



NES was selected to fabricate an integrated SVE/Air Sparge remediation system for an active airport in New England where extensive jet fuel contamination was present. The system enclosure and related exterior mounted components were required to meet very stringent FAA and property owner requirements.

Design Parameters

Site Contaminants	Weathered jet fuel
SVE System	500 acfm at 52 inches wc vacuum at the manifold connections with catalytic oxidizer for vapor treatment
Sparge System	195 scfm at 22 psi at the manifold connections
Site Power	480 VAC, 3 phase
NEC Area Classification	SVE - Class 1, Division 2 Sparge - Non-Classified

System Equipment

SVE	Rotary lobe positive displacement blower (15 hp)
Off-Gas Treatment	Catalytic oxidizer (electric operation)
Sparge	Rotary claw compressor (25 hp)
Controls	Relay based with wireless cellular auto-dialer for remote telemetry
System Enclosure	Steel cargo shipping container (exterior 48 feet x 8 feet x 9.5 feet)



NES was selected to fabricate an SVE/Air Sparge system for a retail petroleum service station in Maryland. The system was designed and fabricated with a single SVE blower and dual Sparge compressors with automatic manifold zone cycling to target a vast array of wells. Rotary vane Sparge compressors with long-life vanes were installed to ensure system operation up-time. Property owner noise requirements dictated the installation of system sound attenuation components, while the use of a mobile trailer as the system enclosure provided relatively rapid and easy permitting procedures.

Design Parameters

Site Contaminants	Gasoline
SVE System	350 scfm at 30 inches wc vacuum at the inlet manifold legs with catalytic oxidizer for vapor treatment
Sparge System Each	80 scfm at 15 psi at the compressor outlet
Site Power	208 VAC, 3 phase, 4 wire
NEC Area Classification	Class 1, Division 2 trailer interior with Non-Classified exterior

System Equipment

SVE	Regenerative blower (20 hp)
Sparge	Rotary vane compressors with long-life vanes (10 hp each)
Off-Gas Treatment	Catalytic oxidizer
Controls	PLC with auto-dialer for remote monitoring and telemetry
System Enclosure	Mobile trailer (interior 16 feet x 8 feet x 6.5 feet)



NES was selected to fabricate an SVE/Air Sparge system for a site in New Jersey that was previously a retail petroleum service station and is currently being developed into a banking facility. The system was designed and fabricated with a single SVE blower and a single Sparge compressor with automatic manifold zone cycling to target multiple wells. Current property owner noise requirements dictated the installation of system sound attenuation components, while the use of a wooden shed as the system enclosure was designed to blend into the new architecture at the site location.

Design Parameters

Site Contaminants	Gasoline
SVE System	210 scfm at 53 inches wc vacuum at the moisture separator inlet with catalytic oxidizer for vapor treatment
Sparge System	40 scfm at 18 psi at the compressor outlet
Site Power	208 VAC, 3 phase, 4 wire
NEC Area Classification	Class 1, Division 2 shed interior with Non-Classified exterior

System Equipment

SVE	Regenerative blower (10 hp)
Sparge	Rotary vane compressor (5 hp)
Off-Gas Treatment	Catalytic oxidizer
Controls	PLC with remote monitoring telemetry unit for data-logging and communication via phone, fax, and email
System Enclosure	Wooden shed (exterior 10 feet x 8 feet x 9.5 feet)





NES was selected to fabricate an integrated SVE/Air Sparge system for a former retail service station in New York City that currently includes a fast-food restaurant. Current property owner noise requirements dictated the installation of system sound attenuation components. The system was designed and fabricated for installation within a small footprint area at the site location and with dual SVE blowers to target a vast array of wells.

Design Parameters

Site Contaminants	Gasoline
SVE System Primary	250 scfm at 83 inches wc total vacuum with carbon or catalytic oxidizer for vapor treatment
SVE System Secondary	400 scfm at 91 inches wc total vacuum with carbon or catalytic oxidizer for vapor treatment
Sparge System	75 scfm at 12 psi at the compressor outlet
Site Power	208 VAC, 3 phase, 4 wire
NEC Area Classification	Class 1, Division 2 system interior with Non-Classified exterior

System Equipment

SVE System Primary	Regenerative blower (15 hp)
SVE System Secondary	Regenerative blower (20 hp)
Sparge System	Rotary vane air compressor (10 hp)
Off-Gas Treatment	Vapor phase carbon or catalytic oxidizer dedicated to each SVE vapor stream
Controls	PLC with wireless remote monitoring unit and programmable cycle timers for automatic cycling of the Sparge zone valves
System Enclosure	Steel cargo shipping container (exterior 14 feet x 8 feet x 8.5 feet)



NES was selected to fabricate an integrated SVE/Air Sparge system for a commercial development project in New York City. The system was designed and fabricated with dual SVE blowers and dual Sparge compressors to target a vast array of wells and remedial zones exhibiting different design characteristics for flow, vacuum, and pressure while also providing for equipment redundancy to ensure system operation up-time. Site specific guidelines dictated the installation of system sound attenuation components in order to address local residential noise requirements.

Design Parameters

Site Contaminants	Chlorinated solvents
SVE System Primary	300 scfm at 25 inches wc vacuum at the inlet manifold legs with carbon for vapor treatment
SVE System Secondary	300 scfm at 10 inches wc vacuum at the inlet manifold legs with carbon for vapor treatment
Sparge System Shallow	100 scfm at 25 psi at the discharge manifold legs
Sparge System Deep	25 scfm at 45 psi at the discharge manifold legs
Site Power	208 VAC, 3 phase, 4 wire
NEC Area Classification	Non-Classified system interior and exterior

System Equipment

SVE Primary	Rotary lobe positive displacement blower (7.5 hp)
SVE Secondary	Rotary lobe positive displacement blower (7.5 hp)
Sparge Shallow	Rotary screw air compressor (25 hp)
Sparge Deep	Rotary screw air compressor (7.5 hp)
Off-Gas Treatment	Vapor phase carbon dedicated to each SVE vapor stream
Controls	PLC with wireless remote monitoring unit and programmable cycle timers for automatic cycling of the SVE and Sparge zone valves
System Enclosure	Steel cargo shipping container (exterior 40 feet x 8 feet x 9.5 feet)



NES was selected to fabricate an integrated SVE/Air Sparge remediation system for a petroleum distribution terminal in Michigan. The system was integral to an emergency clean-up action which also included start-up and integration of SVE/GWT equipment previously owned by the client.

Design Parameters

Site Contaminants	Gasoline and other petroleum products
SVE System	500 scfm at vacuum range 3 to 8 inches Hg with catalytic oxidizer for vapor treatment
Sparge System	70 scfm at 50 psi
Site Power	240 VAC, 3 phase, 4 wire
NEC Area Classification	Class 1, Division 2 system interior with Non-Classified exterior

System Equipment

SVE	Rotary lobe positive displacement blower (30 hp)
Off-Gas Treatment	Catalytic oxidizer (electric operation)
Sparge	Reciprocating compressor (10 hp)
Controls	PLC based with VFD operation for adjusting SVE performance
System Enclosure	Steel cargo shipping container (exterior 20 feet x 8 feet x 8.5 feet)



NES was selected to fabricate an SVE/Air Sparge system for a retail petroleum service station in New Jersey. The system was designed and fabricated with dual SVE blowers and dual Sparge compressors to target a vast array of wells along with providing overall redundancy to ensure system operation up-time. Local building codes required that the wooden shed be designed and constructed in accordance with the International Building Code (IBC).

Design Parameters

Site Contaminants	Gasoline
SVE System Each	240 scfm at 87 inches wc vacuum at the moisture separator inlet with catalytic oxidizer for vapor treatment
Sparge System Each	84 scfm at 12 psi at the compressor outlet
Site Power	208 VAC, 3 phase, 4 wire
NEC Area Classification	Class 1, Division 2 shed interior with Non-Classified exterior

System Equipment

SVE	Rotary lobe positive displacement blowers (10 hp each)
Sparge	Rotary vane compressors (10 hp each)
Off-Gas Treatment	Catalytic oxidizer dedicated to each SVE vapor stream
Controls	PLC with wireless remote monitoring unit and VFD operation for adjusting each SVE blower and each Sparge compressor performance
System Enclosure	Wooden shed (exterior 16 feet x 8 feet x 9.5 feet)



SVE/Air Sparge System
Galvanized Steel Sound Enclosure
NES 09-187



NES was selected to fabricate an integrated SVE/Air Sparge remediation system for a retail petroleum service station in New Mexico. An NES custom fabricated sound and security enclosure was provided in order to address site specific property owner requirements.

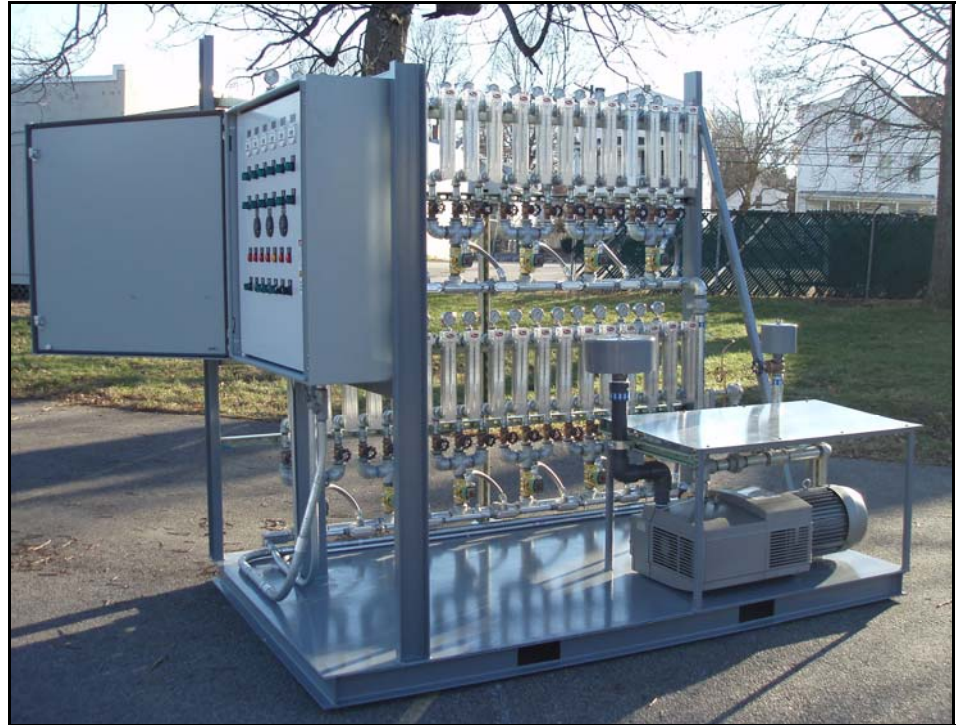
Design Parameters

Site Contaminants	Gasoline
SVE System	380 acfm at 18 inches Hg vacuum with discharge to existing internal combustion engine for vapor treatment
Sparge System	75 scfm at 12 psi
Site Power	240 VAC, 3 phase, 4 wire electric source or generator powered
NEC Area Classification	Class 1, Division 2 system interior with Non-Classified exterior

System Equipment

SVE	Rotary claw vacuum pumps (2 units in parallel – 10 hp each)
Off-Gas Treatment	Internal combustion engine (existing by others)
Sparge	Rotary vane compressor (10 hp)
Controls	Relay based with time delay circuits for operation via generator
System Enclosure	Galvanized steel enclosure (exterior 12 feet x 8 feet x 7 feet)





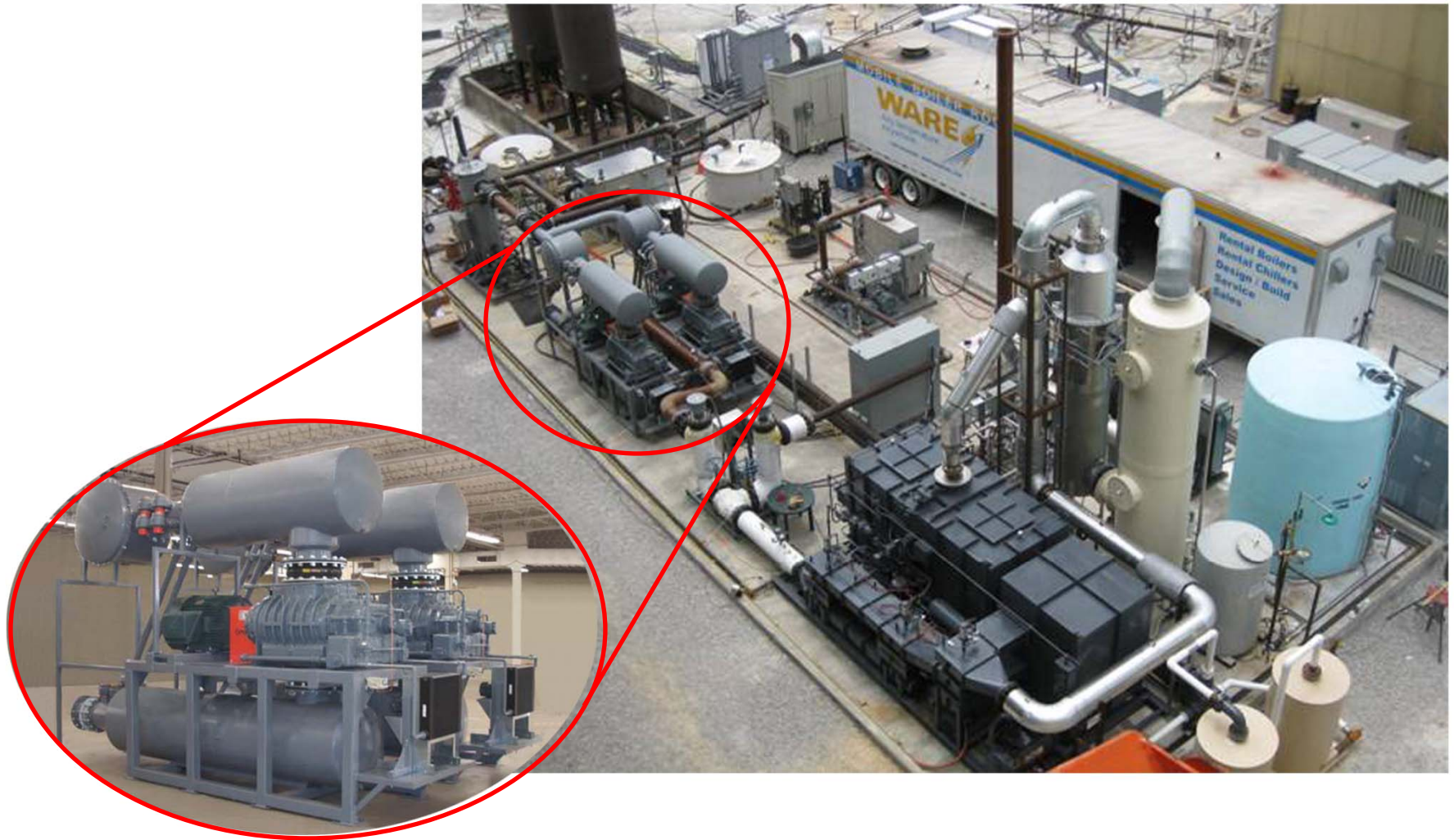
NES was selected to fabricate an SVE/Air Sparge system for a site in New Jersey that was previously a retail petroleum service station and is currently being developed into a retail shopping complex. The system was designed and fabricated with a single SVE blower and a single Sparge compressor with automatic manifold zone cycling to target a vast array of wells. Modular skids were provided for installation within an outdoor equipment compound provided by the property developer.

Design Parameters

Site Contaminants	Gasoline
SVE System	150 scfm at 73 inches wc vacuum at the moisture separator inlet with catalytic oxidizer for vapor treatment
Sparge System	60 scfm at 12 psi at the compressor outlet
Site Power	208 VAC, 3 phase, 4 wire
NEC Area Classification	Class 1, Division 2 process equipment location with Non-Classified control panel location

System Equipment

SVE	Regenerative blower (15 hp)
Sparge	Rotary vane compressor (10 hp)
Off-Gas Treatment	Catalytic oxidizer
Skid Mounted Controls	PLC with remote monitoring telemetry unit for data-logging and communication via phone, fax, and email
Modular Skids	SVE 6.5 feet x 3 feet and Sparge 8 feet x 5 feet



NES was selected to fabricate a large scale SVE system for integration with a consultant’s proprietary in-situ thermal soil remediation process operating at a U.S. military base. The system was designed and fabricated such that one blower skid is on-line at a single time with the second blower skid on stand-by in case additional capacity is needed or in case the on-line blower skid is to be shut down for extended maintenance.

Design Parameters

Site Contaminants	Chlorinated solvents
SVE System (Each Blower)	3600 acfm at 115 inches wc vacuum with vapor discharge
to	existing treatment system
Site Power	460 VAC, 3 phase
NEC Area Classification	Non-Classified

System Equipment

SVE	Rotary lobe positive displacement blowers (each 150 hp)
Controls	Relay based with VFD operation for adjusting SVE performance
Skids	Each skid 18 feet long x 9 feet wide x 10 feet high