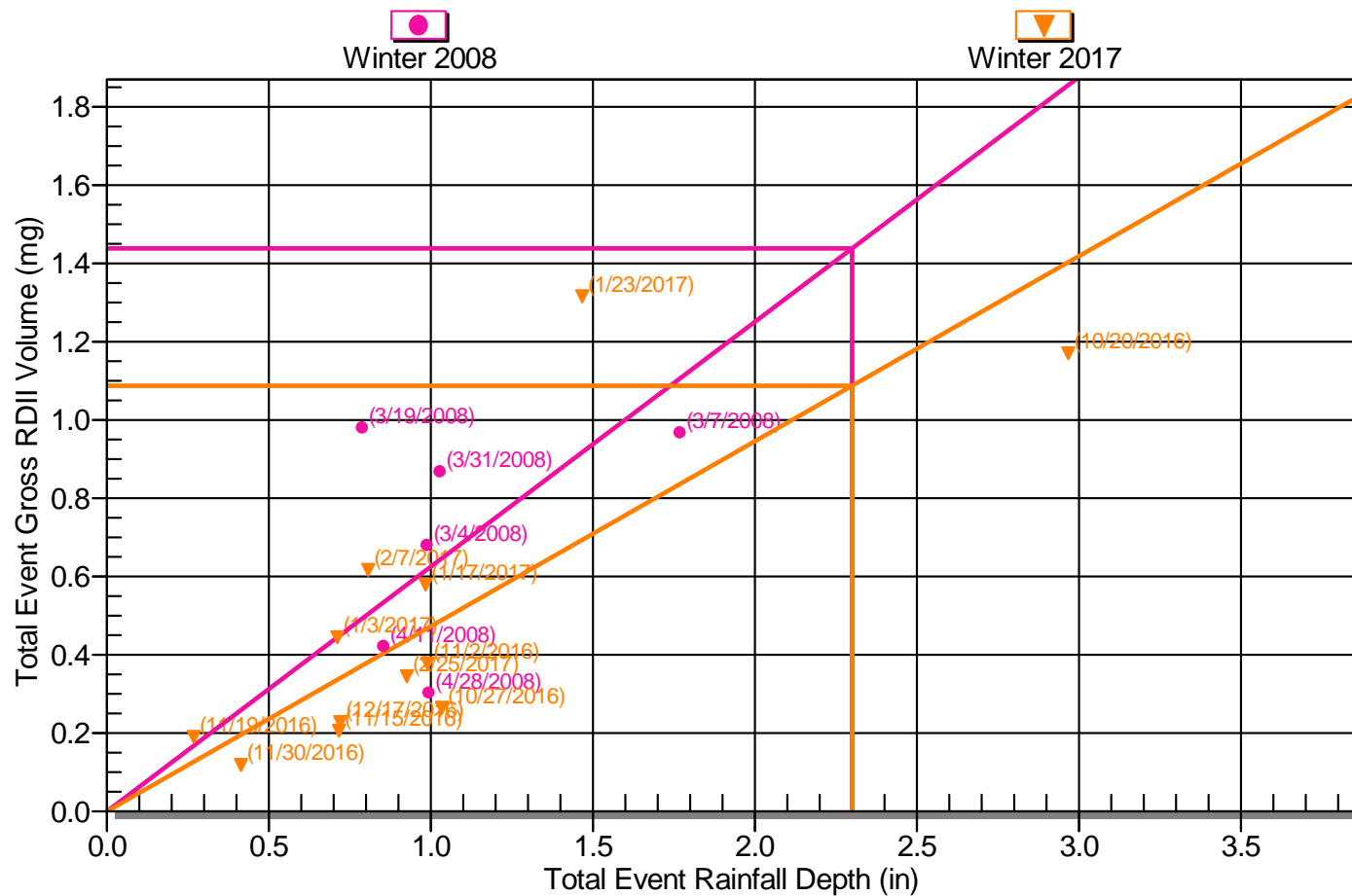
# Q vs i - Oneida\_SCI4

Total Event Gross RDII Volume vs. Rainfall Depth



# Q vs i - Oneida\_HH1

Total Event Gross RDII Volume vs. Rainfall Depth



# Q vs i - Oneida\_HHI1

Total Event Gross RDII Volume vs. Rainfall Depth

