



# DEFENSE LOGISTICS AGENCY

THE NATION'S COMBAT LOGISTICS SUPPORT AGENCY



## DFSP Norwalk RESTORATION ADVISORY BOARD

August 22, 2019



WARFIGHTER FIRST



# Status of Remediation System



- **Soil and Groundwater Treatment System Components:**
  - **Five Horizontal Vapor Extraction Wells**
  - **40 Total Fluids (LNAPL and Groundwater) Recovery Wells Throughout the Tank Farm**
  - **65 New Biosparge Wells - To Enhance BioRemediation of Groundwater**
  - **66 Vertical Vapor Extraction Wells – To Enhance Remediation of Deeper Soils**
- **Planned for Late 2019:**
  - **Full Time (24-hour a day) Operation of Thermal Oxidizer**
  - **Connection of Groundwater Discharge to Sewer and resume Groundwater Extraction.**



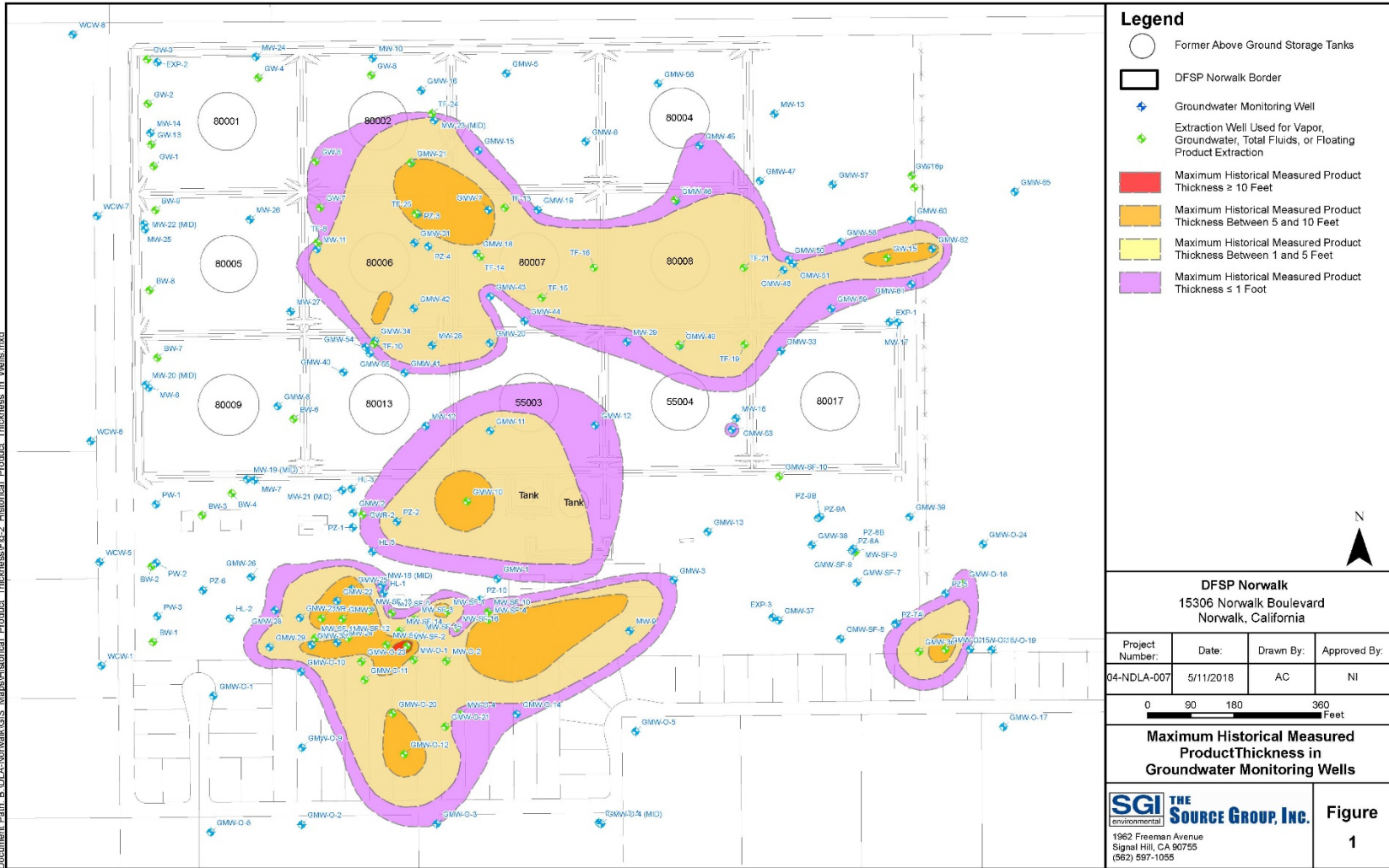
# Status of Remediation System



- **Groundwater Remediation:**
  - **79.3 MM gallons of groundwater extracted and treated since April 1996**
  - **Water System Off-Line pending re-routing of Discharge**
- **SVE System:**
  - **6,918 pounds of vapor-phase hydrocarbons removed in Q2 2019**
  - **Abandoned plugged SVE Horizontal Well HW-3 and re-installed two well section (HW-8, HW-9)**
- **LNAPL Recovery:**
  - **Amount of LNAPL recovered decreased (900 lbs): groundwater rose after heavy winter rains**
  - **9,813 gallons of LNAPL recovered since August 2016**



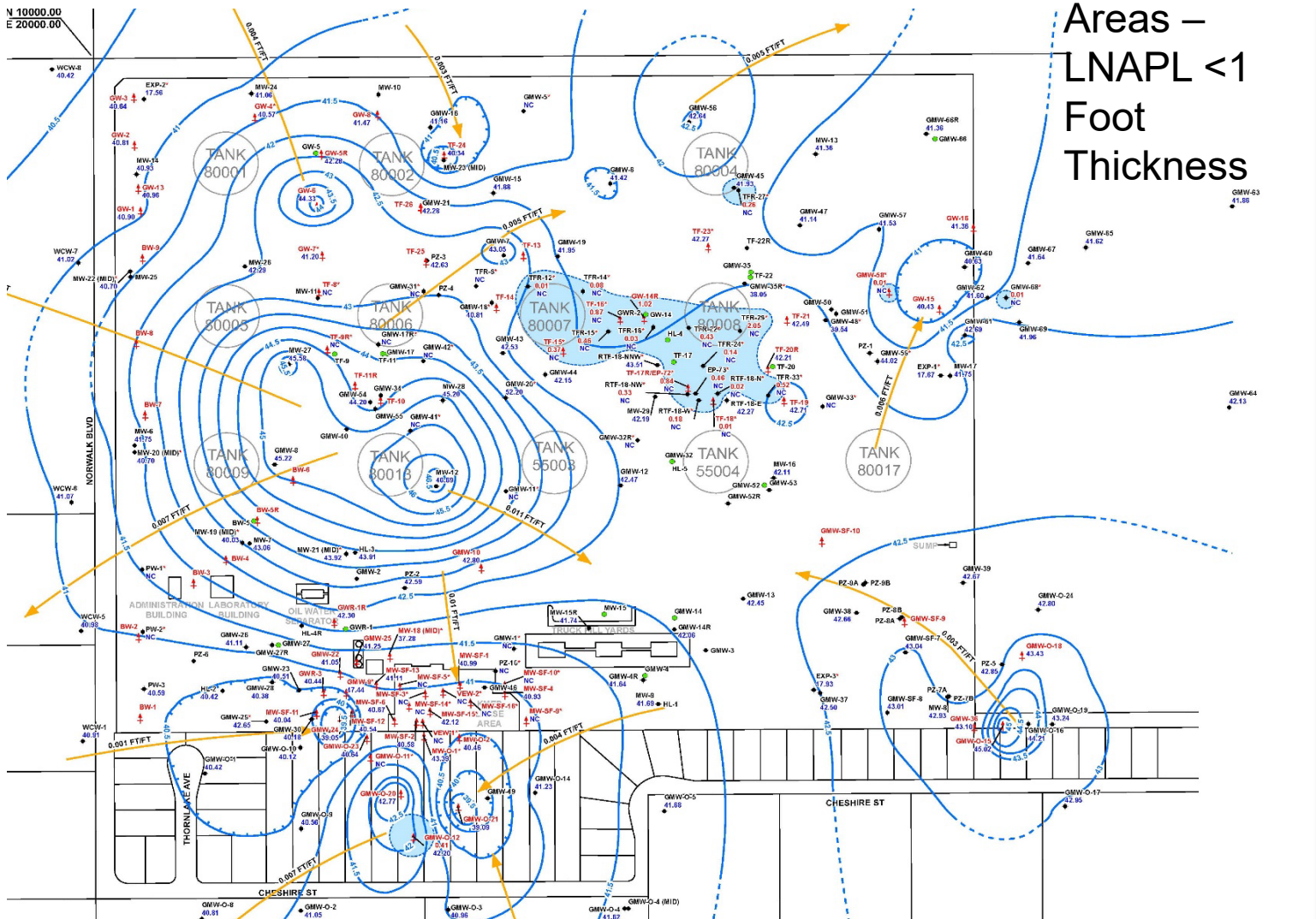
# LNAPL - Maximum



Document Path: B:\DLA-Norwalk\GIS\_Maps\Historical\_Product\_Thickness\Fig.2\_Historical\_Product\_Thickness\_in\_Wells.mxd



# LNAPL – Current (high groundwater)



Sky Blue  
Areas –  
LNAPL < 1  
Foot  
Thickness

- GMW-47' NC ◆ Groundwater elevat
- TF-17 ● Decommissioned w
- 43.0 - - - Lines of equal groun groundwater elevati (dashed where infer)
- Estimated extent of phase liquid (LNAP groundwater, dashed)
- Approximate directi estimated horizonta foot/foot (ft/ft)

### Note

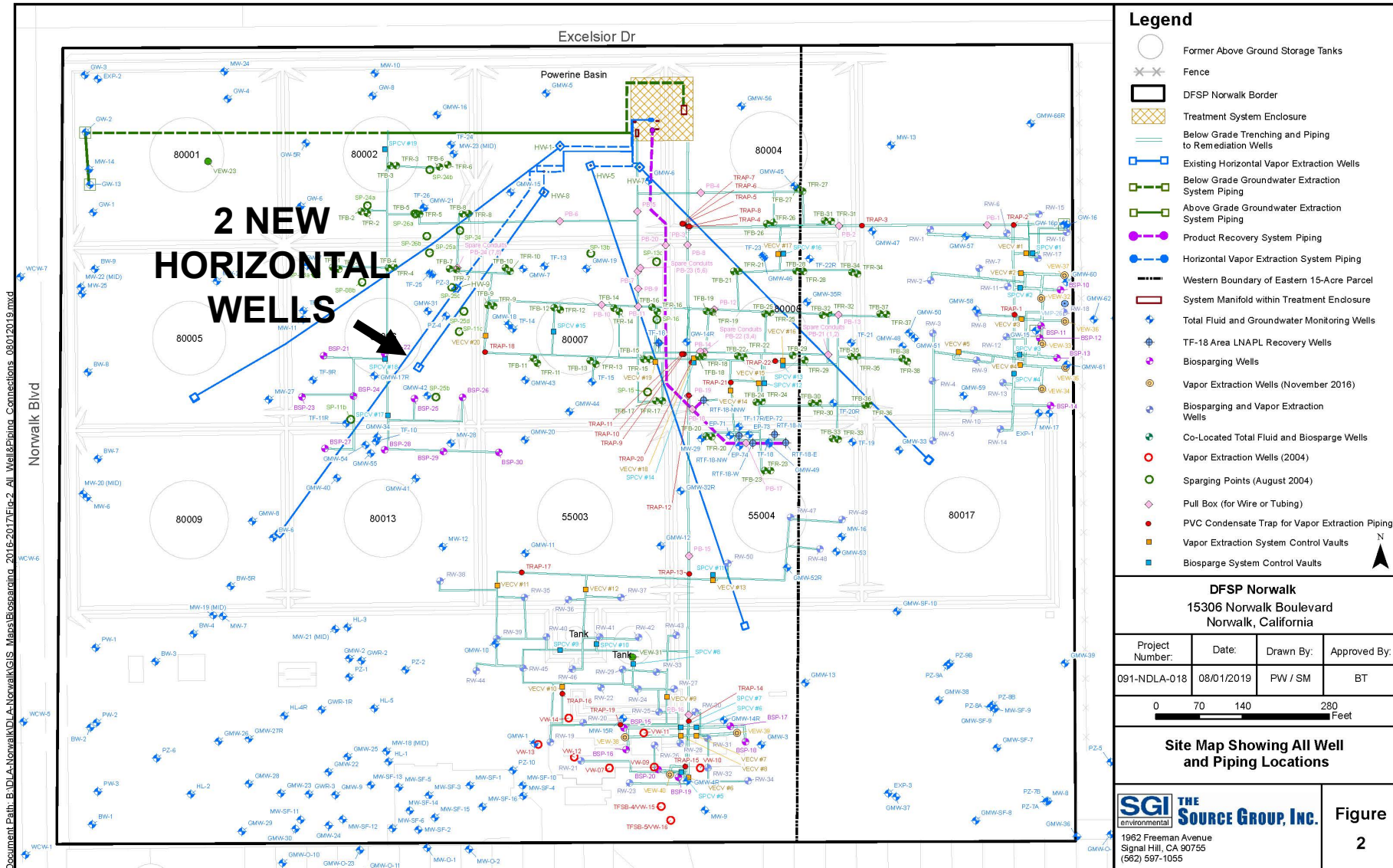
1. Groundwater elevations shown at wells are base SGI, Blaine Tech, and SI
2. SFP and DLA's remedii shut down approximat collecti fluid level mea
3. Wells screened in the E) the bottom of the upper groundwater elevations i surrounding groundwat in contouring. Groundwa intended to represent ge conditions and are inter by Blaine Tech. Wells w elevations not used in co a red asterisk (\*).
4. NC = groundwater eleva calculated because well monitoring event, not m obstruction or other cas casing elevation is not a
5. Wells at which a ground qualifier is not supplie Monitoring and Reportin visited during this monit
6. Fuel storage tanks depic historical structures and the site.

### Survey I

1. Base map prepared from Daniel GTL, Dulin & Boy and Parsons.
2. Except as noted below, by Dulin & Boynton.
3. Locations of wells HL-3, on field measurements t Woodward-Clyde.
4. Locations of wells BW-1 by Geomatrix based on i surveyed by Dulin & Boy
5. Locations of wells TFR-4 TFR-18, TFR-22, TFR-2 TFR-33 based on field r



# Focus on Deep Soil and LNAPL



### Legend

- Former Above Ground Storage Tanks
- Fence
- DFSP Norwalk Border
- Treatment System Enclosure
- Below Grade Trenching and Piping to Remediation Wells
- Existing Horizontal Vapor Extraction Wells
- Below Grade Groundwater Extraction System Piping
- Above Grade Groundwater Extraction System Piping
- Product Recovery System Piping
- Horizontal Vapor Extraction System Piping
- Western Boundary of Eastern 15-Acre Parcel
- System Manifold within Treatment Enclosure
- Total Fluid and Groundwater Monitoring Wells
- TF-18 Area LNAPL Recovery Wells
- Biosparging Wells
- Vapor Extraction Wells (November 2016)
- Biosparging and Vapor Extraction Wells
- Co-Located Total Fluid and Biosparge Wells
- Vapor Extraction Wells (2004)
- Sparging Points (August 2004)
- Pull Box (for Wire or Tubing)
- PVC Condensate Trap for Vapor Extraction Piping
- Vapor Extraction System Control Vaults
- Biosparge System Control Vaults



Document Path: B:\DLA-Norwalk\DLA-Norwalk\SIS\_Maps\Biosparging\_2016-2017\Fig-2\_All\_Wells&Piping\_Connections\_08012019.mxd



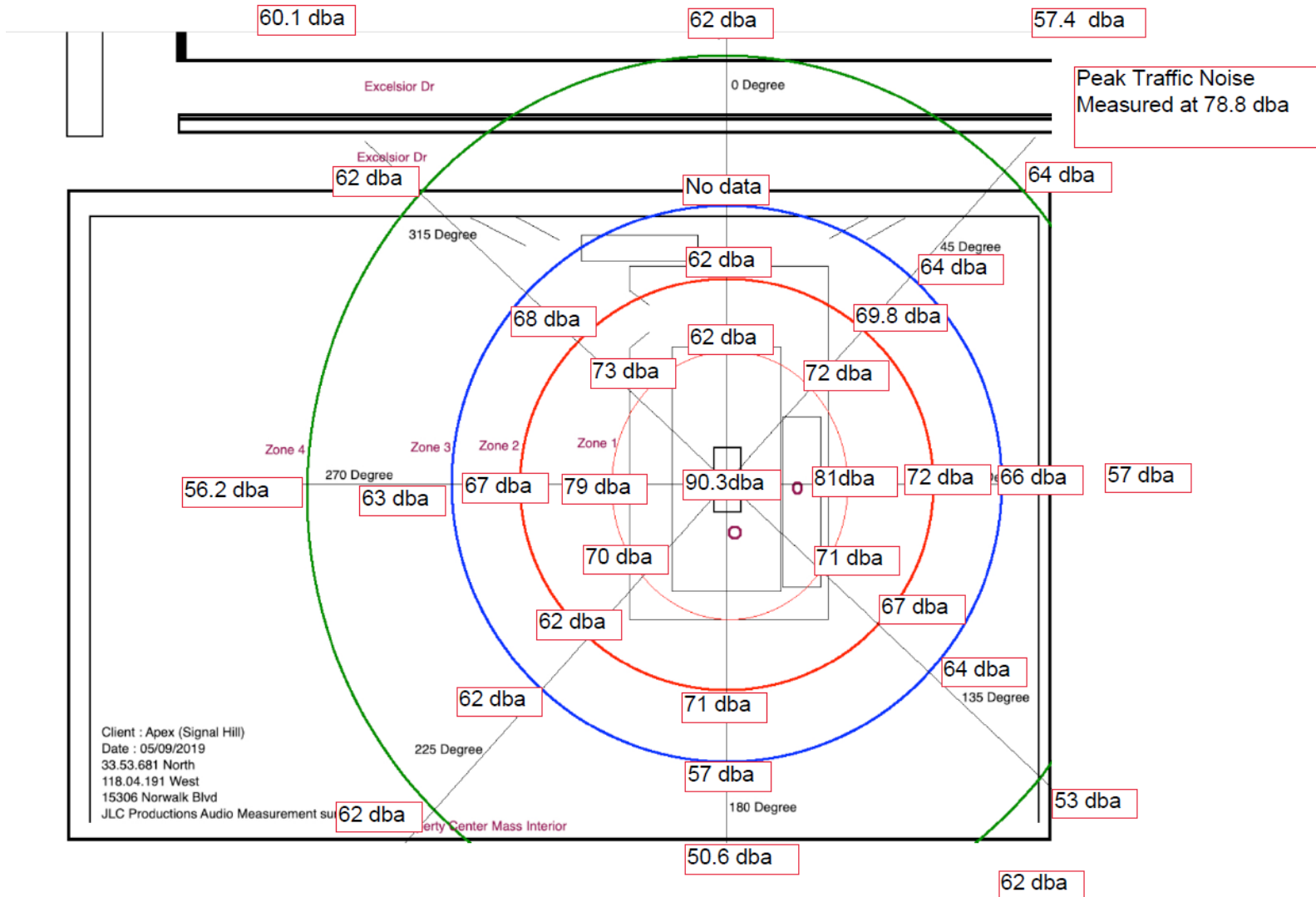
# Status of Remediation System



- **New 3,000-scfm Natural Gas-fired Thermal Oxidizer has been tested, operated during the day; working on Sound Proofing**
- **Noise Study was Completed (findings on next Slide)**
  - **Recommended Sound Shields on Each Piece of Equipment**
  - **Sound Blankets will Add to Sound Deadening**
- **After Sound Proofing, Long-term, Full-time Operational Status of new Thermal Oxidizer will be Maintained.**
- **Noise Monitoring will be Completed in early stages at Property Boundary (Excelsior Blvd)**
- **Additional Vapor Extraction Capacity is provided by 500-scfm System Using Activated Carbon Treatment**



# Noise Evaluation Findings







# ThermOx: Posts for Sound Blankets



**POST FOR  
SOUND  
BLANKETS**



# Remediation of Upper 10 Feet



## Soil Remediation Project Progress

- **Western Area Report** submitted to the RWQCB; *Office of Environmental Health Hazard Assessment (OEHHA)* has provided comments via memo to the RWQCB.
- ***New Soil Gas Data Evaluation Method by Agencies:***
  - DLA preparing collection of more soil gas data at perimeter of the site
  - Data will be used to enhance risk calculations



# Dust Control



- **Problem: Santa Ana Winds Cause Dust Clouds to Form at the Site.**
- **DLA Actions:**
  - **Twice-Weekly (mid-week and Fridays) Dust Control via Water Trucks**
  - **Water Truck Applications will be Conducted in Anticipation of Future Forecasted Santa Ana Wind Conditions**
  - **Environmentally Friendly, non-Toxic Soil Binder to Further Mitigate Dust During Wind Events**



# Water Truck



