

An aerial photograph of a residential neighborhood. In the center-left, there is a large, light-colored industrial building with a flat roof. To its right is a tall, white, cylindrical water tower. The surrounding area is filled with houses, trees, and streets. A large parking lot with many cars is visible in the bottom right. The text is overlaid in yellow on the top right of the image.

South Jersey Ice and Cold Storage
Vineland, Cumberland County, NJ

EPA Emergency Response
June – August 2016

Dwayne Harrington

USEPA Region 2
Response and Prevention Branch

Request from VFD on 6/22/16 for EPA to respond to
investigate conditions at the facility



Anhydrous Ammonia:

EHS, RMP/PSM regulated, DHS/DOJ Schedule 1 TIM

Facility registered for 4,700 lbs;
below RMP and NJDEP-TCPA regulatory thresholds





3 stories plus basement

> 5 million lbs frozen produce, mostly seafood

One 1-pallet freight elevator

Facility owner developing closure plan



Circa 1922; current operator 1998



































A photograph of an industrial facility, likely a refrigeration plant. In the foreground, there are large blue industrial units. To the right, a tall metal ladder is leaning against a structure. The background shows more complex piping and equipment. The lighting is somewhat dim, with some bright spots from overhead lights.

Facility owner NJ Licensed Refrigeration Operator

EPA GDC Inspection 8/2/16:

No process safety program

No process safety information

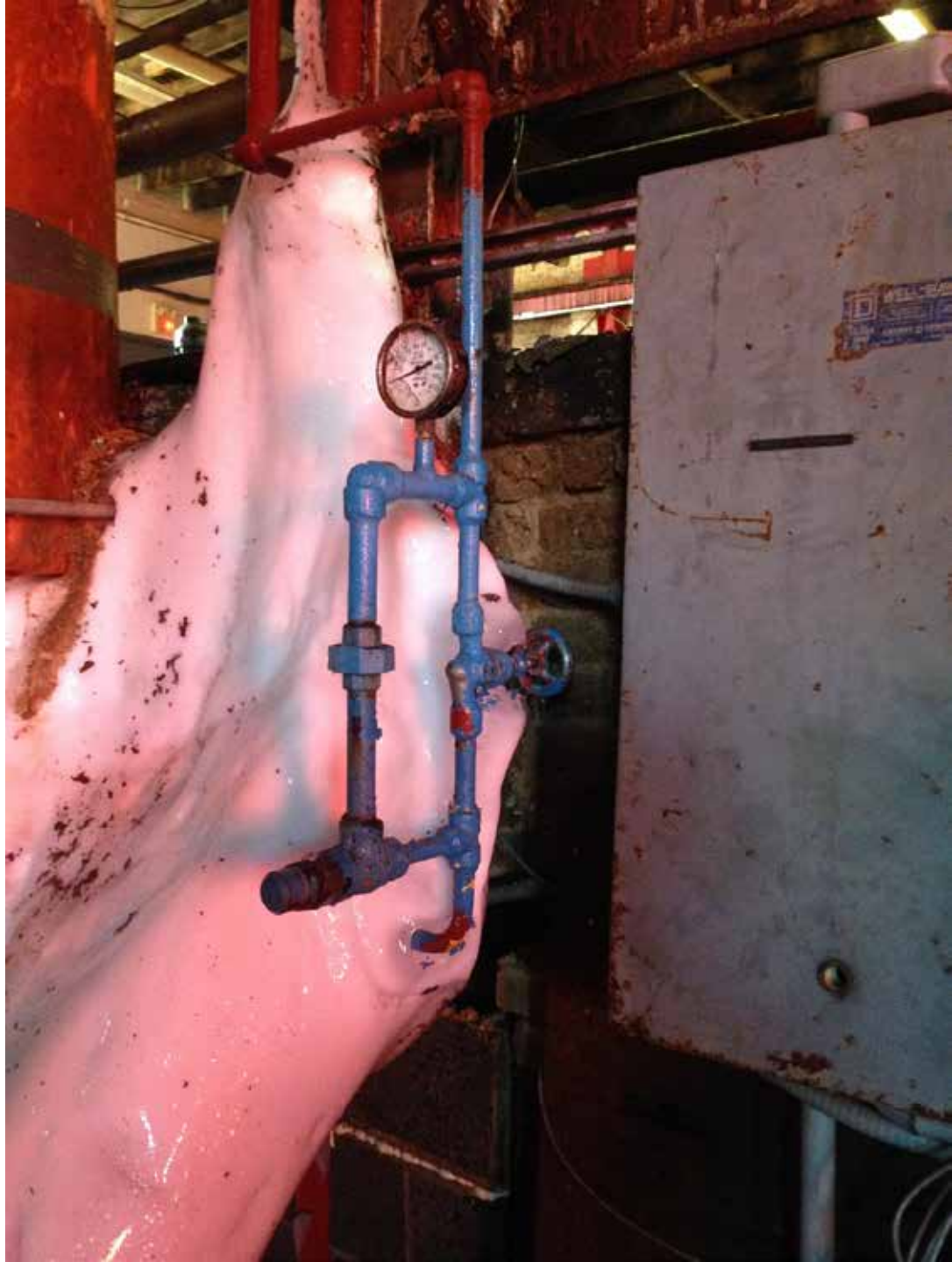
- system charge calcs
- equipment volumes and pressures
- P&IDs
- Pressure relief systems

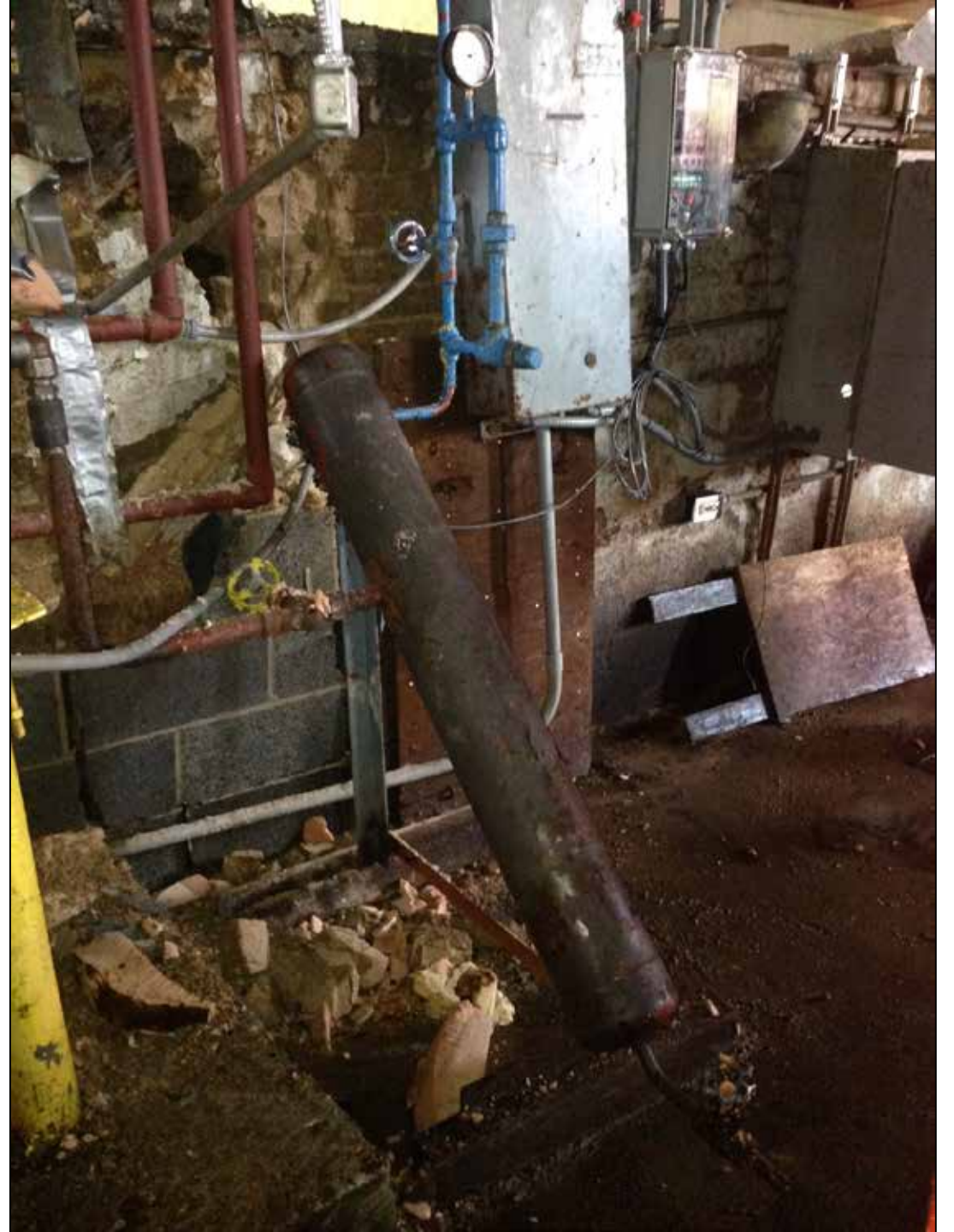
No preventative maintenance, NDT, or records;
breakdown maintenance only

No employee Hazcom or operations/safety training





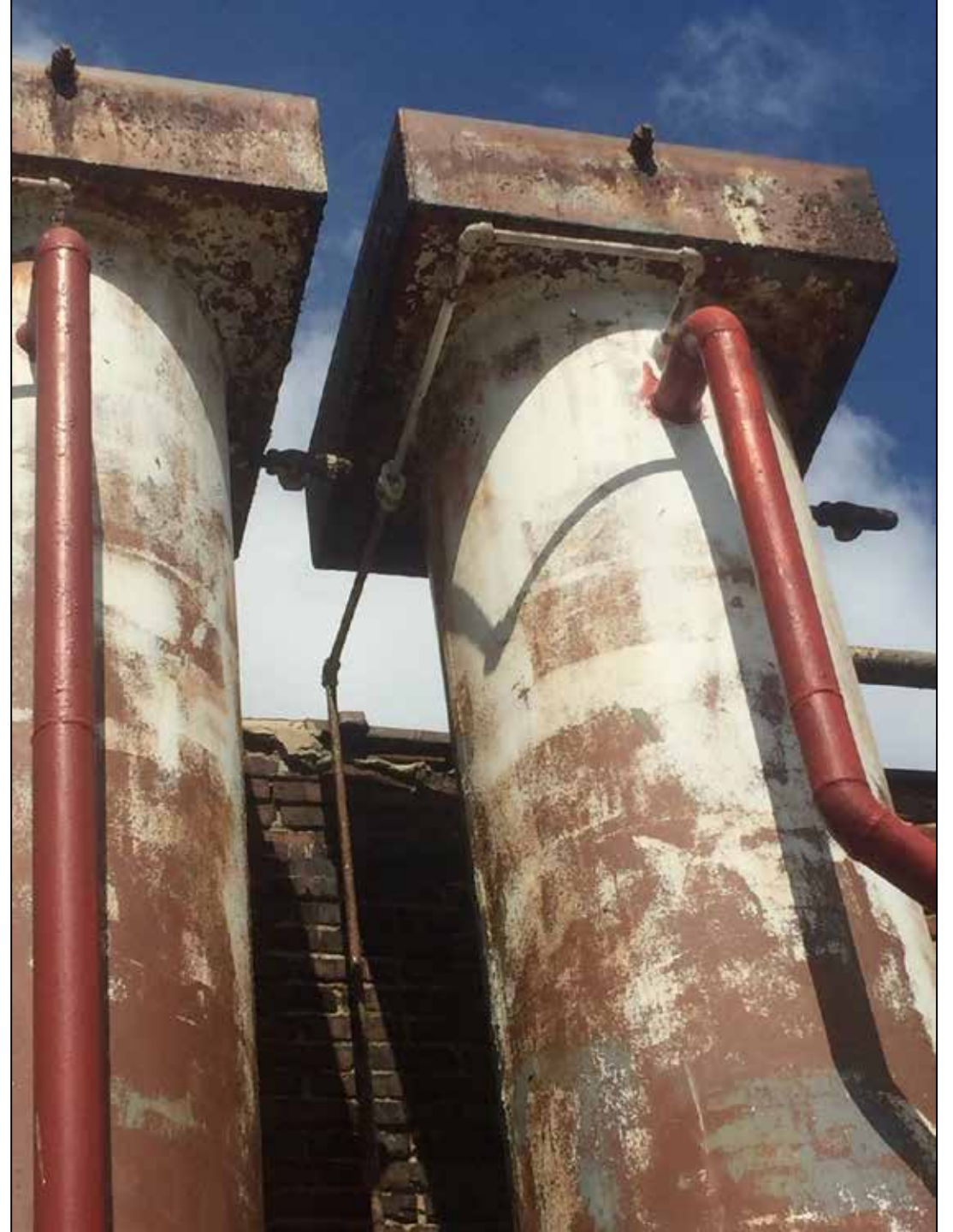








Condenser Silos, 1922













June 28

Initial assessment by EPA and facility owner refrigeration engineering contractors identify numerous serious deficiencies in the system and the need to remove the ammonia and repair the system as soon as possible.

Dangerous ice buildup on refrigeration coils – increased load beyond breakpoint

Serious concerns about ice buildup stress on building integrity

“I have been in the refrigeration business for 52 years of my life and this is the worst building I have ever been in. It is a disaster waiting to happen.”

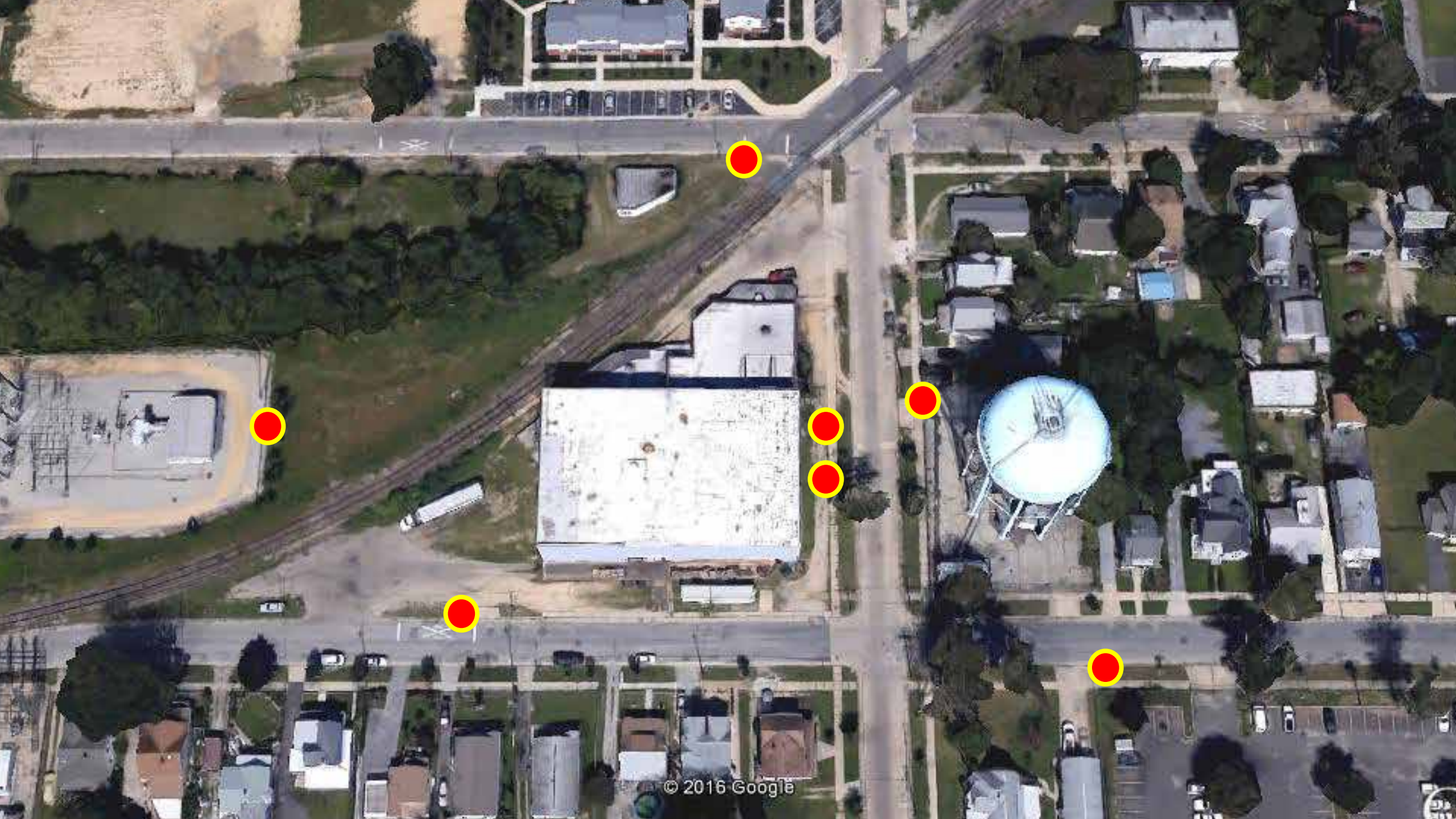
President, Arctic Refrigeration



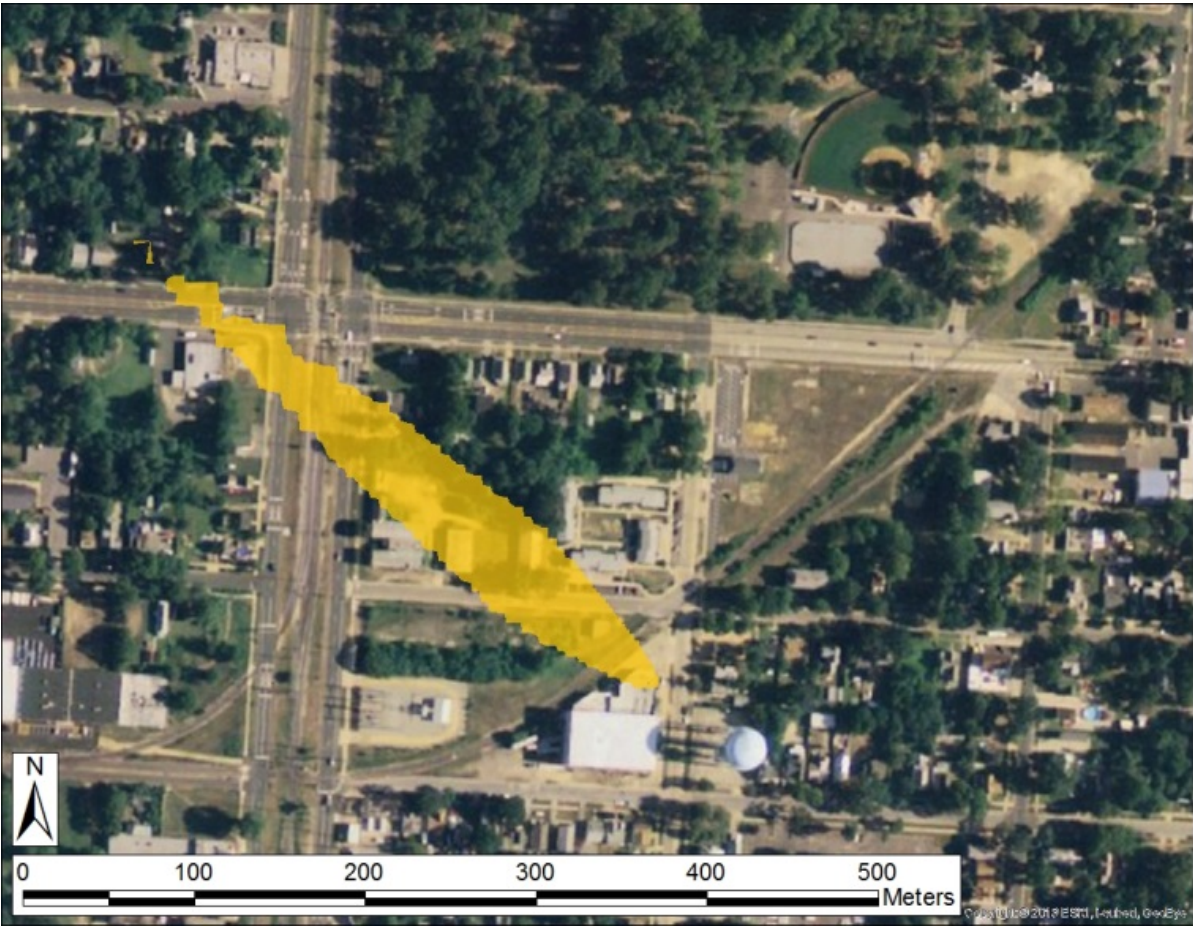
EPA response initiated July 2, 2016



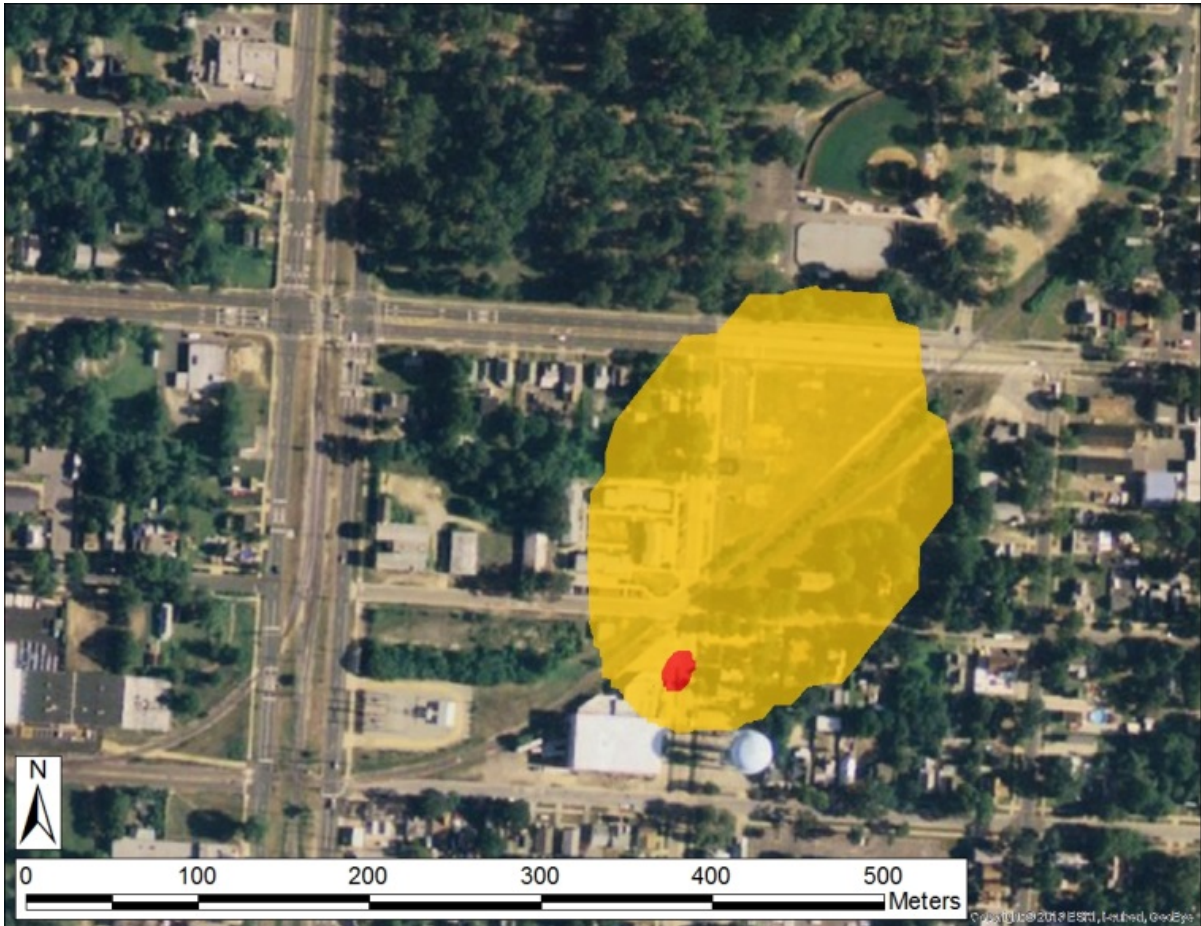
24/7 air monitoring







Minimum Population Affected – 42

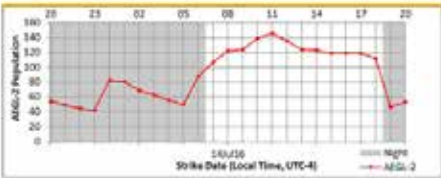


Maximum Population Affected – 146

Value
AEGL-3
AEGL-2

FACTS
Vineland, NJ
Location: 39.489496°N/75.023344°W
Beginning Incident Time: 0000 EST 14JUL2016
Hazard: Ammonia (NH ₃)
Amount: 4,700 lb
Incident: Continuous release
Weather: 12 km HAZE
Model: HIRAC 6.3
Static Population Estimates: LandScan 2014

Ammonia – Estimated AEGL-2 Populations



Day Night

Exposure to high concentrations of ammonia in air caused immediate burning of the nose, throat and respiratory tract. This can cause bronchial and alveolar edema, and airway destruction resulting in respiratory distress or failure. Inhalation of lower concentrations can cause coughing, and nose and throat irritation.

	Strike Date / Time (Day/Night)	Estimated AEGL-2 Population
Min	14JUL2016 / 03:00 EST (Night)	42
Max	14JUL2016 / 15:00 EST (Day)	145



7 Residences Relocated for ~ 6 Weeks



7 Residences Relocated for ~ 6 Weeks

- Families
- Special needs
- Lack of bank accounts



Community emergency notification and response plan

- Bi-lingual
- Community outreach
- Emergency notification



EPA and VFD Hazmat facility response plan

An aerial photograph of a suburban and industrial area. A large, light-colored industrial building is visible in the center. To its right is a large, white, spherical water tower. The surrounding area includes residential houses, parking lots with cars, and green spaces. A road runs vertically through the left side of the image. Text overlays in yellow are present on the left side of the image.

Unified Command:

EPA

- Response and Prevention Branch
- Public Affairs Division

South Jersey Ice

NJDOL

City of Vineland

- Fire Department & OEM
- Health Department
- Public Housing Authority
- Public Works
- Human Services

OSHA -information
sharing w/ EPA

NJDEP-BER



ERV Scrubber Installation 7/9/16

Neighborhood shelter in place advisory during scrubber installation







EPA and VFD Hazmat standby
for response operations





NJDOL Boiler
and Pressure Vessel
Red Tag 7/23/16





EPA Consent Order 7/18/16
EPA assumes facility operations to remove ammonia



> 5 million lbs frozen seafood

One 1-pallet freight elevator

~3 weeks to unload



Product Removal Completed 8/20/16



~ 3 weeks to pump down and remove ammonia

7/21/16: 6080 lbs

7/27/16 : 1820 lbs

~ 8,000 lbs

Neighborhood evacuation by VFD during ammonia removal





Emergency removal of
33k gals brine solution







Building ventilation and meltwater removal






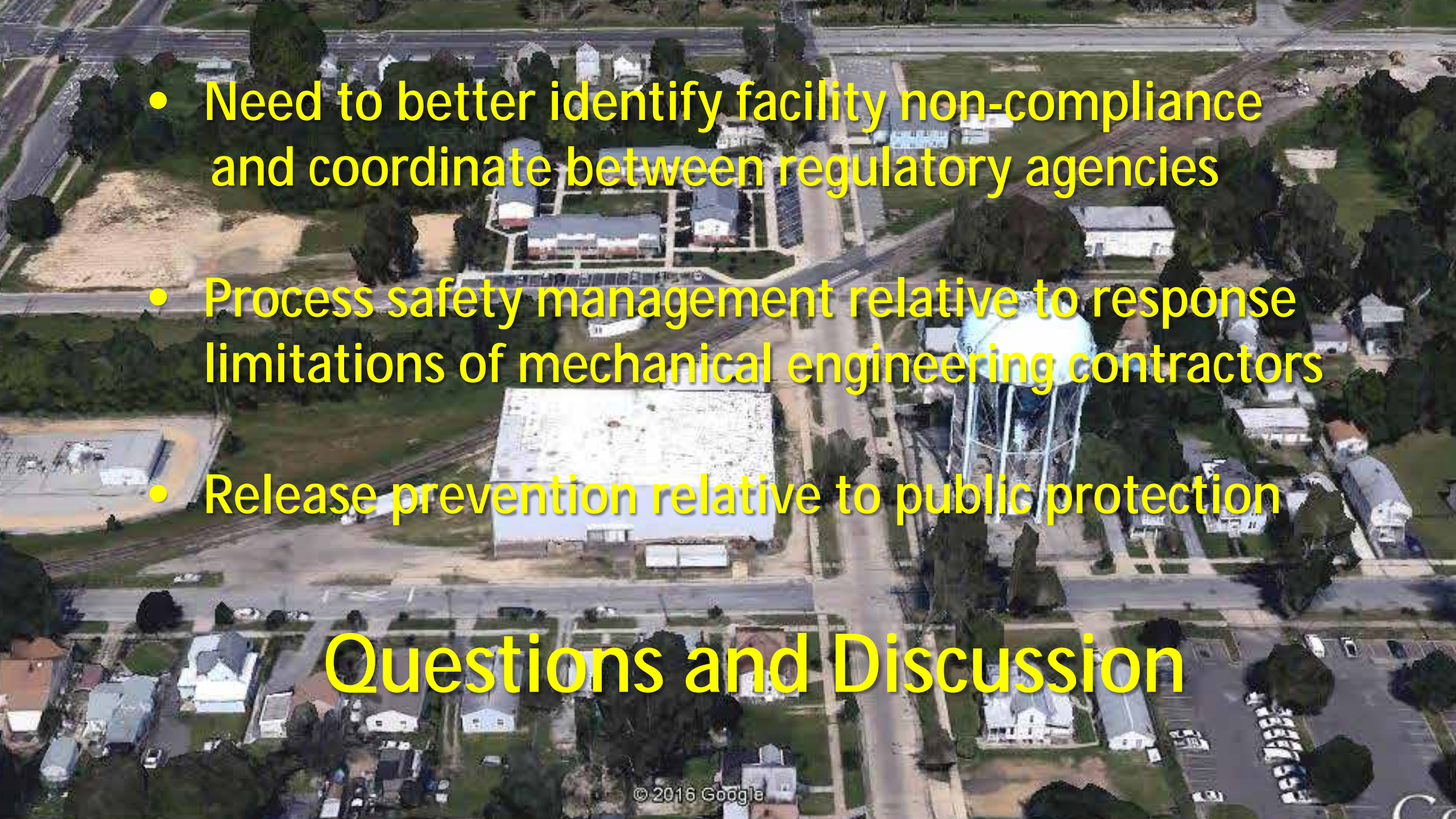






Response Completed 8/18/16
~8,000 lbs Anhydrous Ammonia Removed

- 
- An aerial photograph of a suburban neighborhood. In the center, there is a large, white, rectangular industrial building with a flat roof. To the right of this building is a tall, blue water tower. The surrounding area includes residential houses with various roof colors, green lawns, and trees. A road runs horizontally across the middle of the image, and another road runs vertically through the center. The text of the list is overlaid on the image in yellow.
- Need to better identify facility non-compliance and coordinate between regulatory agencies
 - Process safety management relative to response limitations of mechanical engineering contractors
 - Release prevention relative to public protection

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Questions and Discussion