

**Report for the Fourth Quarter of 2024 pursuant to the Consent Decree entered in  
United States v. Westchester Joint Water Works, 24 Civ. 4783 (S.D.N.Y.)**

This report summarizes the work undertaken to comply with the consent decree from the date of its entry on September 23, 2024 through December 31, 2024 and provides the information required by paragraphs 70 and 71 of the consent decree.

The following are actionable items, relative to paragraph 71.a:

**VII. INJUNCTIVE RELIEF: FILTRATION PLANT**

*23. Subject to Paragraph 33 and Section XIII (Force Majeure), by October 8, 2024, WJWW shall obtain all approvals from the Town/Village of Harrison Planning Board required under the local land use review procedure for the Filtration Plant.*

WJWW did receive all approvals from the Town/Village of Harrison Planning Board by October 8, 2024. However, it should be noted that recent discussions with the FAA have resulted in minor changes to the landscaping plan for the filtration plant to satisfy FAA concerns that the plantings not attract birds that could interfere with airport operations. These landscaping changes may require a minor amendment to the site plan approval issued by the Planning Board.

Such approvals include, but may not be limited to, the following:

- On July 23, 2024 the Town/Village of Harrison Planning Board granted WJWW subdivision approval, site plan approval, a special exception use permit, and a freshwater wetland permit.
  
- On July 11, 2024 the Town/Village of Harrison Zoning Board of Appeals granted WJWW approval of a zoning variance required for the filtration plant's security fence, which was required as a prerequisite for above Planning Board approvals.

*24. Subject to Paragraph 33 and Section XIII (Force Majeure), by November 8, 2024, WJWW shall complete and submit to the appropriate authorities all applications for all necessary local, state, and federal approvals and permits for the Filtration Plant, other than the application for the Contractor Permits.*

WJWW did complete and submit to the appropriate authorities all applications for all necessary local, state, and federal approvals and permits for the Filtration Plant by November 8, 2024, other than those required after construction of the filtration plant has commenced.

Such applications, and subsequent approvals include, but may not be limited to, the following:

- On September 30, 2022, the Federal Aviation Administration (FAA) issued a Letter of Determination of Federal Aviation Administration Approval Authority – Land Swap Project.
- On May 26, 2023, the New York City Department of Environmental Protection (NYCDEP) approved the Stormwater Pollution Prevention Plan (SWPPP).
- On April 8, 2024, the Westchester County Board of Legislators adopted a State Environmental Quality Review Act (SEQRA) Findings Statement.
- On June 11, 2024, WJWW submitted an initial Application for Building Permit to the Town/Village of Harrison Building Department and resubmitted the application on August 29, 2024, in response to comments.
- On August 7, 2024, the Town/Village of Harrison Town Board adopted a SEQRA Findings Statement.
- On August 19, 2024, WJWW notified the New York State Department of Environmental Conservation (“NYSDEC”) of the planned change in ownership and change of use of the filtration plant site portion of the County Airport property as required due to the County Airport’s participation in the NYSDEC brownfield cleanup program (“BCP”). On or about the same date, the County of Westchester made a similar filing to NYSDEC under the BCP. Further BCP filings will be required after the transfer of title of the filtration plant site to WJWW.
- On August 14, 2024, Approvals of Plans for construction of the filtration plant were issued by the Westchester County Department of Health (WCDOH) and the New York State Department of Health (NYSDOH), respectively.
- On August 27, 2024, WJWW submitted a Land Development application to the Town/Village of Harrison Engineering Department.
- On September 10, 2024, WJWW received Town/Village of Harrison Architectural Review Board approval.
- On October 14, 2024, WJWW submitted a PERM-33-COM Permit application to the New York State Department of Transportation (NYSDOT).

- On October 15, 2024, NYSDEC issued a State Pollutant Discharge Elimination System (SPDES) Permit and Freshwater Wetlands Permit for the filtration plant.
- On October 22, 2024, the Town/Village of Harrison accepted the SWPPP.
- On November 8, 2024, NYSDEC issued their Acknowledgement of Notice of Intent for coverage under NYSDEC's stormwater general permit for construction activity.
- On December 17, 2024, the FAA issued a Determination of No Hazard to Air Navigation related to filtration plant structure. It should be noted that the application was submitted on November 4, 2024. A future filing is anticipated to be required relating to the construction crane to be used for the construction work.

*26. Subject to Paragraph 33 and Section XIII (Force Majeure), WJWW shall complete the acquisition of the site selected for construction of the Filtration Plant by April 20, 2025, and shall submit proof of the acquisition to the EPA and the State within 30 Days of such acquisition.*

- A tentative closing date of January 22, 2025, has been scheduled with Westchester County to complete the acquisition of the site selected for construction of the filtration plant.

*34. Prior to commencing construction of the Filtration Plant, WJWW shall evaluate any potential adverse impacts of such construction and other actions undertaken pursuant to this Consent Decree, including to the extent to which these impacts affect already overburdened and underserved populations. WJWW shall schedule at least one public meeting...*

- The environmental impact statement ("EIS") for the project considered its construction impacts in detail. The draft EIS ("DEIS") and final EIS ("FEIS") for the project are posted on the project web site: <https://wjwwfiltration.org/>

WJWW held a duly noticed public hearing on the DEIS on May 25, 2022 for the purpose of taking public comment on the DEIS, which was released to the public on April 12, 2022 for review and comment. The public comment period on the DEIS began April 13, 2022 and ran through June 6, 2022. WJWW considered all comments received at the public hearing and during the public comment and responded to the comments in the FEIS. The project has not changed materially since the public hearing held in 2022. Accordingly, WJWW has considered the construction impacts of the project and held a public hearing thereon. No further public hearing on construction impacts is required.

The area near the filtration plant is not characterized by already overburdened and underserved populations, as the project site is not proximate to any census tract that New York State has identified as a disadvantaged community. See <https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria#nys-universal-navigation>.

### **VIII. INJUNCTIVE RELIEF: INTERIM MEASURES**

*43. WJWW shall remain in compliance with the TTHM and HAA5 monitoring requirements, methodology requirements, and reporting requirements of the Stage 2 DBPR.*

WJWW continues to comply.

*44. WJWW shall conduct monitoring quarterly for TTHM and HAA5 in accordance with 40 C.F.R. § 141.621(a) and WJWW's approved monitoring plan...*

WJWW continues to comply.

*45. WJWW must comply with all public notice requirements specified in 40 C.F.R. Part 141, Subpart Q, for any TTHM or HAA5 MCL violation that occurs after the Effective Date of this Consent Decree.*

There have been no violations since the Effective Date of the Consent Decree.

*46. In addition to routine reporting to the WCDOH, WJWW shall submit to EPA the results of the TTHM and HAA5 monitoring required by this subparagraph...*

A copy of the 2024 4<sup>th</sup> Quarter TTHM and HAA5 Sampling Report previously provided to the WCDOH, under cover letter dated December 16, 2024, is annexed as Appendix A. These results have been posted on the WJWW Filtration Plant microsite <https://wjwwfiltration.org/>

*47. If the WJWW Water System violates a TTHM or HAA5 MCL, WJWW must submit a report to EPA, WCDOH, and NYSDOH ...*

There have been no violations since the Effective Date of the Consent Decree.

*48. At all times after the Effective Date during the duration of this Decree, WJWW must implement the flushing protocol attached hereto as Appendix B...*

The flushing protocol was implemented in 2020 and has continued uninterrupted to date and will continue.

*50. WJWW must report results from the source water monitoring to EPA, NYSDOH and WCDOH no later than 10 Days after the end of the first month following the month when the sample is collected. Within 14 Days after WJWW has submitted the results of the source monitoring to EPA, NYSDOH and WCDOH, WJWW shall post the results of the monitoring on its website.*

LT2 Second Round Source Water Monitoring Sample Results for October, November, and December 2024, were submitted to the EPA, the NYSDOH, and the WCDOH on November 11, 2024, December 9, 2024, and January 8, 2025, respectively. These results have been posted on the WJWW Filtration Plant microsite <https://wjwwfiltration.org/>

*53. CT Calculations. For each day the WJWW water system is in operation, the WJWW shall calculate the total inactivation ratio pursuant to the provisions of 40 C.F.R. §§ 141.74(b)(3) and (4). WJWW shall report to EPA, NYSDOH, and WCDOH the information listed at 40 C.F.R. § 141.75(a)(2) monthly, within 10 Days after the end of each month.*

Water System Operating Reports for October, November, and December 2024, were submitted to the EPA and the NYSDOH on November 19, 2024, December 9, 2024, and January 8, 2025, and to the WCDOH on November 8, 2024, December 9, 2024, and January 7, 2025, respectively.

*55. Within 45 Days after the Effective Date, WJWW must provide notice in writing to its consumers, and to the owner and operator of all public water systems that purchase water from the WJWW, explaining that Defendants entered into a Consent Decree...*

Copies of postcards mailed to consumers on November 7, 2024, letters and notices mailed to owners/operators of public water systems on November 7, 2024, a public notice published in the local Gannett Lohud Journal News, and related documentation are annexed as Appendix B.

*57. WJWW shall include a statement in its annual Drinking Water Quality Report until compliance with the deadlines in Section VII is achieved...*

The next annual Drinking Water Quality Report has not been prepared yet and is due by June 1, 2025.

*58. Prior to commencing construction of the Filtration Plant, WJWW shall establish and maintain a website or a webpage on its website...*

The required information is available to the public at the project website:

<https://wjwwfiltration.org/>

## **X. SUPPLEMENTAL ENVIRONMENTAL PROJECT**

*61. WJWW shall implement a Supplemental Environmental Project (“SEP”) in accordance with this Section X and the SEP Memo annexed as Appendix D. WJWW shall spend no less than \$900,000 to implement the SEP. The SEP shall be completed within 54 months after the Effective Date in accordance with the schedule of milestones set forth in Appendix D. The SEP shall be comprised of the project to improve the quality of storm water entering the Kensico Reservoir described in the SEP Memo annexed as Appendix D.*

- On December 20, 2024, WJWW submitted its Preliminary Design Report for the SEP to NYCDEP for its review. A copy of the Preliminary Design Report is annexed as Appendix C.

*64. SEP Completion Report. No later than 56 months from the Effective Date, Defendants shall submit a SEP Completion Report to DOJ, EPA and the State in accordance with Section XVIII (Notices). The SEP Completion Report shall contain the following information:*

*c. an itemized list of all eligible SEP costs expended;*

- It can be noted that WJWW has expended \$11,961 to date.

This project was undertaken in connection with the settlement of an enforcement action, United States v. Westchester Joint Water Works, taken on behalf of the U.S. Environmental Protection Agency under the Safe Drinking Water Act.

## **VI. CIVIL PENALTY**

*17. In addition, WJWW shall spend a total of at least \$6,800,000 on two water quality benefit projects (the “Benefit Projects”). ... The Benefit Projects are: (i) a new water main to the Quarry Heights neighborhood of the Town of North Castle (the “Quarry Heights Project”), as described in Appendix A, and (ii) the establishment of a Lead Service Line Replacement Program (the “Lead Service Line Replacement Program”).*

- With regard to 17.a, WJWW has deposited \$1,100,000 into a segregated account be used exclusively for the Quarry Heights Project.

*18. WJWW shall provide the State with an accounting of the amount spent on the Benefit Projects within 60 Days of project completion.*

- Neither the Quarry Heights Project nor the Lead Service Line Replacement Program has been completed. It can be noted that the Quarry Heights Project is approximately 85% complete with this project expected to be fully completed by Summer 2025.
- It can be noted that WJWW has expended approximately \$305,003 on the Quarry Heights Project to date, and has expended \$0 on the Lead Service Line Replacement Program to date.

I hope that the above provides a satisfactory Quarterly Report. Should you require any additional information, details or clarification, please let me know.

73. Certification

I certify under penalty of perjury 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 have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment for knowing violations.

Dated: January 15, 2025



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Paul Kutzy, P.E.  
Manager  
Westchester Joint Water Works  
1625 Mamaroneck Ave.  
Mamaroneck, NY 10543  
Office: 914-698-3500 x 612  
Fax: 914-381-4241  
pkutzy@wjww.com

# APPENDIX A

## 2024 Q4 TTHM and HAA5 Sampling Report





## WESTCHESTER JOINT WATER WORKS

1625 Mamaroneck Avenue  
Mamaroneck, New York 10543  
www.wjww.com

Telephone: (914) 698-3500  
Fax: (914) 381-4241  
Fax: (914) 381-0349

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December 16, 2024

Ms. Nawrin Anwar  
Senior Engineer  
Bureau of Environmental Quality  
Westchester County Department of Health  
25 Moore Avenue  
Mt. Kisco, NY 10549

Dear Ms. Anwar,

I have attached the Westchester Joint Water Works 2024 4th quarter THM and HAA5 results.

If you have any questions, feel free to contact me. Thank you.

Very truly yours,

Daniel Pirrone  
Chief Water Treatment Pl. Operator IB

**Bureau of Environmental Quality  
Public Water Supply Stage II Trihalomethanes (THM) Sampling Report**

**Westchester Joint Water Works**  
Name of Public Water Supply

2024  
4th Quarter Period

Date of Sampling: 10/24/2024  
Time of Sampling: 0800 Through 1100

Trihalomethanes (THM)	Disinfection Station Sampling Locations					Disinfection Station Sampling Locations					Disinfection Station Sampling Locations					Disinfection Station Sampling Locations	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Bromodichloromethane (ug/L)	4.59	2.41	3.66	4.95	3.59	2.13	3.28	3.24									
Bromofom (ug/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									
Chloroform (ug/L)	48.40	21.20	30.20	52.40	29.60	16.40	25.00	26.30									
Dibromochloromethane(ug/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									
Total Trihalomethanes (ug/L)	52.990	23.610	33.860	57.350	33.190	18.530	28.280	29.540									
Total Trihalomethanes (mg/L)	0.053	0.024	0.034	0.057	0.033	0.019	0.028	0.030									

Sampling Location #	Address of Sampling Location / (Sample Collection Point)	4th Quarter 2024					3rd Quarter 2024					2nd Quarter 2024					1st Quarter 2024					Current Four Quarter Rolling Average THM (mg/L)
		C12 Residual (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)	THM (mg/L)			
1	250 Westchester Ave (Hydrant P-14)		0.35	0.053	0.024	0.043	0.043	0.028	0.034	0.034	0.043	0.028	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.043		
2	12 Beverly Rd (Hydrant No. 3577)		0.88	0.024	0.024	0.023	0.028	0.014	0.014	0.014	0.028	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.022		
3	Hyatt House 101 Corporate Park Drive (Kitchen Sink)		0.57	0.034	0.042	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.034		
4	1490 Old Orchard Rd (Hydrant No. 6001)		0.24	0.057	0.060	0.060	0.030	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.051		
5	2 Lincoln Lane (Hydrant No. 3833)		0.67	0.033	0.036	0.036	0.029	0.021	0.021	0.021	0.029	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.030		
6	Booster Station 4195 Purchase St (Lab Sink)		1.15	0.019	0.016	0.016	0.018	0.011	0.011	0.011	0.018	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.016		
7	Staples Boston Post Rd (Bathroom Sink)		0.56	0.028	0.038	0.038	0.032	0.027	0.027	0.027	0.032	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.031		
8	66 Bellevue Ave (Hydrant No. 3179)		0.86	0.030	0.031	0.031	0.031	0.020	0.020	0.020	0.031	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.028		

Lab Performing Analysis: Westchester County Dept of Labs  
Samples Approved 12/14/2024  
Rolling Average MCL: 0.08 mg/L

**Bureau of Environmental Quality  
Public Water Supply Stage II Haloacetic Acids (HAA5) Sampling Report**

**Westchester Joint Water Works**  
Name of Public Water Supply

2024  
4th Quarter Period

Date of Sampling: 10/24/2024  
Time of Sampling: 0800 Through 1100

Haloacetic Acids (HAA5)	Distriection Station Sampling Locations								Distriection Station Sampling Locations							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dibromoacetic Acid (ug/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Dichloroacetic Acid (ug/L)	1.71	11.10	10.10	1.70	10.00	13.00	6.99	13.00								
Monochloroacetic Acid (ug/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Trichloroacetic Acid (ug/L)	29.30	19.30	25.60	22.60	22.60	14.60	15.60	19.30								
Monobromoacetic Acid (ug/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Total Haloacetic Acids (ug/L)	31.010	29.400	35.700	24.300	32.600	27.600	22.590	32.300								
Total Haloacetic Acids (mg/L)	0.031	0.029	0.036	0.024	0.033	0.028	0.023	0.032								

Sampling Location #	Address of Sampling Location / (Sample Collection Point)	C12 Residual (mg/L)	4th Quarter 2024				3rd Quarter 2024				2nd Quarter 2024				1st Quarter 2024				Current Four Quarter Rolling Average HAA5 (mg/L)
			HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	HAA5 (mg/L)	
1	250 Westchester Ave (Hydrant P-14)	0.35	0.031	0.032	0.037	0.044	0.032	0.037	0.044	0.032	0.044	0.032	0.044	0.036					
2	12 Beverly Rd (Hydrant No. 3577)	0.88	0.029	0.037	0.040	0.032	0.040	0.040	0.032	0.040	0.032	0.040	0.035						
3	Hyatt House 101 Corporate Park Drive (Kitchen Sink)	0.57	0.036	0.036	0.040	0.036	0.040	0.040	0.036	0.040	0.036	0.040	0.037						
4	1490 Old Orchard Rd (Hydrant No. 6001)	0.24	0.024	0.026	0.040	0.000	0.040	0.040	0.000	0.040	0.000	0.040	0.023						
5	2 Lincoln Lane (Hydrant No. 3883)	0.67	0.033	0.041	0.047	0.036	0.047	0.047	0.036	0.047	0.036	0.047	0.039						
6	Booster Station 4195 Purchase St (Lab Sink)	1.15	0.028	0.027	0.036	0.028	0.036	0.036	0.028	0.036	0.028	0.036	0.030						
7	Staples Boston Post Rd (Bathroom Sink)	0.56	0.023	0.032	0.052	0.043	0.052	0.052	0.043	0.052	0.043	0.052	0.038						
8	66 Bellevue Ave (Hydrant No. 3179)	0.86	0.032	0.034	0.041	0.034	0.041	0.041	0.034	0.041	0.034	0.041	0.035						
<p align="center">Lab Performing Analysis: Westchester County Dept of Labs Samples Approved 12/14/2024</p>																			
<p align="center">Rolling Average MCL: 0.06 mg/L</p>																			

**REPORT OF ANALYSIS**

Westchester County Department of Labs and Research

10 Dana Road Valhalla, New York 10595

Sample Location : P-14  
250 WESTCHESTER AVE  
W. HARRISON, NY

Received By : LG JLM  
Bottle No : K7440 7441 7442 FB0285 T975

Collection Point : HYDRANT

Collected By : GIRILLO  
Collection Date : 10/24/2024 AT 09:15:00  
Submitted On : 10/24/2024 AT 11:55:00

ID of Source : NYC

Agency : Westchester Joint Water Works  
1625 Mamaroneck Avenue  
Mamaroneck, NY 10543  
Attn: Frank Arcara

PWS No. : 5903435  
Type Descriptor : 022 Source ID : 000

pH : 7.30

Free Cl2 : .35 Residual Cl2 :

Sample chilled on arrival ? : YES

Sample Type : POT\_DW

add'l Report To :

Comment :4TH QUARTER  
TEMP 16.0 C

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
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**Organics**

**Volatile Organic Compounds**

EPA 524.2	*THM-Bromodichloromethane	4.59		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Bromoform	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Chloroform	48.4		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Dibromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,1- Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,1,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,2,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,2-Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,3-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,3-Trichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,4-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,4-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,3,5-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,3-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

Chief of Env. Lab Services

Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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Westchester County Department of Labs and Research.

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Sample No. **BA20053**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
EPA 524.2	1,3-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,4-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	2,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	2-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	4-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Benzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromomethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Carbon tetrachloride	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	cis-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	cis-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Dibromomethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Dichlorodifluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Ethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Hexachlorobutadiene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Isopropylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	MEK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 524.2	Methyl tert-butyl ether	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Methylene Chloride	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	MIBK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 524.2	Naphthalene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	N-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	n-Propylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	o-Xylene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	p & m-Xylene	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 524.2	p-Isopropyltoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	sec-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Styrene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	tert-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Tetrachloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Toluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	trans-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	trans-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Trichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Trichlorofluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Vinyl chloride	< LOQ		ug/L	0.50	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

*Chief of Env. Lab Services*

Date Approved : 12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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Sample No. **BA20053**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
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The recovery of p-Isopropyltoluene was below the acceptable QC criteria in the daily calibration check. Established low bias on <LOQ results renders the analytical data suspect.

The recoveries of 1,2,4-trichlorobenzene, Hexachlorobutadiene, Naphthalene, and 1,2,3-trichlorobenzene were higher than the acceptable QC criteria in the LLCCV. Established high bias on <LOQ results are valid to report.

The recovery of 1,2,4-trichlorobenzene was higher than the acceptable QC criteria in the closing calibration check. Established high bias on <LOQ results are valid to report.

DN 11/13/24

**Haloacetic Acids**

EPA 552.2	Bromochloroacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dibromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dichloroacetic Acid	1.71		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monobromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monochloroacetic Acid	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 552.2	Trichloroacetic Acid	29.3		ug/L	1.00	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

**Chief of Env. Lab Services**

Date Approved : 12/14/2024

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*REPORT OF ANALYSIS*

Westchester County Department of Labs and Research

10 Dana Road Valhalla, New York 10595

Sample Location : HYD #3577  
 BEVERLY RD  
 HARRISON, NY

Received By : LG JLM  
 Bottle No : T996 K7395 7396 7397 FB0285

Collection Point : HYDRANT

Collected By : GIRILLO  
 Collection Date : 10/24/2024 AT 10:10:00  
 Submitted On : 10/24/2024 AT 11:55:00

ID of Source : NYC

Agency : Westchester Joint Water Works  
 1625 Mamaroneck Avenue  
 Mamaroneck, NY 10543  
 Attn: Frank Arcara

PWS No. : 5903435  
 Type Descriptor : 022 Source ID : 000  
 pH : 7.40  
 Free Cl2 : .88 Residual Cl2 :

add'l Report To :

Sample chilled on arrival ? : YES  
 Sample Type : POT\_DW  
 Comment :4TH QUARTER  
 TEMP 16.5 C

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
<b>Organics</b>							
<i>Volatile Organic Compounds</i>							
EPA 524.2	*THM-Bromodichloromethane	2.41		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Bromoform	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Chloroform	21.2		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Dibromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,1- Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,1,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,2,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,2-Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,3-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,3-Trichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,4-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,4-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,3,5-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,3-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ

DL = Detection Limit      LOQ = Limit of Quantitation      E=value is an estimate      H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**      Chief of Env. Lab Services      Date Approved : 12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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Sample No. **BA20049**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
EPA 524.2	1,3-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,4-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	2,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	2-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	4-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Benzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromomethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Carbon tetrachloride	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	cis-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	cis-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Dibromomethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Dichlorodifluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Ethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Hexachlorobutadiene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Isopropylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	MEK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZZ
EPA 524.2	Methyl tert-butyl ether	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Methylene Chloride	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	MIBK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZZ
EPA 524.2	Naphthalene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	N-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	n-Propylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	o-Xylene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	p & m-Xylene	< LOQ		ug/L	1.00	11/07/2024	GZZ
EPA 524.2	p-Isopropyltoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	sec-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Styrene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	tert-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Tetrachloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Toluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	trans-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	trans-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Trichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Trichlorofluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Vinyl chloride	< LOQ		ug/L	0.50	11/07/2024	GZZ

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

**Chief of Env. Lab Services**

Date Approved :

12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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Sample No. **BA20049**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
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The recovery of p-Isopropyltoluene was below the acceptable QC criteria in the daily calibration check. Established low bias on <LOQ results renders the analytical data suspect.

The recoveries of 1,2,4-trichlorobenzene, Hexachlorobutadiene, Naphthalene, and 1,2,3-trichlorobenzene were higher than the acceptable QC criteria in the LLCCV. Established high bias on <LOQ results are valid to report.

The recovery of 1,2,4-trichlorobenzene was higher than the acceptable QC criteria in the closing calibration check. Established high bias on <LOQ results are valid to report.

DN 11/13/24

**Haloacetic Acids**

EPA 552.2	Bromochloroacetic Acid	< LOQ		ug/L	1.00	11/06/2024	GZ2
EPA 552.2	Dibromoacetic Acid	< LOQ		ug/L	1.00	11/06/2024	GZ2
EPA 552.2	Dichloroacetic Acid	11.1		ug/L	1.00	11/06/2024	GZ2
EPA 552.2	Monobromoacetic Acid	< LOQ		ug/L	1.00	11/06/2024	GZ2
EPA 552.2	Monochloroacetic Acid	< LOQ		ug/L	2.00	11/06/2024	GZ2
EPA 552.2	Trichloroacetic Acid	18.3		ug/L	1.00	11/06/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

*Chief of Env. Lab Services*

Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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**REPORT OF ANALYSIS**

Westchester County Department of Labs and Research

10 Dana Road Valhalla, New York 10595

Sample Location : HYATT HOUSE  
101 CORP PARK DR  
HARRISON, NY

Received By : LG JLM  
Bottle No : K7371 7372 7373 FB0285 T958

Collection Point : SAMPLE STATION PORT

Collected By : GIRILLO  
Collection Date : 10/24/2024 AT 08:55:00  
Submitted On : 10/24/2024 AT 11:55:00

ID of Source : NYC

Agency : Westchester Joint Water Works  
1625 Mamaroneck Avenue  
Mamaroneck, NY 10543  
Attn: Frank Arcara

PWS No. : 5903435  
Type Descriptor : 022 Source ID : 000  
pH : 7.30  
Free Cl2 : .57 Residual Cl2 :

Sample chilled on arrival ? : YES

Sample Type : POT\_DW

add'l Report To :

Comment : 4TH QUARTER  
TEMP 16.5 C

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
--------	------------------	---------	-----------	-------	--------	-------------	-----------

**Organics**

**Volatile Organic Compounds**

EPA 524.2	*THM-Bromodichloromethane	3.66		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Bromoform	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Chloroform	30.2		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Dibromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,1- Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,1,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,2,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,2-Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,3-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,3-Trichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,4-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,4-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,3,5-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,3-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

Chief of Env. Lab Services

Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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Sample No. **BA20054**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
EPA 524.2	1,3-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,4-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	2,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	2-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	4-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Benzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromomethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Carbon tetrachloride	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	cis-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	cis-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Dibromomethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Dichlorodifluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Ethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Hexachlorobutadiene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Isopropylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	MEK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZZ
EPA 524.2	Methyl tert-butyl ether	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Methylene Chloride	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	MIBK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZZ
EPA 524.2	Naphthalene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	N-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	n-Propylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	o-Xylene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	p & m-Xylene	< LOQ		ug/L	1.00	11/07/2024	GZZ
EPA 524.2	p-Isopropyltoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	sec-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Styrene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	tert-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Tetrachloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Toluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	trans-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	trans-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Trichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Trichlorofluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Vinyl chloride	< LOQ		ug/L	0.50	11/07/2024	GZZ

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

**Chief of Env. Lab Services**

Date Approved : 12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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# Sample No. BA20054

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
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The recovery of p-Isopropyltoluene was below the acceptable QC criteria in the daily calibration check. Established low bias on <LOQ results renders the analytical data suspect.

The recoveries of 1,2,4-trichlorobenzene, Hexachlorobutadiene, Naphthalene, and 1,2,3-trichlorobenzene were higher than the acceptable QC criteria in the LLCCV. Established high bias on <LOQ results are valid to report.

The recovery of 1,2,4-trichlorobenzene was higher than the acceptable QC criteria in the closing calibration check. Established high bias on <LOQ results are valid to report.

DN 11/13/24

**Haloacetic Acids**

EPA 552.2	Bromochloroacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dibromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dichloroacetic Acid	10.1		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monobromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monochloroacetic Acid	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 552.2	Trichloroacetic Acid	25.6		ug/L	1.00	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

*Chief of Env. Lab Services*

Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
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Report Number: 5591

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Sample No. **BA20055**

**REPORT OF ANALYSIS**

Westchester County Department of Labs and Research

10 Dana Road Valhalla, New York 10595

Sample Location : HYD #6001  
1490 OLD ORCHARD ST  
W. HARRISON, NY

Received By : LG JLM  
Bottle No : K7272 7273 7274 FB0285 T851

Collection Point : HYDRANT

Collected By : GIRILLO  
Collection Date : 10/24/2024 AT 11:10:00  
Submitted On : 10/24/2024 AT 11:55:00

ID of Source : NYC

Agency : Westchester Joint Water Works  
1625 Mamaroneck Avenue  
Mamaroneck, NY 10543  
Attn: Frank Arcara

PWS No. : 5903435  
Type Descriptor : 022 Source ID : 000  
pH : 7.30

Free Cl2 : .24 Residual Cl2 :

Sample chilled on arrival ? : YES

Sample Type : POT\_DW

add'l Report To :

Comment :4TH QUARTER  
TEMP 17.0 C

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
<b>Organics</b>							
<b>Volatile Organic Compounds</b>							
EPA 524.2	*THM-Bromodichloromethane	4.95		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Bromoform	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Chloroform	52.4		ug/L	1.00	11/07/2024	GZZ
EPA 524.2	*THM-Dibromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,1- Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,1,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,2,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,2-Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,3-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,3-Trichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,4-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,4-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,3,5-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,3-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

Chief of Env. Lab Services

Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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Page 1 of 3

Sample No. **BA20055**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
EPA 524.2	1,3-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,4-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	2,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	2-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	4-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Benzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromomethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Carbon tetrachloride	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	cis-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	cis-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Dibromomethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Dichlorodifluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Ethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Hexachlorobutadiene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Isopropylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	MEK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZZ
EPA 524.2	Methyl tert-butyl ether	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Methylene Chloride	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	MIBK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZZ
EPA 524.2	Naphthalene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	N-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	n-Propylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	o-Xylene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	p & m-Xylene	< LOQ		ug/L	1.00	11/07/2024	GZZ
EPA 524.2	p-Isopropyltoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	sec-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Styrene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	tert-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Tetrachloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Toluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	trans-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	trans-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Trichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Trichlorofluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Vinyl chloride	< LOQ		ug/L	0.50	11/07/2024	GZZ

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

*Chief of Env. Lab Services*

Date Approved :

12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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Sample No. **BA20055**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
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The recovery of p-isopropyltoluene was below the acceptable QC criteria in the daily calibration check. Established low bias on <LOQ results renders the analytical data suspect.

The recoveries of 1,2,4-trichlorobenzene, Hexachlorobutadiene, Naphthalene, and 1,2,3-trichlorobenzene were higher than the acceptable QC criteria in the LLCCV. Established high bias on <LOQ results are valid to report.

The recovery of 1,2,4-trichlorobenzene was higher than the acceptable QC criteria in the closing calibration check. Established high bias on <LOQ results are valid to report.

Chloroform exceeded the calibration range. Sample was reanalyzed with a 1:2 dilution.

DN 11/13/24

**Haloacetic Acids**

EPA 552.2	Bromochloroacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dibromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dichloroacetic Acid	1.70		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monobromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monochloroacetic Acid	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 552.2	Trichloroacetic Acid	22.6		ug/L	1.00	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

**Chief of Env. Lab Services**

Date Approved : 12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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Sample No. **BA20051**

**REPORT OF ANALYSIS**

Westchester County Department of Labs and Research

10 Dana Road Valhalla, New York 10595

Sample Location : HYD #3883  
2 LINCOLN AVE  
HARRISON, NY

Received By : LG JLM  
Bottle No : K7437 7438 7439 FB0285 T0017

Collection Point : HYDRANT

Collected By : GIRILLO  
Collection Date : 10/24/2024 AT 08:30:00  
Submitted On : 10/24/2024 AT 11:55:00

ID of Source : NYC

Agency : Westchester Joint Water Works  
1625 Mamaroneck Avenue  
Mamaroneck, NY 10543  
Attn: Frank Arcara

PWS No. : 5903435  
Type Descriptor : 022 Source ID : 000  
pH : 7.40  
Free Cl2 : .67 Residual Cl2 :

Sample chilled on arrival ? : YES  
Sample Type : POT\_DW

add'l Report To :

Comment :4TH QUARTER  
TEMP 16.8 C

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
<b>Organics</b>							
<b>Volatile Organic Compounds</b>							
EPA 524.2	*THM-Bromodichloromethane	3.59		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Bromoform	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Chloroform	29.6		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Dibromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,1- Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,1,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,2,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,2-Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,3-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,3-Trichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,4-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,4-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,3,5-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,3-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

Chief of Env. Lab Services

Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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Page 1 of 3



# Sample No. BA20051

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
EPA 524.2	1,3-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,4-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	2,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	2-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	4-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Benzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromomethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Carbon tetrachloride	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	cis-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	cis-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Dibromomethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Dichlorodifluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Ethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Hexachlorobutadiene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Isopropylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	MEK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 524.2	Methyl tert-butyl ether	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Methylene Chloride	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	MIBK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 524.2	Naphthalene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	N-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	n-Propylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	o-Xylene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	p & m-Xylene	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 524.2	p-Isopropyltoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	sec-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Styrene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	tert-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Tetrachloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Toluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	trans-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	trans-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Trichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Trichlorofluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Vinyl chloride	< LOQ		ug/L	0.50	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

*Chief of Env. Lab Services*

Date Approved : 12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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# Sample No. BA20051

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
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The recovery of p-Isopropyltoluene was below the acceptable QC criteria in the daily calibration check. Established low bias on <LOQ results renders the analytical data suspect.

The recoveries of 1,2,4-trichlorobenzene, Hexachlorobutadiene, Naphthalene, and 1,2,3-trichlorobenzene were higher than the acceptable QC criteria in the LLCCV. Established high bias on <LOQ results are valid to report.

The recovery of 1,2,4-trichlorobenzene was higher than the acceptable QC criteria in the closing calibration check. Established high bias on <LOQ results are valid to report.

DN 11/13/24

**Haloacetic Acids**

EPA 552.2	Bromochloroacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dibromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dichloroacetic Acid	10.0		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monobromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monochloroacetic Acid	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 552.2	Trichloroacetic Acid	22.6		ug/L	1.00	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

*Chief of Env. Lab Services*

Date Approved : 12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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**REPORT OF ANALYSIS**

Westchester County Department of Labs and Research

10 Dana Road Valhalla, New York 10595

**Sample Location :** PURCHASE BOOSTER  
4195 PURCHASE ST  
HARRISON, NY

**Received By :** LG JLM  
**Bottle No :** T986 K7404 7405 7406 FB0285

**Collection Point :** ENTRY POINT

**Collected By :** GIRILLO  
**Collection Date :** 10/24/2024 AT 08:00:00  
**Submitted On :** 10/24/2024 AT 11:55:00

**ID of Source :** NYC

**Agency :** Westchester Joint Water Works  
1625 Mamaroneck Avenue  
Mamaroneck, NY 10543  
Attn: Frank Arcara

**PWS No. :** 5903435  
**Type Descriptor :** 022 **Source ID :** 000  
pH : 7.50  
**Free Cl2 :** 1.15 **Residual Cl2 :**

**Sample chilled on arrival ? :** YES  
**Sample Type :** POT\_DW

**add'l Report To :**

**Comment :** 4TH QUARTER  
TEMP 17.7 C TURB .76

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
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**Organics**

**Volatile Organic Compounds**

EPA 524.2	*THM-Bromodichloromethane	2.13		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Bromoform	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Chloroform	16.4		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Dibromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,1- Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,1,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,2,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,2-Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,3-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,3-Trichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,4-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,4-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,3,5-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,3-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

**Approved By** Robert Hilbrandt Jr.

**Chief of Env. Lab Services**

**Date Approved :** 12/14/2024

**Environmental Laboratories**  
NYS ELAP # 10108  
(914) 231-1620

**Report Number:** 5591

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Sample No. **BA20063**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
EPA 524.2	1,3-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,4-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	2,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	2-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	4-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Benzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromomethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Carbon tetrachloride	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	cis-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	cis-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Dibromomethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Dichlorodifluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Ethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Hexachlorobutadiene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Isopropylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	MEK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 524.2	Methyl tert-butyl ether	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Methylene Chloride	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	MIBK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 524.2	Naphthalene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	N-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	n-Propylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	o-Xylene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	p & m-Xylene	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 524.2	p-Isopropyltoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	sec-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Styrene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	tert-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Tetrachloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Toluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	trans-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	trans-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Trichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Trichlorofluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Vinyl chloride	< LOQ		ug/L	0.50	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

*Chief of Env. Lab Services*

Date Approved : 12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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Sample No. **BA20063**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
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The recovery of p-Isopropyltoluene was below the acceptable QC criteria in the daily calibration check. Established low bias on <LOQ results renders the analytical data suspect.

The recoveries of 1,2,4-trichlorobenzene, Hexachlorobutadiene, Naphthalene, and 1,2,3-trichlorobenzene were higher than the acceptable QC criteria in the LLCCV. Established high bias on <LOQ results are valid to report.

The recovery of 1,2,4-trichlorobenzene was higher than the acceptable QC criteria in the closing calibration check. Established high bias on <LOQ results are valid to report.

DN 11/13/24

**Haloacetic Acids**

EPA 552.2	Bromochloroacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dibromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dichloroacetic Acid	13.0		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monobromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monochloroacetic Acid	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 552.2	Trichloroacetic Acid	14.6		ug/L	1.00	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

**Chief of Env. Lab Services**

Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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**REPORT OF ANALYSIS**

Westchester County Department of Labs and Research

10 Dana Road Valhalla, New York 10595

Sample Location : STAPLES  
2444 BOSTON POST RD  
TOWN OF MAMARONECK, NY

Received By : LG JLM  
Bottle No : T622 K7284 7285 7286 FB0285

Collection Point : SAMPLE STATION PORT

Collected By : GIRILLO  
Collection Date : 10/24/2024 AT 10:10:00  
Submitted On : 10/24/2024 AT 11:55:00

ID of Source : NYC

Agency : Westchester Joint Water Works  
1625 Mamaroneck Avenue  
Mamaroneck, NY 10543  
Attn: Frank Arcara

PWS No. : 5903435  
Type Descriptor : 022 Source ID : 000  
pH : 7.50  
Free Cl2 : .56 Residual Cl2 :

Sample chilled on arrival ? : YES  
Sample Type : POT\_DW

add'l Report To :

Comment :4TH QUARTER  
TEMP 16.3 C

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
<b>Organics</b>							
<b>Volatile Organic Compounds</b>							
EPA 524.2	*THM-Bromodichloromethane	3.28		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Bromoform	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Chloroform	25.0		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	*THM-Dibromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,1- Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,1,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,2,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1,2-Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,1-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,3-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,3-Trichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,4-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2,4-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,3,5-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,3-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2

DL = Detection Limit      LOQ = Limit of Quantitation      E=value is an estimate      H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**      Chief of Env. Lab Services      Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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# Sample No. BA20048

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
EPA 524.2	1,3-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	1,4-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	2,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	2-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	4-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Benzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Bromomethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Carbon tetrachloride	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chloroethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Chloromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	cis-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	cis-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Dibromomethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Dichlorodifluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Ethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Hexachlorobutadiene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Isopropylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	MEK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 524.2	Methyl tert-butyl ether	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Methylene Chloride	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	MIBK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 524.2	Naphthalene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	N-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	n-Propylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	o-Xylene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	p & m-Xylene	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 524.2	p-Isopropyltoluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	sec-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Styrene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	tert-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Tetrachloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Toluene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	trans-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	trans-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Trichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Trichlorofluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZ2
EPA 524.2	Vinyl chloride	< LOQ		ug/L	0.50	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

*Chief of Env. Lab Services*

Date Approved : 12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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Page 2 of 3

Sample No. **BA20048**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
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The recovery of p-Isopropyltoluene was below the acceptable QC criteria in the daily calibration check. Established low bias on <LOQ results renders the analytical data suspect.

The recoveries of 1,2,4-trichlorobenzene, Hexachlorobutadiene, Naphthalene, and 1,2,3-trichlorobenzene were higher than the acceptable QC criteria in the LLCCV. Established high bias on <LOQ results are valid to report.

The recovery of 1,2,4-trichlorobenzene was higher than the acceptable QC criteria in the closing calibration check. Established high bias on <LOQ results are valid to report.

DN 11/13/24

**Haloacetic Acids**

EPA 552.2	Bromochloroacetic Acid	< LOQ		ug/L	1.00	11/06/2024	GZ2
EPA 552.2	Dibromoacetic Acid	< LOQ		ug/L	1.00	11/06/2024	GZ2
EPA 552.2	Dichloroacetic Acid	6.99		ug/L	1.00	11/06/2024	GZ2
EPA 552.2	Monobromoacetic Acid	< LOQ		ug/L	1.00	11/06/2024	GZ2
EPA 552.2	Monochloroacetic Acid	< LOQ		ug/L	2.00	11/06/2024	GZ2
EPA 552.2	Trichloroacetic Acid	15.6		ug/L	1.00	11/06/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

**Chief of Env. Lab Services**

Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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Sample No. **BA20052**

**REPORT OF ANALYSIS**

Westchester County Department of Labs and Research

10 Dana Road Valhalla, New York 10595

Sample Location : HYD #3179  
66 BELLEVUE AVE  
HARRISON, NY

Received By : LG JLM  
Bottle No : K7416 7417 7418 FB0285 T0024

Collection Point : HYDRANT

Collected By : GIRILLO  
Collection Date : 10/24/2024 AT 09:45:00  
Submitted On : 10/24/2024 AT 11:55:00

ID of Source : NYC

Agency : Westchester Joint Water Works  
1625 Mamaroneck Avenue  
Mamaroneck, NY 10543  
Attn: Frank Arcara

PWS No. : 5903435  
Type Descriptor : 022 Source ID : 000  
pH : 7.40  
Free Cl2 : .86 Residual Cl2 :

Sample chilled on arrival ? : YES  
Sample Type : POT\_DW

add'l Report To :

Comment :4TH QUARTER  
TEMP 15.8 C

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
<b>Organics</b>							
<b>Volatile Organic Compounds</b>							
EPA 524.2	*THM-Bromodichloromethane	3.24		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Bromoform	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Chloroform	26.3		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	*THM-Dibromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,1- Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,1,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,2,2-Tetrachloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1,2-Trichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,1-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,3-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,3-Trichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,4-Trichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2,4-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,3,5-Trimethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,3-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

Chief of Env. Lab Services

Date Approved : 12/14/2024

Environmental Laboratories  
NYS ELAP # 10108  
(914) 231-1620

Report Number: 5591

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Page 1 of 3

Sample No. **BA20052**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
EPA 524.2	1,3-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	1,4-Dichlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	2,2-Dichloropropane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	2-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	4-Chlorotoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Benzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromochloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Bromomethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Carbon tetrachloride	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chlorobenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chloroethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Chloromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	cis-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	cis-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Dibromomethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Dichlorodifluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Ethylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Hexachlorobutadiene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Isopropylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	MEK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZZ
EPA 524.2	Methyl tert-butyl ether	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Methylene Chloride	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	MIBK(not certified by NYSDOH)	< LOQ		ug/L	2.00	11/07/2024	GZZ
EPA 524.2	Naphthalene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	N-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	n-Propylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	o-Xylene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	p & m-Xylene	< LOQ		ug/L	1.00	11/07/2024	GZZ
EPA 524.2	p-Isopropyltoluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	sec-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Styrene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	tert-Butylbenzene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Tetrachloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Toluene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	trans-1,2-Dichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	trans-1,3-Dichloropropene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Trichloroethene	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Trichlorofluoromethane	< LOQ		ug/L	0.50	11/07/2024	GZZ
EPA 524.2	Vinyl chloride	< LOQ		ug/L	0.50	11/07/2024	GZZ

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

**Chief of Env. Lab Services**

Date Approved : 12/14/2024

Environmental Laboratories  
 NYS ELAP # 10108  
 (914) 231-1620

Report Number: 5591

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Page 2 of 3

Sample No. **BA20052**

Method	Test Description	Results	Qualifier	Units	DL/LOQ	Analyzed on	Validator
--------	------------------	---------	-----------	-------	--------	-------------	-----------

The recovery of p-Isopropyltoluene was below the acceptable QC criteria in the daily calibration check. Established low bias on <LOQ results renders the analytical data suspect.

The recoveries of 1,2,4-trichlorobenzene, Hexachlorobutadiene, Naphthalene, and 1,2,3-trichlorobenzene were higher than the acceptable QC criteria in the LLCCV. Established high bias on <LOQ results are valid to report.

The recovery of 1,2,4-trichlorobenzene was higher than the acceptable QC criteria in the closing calibration check. Established high bias on <LOQ results are valid to report.

DN 11/13/24

**Haloacetic Acids**

EPA 552.2	Bromochloroacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dibromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Dichloroacetic Acid	13.0		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monobromoacetic Acid	< LOQ		ug/L	1.00	11/07/2024	GZ2
EPA 552.2	Monochloroacetic Acid	< LOQ		ug/L	2.00	11/07/2024	GZ2
EPA 552.2	Trichloroacetic Acid	19.3		ug/L	1.00	11/07/2024	GZ2

DL = Detection Limit

LOQ = Limit of Quantitation

E=value is an estimate

H = exceeds holding time

Approved By **Robert Hilbrandt Jr.**

**Chief of Env. Lab Services**

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Page 3 of 3

# APPENDIX B

Public Notices to Consumers

11.07.2024

## Mary Polvere

---

**From:** Mary Polvere  
**Sent:** Wednesday, November 20, 2024 4:57 PM  
**To:** Water Compliance Branch Chief (Region2\_SDWAEnforcement@epa.gov); Phyllis Feinmark (feinmark.phyllis@epa.gov); Andrew Frank (andrew.frank@ag.ny.gov); Danielle Rysedorph (Danielle.Rysedorph@health.ny.gov); Kristine Wheeler  
**Cc:** L. Dickson; Philip Karmel, Esq. (Philip.Karmel@bclplaw.com); Paul Kutzy; David Birdsall  
**Subject:** WJWW FINAL Public Notice to Consumers - Consent Decree - United States v. WJWW et al., Civil Action Number 24 Civ. 4783  
**Attachments:** WJWW CD Postcard - Public Notification 11.07.24.pdf; Aff of Public Notice Mailing & USPS Receipt - Consumer Postcard - Minuteman Press 11.07.24.pdf; WJWW Public Notice - Public Water Systems Letters & Notice 11.07.24.pdf; Aff of Public Notice Mailing & USPS Receipt - Public Water Systems 11.07.24.pdf; Aff & Public Notice Gannett Lohud Journal News 11-07-24.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

To All Concerned Parties,

Attached to this email are documents and receipts relative to the mailing of Westchester Joint Water Works' (WJWW) Final Public Notice to the consumers and owners/operators of public water systems that purchase water from WJWW, which explains that WJWW has entered into a federal consent decree that sets forth a schedule to build a Filtration Plant for the Rye Lake water source for achieving compliance with the maximum contaminant levels for disinfection byproducts and with State law requiring filtration of drinking water taken from surface water sources, pursuant to the consent decree in United States v. WJWW et al., Civil Action Number 24 Civ. 4783.

In addition to the public notification mailings, WJWW placed a public notice in the local Gannett Lohud Journal News newspaper publication.

The attachments, which are meant to provide a record of WJWW's compliance with public notification settlement requirements, are as follows:

- Public Notice to the Consumers (mailed on November 7, 2024):
  - o Postcard (1<sup>st</sup> attachment)
  - o Affidavit of Mailing and USPS Post Office Receipt (2<sup>nd</sup> attachment)
- Public Notice to the Owners/Operators of Public Water Systems (mailed on November 7, 2024):
  - o Letters & Notices (3<sup>rd</sup> attachment)
  - o Affidavit of Mailing and USPS Post Office Receipt (4<sup>th</sup> attachment)
- Public Notice in the local Gannett Lohud Journal News publication:
  - o Affidavit & Public Notice (5<sup>th</sup> attachment)

Updates are also being made to the WJWW microsite, pursuant to the settlement.

If I may be of further assistance, please contact me at [mpolvere@wjww.com](mailto:mpolvere@wjww.com).

Thank you,

**Mary Polvere**

Secretary to Board of Trustees  
Westchester Joint Water Works  
1625 Mamaroneck Avenue  
Mamaroneck, New York 10543  
(914) 698-3500 Ext. 612

**Westchester Joint Water Works  
Public Notice  
To Consumers and Owners/Operators of Public Water Systems  
That Purchase Water from Westchester Joint Water Works**

The following notice is being provided to all consumers and owners/operators of public water systems that purchase water from Westchester Joint Water Works (WJWW).

The WJWW has entered into a federal consent decree with the U.S. Environmental Protection Agency and New York State Department of Health that sets forth a schedule to build a Filtration Plant for WJWW's Rye Lake water source.

The consent decree provides for the installation of the best available technology for achieving compliance with the maximum contaminant levels for disinfection byproducts and with State law requiring the filtration of drinking water taken from a surface water source.

Under the consent decree, the Filtration Plant is to be constructed by March 1, 2029 and operational by July 1, 2029.

A copy of the consent decree and further information regarding WJWW's Rye Lake Filtration Plant Project can be found at [www.wjwwfiltration.org](http://www.wjwwfiltration.org).

**Westchester Joint Water Works**  
1625 Mamaroneck Avenue  
Mamaroneck, NY 10543

PRSRT STD  
U.S. POSTAGE  
**PAID**  
WHITE PLAINS, NY  
PERMIT #43120





**AFFIDAVIT OF MAILING**

STATE OF NEW YORK            )  
  ) ss.:  
COUNTY OF WESTCHESTER    )

Gail Dutan / Mintem Press, having been duly sworn,

deposes and says:

1. On November 7, 2024, I mailed to 14,235 addresses provided by Westchester Joint Water Works a true and accurate copy of the Public Notice to Consumers which was printed on the face of a postage-paid post card by depositing same in an official depository under the exclusive care and custody of the United States Postal Service (USPS) within the State of New York as evidenced by the attached USPS confirmation and acceptance notice.

Signed: Gail Dutan

Print Name: Gail Dutan

Sworn to before me this  
13 day of November 2024

  
\_\_\_\_\_  
Notary Public

**JOHN DIONISIO**  
Notary Public State of New York  
Qualified - Westchester County  
# 01D14804045 Exp. 9/30/26



**USPS Generated**

**Note to Mailer:** Your electronic postage statement has been submitted to the USPS *PostalOne!* system on Nov 07, 2024 10:45 AM

The labels and electronic mailing information associated to this form, **must** match the physical mailing being presented to the USPS® with this form.

Postage Statement ID: 636883174  
 Post Office of Permit: WHITE PLAINS, NY 10610-9655  
 Mailing Group ID: 494151060  
 Account Holder: WESTCHESTER JOINT WATER WORKS  
 Account Number: 1409917  
 Permit Holder: WESTCHESTER JOINT WATER WORKS  
 Permit Type and Number: PI 43120  
 Mail Agent: MINUTEMAN PRESS  
 Mail Owner Name: WESTCHESTER JOINT WATER WORKS  
 Mail Owner's Permit Type and Number:  
 CRID: 13352986  
 Customer Reference ID:  
 Mail Class and Price Eligibility: USPS Marketing Mail - Regular  
 Processing Category: Letters  
 Single Piece Weight Declared by Mailer: 0.0119 lbs, ( 0.19 oz)  
 Total Mail Pieces Declared by Mailer: 14,235 pcs.  
 Total Weight Declared by Mailer: 169.3965 lbs.  
 Single Piece Weight Determined by USPS: 0.0119 lbs.  
 Total Mail Pieces Determined by USPS: 14,235 pcs.  
 Total Weight Determined by USPS: 169.3965 lbs.  
 Part A Subtotal Postage: \$ 300.8280  
 Part B Subtotal Postage: \$ 96.0160  
 Part C Subtotal Postage: \$ 3,228.0020  
 Total Postage Amount: \$ 3,624.85  
 Total Postage Due: \$ 3,624.85

Handling Unit:	1' MM Trays	2' MM Trays	2' EMM Trays	Flat Trays	Sacks	Pallets	Other
	6		9				

**Important: Please bring your mailing by November 14, 2024 .**

<b>Post Office Of Mailing</b>	<b>Hours</b>	
BMEU - WHITE PLAINS	Mon, Tue, Wed, Thu, Fri	10:00 AM - 5:00 PM
1000 WESTCHESTER AVE	Sat	Closed
WHITE PLAINS, NY 106101000	Sun	Closed

**Note:**

\*This mailing may be subject to additional verification at the time of acceptance.



## Westchester Joint Water Works

1625 Mamaroneck Avenue  
Mamaroneck, New York 10543  
www.wjww.com

Telephone: (914) 698-3500  
Fax: (914) 381-4241  
Fax: (914) 381-0349

---

November 7, 2024

Mr. Justin Datino  
Administrator – Village of Larchmont  
Village of Larchmont Municipal Building  
120 Larchmont Avenue  
Larchmont, New York 10538

RE: WJWW Public Notice to Consumers and Owners/Operators of Public Water Systems That Purchase Water from Westchester Joint Water Works

Dear Mr. Datino:

Please see the enclosed Public Notice concerning Westchester Joint Water Works (WJWW) and its three member municipalities (Village of Mamaroneck, Town of Mamaroneck and Town/Village of Harrison), who have entered into a settlement agreement with the United States Department of Justice, on behalf of the United States Environmental Protection Agency and the New York State Attorney General, on behalf of the New York State Department of Health, in the form of a consent decree (24 Civ. 4783, entered September 23, 2024), that includes milestones and a schedule for construction and operation of a Filtration Plant for treatment of WJWW's Rye Lake water source.

If you have any questions, please feel free to call me at (914) 698-3500 extension 614.

Very truly yours,

A handwritten signature in black ink, appearing to read "David Birdsall", is written over a light blue circular stamp.

David Birdsall  
WJWW Business Director

cc:

James Cazzorla, Village of Larchmont  
Paul Kutzy, P.E., WJWW Manager  
Lori Lee Dickson, WJWW General Counsel



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1625 Mamaroneck Avenue  
Mamaroneck, New York 10543  
www.wjww.com

Telephone: (914) 698-3500  
Fax: (914) 381-4241  
Fax: (914) 381-0349

---

### Westchester Joint Water Works

#### Public Notice

**To Consumers and Owners/Operators of Public Water Systems**

**That Purchase Water from Westchester Joint Water Works**

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Mamaroneck, New York 10543  
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Fax: (914) 381-4241  
Fax: (914) 381-0349

---

November 7, 2024

John Telesco  
Operations Manager  
Veolia Water New York, Inc. (Westchester Rate District 2)  
2525 Palmer Avenue  
New Rochelle, New York 10801

RE: WJWW Public Notice to Consumers and Owners/Operators of Public Water Systems That Purchase Water from Westchester Joint Water Works

Dear Mr. Telesco:

Please see the enclosed Public Notice concerning Westchester Joint Water Works (WJWW) and its three member municipalities (Village of Mamaroneck, Town of Mamaroneck and Town/Village of Harrison), who have entered into a settlement agreement with the United States Department of Justice, on behalf of the United States Environmental Protection Agency and the New York State Attorney General, on behalf of the New York State Department of Health, in the form of a consent decree (24 Civ. 4783, entered September 23, 2024), that includes milestones and a schedule for construction and operation of a Filtration Plant for treatment of WJWW's Rye Lake water source.

If you have any questions, please feel free to call me at (914) 698-3500 extension 614.

Very truly yours,

David Birdsall  
WJWW Business Director

cc:

Chris Graziano, Veolia Water New York  
Paul Kutzy, P.E., WJWW Manager  
Lori Lee Dickson, WJWW General Counsel



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www.wjww.com

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Fax: (914) 381-4241  
Fax: (914) 381-0349

---

November 7, 2024

Mr. Brendan Lyons, Ed.D.  
Central Administration  
Chief Operating Officer/Deputy District Superintendent  
Southern Westchester BOCES  
17 Berkley Drive  
Rye Brook, NY 10573

RE: WJWW Public Notice to Consumers and Owners/Operators of Public Water Systems That Purchase Water from Westchester Joint Water Works

Dear Mr. Lyons:

Please see the enclosed Public Notice concerning Westchester Joint Water Works (WJWW) and its three member municipalities (Village of Mamaroneck, Town of Mamaroneck and Town/Village of Harrison), who have entered into a settlement agreement with the United States Department of Justice, on behalf of the United States Environmental Protection Agency and the New York State Attorney General, on behalf of the New York State Department of Health, in the form of a consent decree (24 Civ. 4783, entered September 23, 2024), that includes milestones and a schedule for construction and operation of a Filtration Plant for treatment of WJWW's Rye Lake water source.

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David Birdsall  
WJWW Business Director

cc:

Paul Kutzy, P.E., WJWW Manager  
Lori Lee Dickson, WJWW General Counsel



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Mamaroneck, New York 10543  
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Telephone: (914) 698-3500  
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### Westchester Joint Water Works

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MAMARONECK  
309 MOUNT PLEASANT AVE  
MAMARONECK, NY 10543-9998  
(800)275-8777

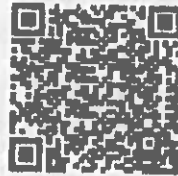
11/07/2024 01:15 PM

Product	Qty	Unit Price	Price
John Wooden	5	\$0.73	\$3.65
Grand Total:			\$3.65
Cash			\$10.00
Change			-\$6.35

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Sign up for FREE @  
<https://informedelivery.usps.com>

All sales final on stamps and postage.  
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or call 1-800-410-7420.

UFN: 355005-0058  
Receipt #: 840-51050036-2-6397270-1  
Clerk: 15

### AFFIDAVIT OF PUBLICATION

State of Wisconsin  
County of Brown

Linda Tuttle being duly sworn, deposes and says she is the Principal Clerk of **The Journal News**, Division of Gannett Newspaper Subsidiary, publishers of following newspaper published in Westchester and Rockland Counties, State of New York, of which annexed is a printed copy, out from said newspaper has been published in said newspaper editions dated:

11/07/2024

Linda Tuttle

Subscribed and sworn to before me this 07 day of November, 2024

Kathleen Allen  
Exp 1-7-25

Notary Public  
State of Wisconsin, County of Brown

KATHLEEN ALLEN  
Notary Public  
State of Wisconsin

**Westchester Joint Water Works  
Public Notice**

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**Westchester Joint Water Works  
1625 Mamaroneck Avenue  
Mamaroneck, New York 10543  
(914) 698-3500**

10727600

# APPENDIX C

## SUPPLEMENTAL ENVIRONMENTAL PROJECT

Extended Detention Basin Modifications

Preliminary Design Report

12.20.24

This project was undertaken in connection with the settlement of an enforcement action, United States v. Westchester Joint Water Works, taken on behalf of the U.S. Environmental Protection Agency under the Safe Drinking Water Act.



Hazen and Sawyer  
498 Seventh Avenue, 11th Floor  
New York, NY 10018 • 212.539.7000



## **Westchester Joint Water Works**

# **Consent Decree 24 Civ. 4783 Supplemental Environmental Project: Extended Detention Basin Modifications Preliminary Design**

90388-006  
December 20, 2024

This project was undertaken in connection with the settlement of an enforcement action, United States v. Westchester Joint Water Works, taken on behalf of the U.S. Environmental Protection Agency under the Safe Drinking Water Act.

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## List of Acronyms

<b>Abbreviation</b>	<b>Definition</b>
BMP	Best Management Practice
CN	Stormwater Curve Number
DIP	Ductile Iron Pipe
FAD	Filtration Avoidance Determination
NLCD	USGS National Land Cover Database
NURP	Nationwide Urban Runoff Program
NYCDEP	New York City Department of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WJWW	Westchester Joint Water Works
WQ <sub>v</sub>	Water Quality Volume
WSE	Water Surface Elevation

## Executive Summary

The report focuses on enhancing the stormwater performance of New York City Department of Environmental Protection's (NYCDEP) BMP #75, located on New York State Department of Transportation (NYSDOT) property between I-684 and Purchase Street. This project is part of the Westchester Joint Water Works (WJWW) Consent Decree to construct the Rye Lake Water Filtration Plant and improve water quality in the Kensico Reservoir watershed.

WJWW has entered into a Consent Decree to construct the Rye Lake Water Filtration Plant to maintain the health and safety of its customers and comply with various regulatory requirements. As part of this decree, WJWW has agreed to conduct a Supplemental Environmental Project to enhance nearby stormwater management and improve water quality in the Kensico Reservoir watershed.

The Kensico Reservoir is critically important for maintaining water quality for New York City and Westchester County. NYCDEP has been addressing nutrient-based non-point source pollution in their watershed for over 25 years through stormwater projects. Phosphorus runoff, in particular, poses significant concerns, contributing to the degradation of many of New York's waters. NYCDEP installed forty five stormwater best management practices (BMPs) in the late 1990s to reduce fecal coliform, turbidity and phosphorus in Kensico Reservoir. Regular inspections and maintenance are conducted to ensure these facilities operate effectively.

### Kensico BMP #75

BMP #75 is a 0.5-acre extended detention basin that discharges into the Rye Lake section of the Kensico Reservoir. This preliminary design proposes potential modifications to BMP #75 aimed to increase its pollutant removal efficiency. Grab sample results indicate that runoff from BMP #75 does not have high levels of total phosphorus, total nitrogen, or total suspended solids, suggesting the pond is providing some level of treatment.

The concrete comprising BMP #75's weir retaining wall remains in satisfactory condition, with minor surface spalling and shrinkage cracking observed. Immediate repair is not required, but loose concrete should be removed and replaced with a concrete repair material.

### Preliminary Design

The design goal is to improve phosphorus retention and reduce turbidity and bacteria by modifying the outlet structure. The existing permanent pool, defined by the 120-degree V-notch weir at +360.50, is optimally sized for enhanced phosphorus storm criteria. The proposed modifications would maintain the current elevation of the permanent pool and adjust the BMP's weir plate to a smaller opening with a larger 1-ft wide top width, forming a compound v-notch weir with a 4-in by 3-in rectangular slit. This would provide extended detention time for additional pollutant removal.

## 1. Project Background and Goals

WJWW has entered into a Consent Decree to construct the Rye Lake Water Filtration Plant to maintain the health and safety of WJWW customers and to comply with a United States Environmental Protection Agency (USEPA) Administrative Order, a New York State Supreme Court Order, and the USEPA and New York State Sanitary Code surface water filtration requirements. As part of this Consent Decree, WJWW has agreed to conduct a Supplemental Environmental Project to enhance nearby stormwater management and improve water quality in the Kensico Reservoir watershed.

### 1.1 Non-Point Source Pollution in the NYCDEP Watershed

The Kensico Reservoir, located in Westchester County, is the terminal reservoir for New York City's Catskill/Delaware water supply. Because this reservoir provides the last impoundment of Catskill/Delaware water prior to entering the City's distribution system, protection of this reservoir is critically important to maintaining water quality for the City and water consumers in Westchester County.

For over 25 years, the NYCDEP has addressed nutrient-based non-point source pollution in their watershed through implementation of stormwater projects. Nutrients including nitrogen and phosphorus pose significant concerns in lakes and estuaries, contributing to the degradation of many of New York's waters. As a result, Kensico Reservoir is subject to a proposed guidance value of 15 µg/L of phosphorus.

Phosphorus runoff has affected the quality of several natural lakes in New York, such as the Finger Lakes and Lake Champlain, which are prone to eutrophication due to phosphorus loading. In the New York City Reservoir system, phosphorus is a critical parameter. In 1999, NYCDEP established water quality guidance values for phosphorus in city drinking water reservoirs. A source-water phosphorus guidance value of 15 µg/l has been proposed for seven reservoirs (Kensico, Rondout, Ashokan, West Branch, New Croton, Croton Falls, and Cross River) to protect them from use-impairment due to eutrophication, while other reservoirs will follow the state-recommended guidance value of 20 µg/l. For these reasons, measures to improve phosphorus retention and treatment by BMPs surrounding Rye Lake are of interest (NYCDEP, 2019).

### 1.2 Kensico Stormwater Management Practices

In the late 1990s, NYCDEP installed 45 stormwater best management practices (BMPs) under its Filtration Avoidance Determination (FAD), effectively reducing fecal coliform and turbidity in Kensico Reservoir. To maintain its FAD, one of NYCDEP's goals is to ensure the proper operation and maintenance of Kensico watershed stormwater management facilities through regular inspections. These inspections help identify repair needs to optimize pollutant removal efficiency. NYCDEP ensures that these facilities receive necessary maintenance, including the removal of accumulated sediment and debris.

### 1.3 Kensico BMP #75

One of NYCDEP's Kensico stormwater practices, BMP #75, has been identified for potential modifications to increase its pollutant removal efficiency. BMP #75 is a 0.5-acre extended detention basin on NYCDEP property between I-684 and Purchase Street. It discharges into the Rye Lake section of the Kensico Reservoir (Figure 1). While this site has been regularly maintained by NYCDEP and is operating effectively, some potential modifications could be considered to further enhance the water quality protection benefits of this facility. WJWW's Supplemental Environmental Project aims to evaluate and design recommendations to improve the detention performance of the existing stormwater management pond for better phosphorus removal

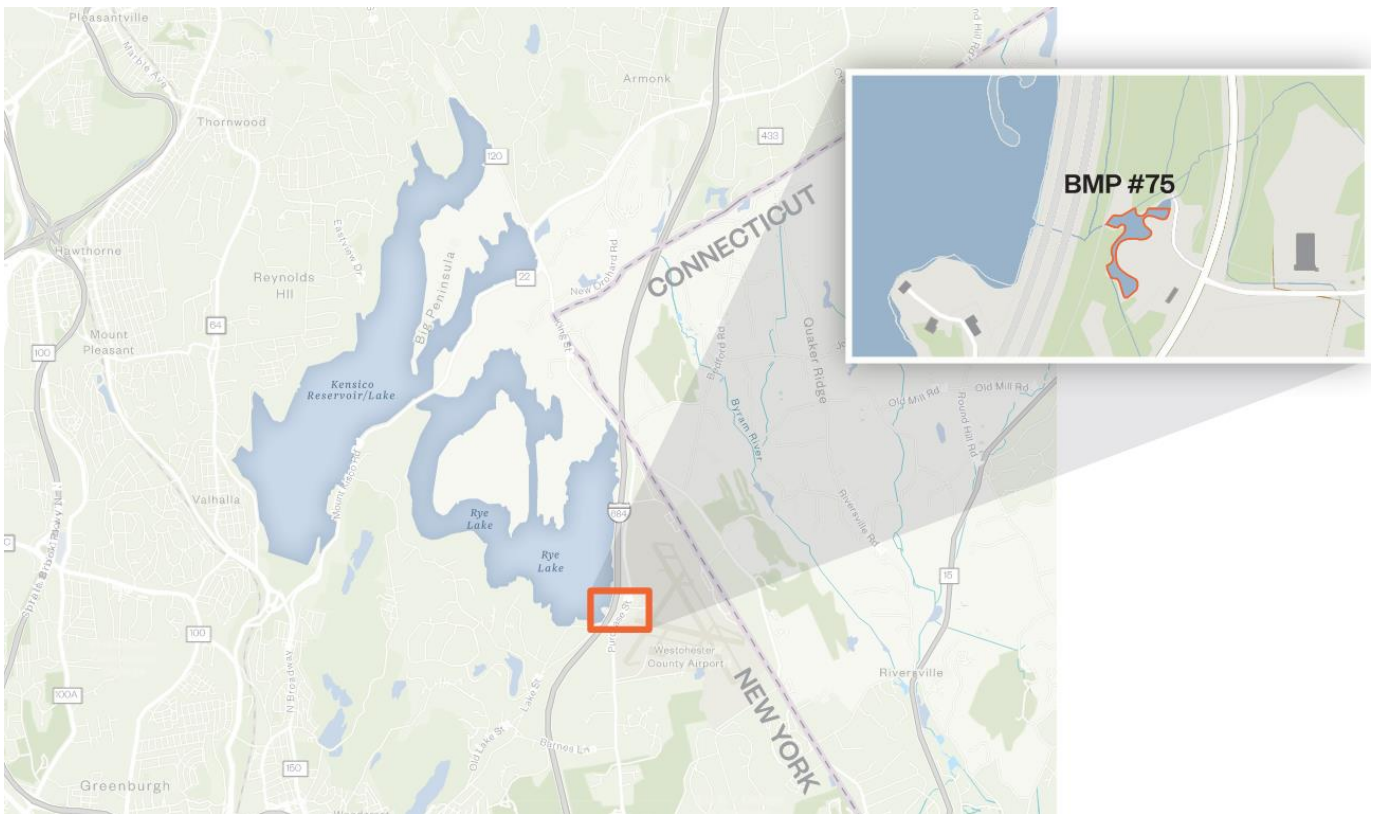


Figure 1: Location of Existing Extended Detention Basin (BMP #75)

## 2. Existing Conditions

A field visit to BMP #75 was conducted on October 24, 2024 to obtain site information, document the condition of the overflow structure, characterize invasive species, and identify any obvious structural concerns. During the field assessment and the concurrent knowledge exchange with DEP on site, the following information was collected:

- 360-degree photos
- Photographs (select photos in **Appendix A**)
- Measurements of the concrete retaining wall and V-notch weir
- Basis of Design Report from original design (1997) – See **Appendix B**

The following items were also provided from DEP digitally:

- Dam Inspection Report, May 13, 2022
- BMP 75 Factsheet
- Kensico Detention Basin Volumes
- Design plan sheets S-14, C-59, C-60, and C-61, circa September 1997 – See **Appendix C**
- Grab sample results from Site E11 – January 2018 to November 2024
- Continuous flow results from Site E11 – January 2018 to November 2024

### 2.1 Detention Basin Characteristics

The original design for BMP #75 called for a principal spillway comprising a 25-foot-long rectangular weir retaining wall with a crest elevation of 361.50 ft. This crest elevation was the “extended detention elevation” in the design. A sketch of the existing weir wall is shown in **Appendix D**. The low-flow discharge in the original design was an 8-in ductile iron pipe (DIP) bored through the wall, which was intended to be controlled with a gate valve with a stem operator extension at invert 358.00 ft. This pipe in the original design is highlighted red in the spillway cross section, which was never installed (**Figure 2**).

By interpolating the contours from the design plans and reviewing the stage-storage design of the 1997 Basis of Design Report, a stage-storage curve (**Figure 3**) was developed to represent the existing conditions.

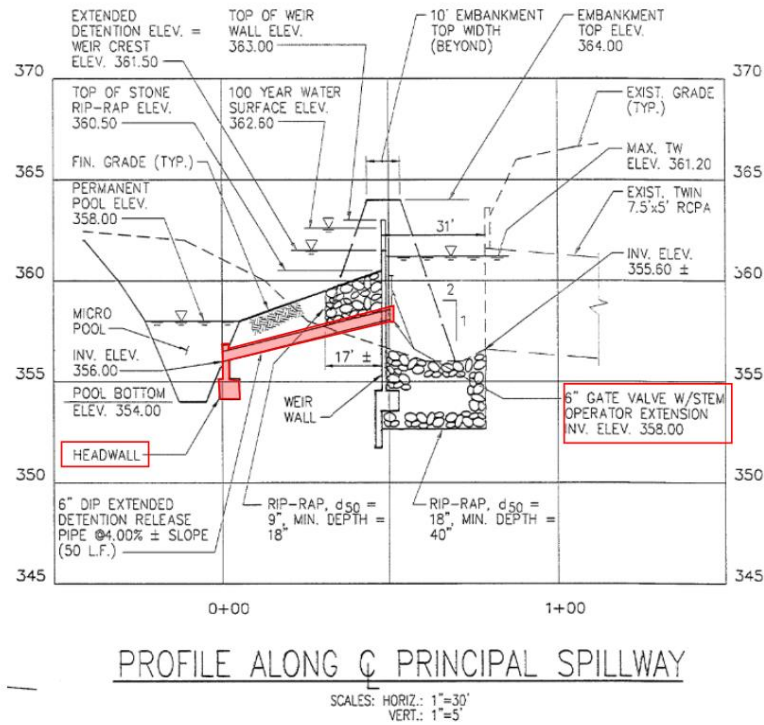


Figure 2. Spillway Profile from Sheet C-60 of Original Design.

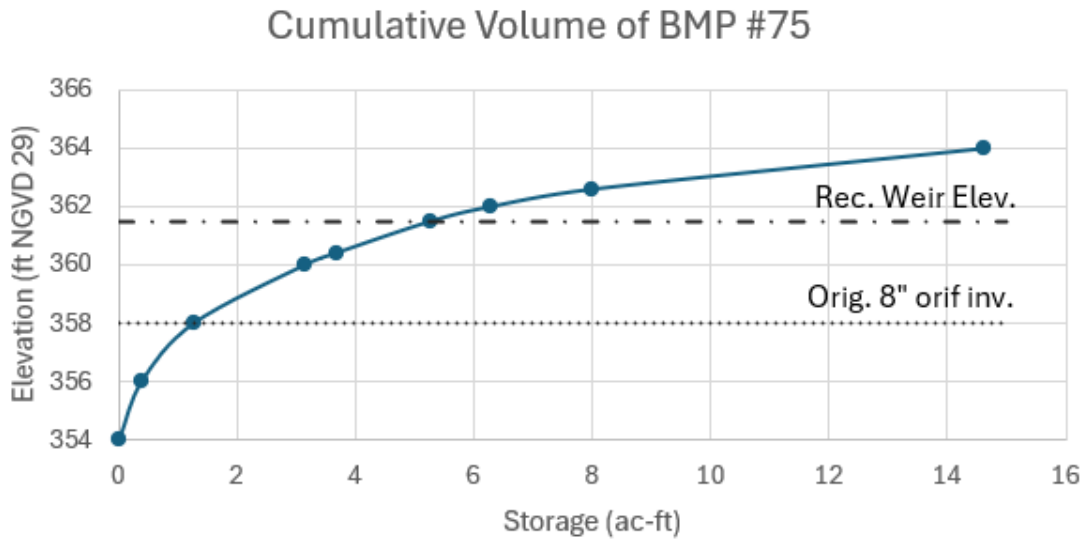


Figure 3. BMP #75 Stage-Storage Curve

During the October 24, 2024, field visit, the as-built condition showed that the pond was modified from this original design. Instead of an 8-in DIP pipe, a 120-degree steel plate V-notch weir was mounted to a cutout in the rectangular weir wall (**Figure 4** and **Appendix D**). While no vertical datum-based survey shots were taken on the weir wall, the rectangular weir wall's crest appeared to match the original design (361.50 ft). Other elevations, such as the V-notch invert and top of concrete weir rise, were calculated from field measurements from this basis.



**Figure 4: BMP #75 Installed Condition with V-Notch Weir**

## 2.2 Water Quality

DEP provided grab sample results from 195 analytes from January 2018 to November 2024, totaling 1,723 data points at the discharge of BMP #75 into Kensico Reservoir, sample site E11 (**Figure 5**). Hazen selected analytes relevant to turbidity, eutrophication, and nutrient pollution to gauge the magnitude of the concentrations discharging from BMP #75. Plots of those are shown in **Figure 6**. The data indicates that runoff from this monitoring point does not have high levels of total phosphorus, total nitrogen, or total suspended solids, suggesting the pond is discharging relatively low concentrations of these pollutants. This signals that the BMP is providing some level of treatment.

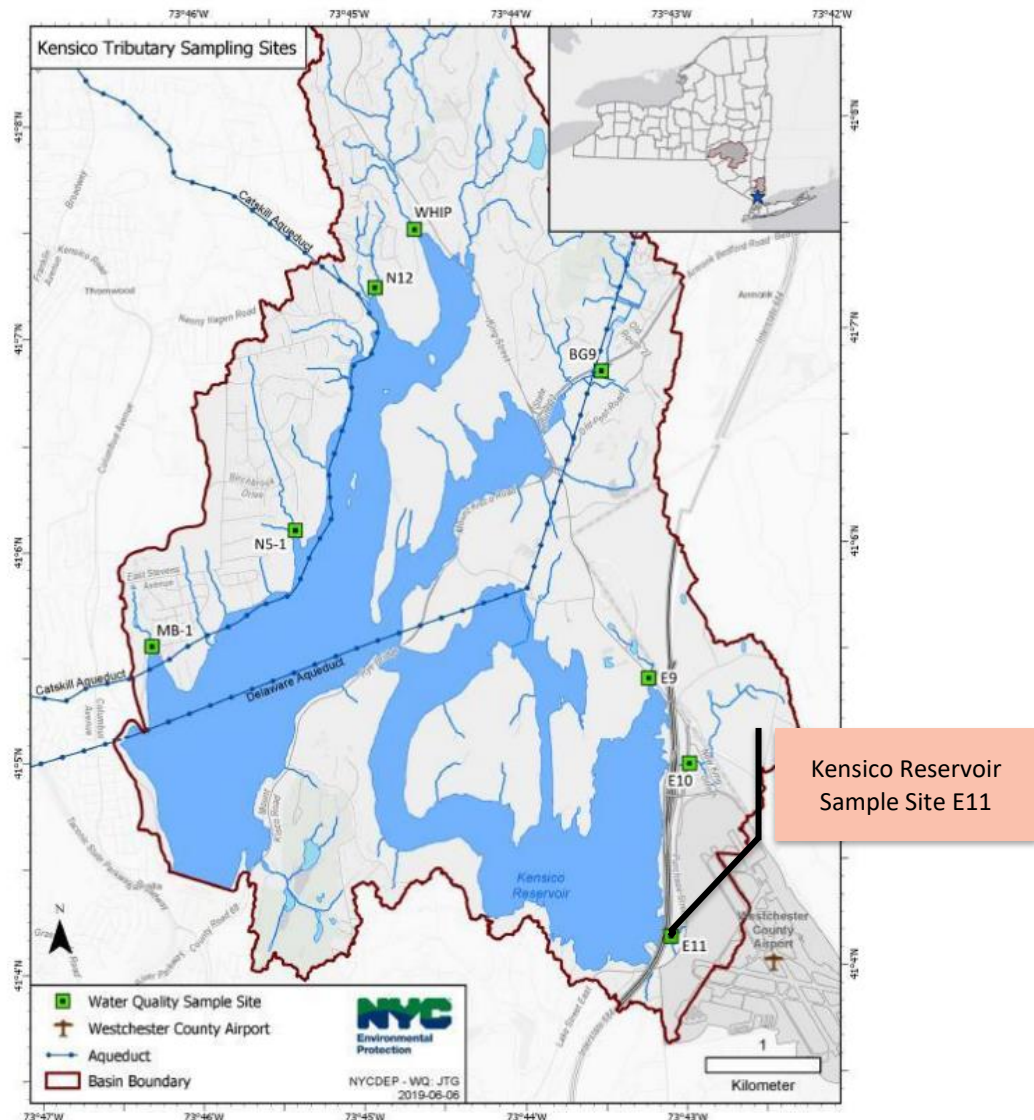
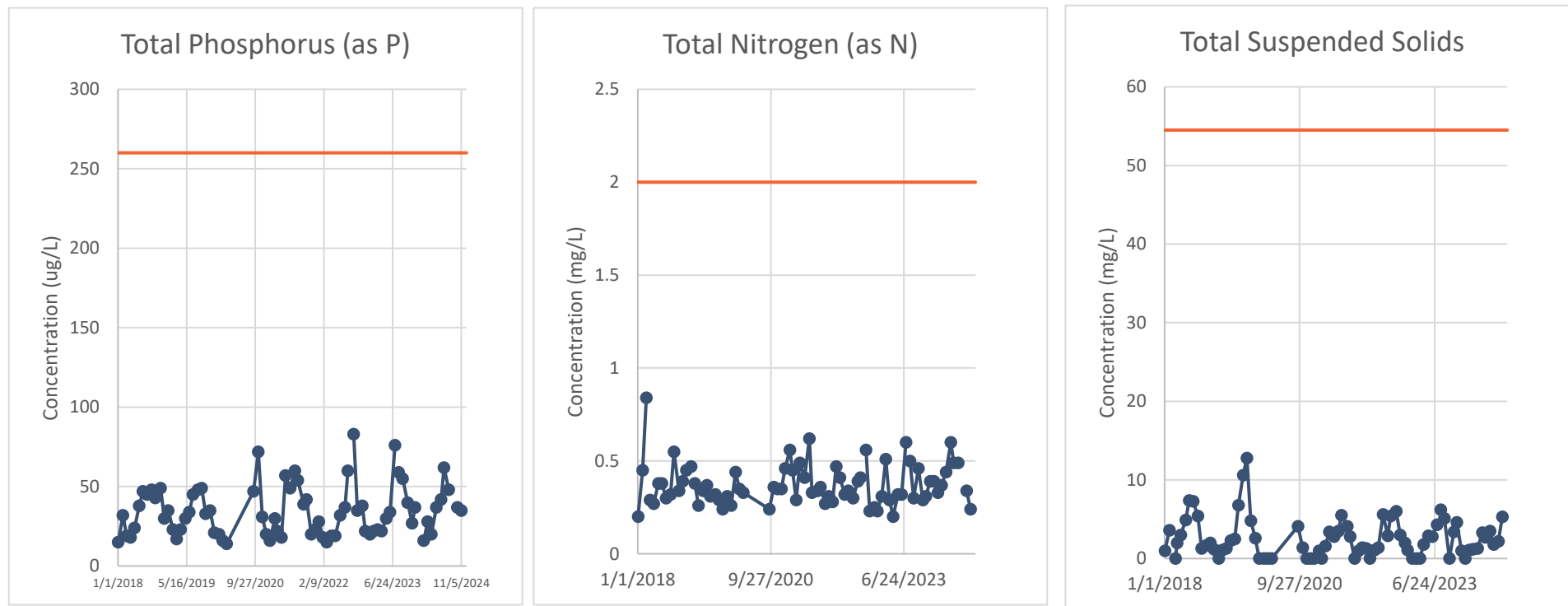


Figure 5: Kensico Reservoir Sample Sites





**Figure 6. Grab Sample Results from Site E11**

Note: The benchmark line in orange in each plot is the national median stormwater runoff concentration from the federal government’s 1983 Nationwide Urban Runoff Program (NURP) found in Table 2.1 of the NYSDEC Stormwater Management Manual. The concentrations of these three pollutants downstream of BMP 75 are significantly lower than raw stormwater concentrations.

## 2.3 Vegetation / Landscape

The perimeter of the BMP has limited invasive species, with only a few apparent including:

- Multiflora rose (*Rosa multiflora*)
- Small patches of Phragmites (*Phragmites* spp.)
- Russian olive (*Elaeagnus angustifolia*)
- Some mugwort (*Artemisia vulgaris*) along the roadway
- Bittersweet (*Celastrus scandens*), greenbriar (*Smilax rotundifolia*), and poison ivy (*Toxicodendron* spp.) vines on some of the trees

Field visit documentation shows large stands of Phragmites upstream of the BMP, between the airport and US-120. None of the vegetation observed above appeared to represent the dominant cover type and could be managed by limited invasive removal proposed.

## 2.4 Weir Structural Condition

Based on the observations during the field assessment, the concrete comprising the weir retaining wall remains satisfactory and in sound condition. The concrete surface was solid and no evidence of interior or exterior attack was observed. The concrete deterioration observed consisted primarily of surface spalling, minor shrinkage cracking, and spalling due to movement at expansion and construction joints. No evidence of reinforcement corrosion was observed in the accessible areas of the wall, including the spalled sections.

The most extensive spalling was observed at vertical expansion and construction joints in the wall (**Figure 7**). At these locations, movement occurs due to temperature fluctuation and freeze-thaw cycles inducing this deterioration. Although immediate repair is not required, the loose concrete caused by the spalling should be removed and replaced with a concrete repair material. At the same time as this repair, the expansion joints should be cleaned, and new material should be installed to enable the joint to move as intended without binding and causing further spalling.



**Figure 7: Spalling at Construction Joints**

At one of the joint locations, the spalling has exposed a rod that appears to be a dowel extending across the expansion joint (**Figure 8**). This rod was likely rigidly embedded on one side of the joint and allowed to move in plane on the opposite side. The spalling is caused by the binding of the joint, either from insufficient expansion joint thickness or improper dowel installation. Since a metal member is exposed, this area should be prepared with a concrete repair material to cover the metal and reduce the risk of corrosion and further deterioration.



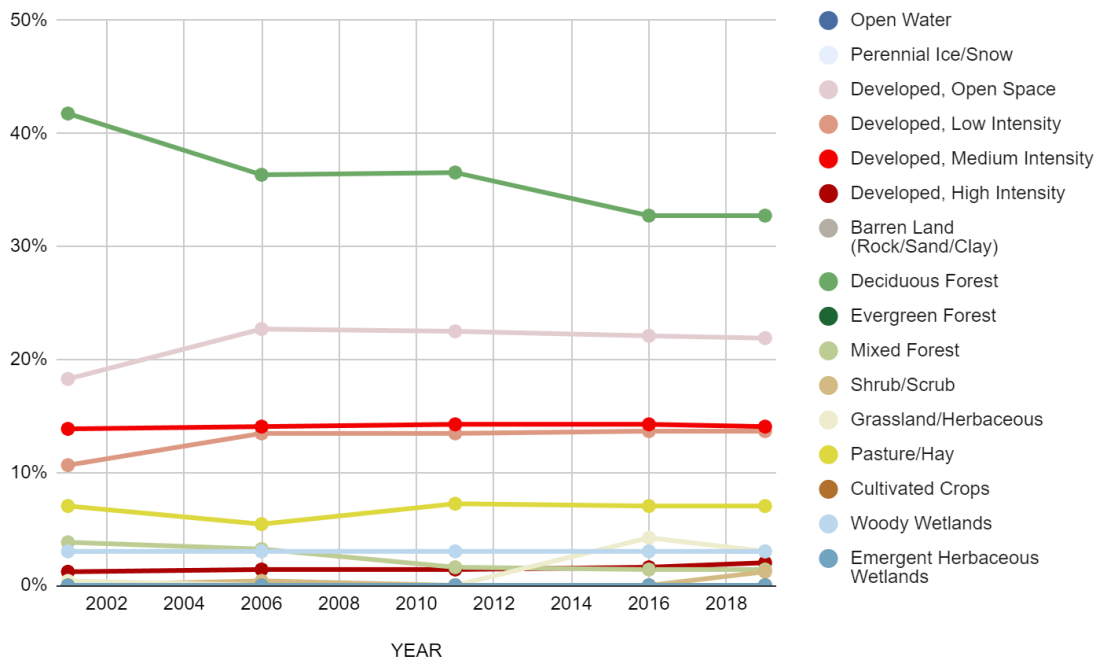
**Figure 8: Exposed Rod at Expansion Joint**

Minor cracking was observed at various locations with efflorescence present. These cracks should be sealed with a chemical injection grout to prevent moisture intrusion and potential corrosion. A potential cold joint was also observed with minor efflorescence. Though repair is not urgent, the joint should be sealed in the same manner as the cracks.

### 3. Preliminary Design

#### 3.1 Land Use

An examination of any significant land use change since the 1997 design was performed to determine if the hydrologic calculations would be substantially altered. The USGS National Land Cover Database (NLCD) was analyzed from 2000 to 2019 to identify major land use changes within the watershed boundary delineated in 1997 (see **Figure 9**). The figure shows percent of the watershed as the NLCD land cover classifications in the legend. Since “forest” is the most analogous classification between this NLCD dataset and the curve number design land uses, the percent reduction of that land use in NLCD was assumed in the curve number land use table. Since 2019, area classified as forest has decreased by 22% (18,597 m<sup>2</sup> to 145,228 m<sup>2</sup>). This same percent reduction was applied to the 1997 land use classification, which used Forest, Institutional, and Transportation cover types. As a result, since 1997, the forest area has decreased by 3.2 acres (out of the total 10-acre drainage area), reclassified as institutional and transportation land uses. Based on this analysis, the stormwater curve number (CN) did not appreciably change since 1997 (**Figure 9** and **Table 1**). The CN is a numerical value used to estimate the amount of runoff



**Figure 9. Land use change, 2000 to 2019 for BMP #75 watershed**

Source: NLCD, ModelMyWatershed website

generated from a given rainfall event based on the land cover, soil type, and hydrologic condition of a specific area; essentially, it measures how much water will infiltrate into the ground versus how much will run off as surface water. The higher the CN, the more runoff will occur per unit of rainfall.

**Table 1. Land Use and Curve Number Change, 1997 vs. 2019**

Land Use	HSG	Curve Number (CN)	Area, 1997 (acres)	Area, 2019 (acres)	Difference (acres)
Forest	B	55	4.8	3.76	-1.04
Forest	C	70	10	7.84	-2.16
Institutional	C	79	7.2	7.45	0.25
Transportation	B	70	26	26.91	0.91
Transportation	C	79	58	60.04	2.04
<b>Total</b>			<b>106</b>	<b>106</b>	<b>0</b>
<b>Weighted CN</b>			<b>74.9</b>	<b>75.2</b>	

### 3.2 Hydrologic Evaluation and Sizing

The design goal of the hydrologic evaluation was to evaluate the characteristics of the pond based on the design plans and propose modifications to the outlet structure that improve phosphorus removal. For this project, the following two characteristics represent the design criteria for improving phosphorus retention:

1. Permanent pool volume
1. Center-of-mass detention time between the inflow and outflow hydrographs

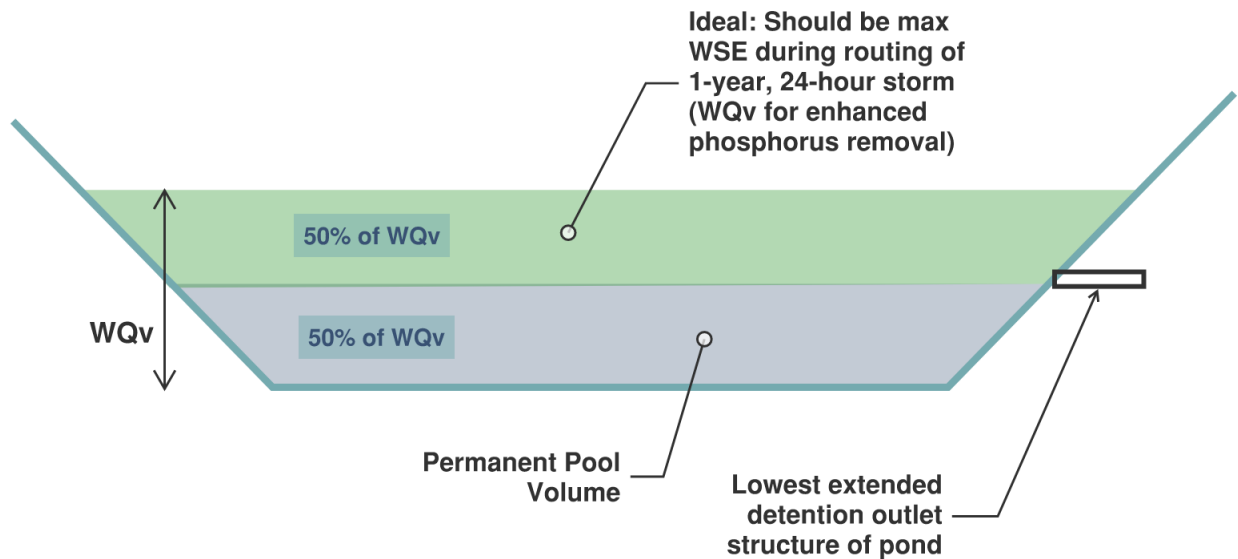
#### 3.2.1 Permanent Pool Volume

Per the NYSDEC *Stormwater Management Manual*, ponds and wetlands draining to reservoirs should “encourage the use of a large permanent pool to improve sediment and phosphorus removal” and “promote long detention times to encourage bacteria removal.” (New York State Department of Environmental Conservation, 2022, p. 12).

The permanent pool of water, defined by the maximum water surface elevation (WSE) at the lowest pond outlet structure, is typically associated with a specific storm size known as the Water Quality Volume (WQ<sub>v</sub>). The original pond’s WQ<sub>v</sub> correctly used the 1.5-inch design storm depth, which, based on the pond’s location in New York, conforms to Figure 4.1 in the *Stormwater Management Design Manual* (New York State Department of Environmental Conservation, 2022).

More rigorous design criteria were sought for the proposed modifications to BMP #75. For watersheds requiring enhanced phosphorus removal, NYSDEC recommends sizing the Water Quality Volume (WQ<sub>v</sub>) larger than the “typical” BMP. Enhanced phosphorus removal in ponds can be achieved by sizing it using the 1-year, 24-hour storm (2.82 inches) instead of the 1.5-inch storm. According to the NYSDEC manual,

extended detention wet ponds are required to have a minimum permanent pool volume that is equivalent to 50% of the  $WQ_v$  and a maximum extended detention volume equal to the remaining 50% of the  $WQ_v$ .



**Figure 10. Distribution of Permanent Pool Volume and Extended Detention Volume**

The runoff volume of the 1-year, 24-hour storm for the watershed is 7.47 acre-feet. Per the guidance summarized above, an “enhanced phosphorus removal” extended detention pond should have a permanent pool volume of 50% the 1-year runoff volume, or 3.73 acre-feet. The cumulative storage of the existing pond just before any outflow, at the invert of the V-notch weir, is 3.80 acre-feet, which meets this 50% criteria. The second criterion is that the extended detention volume above the permanent pool should be 3.80 acre-feet. The validation of this criterion required the iteration of a new weir structure to determine the WSE of the 1-year storm above the lowest outlet (see the green layer of water shown in Figure 10).

**The analysis found that the existing permanent pool, defined by the 120-degree V-notch weir at +360.50, is optimally sized for enhanced phosphorus storm criteria. It was recommended to maintain the current elevation of the permanent pool.**

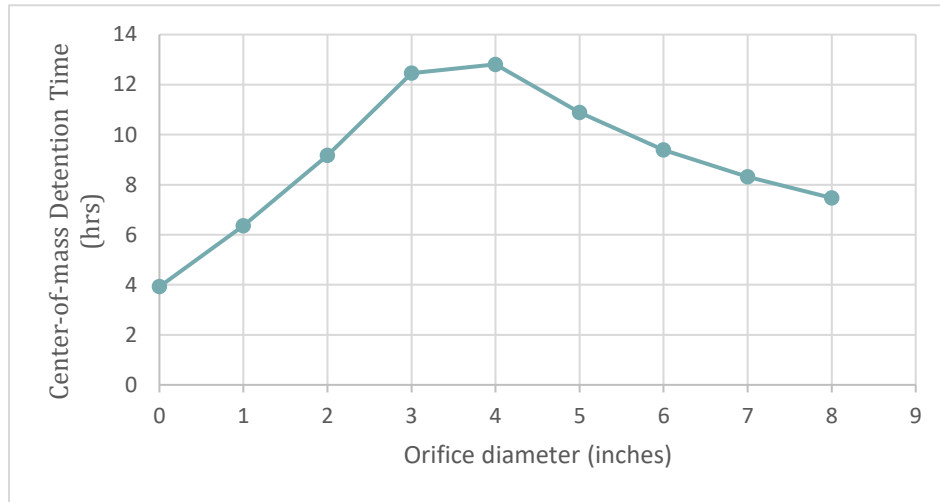
### 3.2.2 Extended Detention Weir Selection

The second design criteria, detention time, is controlled by the extended detention weir selection. It was assumed that the overflow elevation should remain at +360.50 to maintain the required permanent pool volume. Lowering an outflow elevation via an orifice could increase the detention time but would not meet the permanent pool volume design criteria. To increase detention time, circular orifices were tested in HydroCAD for the 1-year storm (see  $WQ_v$  justification above) to find the optimal size.

For this analysis, the center of mass method was used to calculate “detention time.” This method calculates the detention time by determining the difference between the center-of-mass of the inflow and

outflow hydrographs. The larger this value, the more the pond detains the inflow. After evaluating various orifice sizes, it was determined that **a four-inch diameter orifice is optimal for maximizing the detention time of the existing pond** (

**Figure 11**). See **Appendix E** for HydroCAD output.



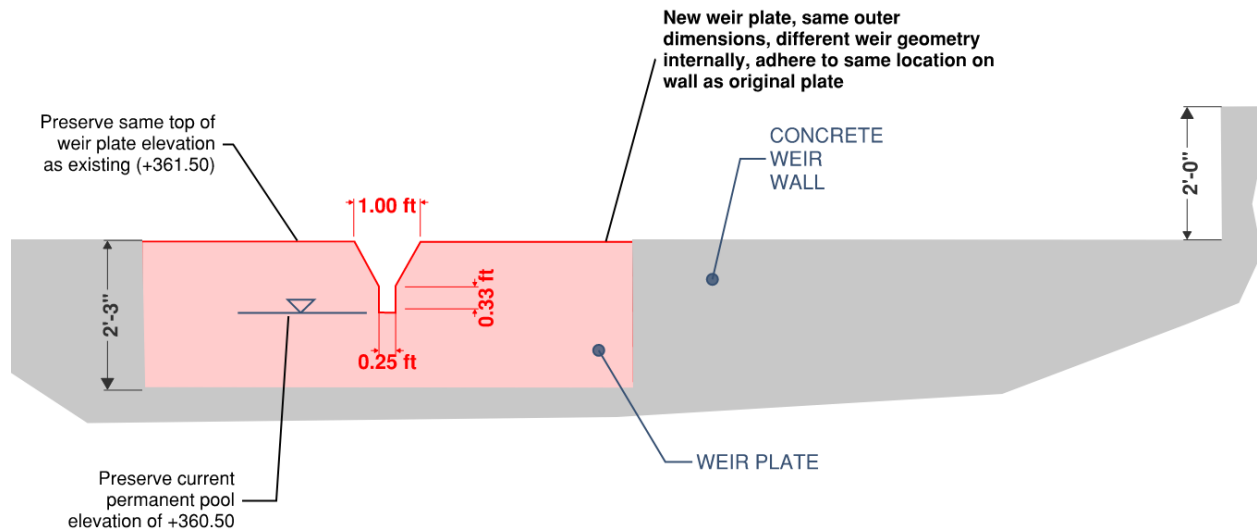
**Figure 11: Center of mass detention time for various orifice diameters (inches)<sup>1</sup>**

It was preferable to modify the existing weir plate to minimize impact on the attached concrete weir wall. The four-inch diameter opening was changed to a rectangular shape with the same area. To restrict outflow and increase detention time, this smaller opening was combined with a larger weir shape (1-ft wide top width) to create a compound v-notch weir with a 4-in by 3-in rectangular slit (**Figure 12**). Maintaining the existing weir top width of 3.75 feet with the addition of a 4-in by 3-in slit at the bottom was considered. However, modifying the top width from 3.75 feet to 1.00 foot could substantially increase the detention time.

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<sup>1</sup> The zero-inch orifice represents the existing condition of the pond (i.e. the v-notch weir without an additional orifice).





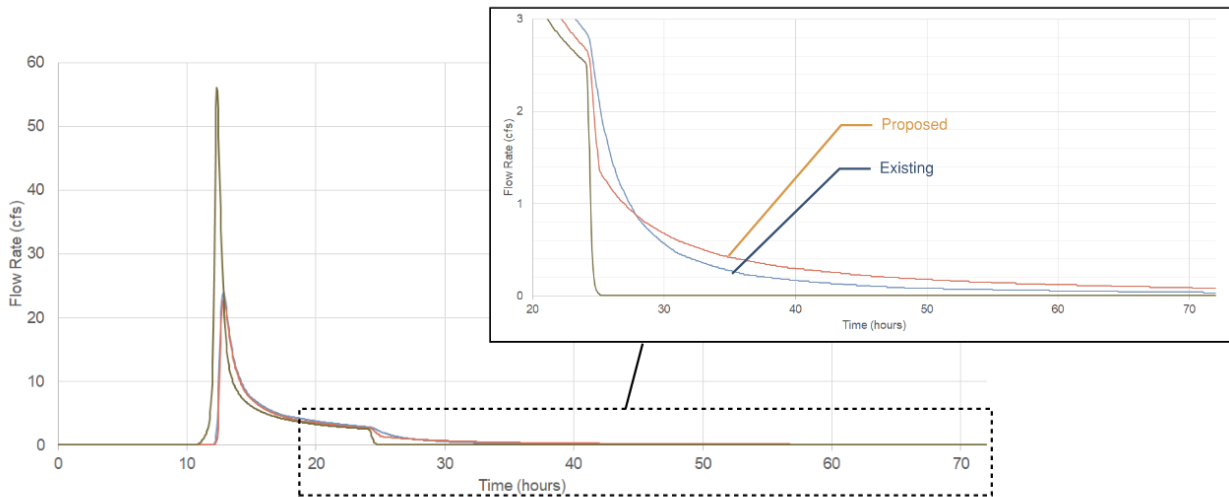
**Figure 12: Proposed Compound V-Notch Weir Plate**

**Table 2: Top Width of Weir vs. Detention Time Improvement**

Top width (ft)	Det. Time (min)	Peak WSE (1-yr)	With New Slit Weir, % Improvement on Detention Time
3.75 <sup>2</sup>	302	361.89	28%
3.00	315	361.90	34%
2.75	319	361.91	36%
2.50	323	361.91	37%
2.25	328	361.91	39%
2.00	333	361.92	42%
1.75	339	361.92	44%
1.50	345	361.92	47%
1.25	352	361.93	49%
<b>1.00</b>	<b>359</b>	<b>361.93</b>	<b>53%</b>

**Figure 13** shows the inflow of the 1-year storm and the outflows of the existing and proposed ponds. At lower flows (zoomed-in view) the proposed design increases the pond’s drainage lag time for this storm compared to the existing pond.

<sup>2</sup> Existing V-notch weir top width



**Figure 13. Inflow (green) vs. Outflow Hydrographs for Existing (Blue) and Proposed (Orange) Conditions**

To ensure the modifications wouldn't negatively impact the 100-year flow, the 100-year storm was modeled through the structure. The existing WSE for the 100-year storm is +363.67, and the proposed is +363.71, showing an acceptably minimal difference. Since a max WSE of +361.93 did not hinder the outlet structure's performance for larger, less frequent storms (up to the 100-year event), the proposed compound V-notch weir plate shown in Figure 12 offers the most effective detention among the tested ranges,

### 3.3 Structural Design Considerations

The existing weir plate remains in satisfactory condition. However, due to the proposed geometrical revisions required, the preferred approach for accommodating the revised geometry is to fabricate a new weir plate. The method for attaching the plate to the structure will be detailed in later design phases. If anchors were utilized for attachment and they remain in satisfactory condition, the new plate can be fabricated to align with the existing anchor spacing, allowing for the reuse of the current anchors.

If the existing anchors cannot be reused or exhibit signs of deterioration, new adhesive anchors should be installed to secure the new weir plate. In this scenario, the existing anchors should be removed and burned back, and the resulting void should be filled with an epoxy resin binder. The new anchors' location should be adjusted to avoid the positions of the existing anchors. The means of attachment cannot be determined without verifying the current attachment methods. During the initial site assessment, access was insufficient to determine the current attachment approach.

A trash rack or similar device will be detailed in later design phases to ensure the weir geometry remains consistent during different flow conditions and reduces operations and maintenance requirements for the pond's outflow performance.

### 3.4 Planting

BMP #75 is located 1,000 feet from the runways at Westchester County Airport. WJWW recently consulted with a Federal Aviation Administration (FAA) Qualified Airport Wildlife Biologist for the design of their nearby Rye Lake Water Filtration Plant. Based on this consultation, the following recommendations are pertinent to re-landscaping BMP #75 due to its proximity to the airport:

1. No vegetation plantings other than what is required by US Army Corps of Engineers (typically cattail (*Typha latifolia*) and bulrush (*Scirpoides holoschoenus*)).
2. Absolutely no ornamentals or aesthetic plants that do not serve a biological purpose for water filtration.
3. Limit any trees that will be planted. Evergreens are preferred over deciduous and fruiting trees.
4. Limit grass. Any grass that must be planted should be red tall fescue (*Festuca rubra*) and should be maintained at 6-10 inches per FAA Advisory Circular 150-5300-13A.

While these recommendations were not related directly to this project, it is expected that they represent analogous situations of plantings near Westchester County Airport, such as any modifications to BMP #75.

The permanent pool and semi-frequently inundated water surface elevation (equivalent to a 1-year storm) were analyzed for the replanting of non-invasive species. This conforms to FAA guidance on similar projects to prevent the attraction of birds. **Appendix F** shows the two replanting zones that result:

- **Emergent Marsh** (Elev. 360.00 – 361.00)<sup>3</sup>
  - Soft stemmed bulrush (*Scirpus Validus*)
  - Common three-square (*Scirpus pungens*)
  - Soft rush (*Juncus effusus*)
  - Hard stemmed bulrush (*Scirpus acutus*)
- **Shallow Marsh** (Elev. 361.00 – 362.00)
  - Common three-square (*Scirpus pungens*)
  - Soft rush (*Juncus effusus*)
  - Greene's rush (*Juncus greenii*)
  - Fox sedge (*Carex vulpinoides*)

Based on the site visit, several woody plants were identified around the berm / slope of the embankment near the outlet structure. Per NYSDEC stormwater manual: Woody vegetation shall not be planted or allowed to grow within 15 ft of the toe of any berm or slope and 25 ft from the principal spillway structure. Therefore, the design includes a recommendation to remove these plantings to ensure the embankment's long-term safety and stability. Specific plants to be removed will be determined after a detailed site survey.

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<sup>3</sup> Elevation range spans the permanent pool, where maximum biological interaction is occurring for emergent vegetation during non-rain events.

## 4. Recommendation and Next Steps

The preliminary design recommends maintaining the current elevation of BMP #75's permanent pool because it is optimally sized for enhanced phosphorus and sediment removal. The design recommends increasing detention time in the BMP by modifying the outlet weir plate. The modified weir plate will have a smaller opening with a larger weir (1-ft wide top width) to create a compound v-notch weir with a 4-in by 3-in rectangular slit (**Figure 12**). The increased detention time will encourage additional bacteria removal. The design includes a recommendation to remove woody plantings near the embankment to maintain its long-term safety and stability, limited invasives removal, and replanting of native, non-fowl attracting species along the water line to promote pollutant removal.

As a next step, WJWW will share this preliminary design with NYCDEP for their review and consideration, since this infrastructure proposed for modification is a component of the Kensico Watershed management and NYCDEP's FAD.

## 5. References

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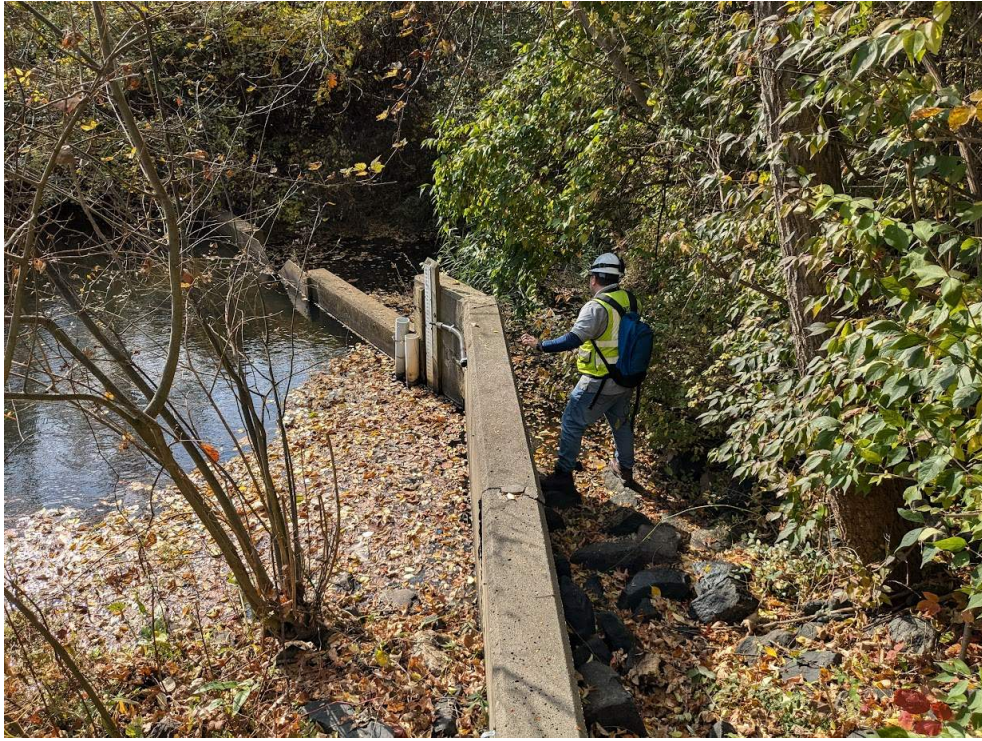
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## Appendix A: Site Photos



**Photo 1. Outlet structure (25 foot concrete weir) with 120-degree steel v-notch sharp crested weir**



**Photo 2. Outflow over 120-degree v-notch weir**



**Photo 3. Outlet structure wall (downstream), some spalling at joints evident**



**Photo 4. Outlet structure wall (upstream) showing exposure of dowel rod across expansion joint**



## Appendix B: Original Basis of Design Report (1997)

# Kensico Watershed

## Stormwater Best Management Practices

E-11  
Site 74 and 75

Extended Detention Pond  
(with Stormwater Wetland)  
and  
Inflow Stabilization

Preliminary Computations

Center for Watershed Protection  
Hazen & Sawyer

July 1997

249A

NORTH  
HARRIS

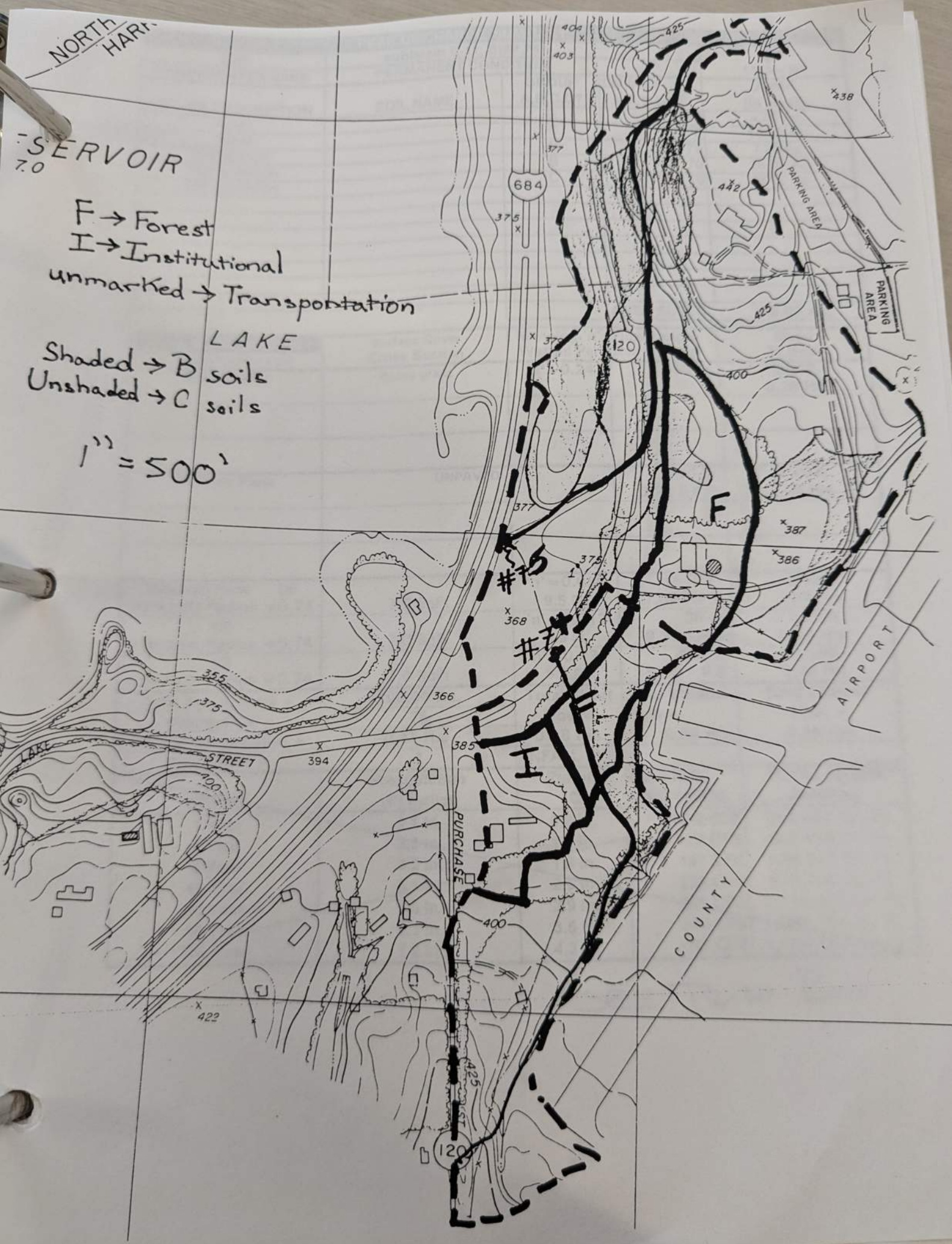
SERVOIR  
7.0

F → Forest  
I → Institutional  
unmarked → Transportation

LAKE

Shaded → B soils  
Unshaded → C soils

1" = 500'





\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY\*\*\*\*\*

JOB TR-20	FULLPRINT	NOPLOTS
FILE	Kensico Watershed BMPs N-5 Site 37 ED Basin 05/97 RAC	
5	Ultimate Conditions Hydrology	
8	0.25	0.01
8	0.0	0.0025
8	0.0125	0.015
8	0.026	0.0285
8	0.039	0.042
8	0.055	0.059
8	0.0745	0.079
8	0.097	0.1045
8	0.1355	0.144
8	0.185	0.1965
8	0.262	0.287
8	0.689	0.7195
8	0.793	0.806
8	0.849	0.8585
8	0.8935	0.90
8	0.92	0.9245
8	0.940	0.944
8	0.957	0.9605
8	0.9725	0.975
8	0.986	0.9885
8	0.9985	0.991

TR-20  
 INPUT FILE  
 FOR  
 TYPE III  
 RAINFALL  
 DISTRIBUTION

ENDTBL					
RUNOFF 1	1	2 0.166	75.0	0.41	1 0 0 1
ENDATA					
INCREM 6		0.1			
COMPUT 7	1	1 0.0	1.5	1.0	7 2 1 01
ENDCMP 1					
COMPUT 7	1	1 0.0	3.3	1.0	7 2 1 02
ENDCMP 1					
COMPUT 7	1	1 0.0	4.2	1.0	7 2 1 03
ENDCMP 1					
COMPUT 7	1	1 0.0	5.0	1.0	7 2 1 04
ENDCMP 1					
COMPUT 7	1	1 0.0	7.2	1.0	7 2 1 05
ENDCMP 1					
ENDJOB 2					

\*\*\*\*\*END OF 80-80 LIST\*\*\*\*\*

TR20 XEQ 7/09/97  
REV 09/01/83

Kensico Watershed BMPs N-5 Site 37 ED Basin 05/97 RAC  
Ultimate Conditions Hydrology

OUTPUT  
FILE

JOB 1 SUMMARY  
PAGE 7

TYPE III  
Rainfall  
Dist.

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED  
(A STAR(\*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH  
A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION			RUNOFF AMOUNT (IN)	PEAK DISCHARGE			
						BEGIN (HR)	AMOUNT (IN)	DURATION (HR)		ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE STRUCTURE 1	1 STORM RUNOFF	1 .17	7	2	.10	.0	.00	24.00	.17	---	12.59	7.60	45.8
ALTERNATE STRUCTURE 1	1 STORM RUNOFF	2 .17	7	2	.10	.0	.00	24.00	1.16	---	12.43	84.97	511.9
ALTERNATE STRUCTURE 1	1 STORM RUNOFF	3 .17	7	2	.10	.0	.00	24.00	1.81	---	12.42	136.11	820.0
ALTERNATE STRUCTURE 1	1 STORM RUNOFF	4 .17	7	2	.10	.0	.00	24.00	2.44	---	12.42	184.75	1113.0
ALTERNATE STRUCTURE 1	1 STORM RUNOFF	5 .17	7	2	.10	.0	.00	24.00	4.31	---	12.41	326.38	1966.1

SHALLOW MAIN WETLAND DESIGN  
 VOL W DEEP POOL = 60-70%  
 VOL W HIGH MAIN = 10-15%  
 VOL W LOW MAIN = 5-10%  
 SA W DEEP POOL = 50%  
 SA W HIGH MAIN = 25%  
 SA W LOW MAIN = 25%

SEE AREA-BWV-STORAGE-DATA  
 FOR PROPOSED STORAGE/S.A.

$$D.A = 106 \text{ AC}$$

$$\%I = 91.2(.3) / 106 = 25.8$$

$$R_v = 0.05 + 0.009(25.8) = 0.28$$

$$\underline{\underline{WQV = 1.5''(0.28)(106 \text{ AC}) / 12''/\text{ft} = 3.71 \text{ AC-ft}}}$$

FONEBAT TARGET VOLUME

$$= 0.1'' (106 \text{ AC} / 12''/\text{ft}) = \underline{\underline{0.88 \text{ AC-ft.}}}$$

FOR SHALLOW MASH WETLAND DESIGN

WANT $\approx$	VOL	IN	DEEP POOL	= 60-70%
	VOL	IN	HIGH MASH	= 10-15%
	VOL	IN	LOW MASH	= 5-10%
	SA	IN	DEEP POOL	= $\leq 50\%$
	SA	IN	HIGH MASH	$\geq 25\%$
	SA	IN	LOW MASH	$\geq 25\%$

SEE AREA-ELEV-STORAGE-DATA  
FOR PROVIDED STORAGE / S.A.

# VOLUME AND AREA OF Perm. Pool.

## Permanent Pool Area-Volume Data

### Area - Elevation - Storage Data - for Stormwater Wetlands

FOUR-BAY  
VOL.  
POOL

Elevation (MSL)	Area (in <sup>2</sup> )	Area (ft <sup>2</sup> )	Average Area (ft <sup>2</sup> )	Depth (ft)	Volume (ft <sup>3</sup> )	Σ Volume (ft <sup>3</sup> )	Σ Volume (ac-ft)	Percent of Total Pool Volume (%)	Surface Area of Pool (acres)
358.0	33.31	29979	TOTAL PERM. POOL S.A. =						
354	5.08	4572							0.69 ac
356	7.44	6696	5634	2	11268	11,268	0.26		
358	11.11	9999	8348	2	16,695	27,963	0.64	52%	0.23 ac (53%)
354	1.99	1791							
356	3.92	3528	2660	2	5310	5319	0.12		
358	6.09	5481	4505	2	9009	19328	0.33	28%	0.13 ac (19%)

DA/SA =  
≈ 0.7%

Σ DEEP POOL = 0.97 ac-ft 80%

### Area - Elevation - Storage Data - for Stormwater Wetlands

HIGH  
MUDFLAT  
  
LOW  
MUDFLAT

Elevation (MSL)	Area (in <sup>2</sup> )	Area (ft <sup>2</sup> )	Average Area (ft <sup>2</sup> )	Depth (ft)	Volume (ft <sup>3</sup> )	Σ Volume (ft <sup>3</sup> )	Σ Volume (ac-ft)	Percent of Total Pool Volume (%)	Surface Area of Pool (acres)
357.5	7.81	7029	Avg	4" (.33')	2320	2320	0.05	4%	23%
356.8	8.30	7470	Avg	14" (1.17')	8740	8740	0.20	16%	25%
						TOTAL VOL.	1.22	100%	100%

OK

OK

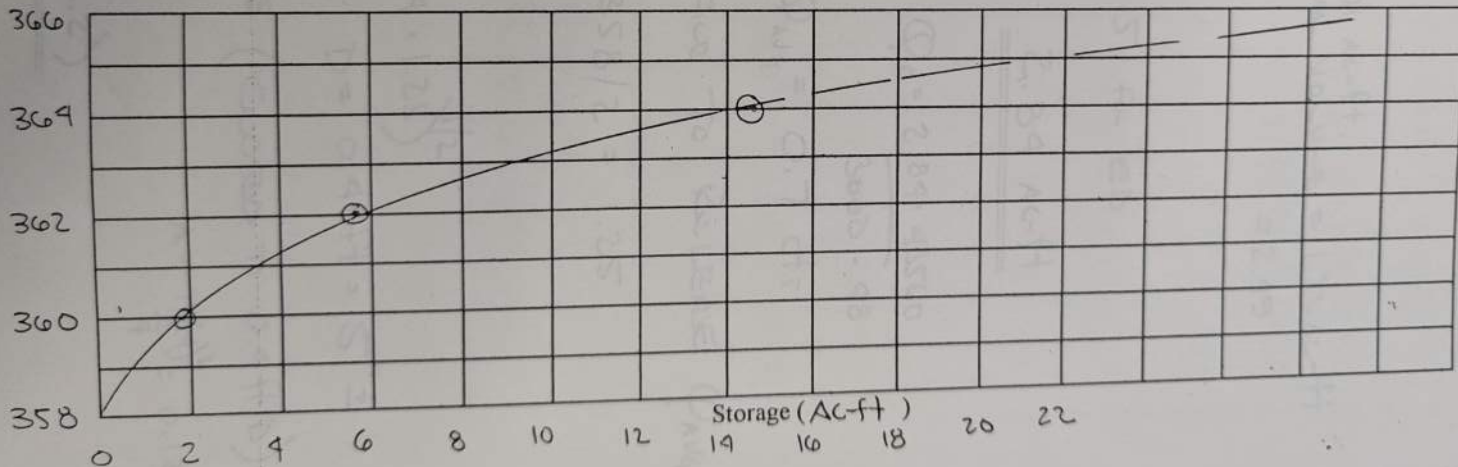
Σ SA = 25,979



### Elevation - Storage Data

STORAGE  
ABOVE  
PERMANENT  
POOL

Elevation (MSL)	Area (in <sup>2</sup> )	Area (ft <sup>2</sup> )	Average Area (ft <sup>2</sup> )	Depth (ft)	Volume (ft <sup>3</sup> )	Σ Volume (ft <sup>3</sup> )	Σ Volume (ac-ft)	Σ Volume above permanent pool (ac-ft)
358	33.31	29,979						
360	58.59	52,731	41,355	2	82,710	82,710		1.30
362	123.17	110,853	81,792	2	163,584	246,294		5.65
364	312.2	280,980	195,917	2	391,834	638,128		14.65



## EXTENDED DETENTION

$$\text{TARGET VOLUME} = 3.71 \text{ AC-ft.}$$

$$\text{LESS REM. POOL VOLUME} = 1.22 \text{ AC-ft}$$

REXO ELEV

$$= 2.49$$

360.3

USE ELEV 360.5 for ED.

$$\text{VOL ABOVE POOL} = \underline{\underline{2.84 \text{ AC-ft}}}$$

$$\text{FOR 48 IN RELEASE } Q_0 = \frac{2.84 \cdot 43560}{3600 \cdot 48}$$

$$Q_{\text{AVG}} = 0.7 \text{ cfs}$$

② h<sub>AVG</sub> SIZE ORFICE TO RELEASE  $Q_{\text{AVG}}$

$$h_{\text{AVG}} = 360.5 - 358/2 = 1.25$$

$$Q = CA \sqrt{2gh}$$

$$0.7 = 0.6 A (64.4 \cdot 1.25)^{1/2}$$

$$A = 0.13 \text{ ft}^2 = \frac{\pi D^2}{4} \therefore D = 0.41 \text{ ft} = 5'' \pm$$

USE 6" GATE VALVE (CLOSED TO 0.4 ft D)

$$Q = 0.605 h^{1/2}$$

$$A = \frac{\pi (4)^2}{4} = 0.126 \text{ ft}^2$$

$$\underline{\underline{h = \text{W.S. ELEV} - (358.2)}}$$



SET OVERFLOW WEIR @ ELEV 360.5

SIZE WEIR TO PASS  $Q_{100}$  @  $H = 2.5$  FT.  $\therefore$   
(ELEV 363.0)

$$Q_{100} = 326 \text{ cfs}$$

$$Q = C L H^{3/2}$$

$$326 = 3.1 (L) (2.5)^{1.5}$$

$$L = 26.6 \text{ FT}$$

USE 25'

$$Q = 77.5 H^{3/2}$$

$$H = \text{U.S. ELEV} - 360.5$$

NO TAILWATER EFFECTS FROM  
EXISTING CULVERTS UNDER I-684  
(SEE HY-8 PRINTOUT)

Project Name

Storage - Elevation - Discharge Data

Elevation (MSL)	Storage (ac-ft)	Low Flow						Riser						Barrel		Emergency Spillway		Total Discharge
		H (ft)		Q (cfs)		H (ft)		Q (cfs)		H (ft)		Q (cfs)		H (ft)	Q (cfs)	H (ft)	Q (cfs)	
		High Stage Slot			Weir			Inlet		Pipe								
		H	Q	H	Q	H	Q	H	Q	H	Q	H	Q					
358.0	0	0	0														0	
359.0	0.95	0.8	0.54														0.54	
360.0	1.90	1.8	0.81														0.81	
360.5	2.84	2.3	0.92			0	0										0.92	
360.8	3.40	2.6	0.98			0.3	12.7										13.7	
361.0	3.78					0.5	27.4										27.4	
361.5	4.72					1.0	77.5										77.5	
362.0	5.65					1.5	142.4										142.4	
363	10.15					2.5	306.0										306.0	

Project Name: \_\_\_\_\_

Date: \_\_\_\_\_

By: \_\_\_\_\_

TR-20  
INPUT  
FILE

RESVOR  
ROUTING

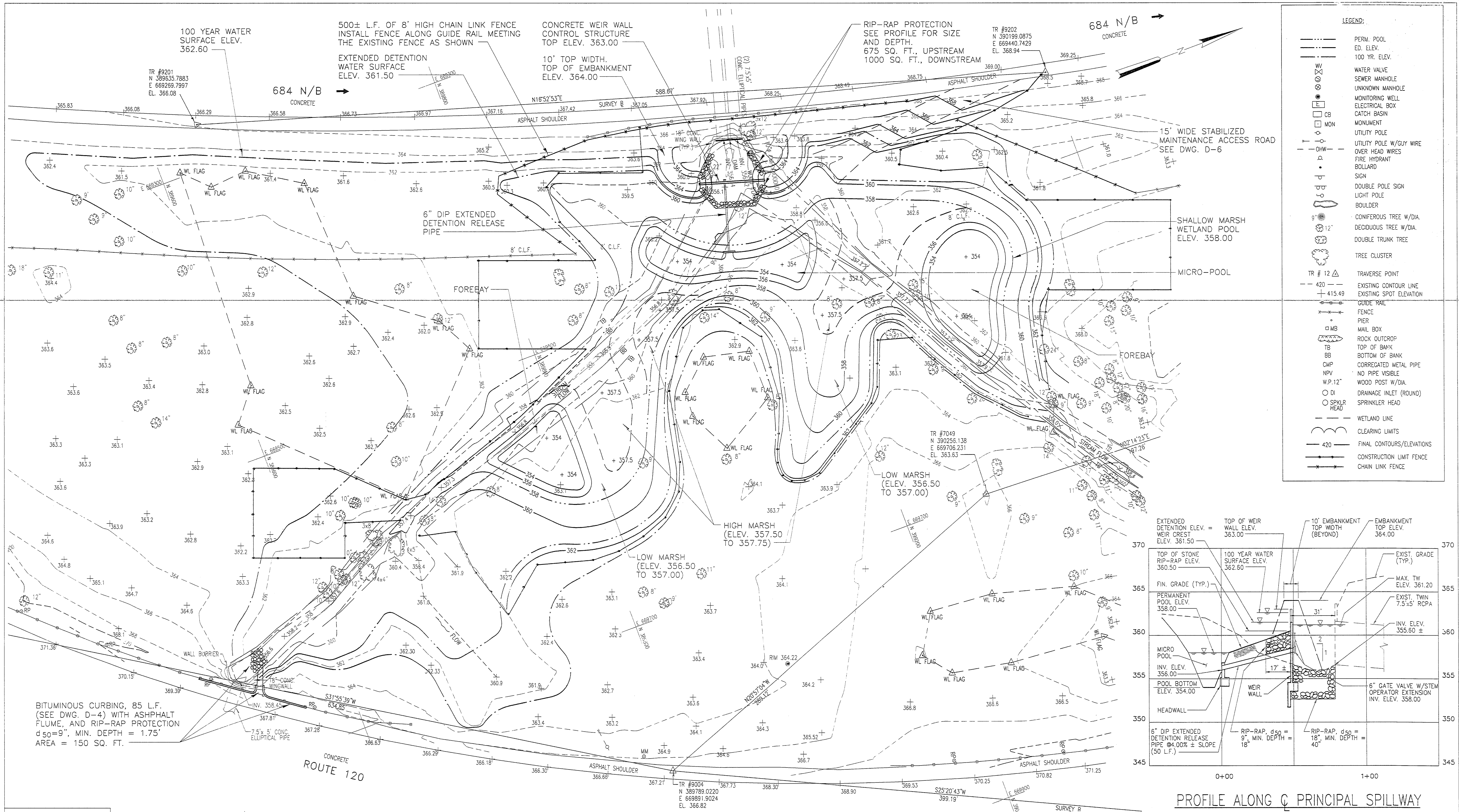
TR-20	FULLPRINT	NOPLOTS
TITLE	Kensico Watershed BMPs N-5 Site 37 ED Basin 05/97 RAC	
TITLE	Ultimate Conditions Hydrology	
5 RAINFL 7	0.25	
8	0.0	0.01
8	0.0125	0.0225
8	0.026	0.036
8	0.039	0.052
8	0.055	0.07
8	0.0745	0.092
8	0.097	0.127
8	0.1355	0.1735
8	0.185	0.242
8	0.262	0.611
8	0.689	0.779
8	0.793	0.84
8	0.849	0.886
8	0.8935	0.916
8	0.92	0.936
8	0.940	0.954
8	0.957	0.969
8	0.9725	0.9835
8	0.986	0.996
8	0.9985	
9 ENDTBL		
3 STRUCT	1	
	358.0	0.0
8	359.0	0.95
8	360.0	1.90
8	360.5	2.84
8	360.8	3.40
8	361.0	3.78
8	361.5	4.72
8	362.0	5.65
8	363.0	10.15
9 ENDTBL		
5 RUNOFF 1	1 2 0.166	75.0 0.41 1 0 0 0 1
5 RESVOR 2	1 2 3 358.0	1 0 0 0 0 1
ENDATA		
INCREM 6	0.1	
COMPUT 7	1 1 0.0	1.5 1.0 7 2 1 01
ENDCMP 1		
COMPUT 7	1 1 0.0	3.3 1.0 7 2 1 02
ENDCMP 1		
COMPUT 7	1 1 0.0	4.2 1.0 7 2 1 03
ENDCMP 1		



## Appendix C: Existing Design Sheets

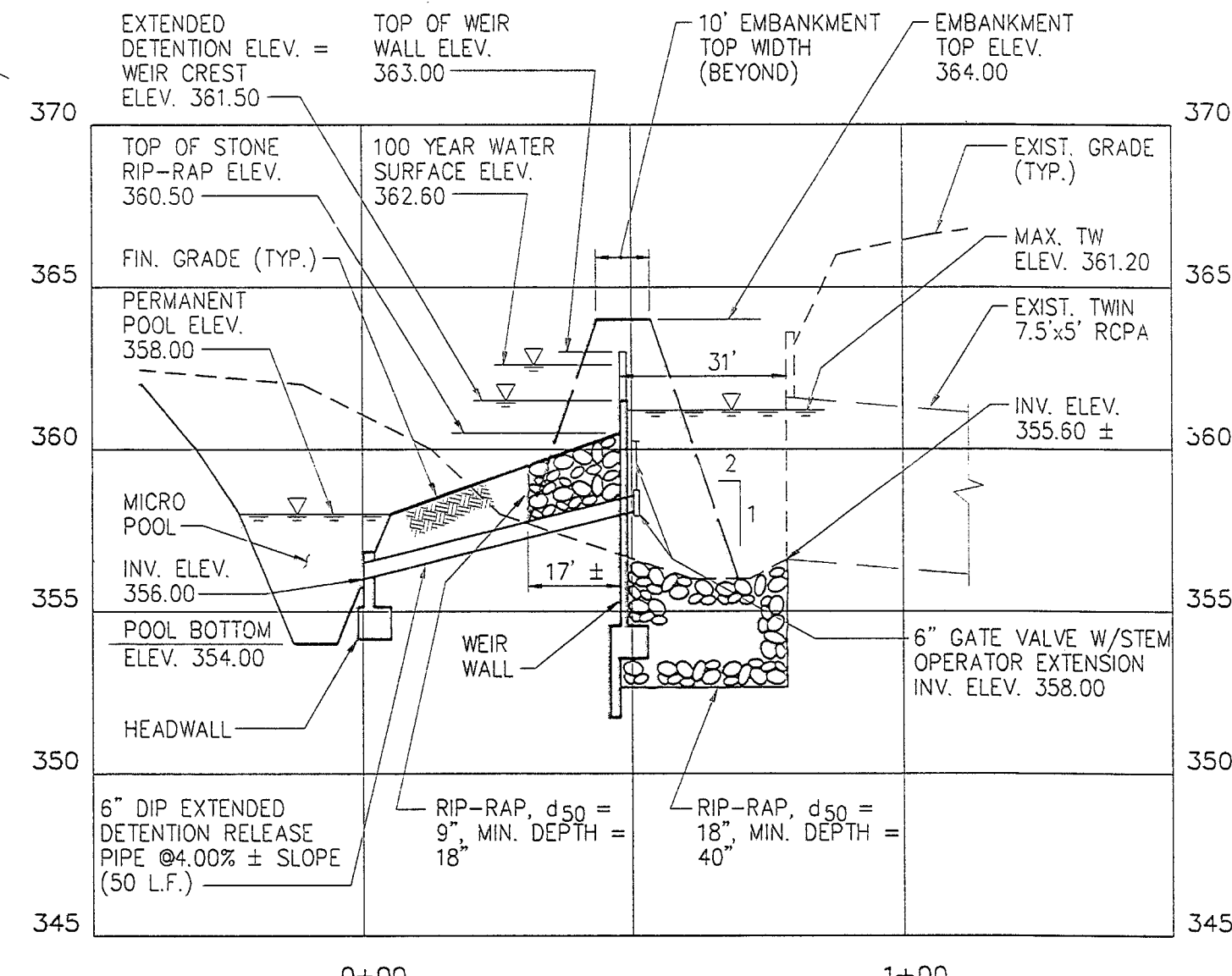




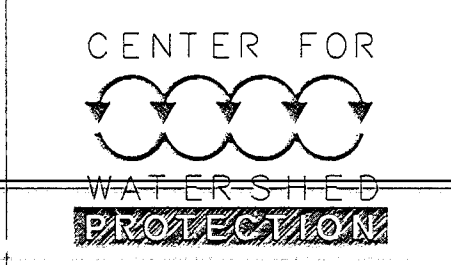
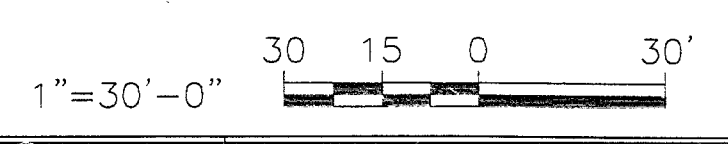


**LEGEND:**

---	PERM. POOL
---	ED. ELEV.
---	100 YR. ELEV.
WV	WATER VALVE
SM	SEWER MANHOLE
⊙	UNKNOWN MANHOLE
⊙	MONITORING WELL
⊙	ELECTRICAL BOX
⊙	CATCH BASIN
⊙	MONUMENT
⊙	UTILITY POLE
⊙	UTILITY POLE W/GUY WIRE
⊙	OVER HEAD WIRES
⊙	FIRE HYDRANT
⊙	BOLLARD
⊙	SIGN
⊙	DOUBLE POLE SIGN
⊙	LIGHT POLE
⊙	BOULDER
⊙	CONIFEROUS TREE W/DIA.
⊙	DECIDUOUS TREE W/DIA.
⊙	DOUBLE TRUNK TREE
⊙	TREE CLUSTER
TR # 12 Δ	TRAVERSE POINT
---	EXISTING CONTOUR LINE
---	EXISTING SPOT ELEVATION
---	GUIDE RAIL
---	FENCE
---	PIER
⊙	MAIL BOX
⊙	ROCK OUTCROP
⊙	TOP OF BANK
⊙	BOTTOM OF BANK
⊙	CORROGATED METAL PIPE
⊙	NO PIPE VISIBLE
⊙	WOOD POST W/DIA.
⊙	DI
⊙	DRAINAGE INLET (ROUND)
⊙	SPRINKLER HEAD
---	WETLAND LINE
---	CLEARING LIMITS
---	FINAL CONTOURS/ELEVATIONS
---	CONSTRUCTION LIMIT FENCE
---	CHAIN LINK FENCE



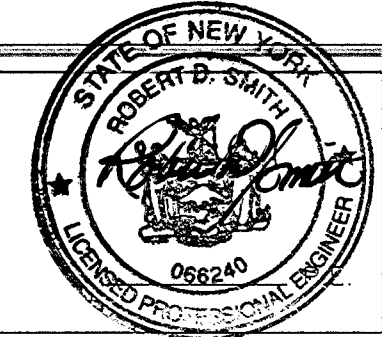
- NOTES:**
1. REMOVE SILT FENCE AND CONSTRUCTION LIMIT FENCE AS DIRECTED BY DEP.
  2. CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS UPON COMPLETION OF CONSTRUCTION ACCORDING TO DWG D-10 SEEDING SCHEDULE.



**SHAH ASSOCIATES, P.C.**  
 ENGINEERING & LAND SURVEYING  
 2835 PRITTT AV.  
 BELLMORE, N.Y. 11710

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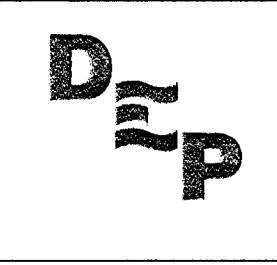
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DRAWN	J.A.F.	CAO REF	6450/002\ SITE-75F
CHECKED	M.J.L.		
SECT. CHIEF	R.D.S.		
PROJ. ENGR.	S.M.		



THE ELEVATIONS SHOWN ON THIS MAP ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929. COORDINATES ARE REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM 1927.

**HAZEN AND SAWYER**  
 Environmental Engineers & Scientists  
 HAZEN AND SAWYER, P.C. - 730 BROADWAY - NEW YORK, NEW YORK 10003

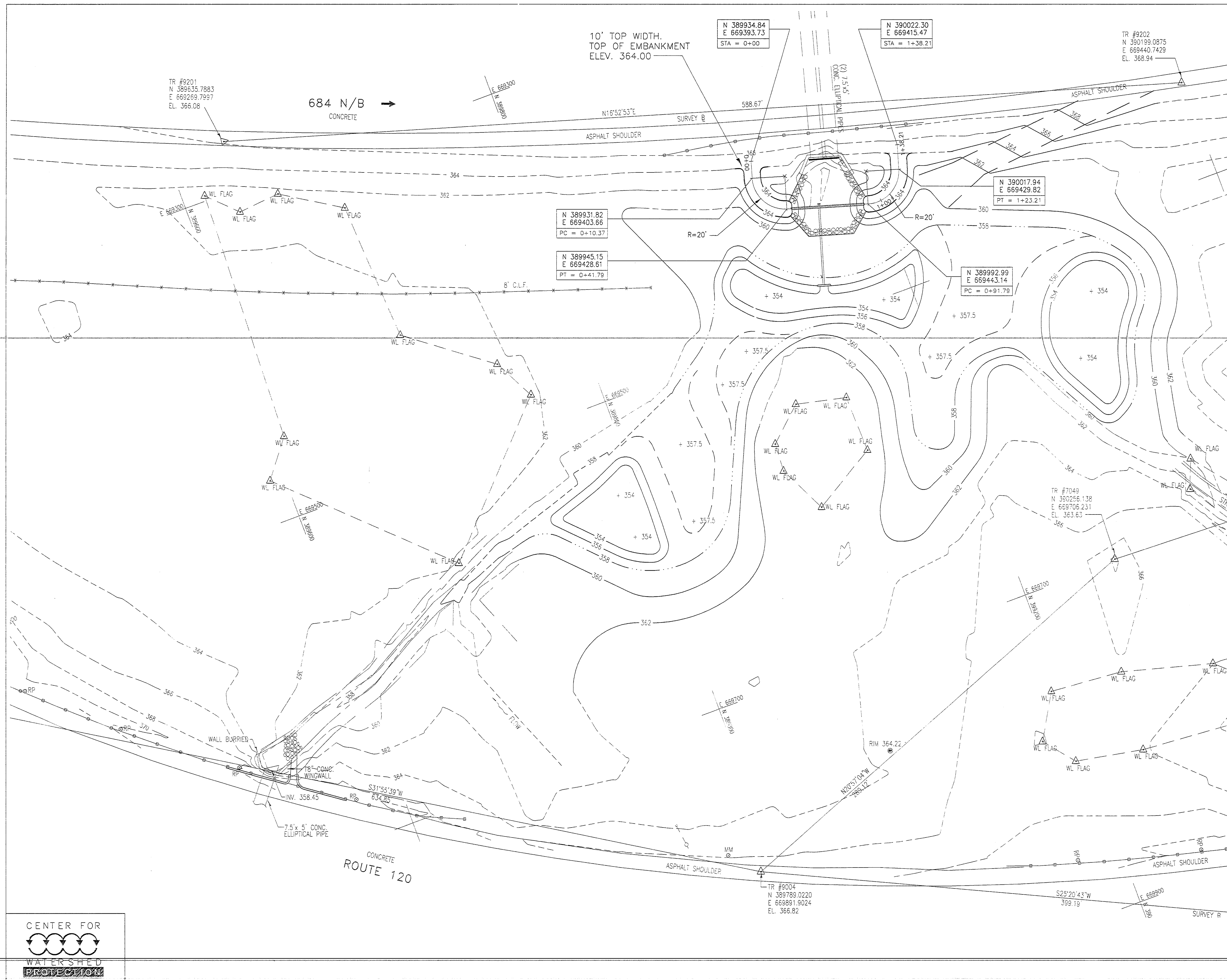
APPROVED FOR THE CITY OF NEW YORK  
 PROJECT MANAGER



CITY OF NEW YORK  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 BUREAU OF WATER SUPPLY, QUALITY AND PROTECTION  
 CAPITAL PROJECT KENS-01C  
 KENSICO WATERSHED STORMWATER BEST MANAGEMENT FACILITIES  
 WESTCHESTER, NEW YORK

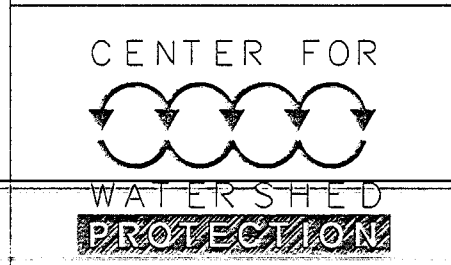
**BMP 74, 75**  
 SUB-BASIN E-11  
 EXTENDED DETENTION BASIN  
 FINAL SITE PLAN

DATE: SEPTEMBER 1997  
 SHEET: 66 OF 93  
 DWG. NO.: C-60



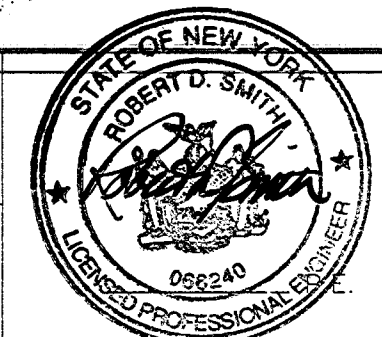
**LEGEND:**

---	PERM. POOL
---	ED. ELEV.
---	100 YR. ELEV.
WV	WATER VALVE
SM	SEWER MANHOLE
U	UNKNOWN MANHOLE
EW	MONITORING WELL
EB	ELECTRICAL BOX
CB	CATCH BASIN
MON	MONUMENT
U	UTILITY POLE
UW	UTILITY POLE W/GUY WIRE
OH	OVER HEAD WIRES
FH	FIRE HYDRANT
B	BOLLARD
S	SIGN
DP	DOUBLE POLE SIGN
LP	LIGHT POLE
B	BOULDER
CT	CONIFEROUS TREE W/DIA.
DT	DECIDUOUS TREE W/DIA.
CT	DOUBLE TRUNK TREE
CT	TREE CLUSTER
TR # 12	TRAVERSE POINT
420	EXISTING CONTOUR LINE
415.49	EXISTING SPOT ELEVATION
---	GUIDE RAIL
---	FENCE
P	PIER
MB	MAIL BOX
RO	ROCK OUTCROP
TB	TOP OF BANK
BB	BOTTOM OF BANK
CMP	CORRUGATED METAL PIPE
NPV	NO PIPE VISIBLE
W.P.12"	WOOD POST W/DIA.
DI	DRAINAGE INLET (ROUND)
SPKLR	SPRINKLER HEAD
---	WETLAND LINE
---	CLEARING LIMITS
420	FINAL CONTOURS/ELEVATIONS



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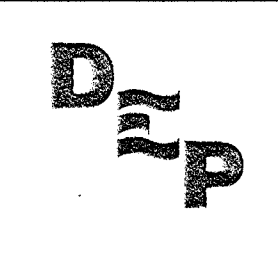
WARNING  
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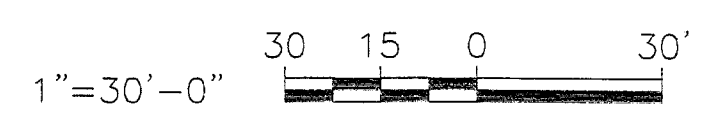
APPROVED FOR THE CITY OF NEW YORK  
 PROJECT MANAGER



CITY OF NEW YORK  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 BUREAU OF WATER SUPPLY, QUALITY AND PROTECTION  
 CAPITAL PROJECT KENS-01C  
 KENSICO WATERSHED STORMWATER  
 BEST MANAGEMENT FACILITIES  
 WESTCHESTER, NEW YORK

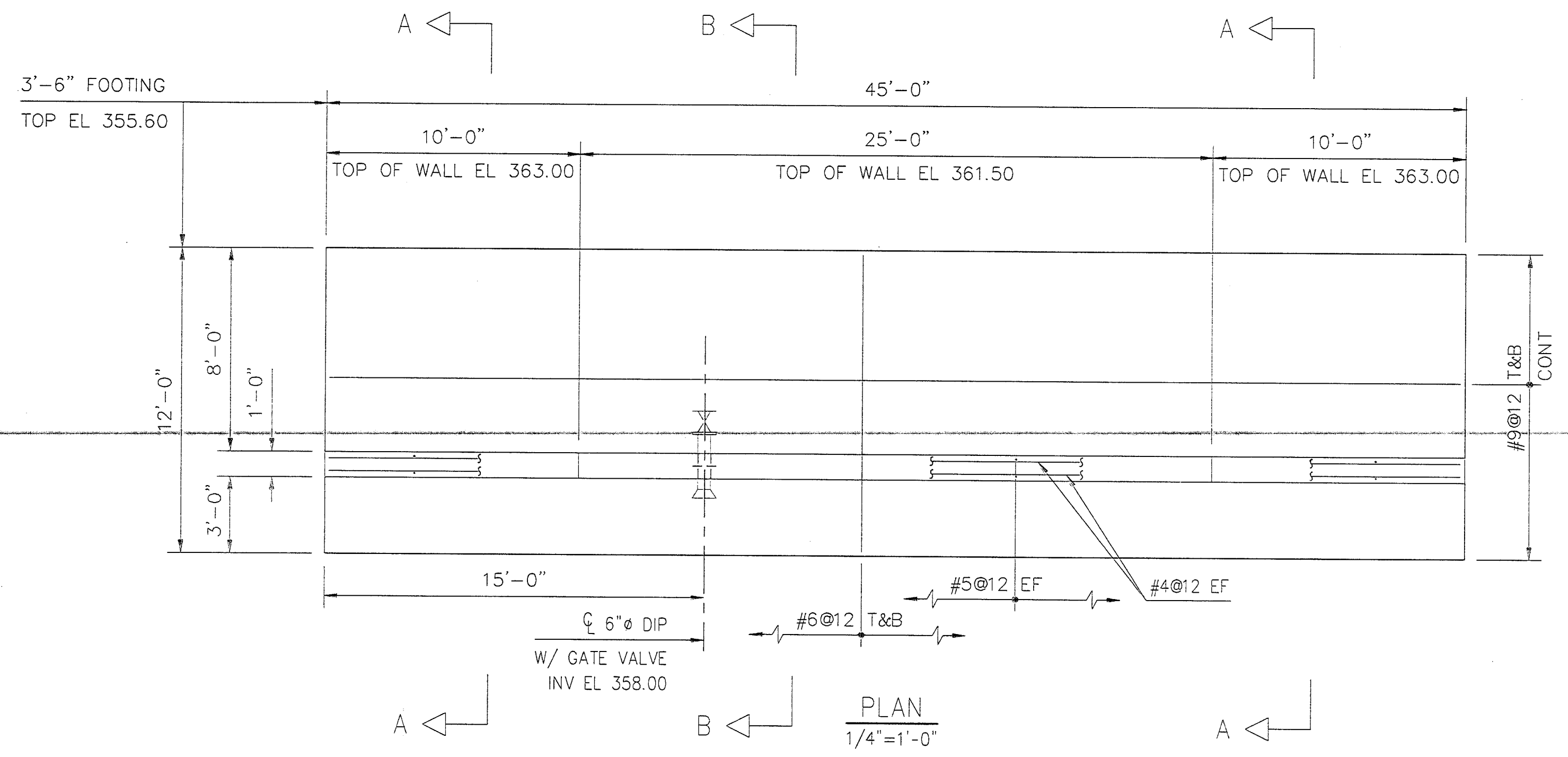
**BMP 74, 75**  
**SUB-BASIN E-11**  
**EXTENDED DETENTION BASIN**  
**GEOMETRY**

DATE SEPTEMBER 1997  
 SHEET 67 OF 93  
 DWG. NO. C-61

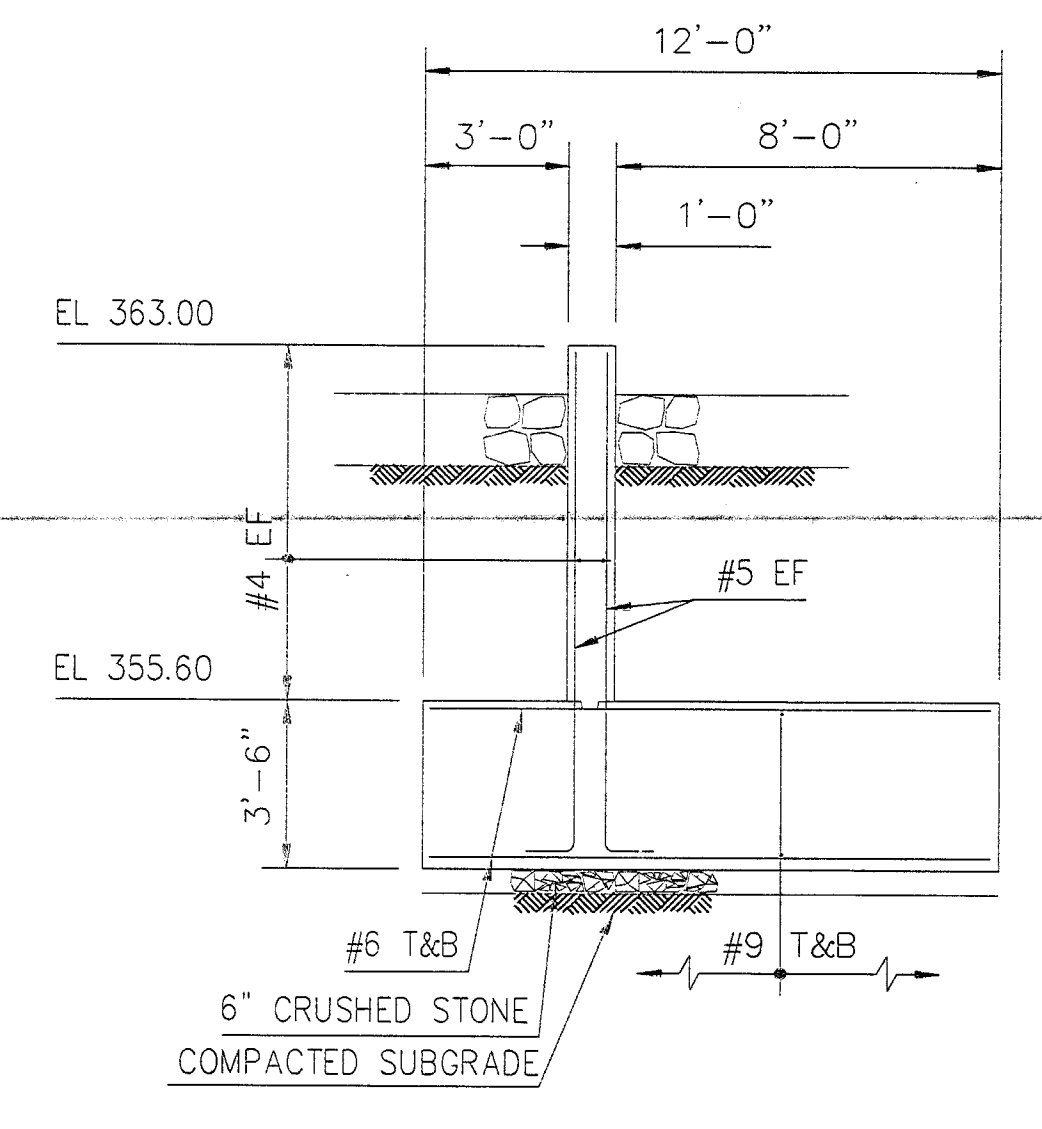


NO.	DATE	ISSUED FOR	BY

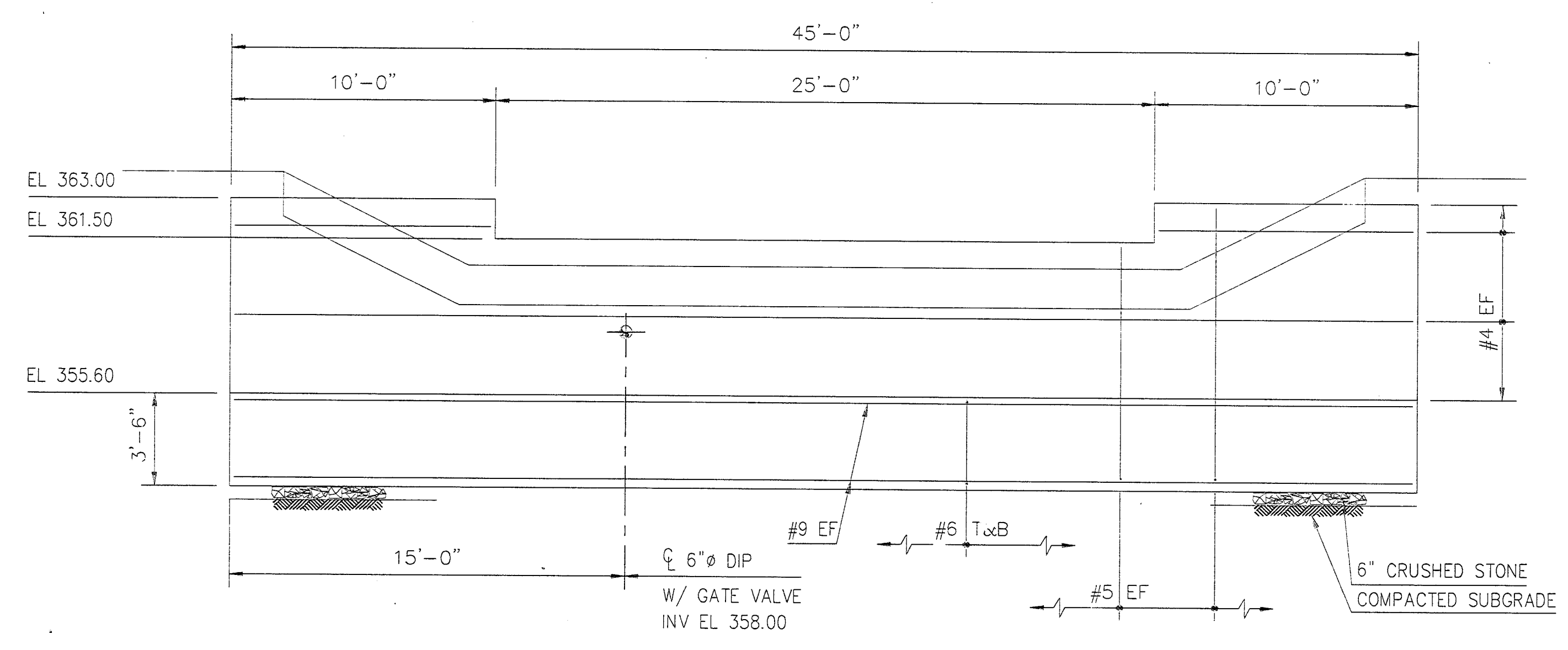
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DRAWN	J.A.F.	1"=30'-0"
CHECKED	M.J.T.	
SECT.CHIEF	R.D.S.	CAD REF
PROJ.ENGR.	S.M.	6450\002\ SITE-75G



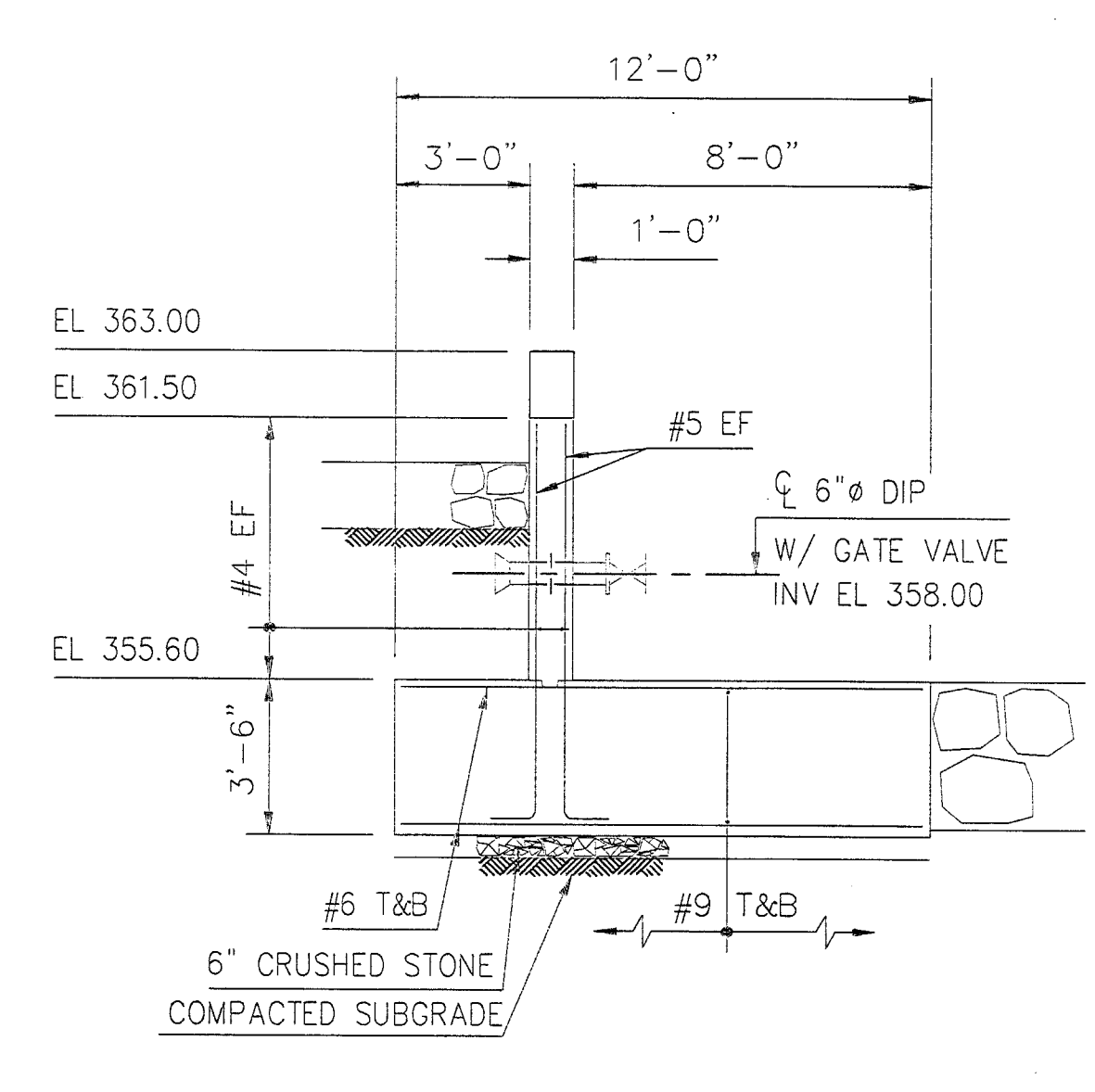
PLAN  
1/4"=1'-0"



SECTION A-A  
1/4"=1'-0"



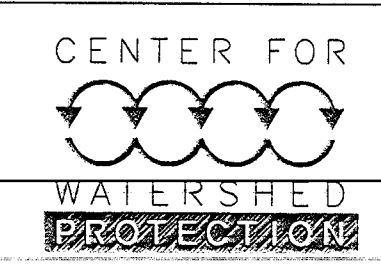
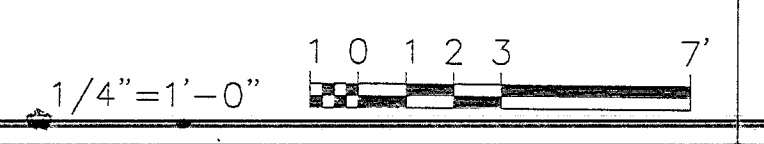
ELEVATION  
1/4"=1'-0"



SECTION B-B  
1/4"=1'-0"

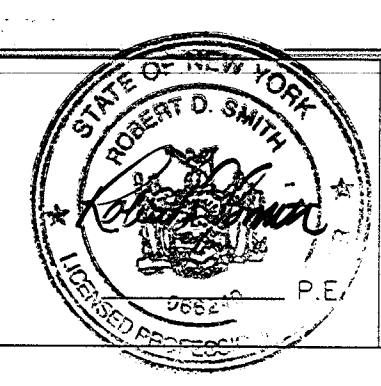
WEIR STRUCTURE  
(FOR LOCATION SEE CIVIL DWGS)

NOTES:  
1. FOR GENERAL NOTES AND TYPICAL DETAILS SEE DWG S-15.



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**HAZEN AND SAWYER**  
Environmental Engineers & Scientists

HAZEN AND SAWYER, P.C. • 730 BROADWAY • NEW YORK, NEW YORK 10003

APPROVED FOR THE CITY OF NEW YORK  
PROJECT MANAGER



CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER SUPPLY, QUALITY AND PROTECTION  
CAPITAL PROJECT KENS-GIC  
KENSICO WATERSHED STORMWATER  
BEST MANAGEMENT FACILITIES  
WESTCHESTER, NEW YORK

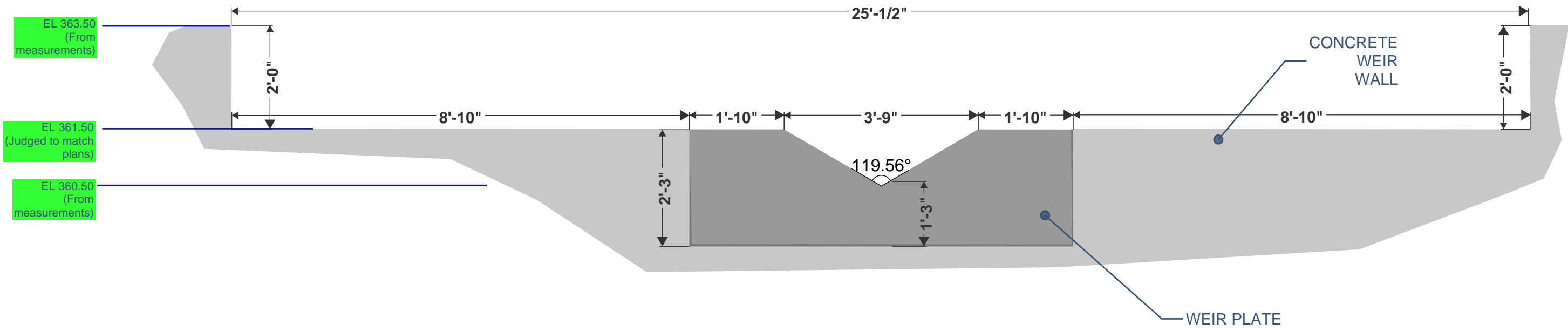
BMP 74  
EXTENDED DETENTION BASIN  
WEIR STRUCTURE

DATE SEPTEMBER 1997  
SHEET 92 OF 93  
DWG. NO. S-14

DESIGNED	A.A.G.	SCALE	1/4"=1'-0"
DRAWN	C.W.S.	CAD REF	6450\003\
CHECKED	F.S.	STRU-23	
SECT. CHIEF	R.D.S.		
PROJ. ENGR.	S.M.		
NO.	DATE	ISSUED FOR	BY

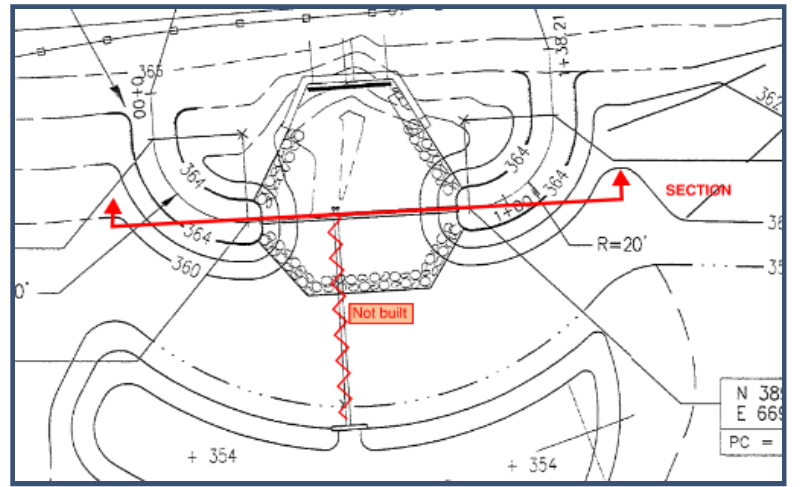
LAST PLOT: 02-05-98 IEB

## Appendix D: As-Built Outlet Structure Diagram

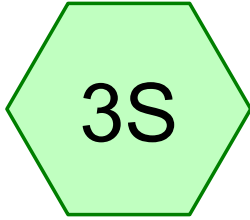


SECTION

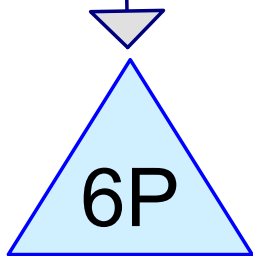
Scale = 1/2" = 1'-0"



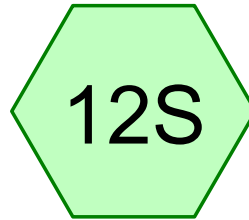
## Appendix E: HydroCAD



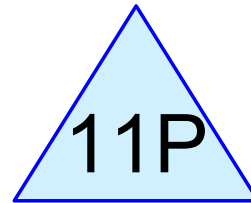
2024 Estimate



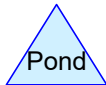
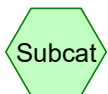
Existing (2024)



2024 Estimate



Weir Slit + Adjust  
Vnotch2024)



**BMP75\_QAQC**

Prepared by Hazen & Sawyer

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NY-RyeLake 24-hr S1 1-yr Rainfall=2.82"

Printed 12/13/2024

Page 2

**Summary for Subcatchment 3S: 2024 Estimate**

Runoff = 56.26 cfs @ 12.32 hrs, Volume= 7.465 af, Depth= 0.85"

Routed to Pond 6P : Existing (2024)

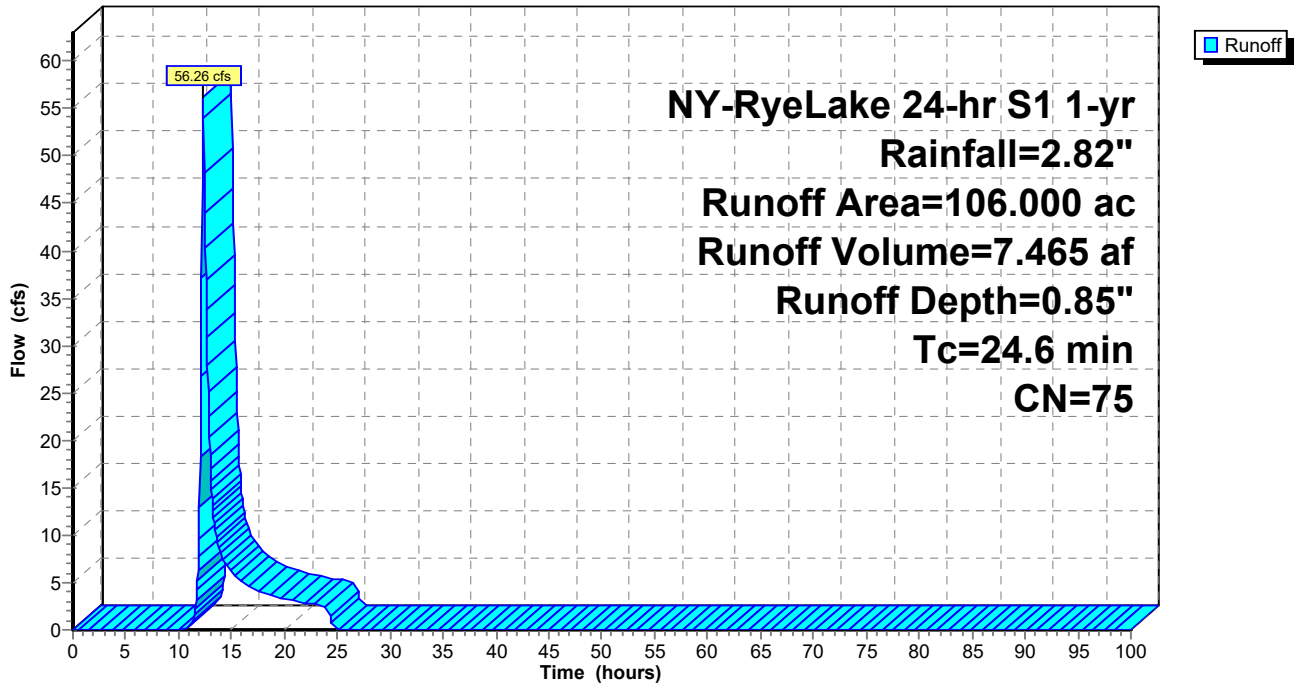
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
NY-RyeLake 24-hr S1 1-yr Rainfall=2.82"

Area (ac)	CN	Description
* 3.760	55	forest
* 7.840	70	forest
* 7.450	79	institutional
* 26.910	70	transportation
* 60.040	79	transportation
106.000	75	Weighted Average
106.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.6					Direct Entry,

**Subcatchment 3S: 2024 Estimate**

Hydrograph





**BMP75\_QAQC**

Prepared by Hazen & Sawyer

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NY-RyeLake 24-hr S1 1-yr Rainfall=2.82"

Printed 12/13/2024

Page 3

**Summary for Subcatchment 12S: 2024 Estimate**

Runoff = 56.26 cfs @ 12.32 hrs, Volume= 7.465 af, Depth= 0.85"

Routed to Pond 11P : Weir Slit + Adjust Vnotch2024)

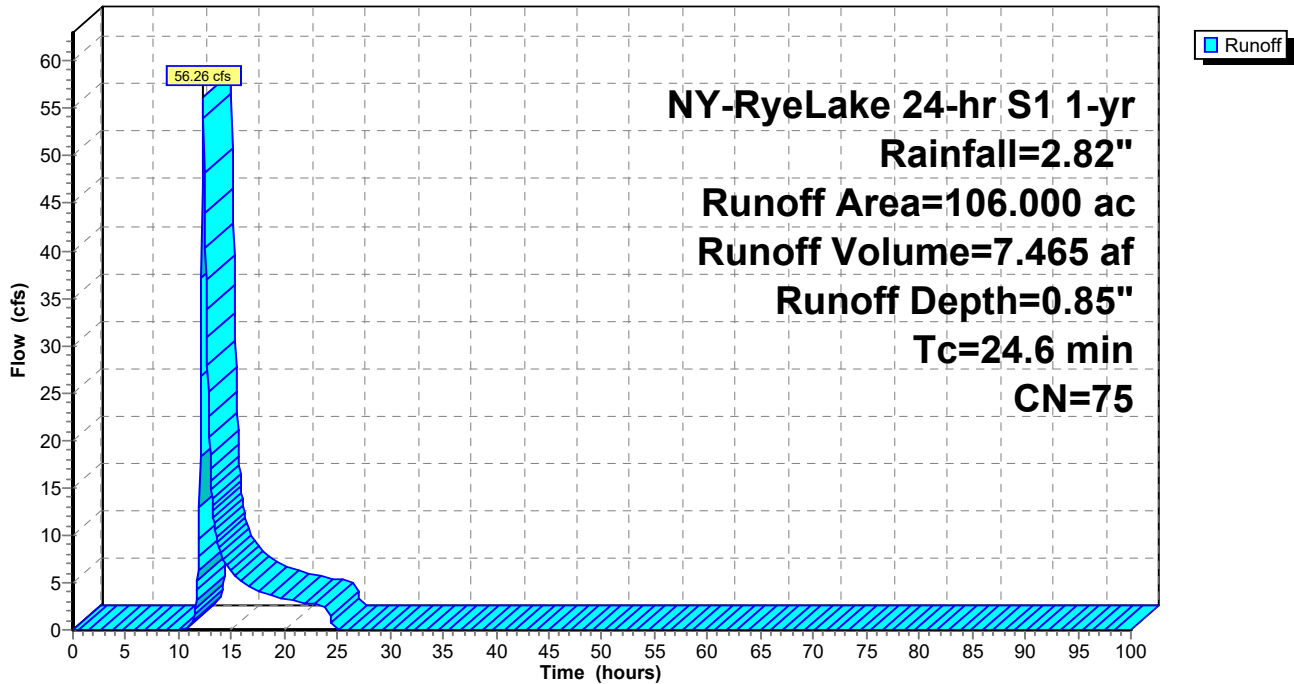
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
NY-RyeLake 24-hr S1 1-yr Rainfall=2.82"

Area (ac)	CN	Description
* 3.760	55	forest
* 7.840	70	forest
* 7.450	79	institutional
* 26.910	70	transportation
* 60.040	79	transportation
106.000	75	Weighted Average
106.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.6					Direct Entry,

**Subcatchment 12S: 2024 Estimate**

Hydrograph



**BMP75\_QAQC**

NY-RyeLake 24-hr S1 1-yr Rainfall=2.82"

Prepared by Hazen & Sawyer

Printed 12/13/2024

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Page 4

**Summary for Pond 6P: Existing (2024)**

Inflow Area = 106.000 ac, 0.00% Impervious, Inflow Depth = 0.85" for 1-yr event  
 Inflow = 56.26 cfs @ 12.32 hrs, Volume= 7.465 af  
 Outflow = 23.94 cfs @ 12.82 hrs, Volume= 7.326 af, Atten= 57%, Lag= 30.4 min  
 Primary = 23.94 cfs @ 12.82 hrs, Volume= 7.326 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Starting Elev= 360.50' Storage= 3.793 af  
 Peak Elev= 361.87' @ 12.82 hrs Storage= 6.022 af (2.229 af above start)

Plug-Flow detention time= 728.3 min calculated for 3.531 af (47% of inflow)  
 Center-of-Mass det. time= 235.4 min ( 1,145.0 - 909.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	354.00'	14.620 af	<b>Custom Stage Data</b> Listed below

Elevation (feet)	Cum.Store (acre-feet)
354.00	0.000
356.00	0.379
358.00	1.261
360.00	3.135
360.42	3.675
361.50	5.264
362.00	6.278
362.60	7.998
364.00	14.620

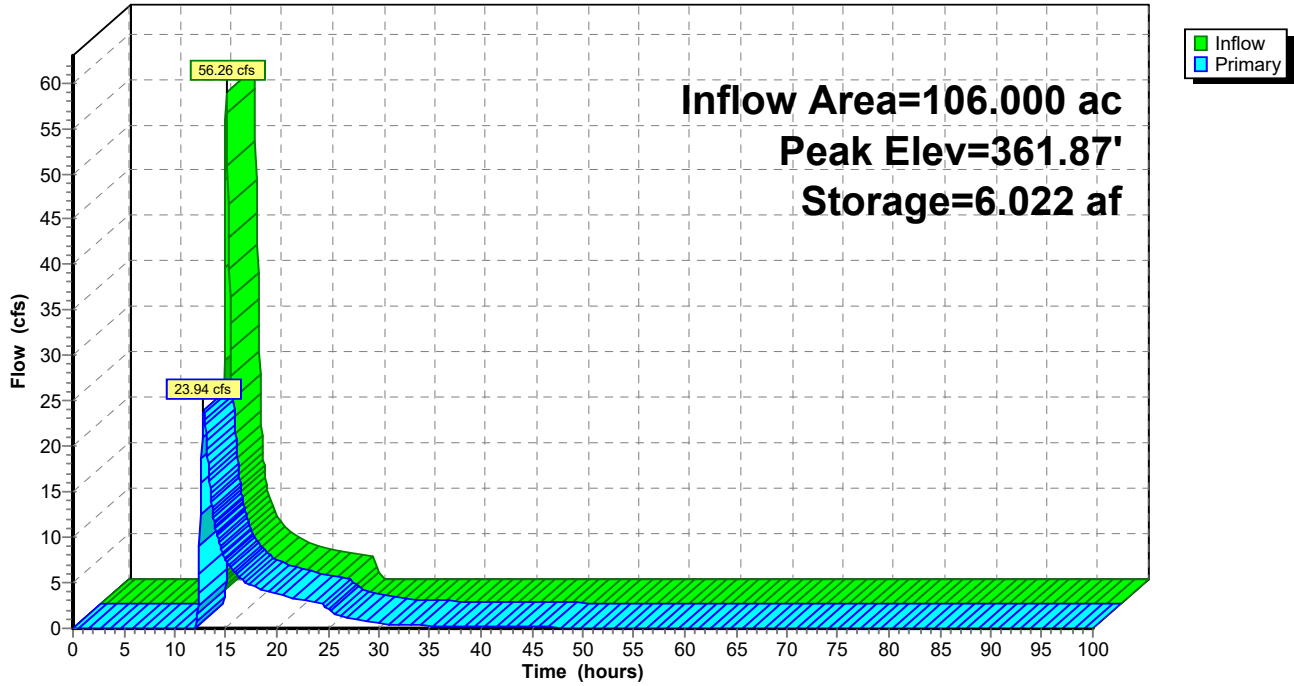
Device	Routing	Invert	Outlet Devices
#1	Primary	360.50'	<b>123.9 deg x 1.00' rise Steel V-Notch</b> Cv= 2.48 (C= 3.10)
#2	Primary	361.50'	<b>25.0' long x 0.5' breadth Concrete Rect Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

**Primary OutFlow** Max=23.78 cfs @ 12.82 hrs HW=361.87' (Free Discharge)

- 1=Steel V-Notch (Orifice Controls 7.24 cfs @ 3.86 fps)
- 2=Concrete Rect Weir (Weir Controls 16.54 cfs @ 1.77 fps)

Pond 6P: Existing (2024)

Hydrograph



**Summary for Pond 11P: Weir Slit + Adjust Vnotch2024)**

Inflow Area = 106.000 ac, 0.00% Impervious, Inflow Depth = 0.85" for 1-yr event  
 Inflow = 56.26 cfs @ 12.32 hrs, Volume= 7.465 af  
 Outflow = 22.90 cfs @ 12.85 hrs, Volume= 7.283 af, Atten= 59%, Lag= 31.8 min  
 Primary = 22.90 cfs @ 12.85 hrs, Volume= 7.283 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Starting Elev= 360.50' Storage= 3.793 af  
 Peak Elev= 361.93' @ 12.85 hrs Storage= 6.133 af (2.340 af above start)

Plug-Flow detention time= 981.3 min calculated for 3.490 af (47% of inflow)  
 Center-of-Mass det. time= 359.2 min ( 1,268.8 - 909.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	354.00'	14.620 af	<b>Custom Stage Data</b> Listed below

Elevation (feet)	Cum.Store (acre-feet)
354.00	0.000
356.00	0.379
358.00	1.261
360.00	3.135
360.42	3.675
361.50	5.264
362.00	6.278
362.60	7.998
364.00	14.620

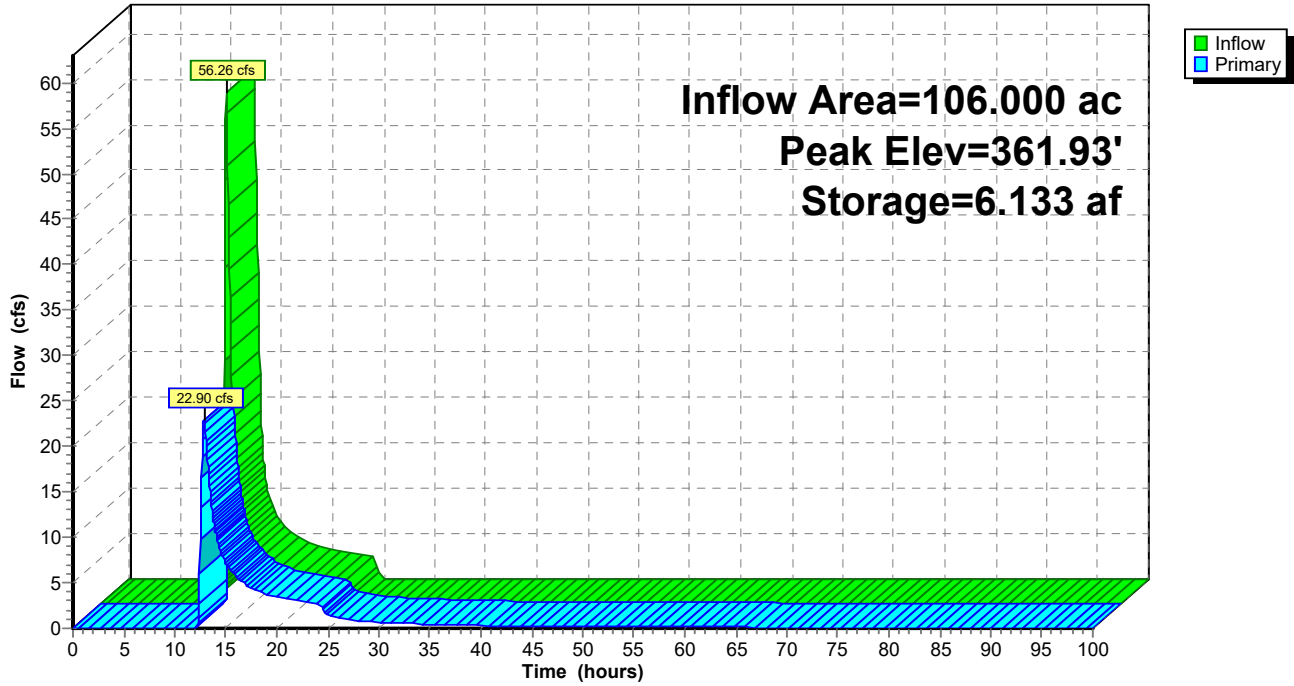
Device	Routing	Invert	Outlet Devices
#1	Primary	361.50'	<b>25.0' long x 0.5' breadth Concrete Rect Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	360.50'	<b>New Slit Weir, Cv= 2.62 (C= 3.28)</b> Head (feet) 0.00 0.33 1.00 Width (feet) 0.25 0.25 1.00

**Primary OutFlow** Max=22.77 cfs @ 12.85 hrs HW=361.93' (Free Discharge)

- 1=Concrete Rect Weir (Weir Controls 20.61 cfs @ 1.93 fps)
- 2=New Slit Weir (Orifice Controls 2.16 cfs @ 4.30 fps)

**Pond 11P: Weir Slit + Adjust Vnotch2024)**

Hydrograph



**Summary for Subcatchment 3S: 2024 Estimate**

Runoff = 395.28 cfs @ 12.29 hrs, Volume= 53.148 af, Depth= 6.02"  
 Routed to Pond 6P : Existing (2024)

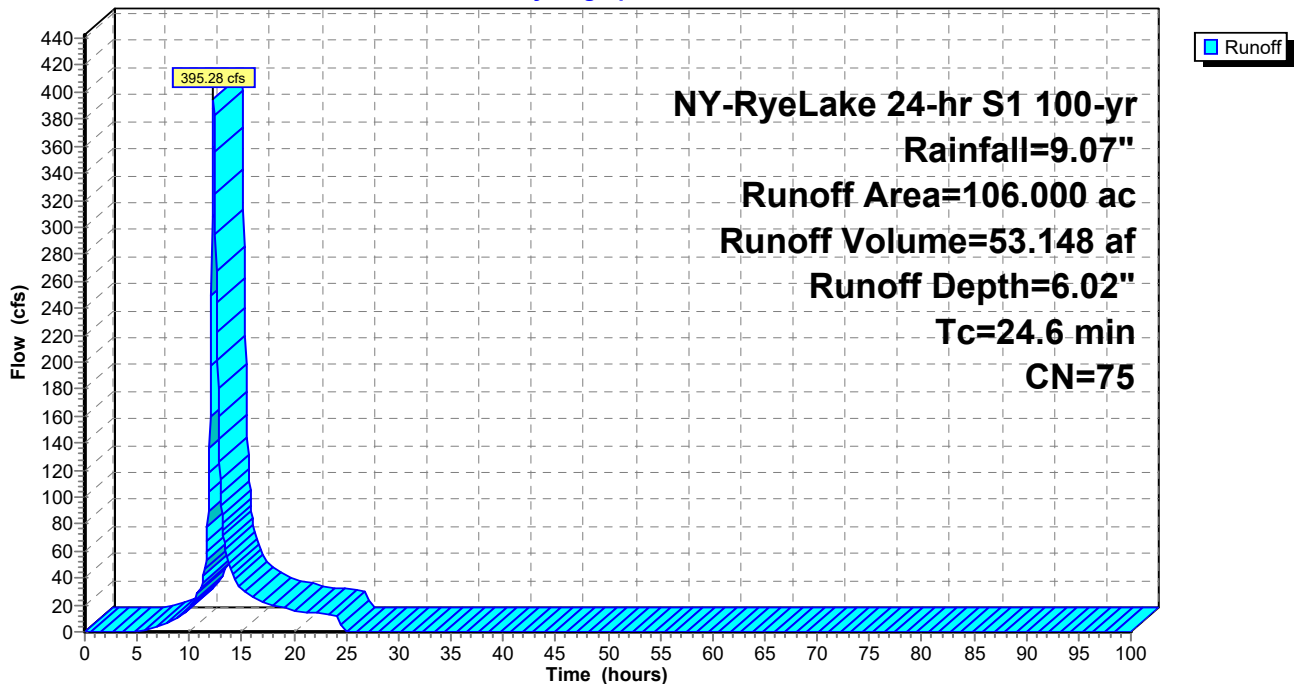
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 NY-RyeLake 24-hr S1 100-yr Rainfall=9.07"

Area (ac)	CN	Description
* 3.760	55	forest
* 7.840	70	forest
* 7.450	79	institutional
* 26.910	70	transportation
* 60.040	79	transportation
106.000	75	Weighted Average
106.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.6					Direct Entry,

**Subcatchment 3S: 2024 Estimate**

Hydrograph



**Summary for Subcatchment 12S: 2024 Estimate**

Runoff = 395.28 cfs @ 12.29 hrs, Volume= 53.148 af, Depth= 6.02"

Routed to Pond 11P : Weir Slit + Adjust Vnotch2024)

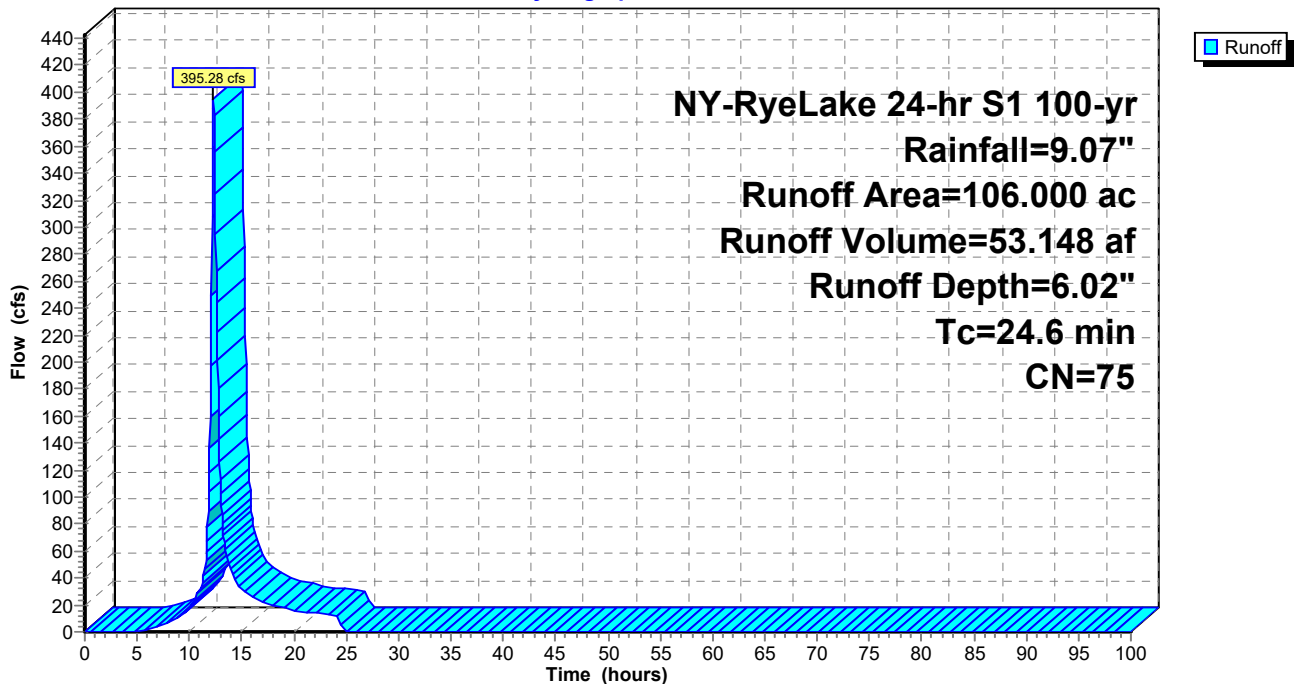
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 NY-RyeLake 24-hr S1 100-yr Rainfall=9.07"

Area (ac)	CN	Description
* 3.760	55	forest
* 7.840	70	forest
* 7.450	79	institutional
* 26.910	70	transportation
* 60.040	79	transportation
106.000	75	Weighted Average
106.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.6					Direct Entry,

**Subcatchment 12S: 2024 Estimate**

Hydrograph



**Summary for Pond 6P: Existing (2024)**

Inflow Area = 106.000 ac, 0.00% Impervious, Inflow Depth = 6.02" for 100-yr event  
 Inflow = 395.28 cfs @ 12.29 hrs, Volume= 53.148 af  
 Outflow = 278.34 cfs @ 12.53 hrs, Volume= 53.006 af, Atten= 30%, Lag= 14.3 min  
 Primary = 278.34 cfs @ 12.53 hrs, Volume= 53.006 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Starting Elev= 360.50' Storage= 3.793 af  
 Peak Elev= 363.67' @ 12.53 hrs Storage= 13.038 af (9.246 af above start)

Plug-Flow detention time= 122.0 min calculated for 49.189 af (93% of inflow)  
 Center-of-Mass det. time= 62.0 min ( 903.5 - 841.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	354.00'	14.620 af	<b>Custom Stage Data</b> Listed below

Elevation (feet)	Cum.Store (acre-feet)
354.00	0.000
356.00	0.379
358.00	1.261
360.00	3.135
360.42	3.675
361.50	5.264
362.00	6.278
362.60	7.998
364.00	14.620

Device	Routing	Invert	Outlet Devices
#1	Primary	360.50'	<b>123.9 deg x 1.00' rise Steel V-Notch</b> Cv= 2.48 (C= 3.10)
#2	Primary	361.50'	<b>25.0' long x 0.5' breadth Concrete Rect Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

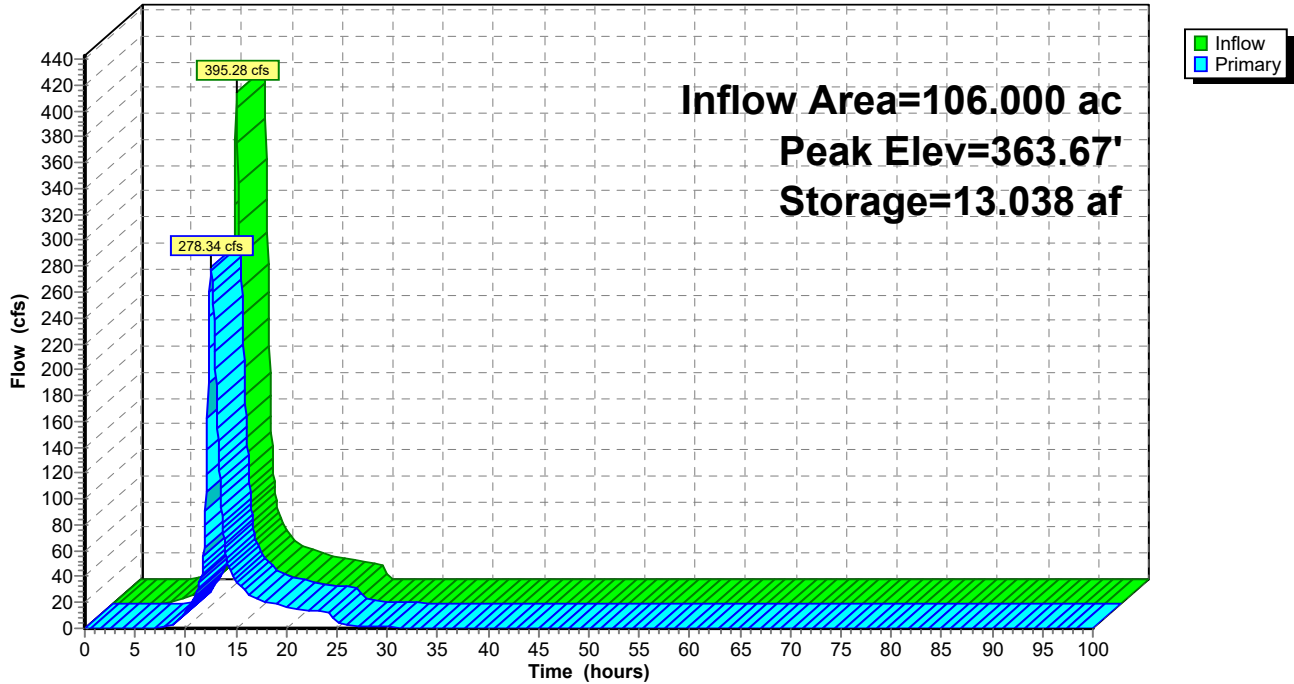
**Primary OutFlow** Max=277.84 cfs @ 12.53 hrs HW=363.66' (Free Discharge)

- 1=Steel V-Notch (Orifice Controls 13.77 cfs @ 7.34 fps)
- 2=Concrete Rect Weir (Weir Controls 264.07 cfs @ 4.88 fps)



**Pond 6P: Existing (2024)**

Hydrograph



**Summary for Pond 11P: Weir Slit + Adjust Vnotch2024)**

Inflow Area = 106.000 ac, 0.00% Impervious, Inflow Depth = 6.02" for 100-yr event  
 Inflow = 395.28 cfs @ 12.29 hrs, Volume= 53.148 af  
 Outflow = 277.53 cfs @ 12.53 hrs, Volume= 52.962 af, Atten= 30%, Lag= 14.4 min  
 Primary = 277.53 cfs @ 12.53 hrs, Volume= 52.962 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Starting Elev= 360.50' Storage= 3.793 af  
 Peak Elev= 363.71' @ 12.53 hrs Storage= 13.270 af (9.478 af above start)

Plug-Flow detention time= 140.6 min calculated for 49.169 af (93% of inflow)  
 Center-of-Mass det. time= 77.6 min ( 919.1 - 841.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	354.00'	14.620 af	<b>Custom Stage Data</b> Listed below

Elevation (feet)	Cum.Store (acre-feet)
354.00	0.000
356.00	0.379
358.00	1.261
360.00	3.135
360.42	3.675
361.50	5.264
362.00	6.278
362.60	7.998
364.00	14.620

Device	Routing	Invert	Outlet Devices
#1	Primary	361.50'	<b>25.0' long x 0.5' breadth Concrete Rect Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	360.50'	<b>New Slit Weir, Cv= 2.62 (C= 3.28)</b> Head (feet) 0.00 0.33 1.00 Width (feet) 0.25 0.25 1.00

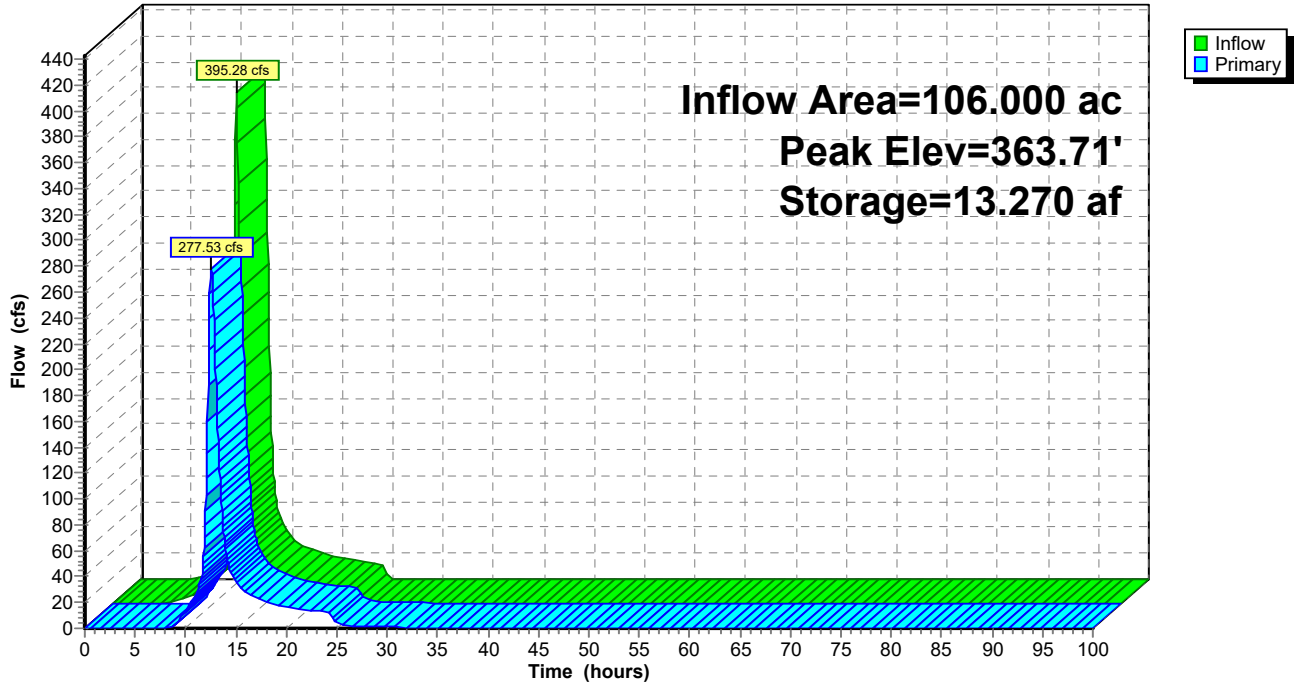
**Primary OutFlow** Max=277.07 cfs @ 12.53 hrs HW=363.71' (Free Discharge)

1=Concrete Rect Weir (Weir Controls 273.13 cfs @ 4.94 fps)

2=New Slit Weir (Orifice Controls 3.95 cfs @ 7.87 fps)

**Pond 11P: Weir Slit + Adjust Vnotch2024)**

Hydrograph



## Appendix F: Proposed Planting Plan

# Proposed Landscaping

Hazen conducted a site visit of BMP #75 in October 24. The permanent pool and semi-frequently inundated water surface elevation (equivalent to a 1-year storm) were analyzed for the replanting of non-invasive species to improve ecological diversity and promote better nutrient and sediment removal by the pond. Two replanting zones are proposed to achieve this.

	Common Name	Latin Name
<b>Emergent Marsh</b> <b>360.0-361.0</b> 4,050 2" plugs @ 2.0' o.c. spacing	Soft stemmed bulrush	<i>Scirpus validus</i>
	Common three-square	<i>Scirpus pungens</i>
	Soft rush	<i>Juncus effusus</i>
	Hard stemmed bulrush	<i>Scirpus acutus</i>
<b>Shallow Marsh</b> <b>361.0-362.0</b> 13,120 2" plugs @ 2.0' o.c. spacing	Common three-square	<i>Scirpus pungens</i>
	Soft rush	<i>Juncus effusus</i>
	Greene's rush	<i>Juncus greenei</i>
	Fox sedge	<i>Carex vulpinoides</i>

**LEGEND**

- Permanent Pool Water Surface EL. 360.50
- 100 Yr. EL.
- High Water Line for 1-Year Storm (~362.00)
- High Water Line for 1.5-inch Storm (~361.53)
- Emergent/Shallow Marsh Boundary EL. 361
- Emergent Marsh, 13,900 sf
- Shallow Marsh, 45,235 sf

