Advocating New York's Remediation Process

Michael B. Carr, CPG
Senior Geologist
Compliance & Environmental Regional Manager
American Petroleum Equipment & Construction Company
63 Orange Avenue
Walden, New York 12586

PEI MEMBER

ap american petroleum equipment & construction
Naturally, leading the way

Agenda

- Summary of Facilities and Spills in New York State
- Did you have a release? - Spill Notification
- Tank Removals – Often Reveal Petroleum Releases
- STIP Agreements & Consent Orders
- Guidance Documents – Help Along The Way
- Example Remedial Alternatives
- Site Closure / NFA
- Case Study – Ozone Injection

Summary of Facilities and Spills

BULK STORAGE PROGRAMS

PROGRAM STATISTICS[1]

Number of active Petroleum Bulk Storage (PBS) Facilities: **47,221** and Tanks: **109,247**

Number of PBS registrations processed during SFY 2011/2012: **8,822**

Number of active Major Oil Storage Facilities (MOSF) On-Shore: **181** Vessels: **235** and Tanks: **3,239**

Number of On-Shore MOSF Licenses issued: **43** and Vessel Licenses issued during SFY 2011/2012: **6**

Number of active Chemical Bulk Storage (CBS) Facilities: **1,482** and Tanks: **4,680**

Number of CBS Registrations processed during SFY 2011/2012: **812**

[1]As of 3/31/2012 unless otherwise noted.

Source: NYSDEC Division of Environmental Remediation Annual Report 2011-2012

Summary of Facilities and Spills

SPILL RESPONSE PROGRAM

PROGRAM STATISTICS

Number of spill incidents reported during SFY 2011/2012: **14,465 (State lead: 428, RP[1] lead: 14,037)**

Number of spill incidents closed during SFY 2011/2012: **14,879 (State lead: 366, RP[1] lead: 14,513)**

Number of open spills as of 3/31/2012: **12,331 (State lead: 1,071, RP[1] lead: 11,260)**

Cost recovery revenue received during SFY 2011/2012: **$9.6 million[2]**

[1] Responsible Party (RP)

[2] This number does not include penalties, fines and forfeitures.

Source: NYSDEC Division of Environmental Remediation Annual Report 2011-2012

Summary of Facilities and Spills

Spill Incidents Reported and Those Closed During SFY 2011/2012 by DEC Region and County					
DEC Region	Counties	Spill Incidents			
	57.5% of reported spills	Reported	Percent of Total Reported	Closed	Percent of Total Closed
1	Nassau, Suffolk	2,251	15.6%	2,836	19%
2	Kings, Bronx, Queens, New York, Richmond	2,131	14.7%	2,253	15.1%
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester	3,937	27.2%	3,858	25.9%
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady, Schoharie	1,523	10.6%	1,425	9.6%
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren, Washington	1,080	7.5%	1,021	6.9%
6	Herkimer, Jefferson, Lewis, Oneida, St. Lawrence	606	4.2%	561	3.8%
7	Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga, Tompkins	975	6.7%	981	6.6%
8	Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, Yates	1,002	6.9%	998	6.7%
9	Allegany, Chautauqua, Cattaraugus, Erie, Niagara, Wyoming	960	6.6%	946	6.4%
Total	**All Counties**	**14,465**	**100%**	**14,879**	**100%**

Source: NYSDEC Division of Environmental Remediation Annual Report 2011-2012

Did you have a release?

- **Statutory Authority: Navigation Law, Article 12; Environmental Conservation Law (ECL), Article 37**
- **Regulations: 6 NYCRR Part 610 for Major Oil Storage Facilities (MOSF)**
- **Regulations: Portions of 6 NYCRR 595-597 for Hazardous Substances Regulations and Release Reporting and 6 NYCRR Part 613.8 for petroleum spills**

Did you have a release? **REPORT IT!**

NYSDEC Spills 24-Hour Hotline
(800) 457-7362

5-Gallon Spill Criteria – USE CAUTION!

Petroleum Spill must be reported to NYSDEC unless they meet ALL of the following criteria:

- **The spill is known to be less than 5 gallons; AND**
- **The spill is contained and under control of the spiller; AND**
- **The spill has not and will not reach the State's water or any land; AND**
- **The spill is cleaned up within two (2) hours of discovery.**

For spills not deemed reportable, it is strongly recommended that the facts concerning the incident be documented by the spiller and a record maintained for one (1) year. Examples of spills as they may apply to you:

- **Product in containment sumps**
- **Product spills at or near dispensers**
- **Inventory discrepancies noted in 10-day reconciliation**
- **Product found in a monitoring well**
- **Tank overfills**
- **Tank test failures**
- **Any other petroleum release of suspected petroleum release**

Gasoline in sump

Did you have a release?

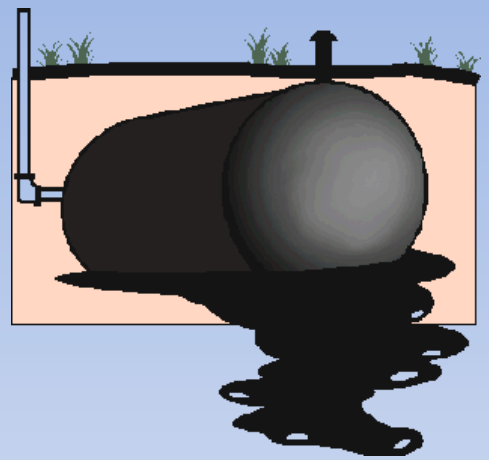
A common problem/misconception with owners & operators:

§ 613.4 Inventory monitoring for underground storage facilities

(d) Reporting of inventory losses. If inventory monitoring required in subdivision 613.4(a) shows: an inventory loss; a recurring accumulation of water in the bottom of the tank during any ten-day period; apparent product losses or gains exceed three-quarters (3/4) of one (1) percent of the tank volume; or apparent losses or gains exceed seven and one-half (7.5) gallons per one-thousand (1,000) gallons delivered, the operator must initiate an investigation into the possible causes. **If, within forty-eight (48) hours, the causes cannot be explained by inaccurate recordkeeping, temperature variations or other factors not related to leakage, the operator must notify the owner and the nearest regional office of the Department and must take the tank out-of-service in accordance with subdivision 613.9(a) until such time that inspection and/or tightness tests are performed, the cause is determined and necessary repairs or replacements are made.**

Tank Removals – Often Reveal Petroleum Releases

Required under 40 CFR Part 280 Subpart G



Subpart G - Out-of-Service UST Systems and Closure

§ 280.70 Temporary closure.
§ 280.71 Permanent closure and changes-in-service.
§ 280.72 Assessing the site at closure or change-in-service.
§ 280.73 Applicability to previously closed UST systems.
§ 280.74 Closure records.

New York State – Key Elements for UST Closure

- **30 day notification to NYSDEC prior to tank closure – They are very reasonable**
- **Tank Removal Notification Form (TRN) completed & submitted**
- **PBS Application paperwork is properly completed & submitted**
- **PBS Group versus Spills Group – Who gets the reports?**

Petroleum Spill Stipulation Agreements (STIP)

Summary

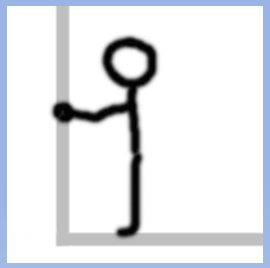
- Used to conduct the cleanup and removal of petroleum discharges
- Enforceable written agreement between NYSDEC and PRP
- The Stipulation is applicable state-wide
- No permits required for cleanup, discharge criteria already set in STIP
- Binding commitment to clean up the spill with no admission of liability
- Not for very small spills cleaned up quickly without remediation or air/water discharges
- Generally for cooperative parties

Benefits

- Allows for quick implementation of remedial activities
- Eliminates certain permitting roadblocks for consultants and contractors
- Sets a schedule for work activities with milestones
- Flexibility to work with NYSDEC regional staff and attorneys to craft an appropriate schedule for cleanup activities

http://www.dec.ny.gov/docs/remediation_hudson_pdf/STIPguidance.pdf

Long Form Consent Orders



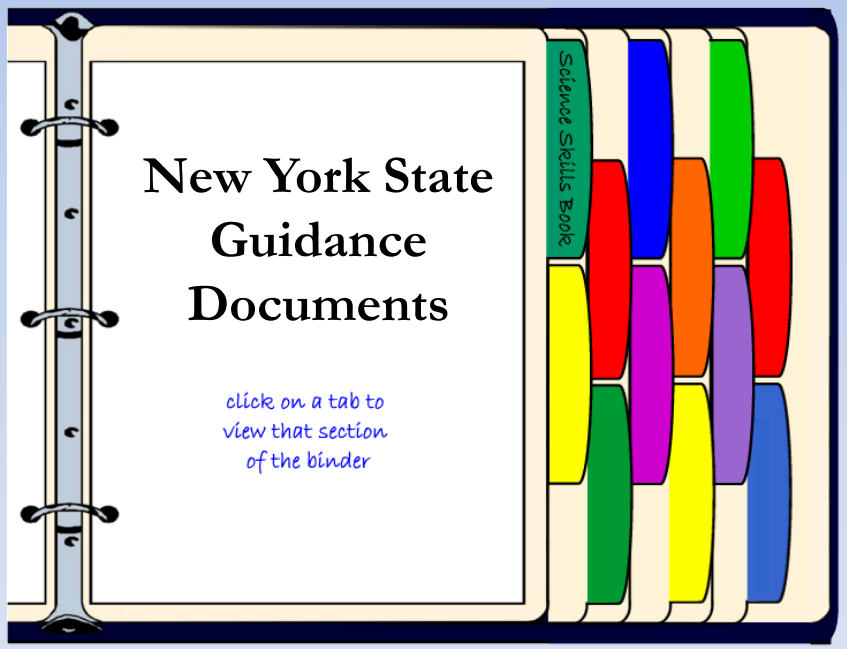
Summary

- Used to enforce and ensure the cleanup and removal of petroleum discharges
- Used for spills that have caused or have the potential to cause very significant environmental, safety or human health impacts.
- Used for spills that are very complex or complicated
- Used for spills where significant penalties are involved

Example Uses

- Used for spills requiring the relocation of residents
- Used for spills that have contaminated public drinking water supplies or several private water supplies
- Used for significant surface water spills
- Used for spills caused by negligence that causes serious injury or harm to nearby residents

Guidance Documents to help guide you through the Remediation Process in New York State



DER-25 – Petroleum Bulk Storage Inspection Handbook

- NYSDEC Division of Environmental Remediation (DER) policy & guidance
- Establishes procedures for NYSDEC staff in conducting inspections
- Provides the form used by NYSDEC inspectors when they visit your facility
- Helps identify Federally-regulated issues as well
- Provides cross-references with explanations for inspection questions on form

Use it to your advantage - <u>PREVENTION</u>

DER-25 / Petroleum Bulk Storage (PBS) Inspection Handbook	
New York State Department of Environmental Conservation **DEC Program Policy**	
Issuing Authority: Eugene J. Leff	**Title:** Deputy Commissioner, Office of Remediation & Materials Management
Date Issued: April 20, 2011	**Latest Date Revised:**

- Perform regularly scheduled UST inspections of your facilities
- Use DER-25 as a guidance document to identify issues and establish inspection protocols
- Engage a consultant to assist or perform as necessary
- Find issues before they create a spill

http://www.dec.ny.gov/docs/remediation_hudson_pdf/der25.pdf

DER-10 – Technical Guidance for Site investigation and Remediation

- NYSDEC Division of Environmental Remediation (DER) policy & guidance
- Helps develop and implement procedures for Site Investigation & Remediation
- Generally used for Superfund, Brownfields, Voluntary Cleanup Programs
- Can be utilized at complex Petroleum Spill remediation sites

DER-10 / Technical Guidance for Site Investigation and Remediation	
New York State Department of Environmental Conservation **DEC Program Policy**	
Issuing Authority: Val Washington	**Title:** Deputy Commissioner, Office of Remediation and Materials Management
Date Issued: May 3, 2010	**Latest Date Revised:**

- Chapter 1 – General Rules
- Chapter 2 – QA/QC Guidelines for Sampling and Laboratory Analytical Protocols
- Chapter 3 – Assessment & Investigation of Environmental Conditions
- Chapter 4 – Remedial Alternative Methodology and Selection
- Chapter 5 – Design & Construction of Selected Remedy
- Chapter 6 – Operational Management, Periodic Review and Closeout Considerations

http://www.dec.ny.gov/docs/remediation_hudson_pdf/der10.pdf

6 NYCRR Part 611 – Environmental Priorities and Procedures In Petroleum Cleanup and Removal - Statutory authority: Navigation Law, § 191

611.1 Authority, purpose and policy
611.2 Definitions
611.3 Containment
- **Containment must be initiated immediately**

611.4 Environmental protection
- **Booms, Physical Barriers, Contain Discharge, Protect Human Health**

611.5 Prohibited and restricted chemicals
- **Any chemicals used in cleanup require Department approval**

611.6 Cleanup and removal

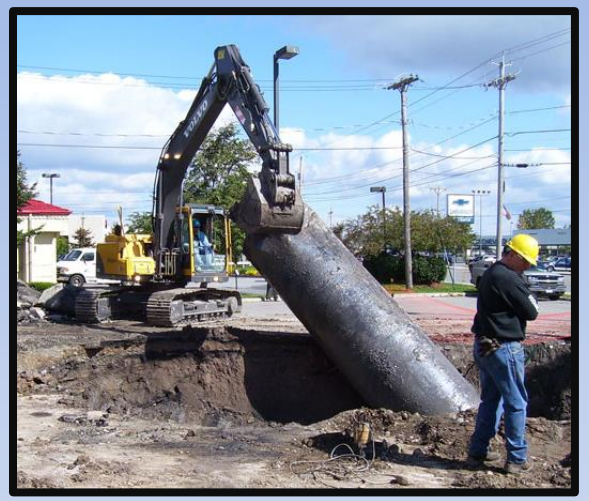
(1) rapid removal of the discharge to increase its recyclability and to minimize damage to the environment;
(2) continued protection of areas of environmental value and natural resources from both the discharge and the cleanup and removal operations;
(3) proper and environmentally sound disposal of unrecyclable petroleum and debris;
(4) the restoration of the environment to its pre-spill conditions;

611.7 References **http://www.dec.ny.gov/regs/4435.html**

CP-51 – Soil Cleanup Guidance

- Provides framework and procedures for the selection of soil cleanup levels
- Sets cleanup levels appropriate to each Remedial Program
- Effectively replaces/combines TAGM 4046 and STARS Memo #1

CP-51 / Soil Cleanup Guidance	
New York State Department of Environmental Conservation **DEC Policy**	
Issuing Authority: Alexander B. Grannis, Commissioner	
Date Issued: October 21, 2010	**Latest Date Revised:**



Can only be applied to a site after:

- Spill site is completely investigated
- All sources of contamination are properly addressed with their regulatory framework
- Groundwater, if contaminated, is properly evaluated for the appropriate remediation
- Impacts on adjacent residential properties, surface water, aquatic ecological resources are evaluated, as well as indoor air, soil vapor, vapor intrusion and other appropriate media.

http://www.dec.ny.gov/docs/remediation_hudson_pdf/cpsoil.pdf

Technical Field Guidance Documents – Spill Guidance Manual (SGM)

TECHNICAL FIELD GUIDANCE
SPILL REPORTING AND INITIAL NOTIFICATION REQUIREMENTS

http://www.dec.ny.gov/docs/remediation_hudson_pdf/1x1.pdf

TECHNICAL FIELD GUIDANCE
SITE INVESTIGATION PROCEDURES

http://www.dec.ny.gov/docs/remediation_hudson_pdf/1x4.pdf

TECHNICAL FIELD GUIDANCE
CORRECTIVE ACTION

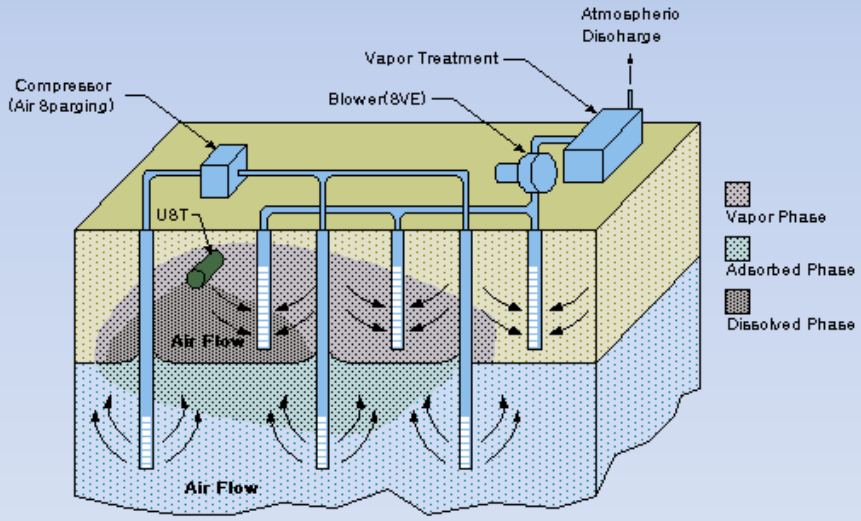
http://www.dec.ny.gov/docs/remediation_hudson_pdf/1x61.pdf

TECHNICAL FIELD GUIDANCE
CLOSING-OUT A SPILL

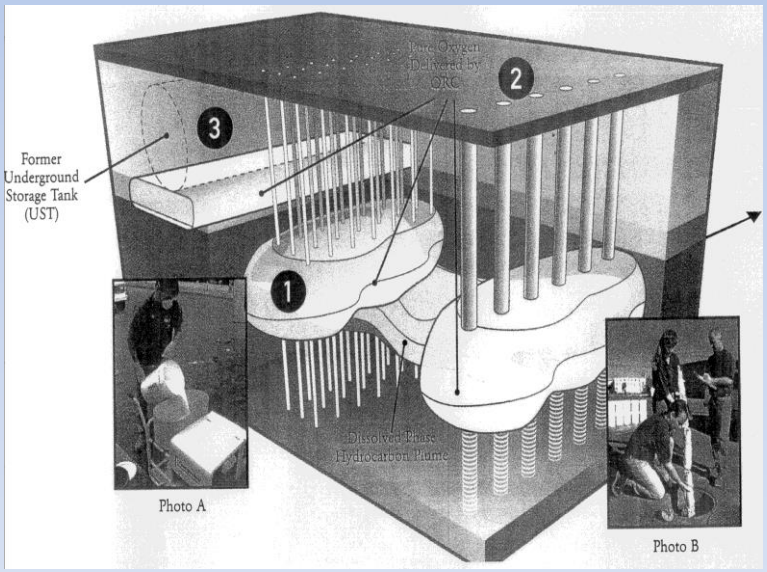
http://www.dec.ny.gov/docs/remediation_hudson_pdf/1x7.pdf

Example Remedial Alternatives

- Soil Excavation / Source Area Removal – Get it done while you're already on site
- Free Product Recovery – EFR, Product pumping
- SVE, Air Sparge/SVE, Total Fluids
- Chemical Oxidation / Stabilization
- Oxygen Injection
- Ozone Injection
- Groundwater Monitoring / Natural Attenuation



Air Sparge / SVE



Oxygen Injection

Site Closure / NFA – General Course of Action

** Every site has unique circumstances **

- Determine that the spill has resulted in resource impairment

- Continue plume management activities as long as you consider the impairment situation to be unacceptable

- If monitoring data indicate a "dead-end" situation has been reached, evaluate whether contaminant concentrations have been lowered to a "tolerable" level

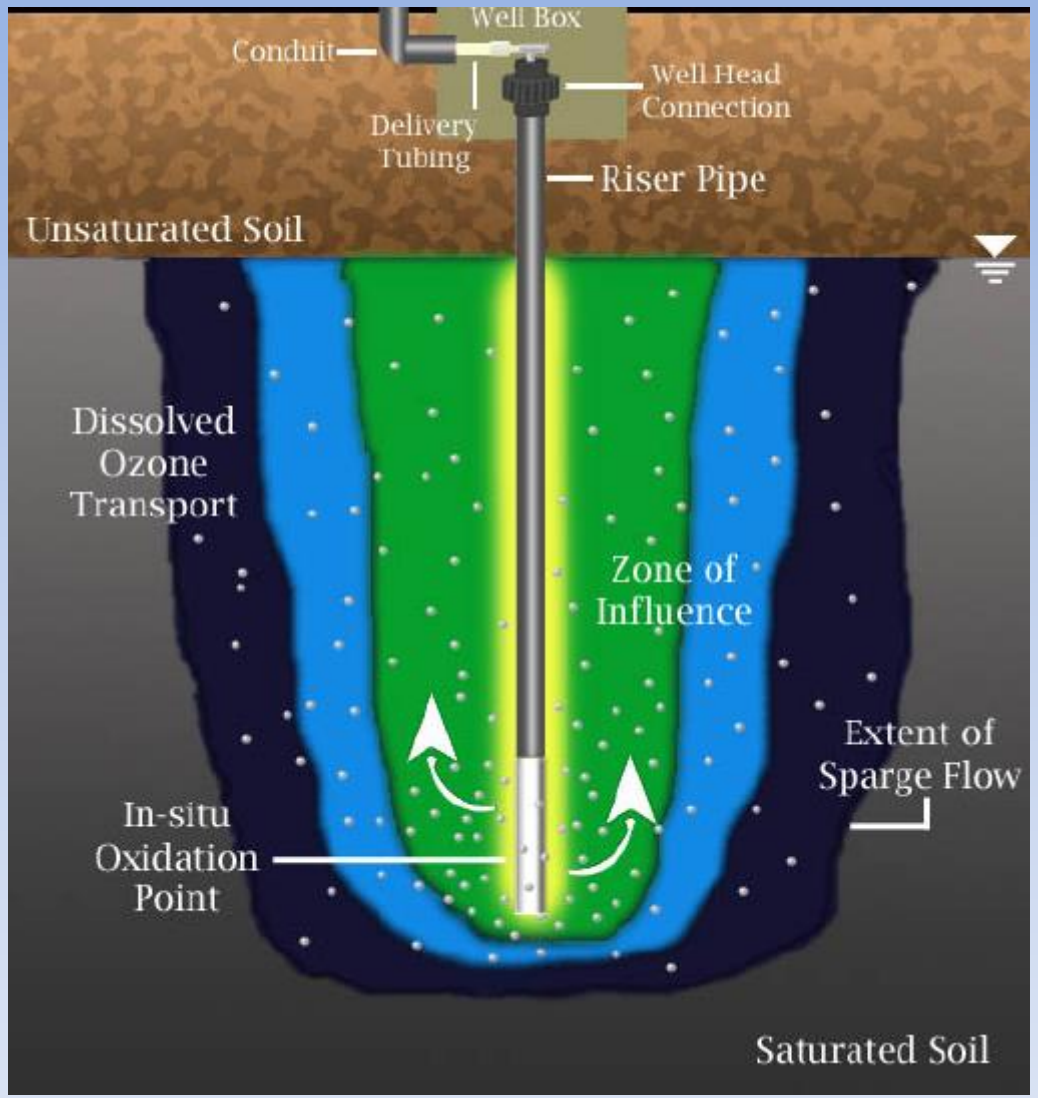
- If a "tolerable" contamination level has been reached, evaluate the costs and benefits of continuing with the plume management program

- Continue the plume management program if doing so is, in your judgment, cost-effective

- Terminate the plume management program if continuing with it is, in your judgment, no longer cost-effective.

Source: NYSDEC
Spill Guidance
Manual Section 1.7

Case Study – Ozone Injection, Queens, New York



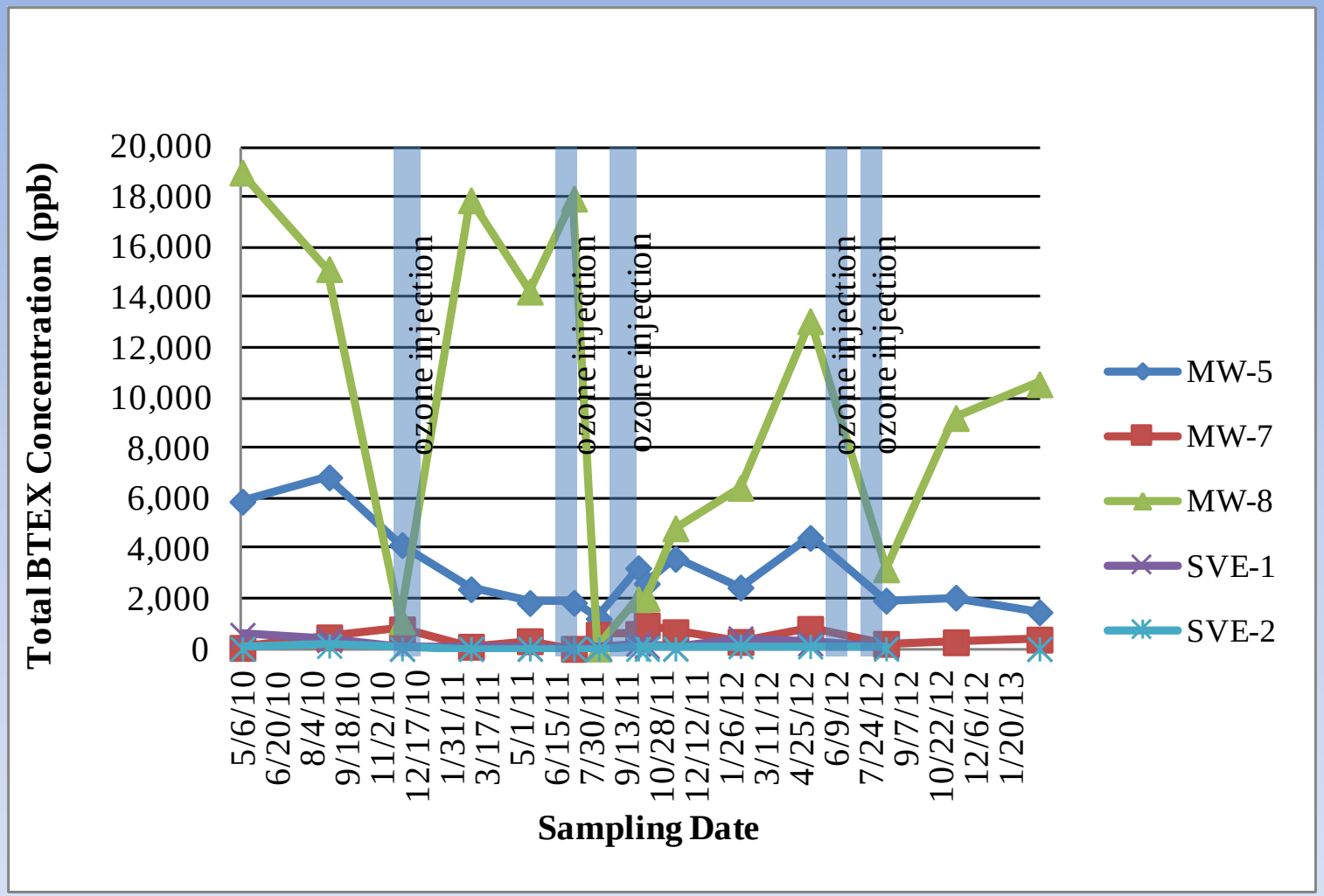
Graphic Source:
H2O Engineering

Case Study – Ozone Injection, Queens, New York

Total BTEX Trend After Ozone (ppb)						
	MW-5	MW-7	MW-8	SVE-1	SVE-2	Ozone Injection
5/6/10	5,868	38.9	18,990	554.9	2.91	
8/26/10	6,836	457.6	15,142	351.29	118.97	
11/28/10	4,137	774.9	1,097	5.99	3.04	11/16-12/15/10
2/25/11	2,377	84.3	17,884	4.28	ND	
5/12/11	1,828	304	14,243	12.6	ND	
7/8/11	1,836	NA	17,950	ND	ND	7/8-8/9/11
8/9/11	1,203	561	12.3	24.5	ND	
9/29/11	3,218	591	1,981	206.9	0.72	9/12-10/10/11
10/10/11	2,599	938	2,028	109.8	3.92	
11/16/11	3,587	664	4,808	18.5	1.15	
2/8/12	2,444	276	6,419	416.3	102.53	
5/8/2012	4422.4	795.6	13064	216	96.39	
8/14/2012	1918.7	198.8	3169.9	66.92	5.6	7/6-7/17, 7/31-8/20
11/12/2012	2041	262	9204			
2/28/2013	1459.3	369.6	10547.2	0.2	0	

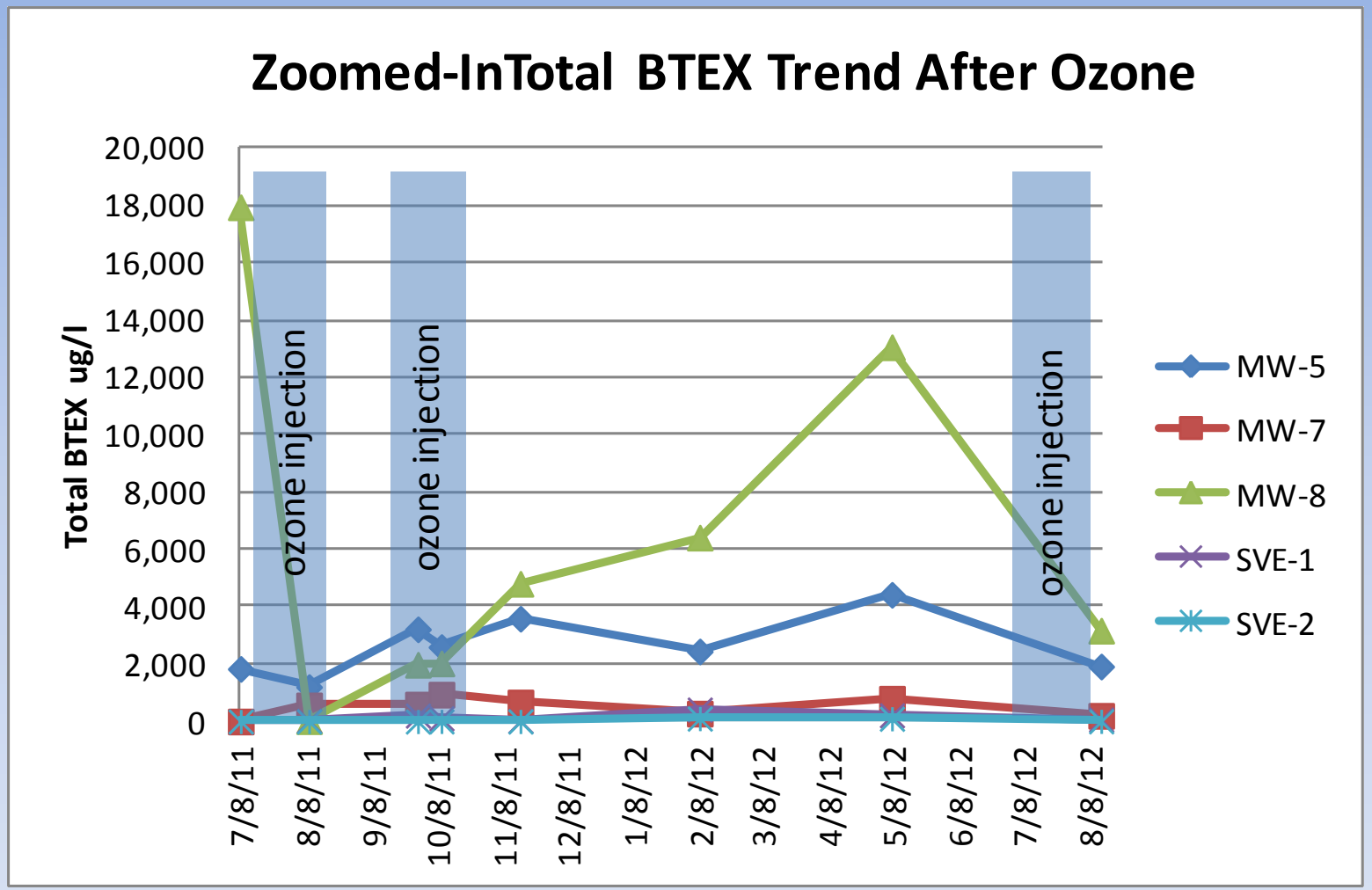
Source: B. Warner

Case Study – Ozone Injection, Queens, New York



Source: B. Warner

Case Study – Ozone Injection, Queens, New York



Source: B. Warner

In summary

- Inspect & Maintain USTs – Identify weaknesses and prevent spills

- Communicate with NYSDEC – They will work with you if you work with them

- Use Guidance Documents as necessary, much assistance is available online, NYSDEC will assist

- Get a good consultant – someone who knows and understands the "playing field"

- Get good legal representation if needed

- Work with the State and they will work with you

Questions & Answers

Thank You