



STATE OF NEW JERSEY  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**HURRICANE SANDY  
PASSAIC VALLEY SEWAGE  
COMMISSION**

**AIR MONITORING PROJECT**

**JEFF MEYER  
NORTHERN REGIONAL OFFICE  
AIR COMPLIANCE AND  
ENFORCEMENT**

# PASSAIC VALLEY SEWAGE COMMISSION

- ❑ The Passaic Valley Sewerage Commission (PVSC), established in 1902 by an Act of New Jersey State Legislature, began operation of the Newark Bay Treatment Plant in 1924 as a means to alleviate pollution in the Passaic River and its tributaries.
- ❑ Major expansions, upgrades and renovations throughout the twentieth century have made the PVSC one of the largest wastewater treatment plants in the United States.
- ❑ PVSC is designed to treat 330 million gallons per day (mgd), with an annual daily average of 220 mgd.
- ❑ PVSC serves 1.4 million residents in parts of Bergen, Hudson, Passaic, Essex and Union Counties
- ❑ PVSC serves approx. an additional 2 million residents throughout the States of NJ and NY through its Liquid Waste Acceptance Program

# HURRICANE SANDY DAMAGE

- Due to damage caused by the storm surge from Sandy, PVSC's entire treatment plant was taken out of service on the evening of the storm at approx. 9PM, Oct. 29<sup>th</sup>
- All connected flows were brought back into the plant by Nov. 3<sup>rd</sup>
- Flooding in the utility tunnels and galleries damaged electrical systems and pumping equipment

# DAMAGE TO PVSC

- ▣ PVSC's damaged equipment included its sludge dewatering processes including its Thickening Centrifuges, Zimpro Process, Decant Settling Tanks and Filter Press Dewatering.
- ▣ An alternate method of sludge processing had to be onsite until PVSC could repair its existing equipment.
- ▣ The potential for offsite odors in a highly urbanized area was high.



# DAMAGE TO PVSC

- ▣ PVSC contracted with Synagro to bring 10 mobile dewatering centrifuges onsite to dewater the solids.

# TEMPORARY SLUDGE PROCESSING

- ▣ Synagro was dewatering solids 1 week from the start of its site preparation. They brought their own generators to power the equipment, constructing the solids conveying systems, sludge pumping and piping for liquid sludge delivery to the machines and the centrate return to PVSC's plant.

# TEMPORARY SLUDGE PROCESSING

- ▣ The dewatered biosolids were trucked offsite for disposal.
- ▣ The temporary dewatering operations were in the open air, on a PVSC access street.

# TEMPORARY SLUDGE PROCESSING

- ▣ Synagro began dewatering on November 23<sup>rd</sup> with 10 centrifuges. The centrifuges were phased out as PVSC's own dewatering equipment became available in mid December.



# NJDEP RESPONSE

- ▣ NJDEP contacted PVSC customers to request voluntary reduction in discharge to PVSC.
- ▣ NJDEP Commissioner requested that PVSC phase in of sludge treatment equipment ensure no significant odor in the residential community.
- ▣ NDEP and USEPA set up a temporary Hydrogen Sulfide monitoring system .

# HYDROGEN SULFIDE MONITORING

- NJDEP and EPA coordinated the placement of H<sub>2</sub>S monitors in and around PVSC. A total of 6 monitors were located on PVSC property. An additional four monitors were located off site. Weather data was obtained from the NOAA weather station at Newark International airport.
- Fence line Action Levels - Alarm trigger set at less than 42 ug/m<sup>3</sup> H<sub>2</sub>S 1 hour average at the PVSC fence line. This is the California reference level for adverse health effects, including headache and nausea.
- The residential community trigger was set below the odor detection threshold of 5 to 11 ug/m<sup>3</sup>.
- Significant odor potential in the community would require reduction in sludge processing. Therefore, NJDEP Investigators conducted 24 hour odor surveillance around PVSC to ensure no odors were leaving the PVSC property.

# NJDEP ODOR SURVEILLANCE

- ▣ Odor Surveillance - Enforcement conducted patrols of the area as the centrifuges were phased in to determine if there was significant odor in the residential communities (Ironbound, Bayonne, JC, Kearney).
- ▣ The greatest odor potential was most likely at night during inversion meteorological conditions.
- ▣ Protocol for communication with PVSC on significant odor and actions to decrease sludge processing was developed.

# CONCLUSIONS

- ▣ 24 hour odor surveillance was conducted in the areas around PVSC from November 14<sup>th</sup> through November 26<sup>th</sup> .
- ▣ No significant offsite odors were observed by NJDEP investigators.
- ▣ No complaints were received by the NJDEP Communications Center within the area around PVSC and surveillance area.

# QUESTIONS?

