43-25 52ND STREET

QUEENS, NEW YORK

Remedial Design Report

NYSDEC BCP Number: C241269

Prepared for:

43-25 52 LLC

46-02 70th Street

Woodside, NY 11377

Prepared by:

YU & Associates Engineers, P.C.

611 River Drive, 3rd Floor

Elmwood Park, NJ

201-791-0075

NOVEMBER 2024

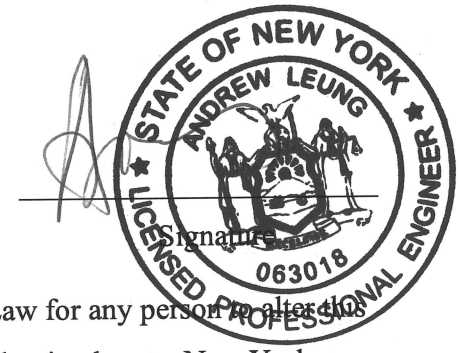
CERTIFICATIONS

I, _Andrew Leung_, certify that I am currently a NYS registered professional engineer and that this Remedial Design Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

063018
NYS Professional Engineer #

11/19/2024
Date



Signature

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS

Acronym	Definition
AOC	Areas of Concern
ASP	Analytical Services Protocol
AST	Aboveground Storage Tank
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CAMP	Community Air Monitoring Program
C/D	Construction and Demolition
CPP	Citizen Participation Plan
CQAP	Construction Quality Assurance Plan
CSO	Combined Sewer Overflow
CVOC	Chlorinated Volatile Organic Compound
DCE	Dichloroethene
DER	Division of Environmental Remediation
DMM	Division of Materials Management
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
EDD	Electronic Data Deliverable
EDR	Environmental Data Resources
ELAP	Environmental Laboratory Approval Program
ESA	Environmental Site Assessment
ft bbfs	Feet Below Basement Floor Surface
ft bgs	Feet Below Ground Surface
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
FER	Final Engineering Report
FRTR	Federal Remediation Technologies Roundtable
FWRIA	Fish and Wildlife Resources Impact Analysis
GPR	Ground Penetrating Radar

HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HVAC	Heating, Ventilation and Air Conditioning
IC	Institutional Control
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PID	Photoionization Detector
POGW	Protection of Groundwater
ppm	parts per million
PRT	Post Run Tubing
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RF/EM	Ratio Frequency/Electromagnetic
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
RL	Reporting Limit
RRSCO	Restricted-Residential Soil Clean-up Objective
SCG	Standards, Criteria and Guidance

SCO	Soil Clean-up Objective
SSD	Sub-Slab Depressurization
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TOGS	Technical Operational Guidance Series
TSCA	Toxic Substances Control Act
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UUSCO	Unrestricted Use Soil Cleanup Objective
VOC	Volatile Organic Compound
YU	YU & Associates Engineers, P.C.

1.0 INTRODUCTION

43-25 52 LLC entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) in May, 2023, to investigate and remediate a 0.21-acre property located at 43-25 & 43-27 52nd Street in Woodside, Queens New York. 43-25 52 LLC is a Volunteer in the Brownfield Cleanup Program. Residential and commercial use is proposed for the property. When completed, the Site will contain a nine-story mixed commercial and residential use building with a full cellar. Refer to the Brownfield Cleanup Program (BCP) application for additional details.

This Remedial Design Report (RDR) summarizes the results of the soil vapor extraction (SVE) pilot test performed on April 23, 2024 and provides design details and specifications of the SVE system to be installed at the Site. This RDR was prepared in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010.

1.1 SITE LOCATION AND DESCRIPTION

The Site is located in the County of Queens, New York City, New York and is identified as Block 1321, Lots 7 and 10 on the New York City Tax Map. A United States Geological Survey (USGS) topographical quadrangle map shows the Site location. The Site is situated on an approximately 0.21-acre area bounded by Skillman Avenue to the north, Queens Blvd to the south, 52nd Street to the east, and residential properties to the west.

1.2 PROJECT BACKGROUND

A remedial investigation (RI) was performed by YU & Associates (YU) between July 21, 2023, and August 10, 2023. Based upon the remedial investigation results, CVOCs were detected in soil at the 10-12 feet below ground surface (ft bgs) at levels above the unrestricted use soil cleanup objectives (UUSCOs) but below the restricted-residential use soil cleanup objectives (RRSCOs). Elevated CVOCs levels were detected in site-wide soil vapor samples and the maximum tetrachloroethene (PCE) concentration detected in soil vapor is 4,600 $\mu g/m^3$. The source of CVOC exceedances is likely attributable to the previous on-site operation. A SVE

system is proposed to prevent the off-site migration of the elevated levels of chlorinated volatile organic compounds (CVOCs) found in soil vapor at the Site.

2.0 SOIL VAPOR EXTRACTION PILOT TEST

2.1 OVERVIEW

The objective of the SVE pilot test is to determine the radius-of-influence (ROI) and the design parameters including blower vacuum, flow rates and treatment units for the full-scale SVE system. PAL Environmental (PAL) installed one extraction well, three observation wells, treatment vessels and piping accessories. The vacuum testing was conducted by YU on April 23, 2023. The test was performed in three steps, starting from the lowest applied vacuum (60 inch water column(w.c.)) to the highest applied vacuum (125 inch w.c.).

2.1.1 Field Test Procedures

2.1.1.1 Extraction Well and Vacuum Monitoring Points Installations

The extraction well (EW) and vacuum monitoring points (MP) were installed to a depth of 20 feet below ground surface (ft bgs) with a direct-push drilling rig. The wells were screened from 15-20 ft bgs using a 2-inch diameter PVC with 0.010-inch slot pipe, and extended to approximately 2 ft above grade with a solid PVC riser. The screen was backfilled using a #1 filter sand pack to 1 foot above the base of the riser casing, followed by approximately 1 foot of bentonite pellets to prevent grout infiltration. The annular space was then grouted with a bentonite-cement slurry to three feet below grade and backfilled with native sand to grade.

The EW was installed at the southwest portion of the Site, and the MP-1, MP-2, MP-3 were installed in the vicinity of the vapor extraction well at distances of 20, 25, and 30 feet, respectively.

2.1.1.2 Pilot Test Process Equipment

The pilot test process equipment was provided by PAL and consisted of a regenerative blower, moisture knock out tank, a 55-gallon drum of vapor phase granular activated carbon (VPGAC), piping and effluent discharge stack.

The 3 horse-power (HP) regenerative blower utilized for the pilot testing was a Rotron EN523M5L, which was capable of producing up to 130 inches of water column (inch w.c.)

vacuum and an air flow rate of up to 85 standard cubic feet per minute (scfm). During the field testing, various levels of flow rates (ranging from 5 to 45 scfm) and vacuums (ranging from 60 inch w.c. to 125 inch w.c.) were applied at the extraction well by the regenerative blower. Equipment specifications for the pilot test are included as Appendix A.

Extracted soil vapor was treated through one 55-gallon drum containing 200 pounds of VPGAC before being discharged to the atmosphere. The influent (at the wellhead) and the effluent (after the VPGAC unit) were monitored periodically with a PID. The VPGAC drum and the moisture knockout tanks was disposed of off-site by PAL after the completion of the pilot test. Equipment specifications for the carbon vessel are included as Appendix A.

2.1.1.3 Pilot Test Monitoring Equipment

Vacuum measurements at the well head were collected with the Dwyer series 477 Handheld Digital Manometer and the TSI VelociCalc Multi-Function Ventilation Meter 9565. Dwyer series 477-1 with vacuum readings from 0 to 90 inches w.c. was used at the extraction well head, and the TSI meter 9565 with vacuum readings from 0 to 2 inches w.c. was used at the vacuum monitoring well head. Flow rate measurements were obtained based on the design flow rate per the manufacturer's performance curve.

Total VOCs monitoring was performed periodically with a PID. PID readings were collected directly from the sampling ports before/after the VPGAC drum and were summarized in Table 1. Influent (IF-1) and effluent (EF-1) air samples were also collected with a tedlar bag and analyzed for VOCs via the TO-15 method. The laboratory results are presented in Appendix B.

2.1.2 Results and Conclusions

A total of three step tests were performed for the pilot study. Table 1 presents the pilot test field data and the results are summarized below.

100% Vacuum Test (125 inch w.c.)

The field test was initiated with the full blower vacuum application over the period of approximately one hour. The vacuum at the blower was stabilized at 90 inch w.c. for a volumetric flow rate of 5 scfm (per manufacture's performance curve). The wellhead vacuum at the extraction well was -90 inch w.c., and the wellhead vacuum at the three vacuum monitoring wells were 0.047, 0.025 and 0.015 inch w.c. at locations MP-3, MP-2 and MP-1, respectively. Based on the distances from the extraction well to the monitoring wells, these vacuum readings

indicate a radius of influence (ROI) more than 30 ft when using 0.01 inch w.c. as the limit of influence.

75% Vacuum Test (90 inch w.c.)

The second field test was applying with the 75% blower vacuum application over the period of approximately one hour. The vacuum at the extraction well was stabilized at 72 inch w.c. for a volumetric flow rate of 28 scfm (per manufacture's performance curve). The wellhead vacuum at the extraction well was 72 inch w.c., and the wellhead vacuum at the three vacuum monitoring wells were 0.035, 0.011 and 0.003 inch w.c. at locations MP-3, MP-2 and MP-1, respectively. Based on the distances from the extraction well to the monitoring wells, these vacuum readings indicate a radius of influence (ROI) of 25 ft when using 0.01 inch w.c. as the limit of influence.

50% Vacuum Test (60 inch w.c.)

The third field test was applying with the 50% blower vacuum application over the period of approximately one hour. The vacuum at the extraction well was stabilized at 54 inch w.c. for a volumetric flow rate of 45 scfm (per manufacture's performance curve). The wellhead vacuum at the extraction well was 54 inch w.c., and the wellhead vacuum at the three vacuum monitoring wells were 0.025, 0.007 and 0.001 inch w.c. at locations MP-3, MP-2 and MP-1, respectively. Based on the distances from the extraction well to the monitoring wells, these vacuum readings indicate a radius of influence (ROI) of 20 ft when using 0.01 inch w.c. as the limit of influence.

VOC Monitoring Results

The total VOC readings of the influent (extracted vapor before entering the VPGAC vessel) and effluent (exhaust after the VPGAC treatment) were collected by the PID during each step test. The influent readings ranged from 3.9 – 4.2 ppm and the effluent readings ranged from 0.0 – 0.5 ppm.

Two tedlar bags of influent/effluent air samples (IF-1 and EF-1) were also collected for TO-15 VOCs analysis. Based on the laboratory analytical results, the total VOCs concentrations detected in influent air sample IF-1 was 576. 05 µg/m3, of which PCE and TCE were detected at 270 µg/m3 and 0.91 µg/m3, respectively; the total VOCs concentrations detected in effluent air sample EF-1 was 151 µg/m3, of which PCE was detected at 1 µg/m3 and TCE was not detected.

PID readings were summarized in Table 1 and the air sample analytical results were summarized in Table 2. Laboratory analytical reports were included as Appendix B.

Conclusions

Based on the vacuum monitoring and air samples results, the pilot testing performed demonstrates that a full-scale SVE system will serve as an effective means of remediation to prevent the off-site migration of the elevated levels of CVOCs found in soil vapor. An effective ROI of 25 feet at each extraction point would be attainable with the application of a minimum vacuum of 90 inch w.c. and an average flow rate of 28 scfm for each extraction well.

3.0 SVE SYSTEM DESIGN

3.1 SVE SYSTEM OVERVIEW

The SVE system will be consisted of a network of eight (8) extraction wells based on the radius of influence (ROI) of 25 ft, a blower, treatment units, two vacuum monitoring point, and exhaust stack. The extraction wells will be constructed of the 2-inch diameter PVC with 5 feet of 0.010-inch slot pipe screened at the 15-20 ft bgs interval to match the depth of contamination at each well location based on RI results. Connected horizontal piping from each well will be equipped for flow measurement. A SVE enclosure containing the blower, manifolds, moisture separator, treatment units and alarm system will be installed for utilization at the Site and to be powered by the proposed building's electrical infrastructure. SVE wells will be connected to the enclosure's regenerative blowers and related accessories. The effluent will pass through a vapor-phase granular activated carbon (VPGAC) treatment prior to discharge via a PVC stack on the rooftop in accordance with the emission requirements set forth in 6NYCRR Part 212. Two permanent vacuum monitoring points will be installed across the building slab. The locations of the effluent riser from 1st through 9th floor and the stack on rooftop are shown in Figure 3 and Figure 4. A cross-section view of the SVE system is shown in Figure 5.

3.2 EQUIPMENT DESIGN SPECIFICATIONS

SVE Well Design Geometry

The SVE pilot test results indicated that the ROI for the SVE wells is approximately 25 ft. To encompass the full perimeters of the Site to prevent off-site migration of the soil vapor, the 8 SVE wells will be installed at a distancing of approximately 40 ft on center and system treatment area is approximately 7,900 sf.

Vacuum and Flow Rate Operational Parameter

Based on the SVE pilot test results, the average vacuum and flow rate for one SVE well is 90 in w.c. and 28 cfm, respectively. Assuming head losses for the frictional resistance of the

piping system (pipe, turn, entry and exit) is calculated via Darcy-Weisbach formula, a total of 8 SVE well will require the blower to provide 110 in w.c. of vacuum at flow rate of 224 cfm. The detailed calculation of head loss and adjusted vacuum are included in Table 3. Long Term Operation and Maintenance (O&M) of the system will be performed under site management, and O&M procedures will be outlined in the Site Management Plan.

VOC Mass Flux Rate

The influent air sample analytical results in the SVE pilot test indicated the total VOCs concentration is 576 $\mu g/m^3$ from one extraction well. Assuming the system flow rate of 224 cfm, the initial VOC mass flux rate will be approximately 0.07 pounds per day. The detailed calculation of VOC mass flux rate is included in Table 4. However, it is anticipated that the VOC mass flux rate will decrease rapidly during the SVE system operation. The effluent air sample results indicated the total VOCs concentration is 151 $\mu g/m^3$ from one extraction well. Considering a combination of 8 extraction wells for the full-scale SVE system, the effluent would be approximately 1,200 $\mu g/m^3$ which is below the mass emission limit as set forth in 6 NYCRR Part 212-2.2 Table 2 – High Toxicity Air Contaminant List.

3.3 SVE WELLS

A total of eight (8) SVE wells will be installed at the perimeters of the Site at the average distancing of 40 ft. The wells were screened from 15-20 ft bgs using a 2-inch diameter PVC with 0.010-inch slot pipe, connected with the PVC riser, adapter, and plug and extended to approximately 6-inch below the basement slab. The SVE wells will be finished with a watertight cleanout with flush mounted fiberlite cover at the basement slab level. The annular space will be backfilled using a #1 filter sand pack to 1 foot above the base of the riser casing, and then sealed with hydrated bentonite and a minimum 2-inch thick of concrete. Well construction details are provided in Figure 6.

The wells will be connected to the enclosure via sub-slab piping system. The horizontal piping will be installed approximately 1 ft below the basement slab and connected to the manifolds. The locations of the horizontal piping will be subject to the foundation and plumbing piping locations.

3.4 SVE SYSTEM PROCESS EQUIPMENT

The primary SVE system process equipment will be a positive displacement blower. The blower will be mounted to the basement slab and equipped with flow control valves, a pressure gauge. Manufacturer specification is included in Appendix C.

A moisture knockout tank and air filter will be installed upstream of the blower to remove trapped water and solids. The extracted soil vapor will be treated through two VPGAC vessels before discharging to the atmosphere. Each vessel contains approximately 200 pounds of activated carbon. Sample ports will be installed at the upstream and downstream of the VPGAC for air sample collection. If the replacement of the VPGAC is warranted by the influent/effluent air sample results, the vessel will be replaced, and the spent activated carbon will be disposed of off-site in accordance with application regulations. The SVE system process diagram is shown in Figure 7.

4.0 SYSTEM OPERATION AND MAINTAINENCE

4.1 SVE START-UP PROCEDURES

After the SVE system is installed, the following will be completed:

1. The equipment and accessories need to be adjusted and calibrated prior to the start-up.
2. Visual inspection of all SVE piping for any damage, cracks or leaks. If any are identified, they should be sealed using caulk.
3. Turn the system on and off to ensure the system is functioning properly.
4. Measurement of the vacuum at the blower and at the monitoring point to ensure that the system maintained an adequate negative pressure under the slab. The design vacuum goal for sub-slab pressure is -0.01 in-wc.
5. Collect PID readings before and after carbon vessels for the influent and effluent.

The system testing described above will be conducted if, in the course of the SVE lifetimes, the systems go down or significant changes are made to the systems and the systems must be restarted.

4.2 PERFORMANCE MONITORING

The SVE system performance monitoring will be conducted via vacuum/flow rate monitoring, influent/effluent air sampling and indoor/outdoor air sampling.

Vacuum measurements will be collected via the two monitoring points to assess the vacuum distribution of the Site and to evaluate if the design ROI has been achieved. Flow rate will be measured via flow meter at the blower and at each wellhead/pipeline to assess the vapor

extraction performance. The locations of the vacuum monitoring points are shown in Figure 1. Construction details of the vacuum monitoring point are shown in Figure 3.

Influent and effluent air samples will be collected using tedlar bags and analyzed for TO-15 VOCs in the first week and the first month for the initial operation to evaluate the system performance and VOC mass flux rate, and to determine the needs for VPGAC replacement. As mentioned above, VOC mass flux rate is anticipated to decrease rapidly during the SVE system operation. In the case of operations monitoring demonstrating the decline trend, the system performance monitoring frequency will be reduced to quarterly. Based on the 2006 NYSDOH Soil Vapor Intrusion Guidance document and updates to February 2024, a total of three indoor and one outdoor ambient air samples will also be collected annually to evaluate the potential for vapor intrusion. The indoor and outdoor air samples will be collected for a 24-hr period and analyzed for TO-15 TCL VOCs.

4.3 REPORTING

Details of the constructed system, including PE-stamped "as built" drawings, and results of the startup testing should be summarized in the Final Engineering Report (FER).

TABLES

Table 1
SVE Pilot Test Results Summary
43-25 43-27 52nd Street
Queens, NY 11377
Project No. 22254

SVE Test #	Blower Vacuum (inch w.c.)	Flow rate (scfm)	Wellhead Vacuum EW-1 (inch w.c.)	Monitoring Point Vacuum MP-1 (inch w.c.)	Monitoring Point Vacuum MP-2 (inch w.c.)	Monitoring Point Vacuum MP-3 (inch w.c.)	Influent PID readings (ppm)	Effluent PID readings (ppm)
1	125	5	90	0.015	0.025	0.047	4.2	0.5
2	90	28	72	0.003	0.011	0.035	3.9	0
3	60	45	54	0.001	0.007	0.025	4.1	0

Table 2
SVE Pilot Test Influent and Effluent Sample Analytical Results Summary
43-25 43-27 52nd Street
Queens, NY 11377
Project No. 22254

Sample ID Sampling Date Matrix		EF-1 4/24/2024 Vapor Extraction	IF-1 4/24/2024 Vapor Extraction
Compound	**CAS Number**	ug/m3	ug/m3
VOA, TO15 Isooctane (2,2,4-TMP) Add On			
2,2,4-Trimethylpentane	540-84-1	0.841	2.060
Volatile Organics, EPA TO15 Full List			
1,1,1,2-Tetrachloroethane	630-20-6	ND	ND
1,1,1-Trichloroethane	71-55-6	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	ND	ND
1,1,2-Trichloroethane	79-00-5	ND	ND
1,1-Dichloroethane	75-34-3	ND	ND
1,1-Dichloroethylene	75-35-4	ND	ND
1,2,4-Trichlorobenzene	120-82-1	ND	ND
1,2,4-Trimethylbenzene	95-63-6	3.300	40
1,2-Dibromoethane	106-93-4	ND	ND
1,2-Dichlorobenzene	95-50-1	ND	ND
1,2-Dichloroethane	107-06-2	ND	ND
1,2-Dichloropropane	78-87-5	ND	ND
1,2-Dichlorotetrafluoroethane	76-14-2	ND	ND
1,3,5-Trimethylbenzene	108-67-8	0.740	8.800
1,3-Butadiene	106-99-0	ND	ND
1,3-Dichlorobenzene	541-73-1	ND	ND
1,3-Dichloropropane	142-28-9	ND	ND
1,4-Dichlorobenzene	106-46-7	ND	ND
1,4-Dioxane	123-91-1	ND	ND
2-Butanone	78-93-3	2.900	3.100
2-Hexanone	591-78-6	ND	ND
3-Chloropropene	107-05-1	ND	ND
4-Methyl-2-pentanone	108-10-1	1.800	4.100
Acetone	67-64-1	12	34
Acrylonitrile	107-13-1	ND	ND
Benzene	71-43-2	0.510	2.200
Benzyl chloride	100-44-7	ND	ND
Bromodichloromethane	75-27-4	ND	ND
Bromoform	75-25-2	ND	ND
Bromomethane	74-83-9	ND	ND
Carbon disulfide	75-15-0	ND	0.340
Carbon tetrachloride	56-23-5	0.310	0.380
Chlorobenzene	108-90-7	ND	ND
Chloroethane	75-00-3	ND	ND
Chloroform	67-66-3	ND	ND
Chloromethane	74-87-3	1.500	1.700
cis-1,2-Dichloroethylene	156-59-2	ND	ND
cis-1,3-Dichloropropylene	10061-01-5	ND	ND
Cyclohexane	110-82-7	0.550	0.690
Dibromochloromethane	124-48-1	ND	ND
Dichlorodifluoromethane	75-71-8	2.200	2.300
Ethyl acetate	141-78-6	6.600	1.200
Ethyl Benzene	100-41-4	10	19

Table 2
SVE Pilot Test Influent and Effluent Sample Analytical Results Summary
43-25 43-27 52nd Street
Queens, NY 11377
Project No. 22254

Sample ID **Sampling Date** **Matrix**		**EF-1** **4/24/2024** **Vapor Extraction**	**IF-1** **4/24/2024** **Vapor Extraction**
Compound	**CAS Number**	ug/m3	ug/m3
Hexachlorobutadiene	87-68-3	ND	ND
Isopropanol	67-63-0	18	6
Methyl Methacrylate	80-62-6	ND	ND
Methyl tert-butyl ether (MTBE)	1634-04-4	ND	ND
Methylene chloride	75-09-2	0.760	0.760
Naphthalene	91-20-3	ND	ND
n-Heptane	142-82-5	2.800	2.300
n-Hexane	110-54-3	0.600	2
o-Xylene	95-47-6	14	28
p- & m- Xylenes	179601-23-1	42	86
p-Ethyltoluene	622-96-8	2.500	46
Propylene	115-07-1	0.550	4.100
Styrene	100-42-5	0.680	1.600
Tetrachloroethylene	127-18-4	1	270
Tetrahydrofuran	109-99-9	ND	1.500
Toluene	108-88-3	29	23
trans-1,2-Dichloroethylene	156-60-5	ND	ND
trans-1,3-Dichloropropylene	10061-02-6	ND	ND
Trichloroethylene	79-01-6	ND	0.910
Trichlorofluoromethane (Freon 11)	75-69-4	1.100	1.200
Vinyl acetate	108-05-4	ND	ND
Vinyl bromide	593-60-2	ND	ND
Vinyl Chloride	75-01-4	ND	0.360

NOTES:
ND = indicates that the analyte was Not Detected

Table 3
SVE System Applied Vacuum Calculation
43-25 43-27 52nd Street
Queens, NY 11377
Project No. 22254

Well ID	Pipe Length (ft)	Pipe Diameter (ft)	Flow Rate (cfm)	Air Velocity (ft/s)	Friction Loss (ft/100ft)	Required Vacuum (inch.w.c.)	Applied Vaccum (inch w.c.)
SVE-1	45	0.17	28	21.40	0.96	90	101.54
SVE-2	34	0.17	28	21.40	0.73	90	98.72
SVE-3	28	0.17	28	21.40	0.60	90	97.18
SVE-4	55	0.17	28	21.40	1.17	90	104.10
SVE-5	58	0.17	28	21.40	1.24	90	104.87
SVE-6	80	0.17	28	21.40	1.71	90	110.51
SVE-7	82	0.17	28	21.40	1.75	90	111.02
SVE-8	56	0.17	28	21.40	1.20	90	104.36

Table 4
SVE System VOC Mass Flux Rate Calculation
43-25 43-27 52nd Street
Queens, NY 11377
Project No. 22254

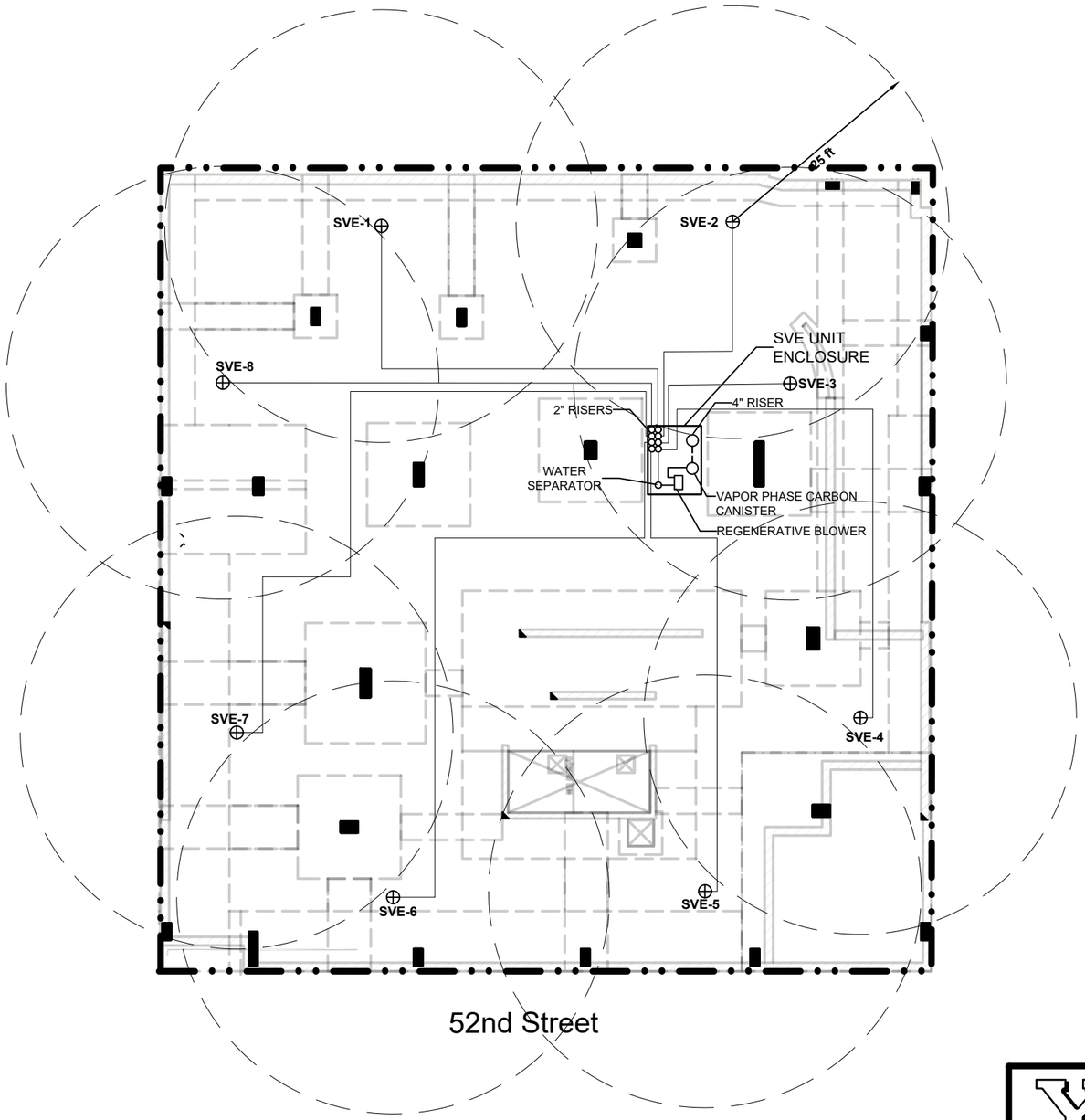
Constants:	Q_{air} cfm, 20°C	Q_{air} m^3/min
	224	6.34

Compound	Detected Concentration		Constituent Mass Flow Rate					Carbon Saturation Rate			
	µg/m^3	ppm	g/min	lb/min	lb/hr	lb/day	lb/month	%W/W	lb/hr	lb/day	lb/month
Tetrachloroethene	2160	0.31	0.0137	3.02E-05	0.0018	0.043	1.30	2.3	0.08	1.89	57
BTEX	1409.6	0.005	0.0089	1.97E-05	1.2E-03	0.028	0.85	2.3	0.05	1.23	37
Trichloroethene	7.28	0.02	0.0000	1.02E-07	0.0000	0.000	0.00	3	0.00	0.00	0
Vinyl Chloride	2.88	0.01	0.0000	4.03E-08	0.0000	0.000	0.00	0.5	0.00	0.01	0

Total (lb./day)		0.072
% of total	PCE	60.34%
	BTEX	39.38%
	TCE	0.20%
	VCE	0.08%

Mass of carbon, primary drums(lb.)	200
Carbon saturated per day (lb.)	3.1
Time to saturation (days)	64

FIGURES



LEGEND:

- PROPERTY BOUNDARY
- RISER PIPE
- SOLID 2" Ø SCHEDULE 40 PVC SVE PIPING
- 4" Ø SCHEDULE 40 PVC SVE PIPING
- RADIUS OF IMPACT
- SVE WELL LOCATION

NOTES:

1. THE BASE MAP IS FROM FOUNDATION PLAN PROPOSED CELLAR PLAN .
2. THE SVE EXTRACTION WELL WILL BE INSTALLED AT 15-20 FT BGS INTERVAL
3. CONCEPTUAL LOCATION OF WELLS ARE SHOWN. THE EXACT LOCATIONS OF THE WELLS, SVE UNIT ENCLOSURE, PIPING, AND RISER PIPE WILL REQUIRE OTHER DESIGN TEAM'S APPROVAL TO ACCOMODATE BUILDING COMPONENTS. OR ARCHITECTURAL DETAILS.
4. EQUIPMENT SPECIFICATIONS OF SVE UNIT ENCLOSURE IS INCLUDED IN APPENDIX C OF REMEDIAL DESIGN REPORT

STATE OF NEW YORK
ANDREW LEUNG
EXCELSIOR
063018
LICENSED PROFESSIONAL ENGINEER

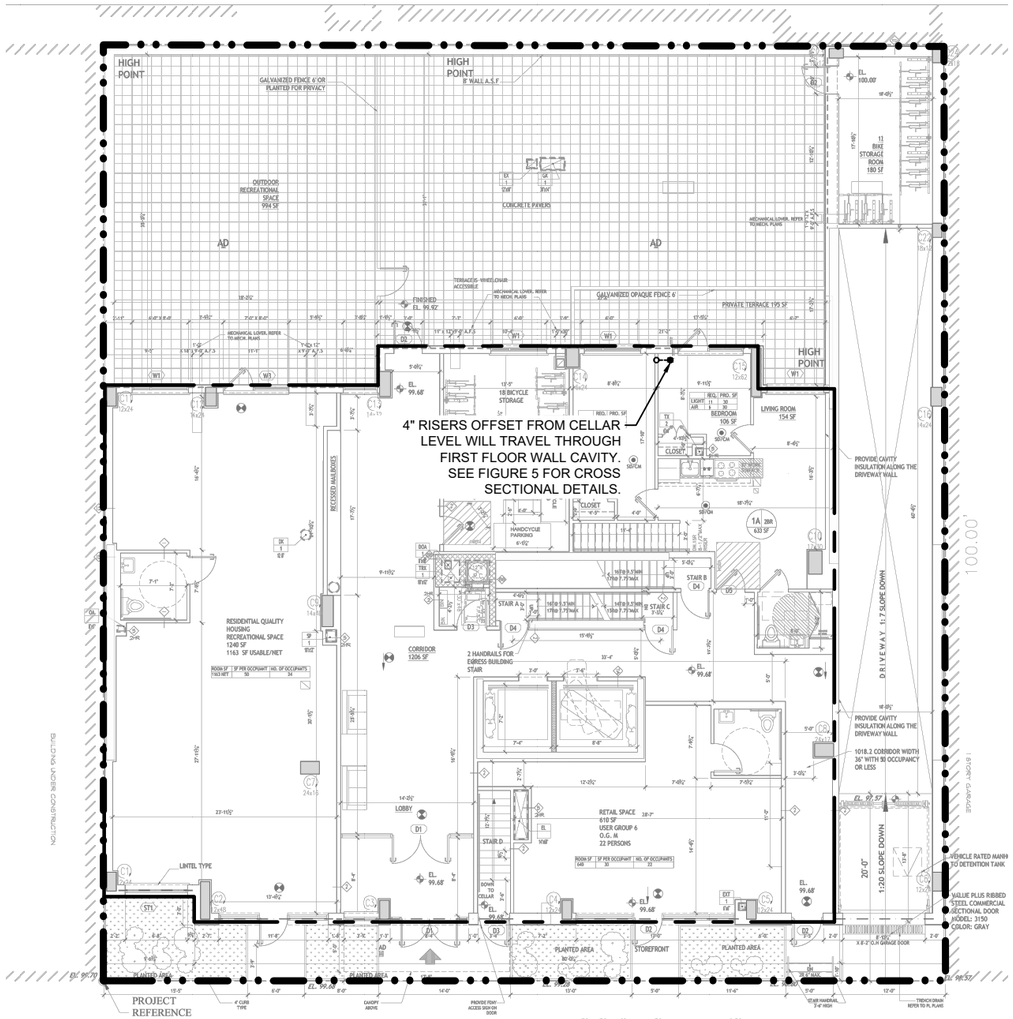
YU & Associates Engineers, P.C.
Geotechnical, Environmental and Civil Engineering
611 River Drive - 3rd Floor
Elmwood Park, NJ 07407
Tel: (201) 791-0075
Fax: (201) 791-4533

SOIL VAPOR EXTRACTION SYSTEM LAYOUT
CELLAR LEVEL - BCP Site ID# C241269

43-25 & 43-27 52nd STREET
WOODSIDE
QUEENS NEW YORK

JOB NO.: 22254	SCALE: As Shown	DATE: 10/02/2024	FIG. 1

P:\22\22254 (43-52nd Street)\Remedial Design\DWG\ SVE System and Diagram Rev 09192024.dwg Oct 02, 2024 - 3:42pm vpujara



0 16 32 Feet

Graphic Scale

LEGEND:

- PROPERTY BOUNDARY
- BUILDING BOUNDARY
- 4-INCH PVC RISER PIPE
- 4-INCH PVCSUB-SLAB DEPRESSURIZATION SYSTEM PIPING
- VERTICAL RISER OFFSET (UP / DOWN)

NOTES:

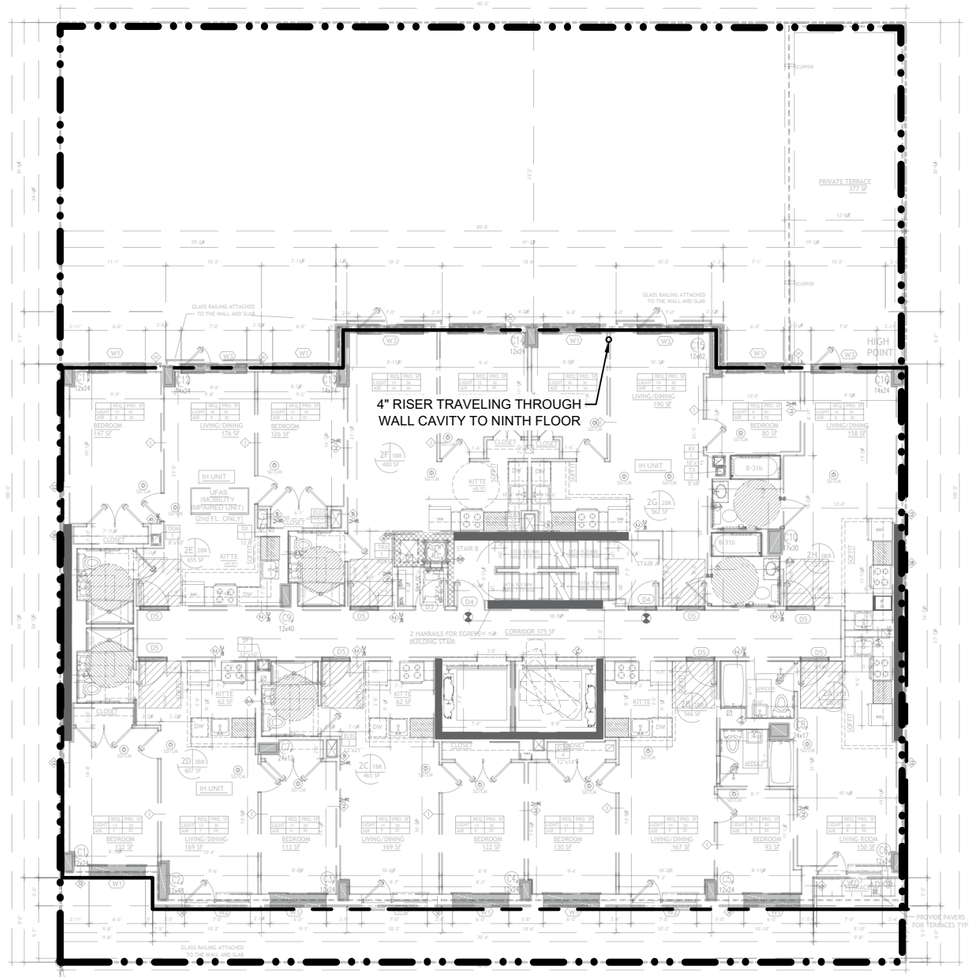
1. THE BASE MAP IS FROM ARCHITECT DRAWING NO. A-101.00 PROPOSED FIRST FLOOR PLAN PREPARED BY ARCHITECTS STUDIO P.C., DATED DECEMBER 7, 2023.
2. CONCEPTUAL LOCATION OF PITS ARE SHOWN. THE EXACT LOCATIONS OF THE PITS, PIPING, AND RISER PIPE WILL REQUIRE OTHER DESIGN TEAM'S APPROVAL TO ACCOMODATE BUILDING COMPONENTS OR ARCHITECTURAL DETAILS.

STATE OF NEW YORK
ANDREW LEUNG
063018
LICENSED PROFESSIONAL ENGINEER

YU & Associates Engineers, P.C.
Geotechnical, Environmental and Civil Engineering
611 River Drive - 3rd Floor
Elmwood Park, NJ 07407
Tel: (201) 791-0075
Fax: (201) 791-4533

SOIL VAPOR EXTRACTION SYSTEM LAYOUT
FIRST FLOOR - BCP Site ID# C241269
43-25 52nd STREET
WOODSIDE
QUEENS NEW YORK

JOB NO.: 22254	SCALE: As Shown	DATE: 10/02/2024	FIG. 2



0 16 32 Feet

Graphic Scale

LEGEND:

PROPERTY BOUNDARY

BUILDING BOUNDARY

4-INCH VERTICAL RISER

NOTES:

1. THE BASE MAP IS FROM ARCHITECT DRAWING NO. A-102.00 PROPOSED SECOND FLOOR PLAN PREPARED BY ARCHITECTS STUDIO P.C., DATED NOVEMBER 01, 2022
2. CONCEPTUAL LOCATION OF PITS ARE SHOWN. THE EXACT LOCATIONS OF THE PITS, PIPING, AND RISER PIPE WILL REQUIRE OTHER DESIGN TEAM'S APPROVAL TO ACCOMMODATE BUILDING COMPONENTS OR ARCHITECTURAL DETAILS.
3. THE PROPOSED SECOND TO NINTH FLOOR PLANS FOLLOW A STANDARDIZED LAYOUT AND WILL CONTAIN THE SAME 4" RISER LOCATION THROUGHOUT.

STATE OF NEW YORK
ANDREW LEUNG
063018
LICENSED PROFESSIONAL ENGINEER

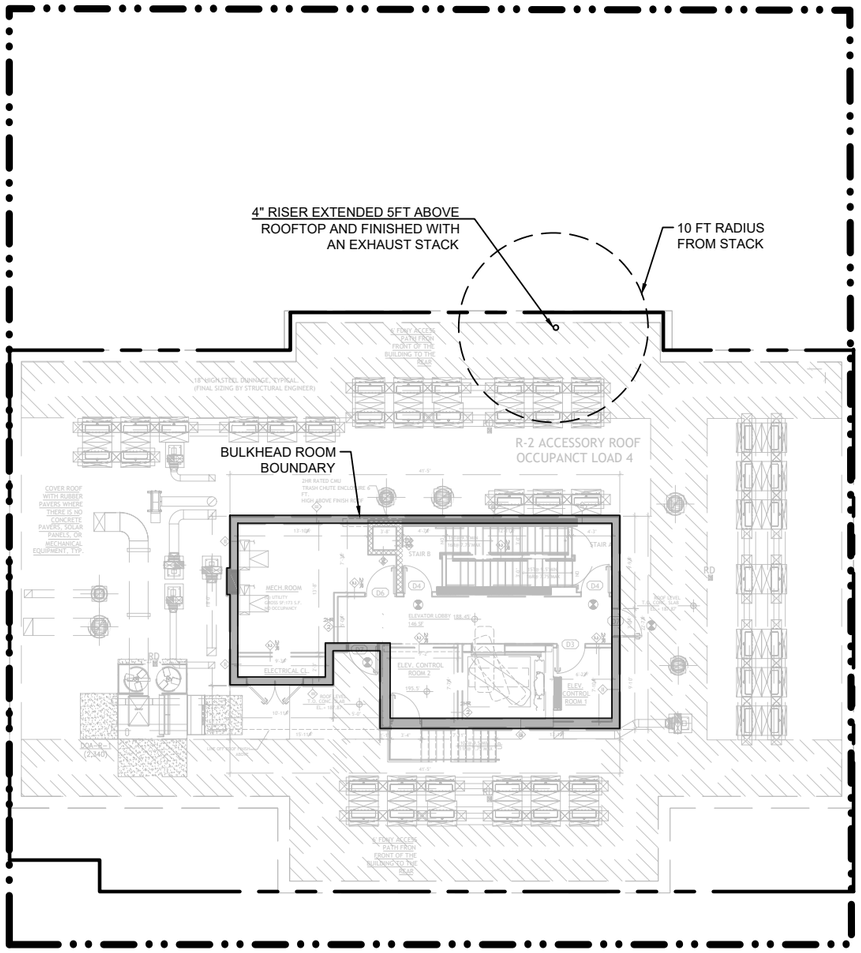
YU & Associates Engineers, P.C.
Geotechnical, Environmental and Civil Engineering
611 River Drive - 3rd Floor
Elmwood Park, NJ 07407
Tel: (201) 791-0075
Fax: (201) 791-4533

SOIL VAPOR EXTRACTION SYSTEM LAYOUT
SECOND TO NINTH FLOOR- BCP Site ID# C241269

43-25 52nd STREET
WOODSIDE
QUEENS NEW YORK

JOB NO.: 22254	SCALE: As Shown	DATE: 09/19/2024	FIG. 3

P:\22\22254 (43-52nd Street)\Remedial Design\DWG\ SVE System and Diagram Rev 09192024.dwg Oct 02, 2024 - 3:45pm vpujara



0 16 32 Feet

Graphic Scale

LEGEND:

- PROPERTY BOUNDARY
- BUILDING BOUNDARY
- 4-INCH PVC EXHAUST STACK
- BULKHEAD ROOM
- RADIUS OF IMPACT

NOTES:

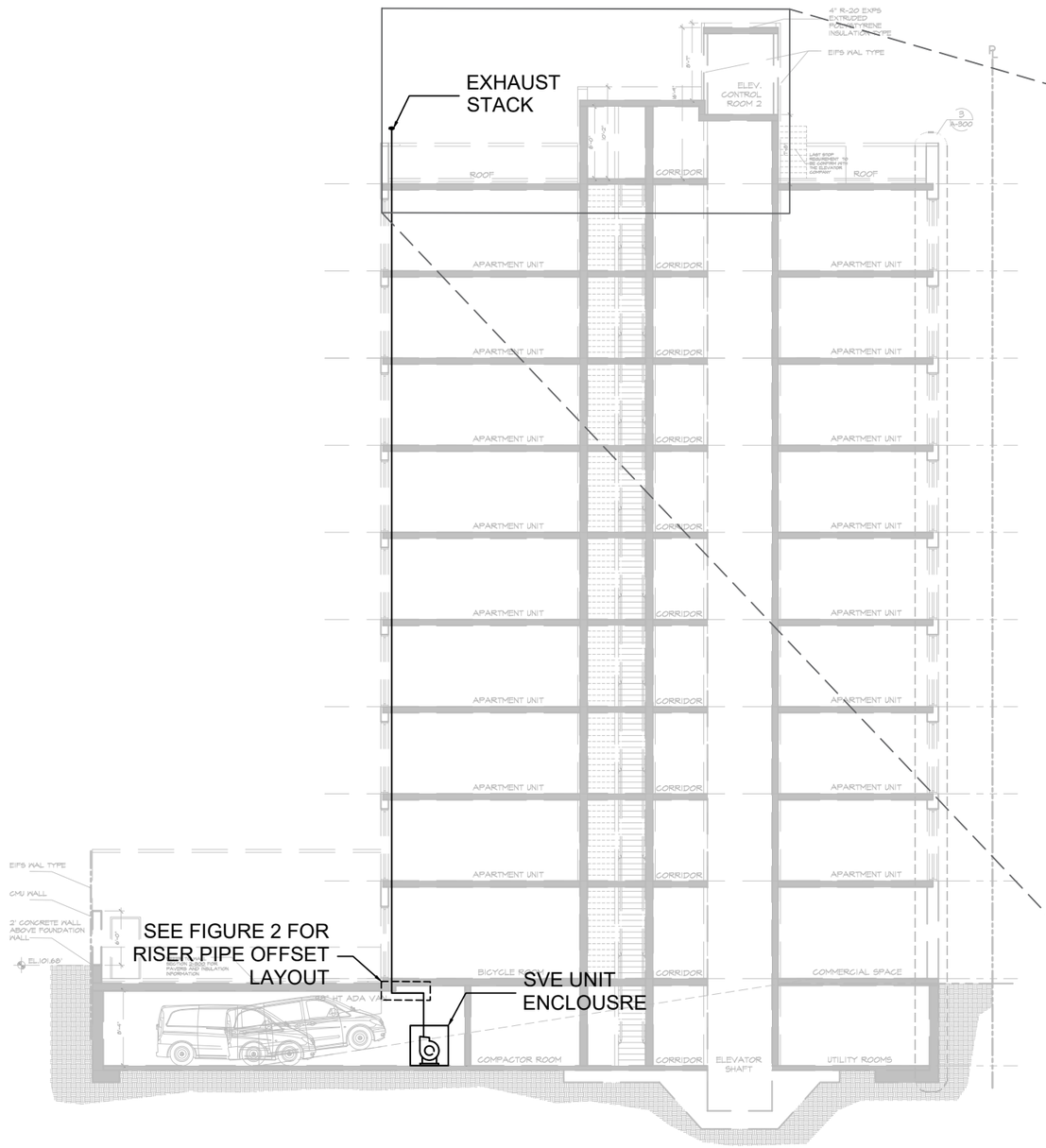
1. THE BASE MAP IS FROM ARCHITECT DRAWING NO. A-108.00 PROPOSED ROOF FLOOR PLAN PREPARED BY ARCHITECTS STUDIO P.C., DATED NOVEMBER 01, 2022
2. CONCEPTUAL LOCATION OF PITS ARE SHOWN. THE EXACT LOCATIONS OF THE PITS, PIPING, AND RISER PIPE WILL REQUIRE OTHER DESIGN TEAM'S APPROVAL TO ACCOMMODATE BUILDING COMPONENTS OR ARCHITECTURAL DETAILS.
3. VERTICAL 4" RISER WILL BE EXTENDED 5FT ABOVE ROOF.

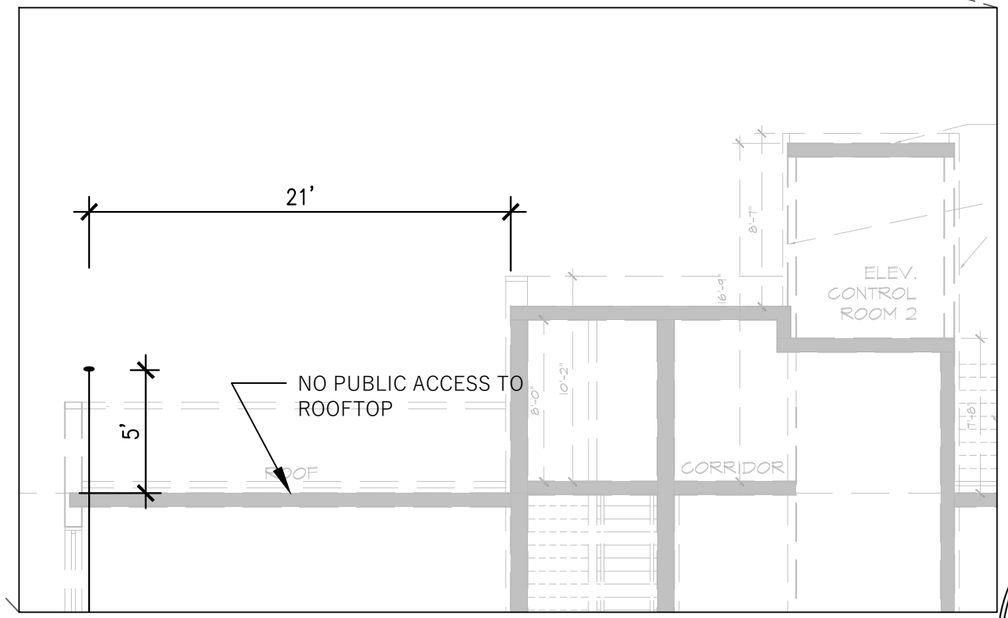
STATE OF NEW YORK
ANDREW LEUNG
EXCELSIOR
063018
LICENSED PROFESSIONAL ENGINEER

YU & Associates Engineers, P.C.
Geotechnical, Environmental and Civil Engineering
611 River Drive - 3rd Floor
Elmwood Park, NJ 07407
Tel: (201) 791-0075
Fax: (201) 791-4533

SOIL VAPOR EXTRACTION SYSTEM LAYOUT
ROOF PLAN - BCP Site ID# C241269
43-25 52nd STREET
WOODSIDE
QUEENS NEW YORK

JOB NO.: 22254	SCALE: As Shown	DATE: 10/02/2024	FIG. 4





NOTES:

1. THE BASE MAP IS FROM ARCHITECT DRAWING NO. A-204.00 LONGITUDINAL SECTION PLAN PREPARED BY ARCHITECTS STUDIO P.C., DATED DECEMBER 7, 2023.
2. CONCEPTUAL LOCATION OF PITS ARE SHOWN. THE EXACT LOCATIONS OF THE PITS, PIPING, AND RISER PIPE WILL REQUIRE OTHER DESIGN TEAM'S APPROVAL TO ACCOMMODATE BUILDING COMPONENTS OR ARCHITECTURAL DETAILS.

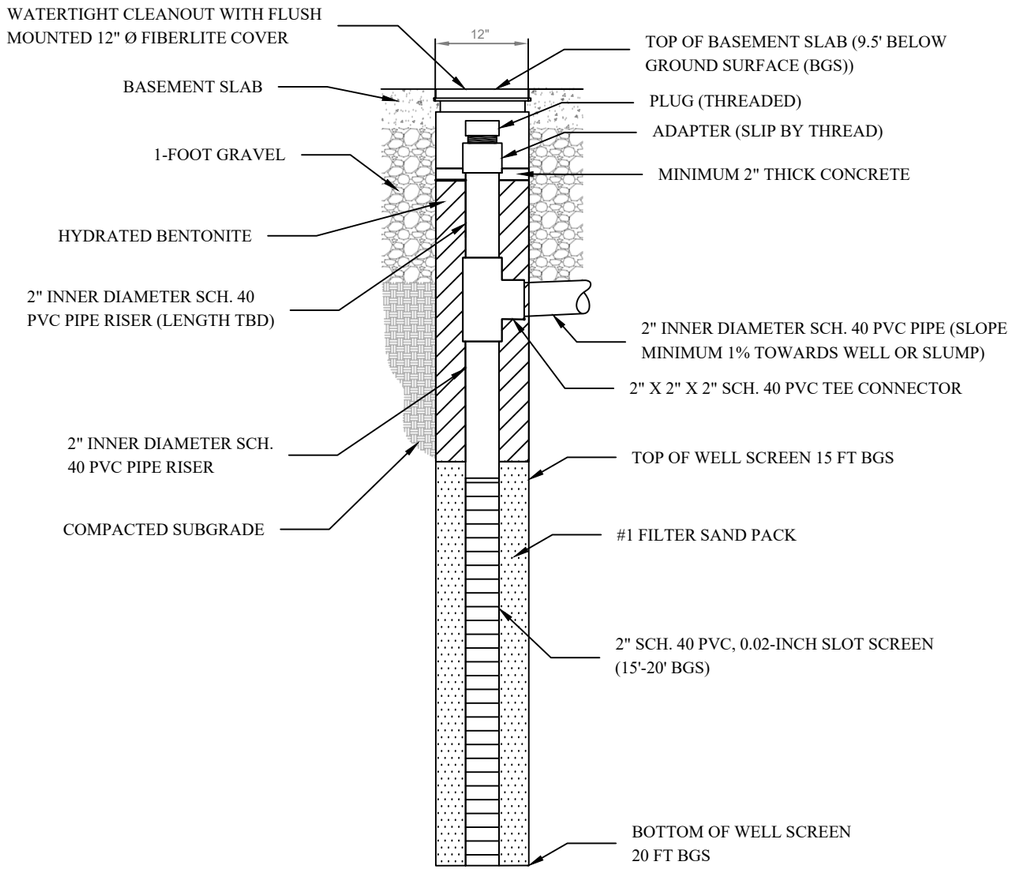
STATE OF NEW YORK
ANDREW LEUNG
063018
LICENSED PROFESSIONAL ENGINEER

YU & Associates Engineers, P.C.
Geotechnical, Environmental and Civil Engineering
611 River Drive - 3rd Floor
Elmwood Park, NJ 07407
Tel: (201) 791-0075
Fax: (201) 791-4533

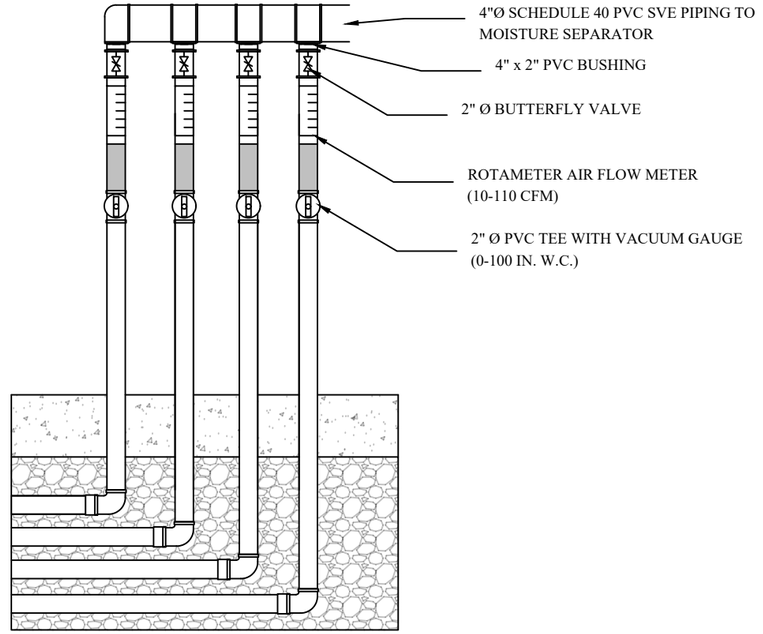
SOIL VAPOR EXTRACTION SYSTEM
CROSS SECTION VIEW - BCP Site ID# C241269
43-25 52nd STREET
WOODSIDE
QUEENS NEW YORK

JOB NO.: 22254	SCALE: N.T.S	DATE: 10/02/2024	FIG. 5

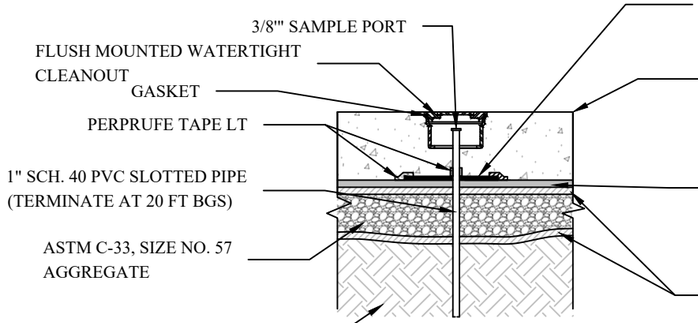
P:\22\22254 (43-52nd Street)\Remedial Design\DWG\ SVE System and Diagram Rev 09192024.dwg Oct 02, 2024 - 5:14pm vpujara



TYPICAL SVE WELL CONSTRUCTION
SCALE: NOT TO SCALE (N.T.S)



SOIL VAPOR EXTRACTION MANIFOLD
SCALE: N.T.S

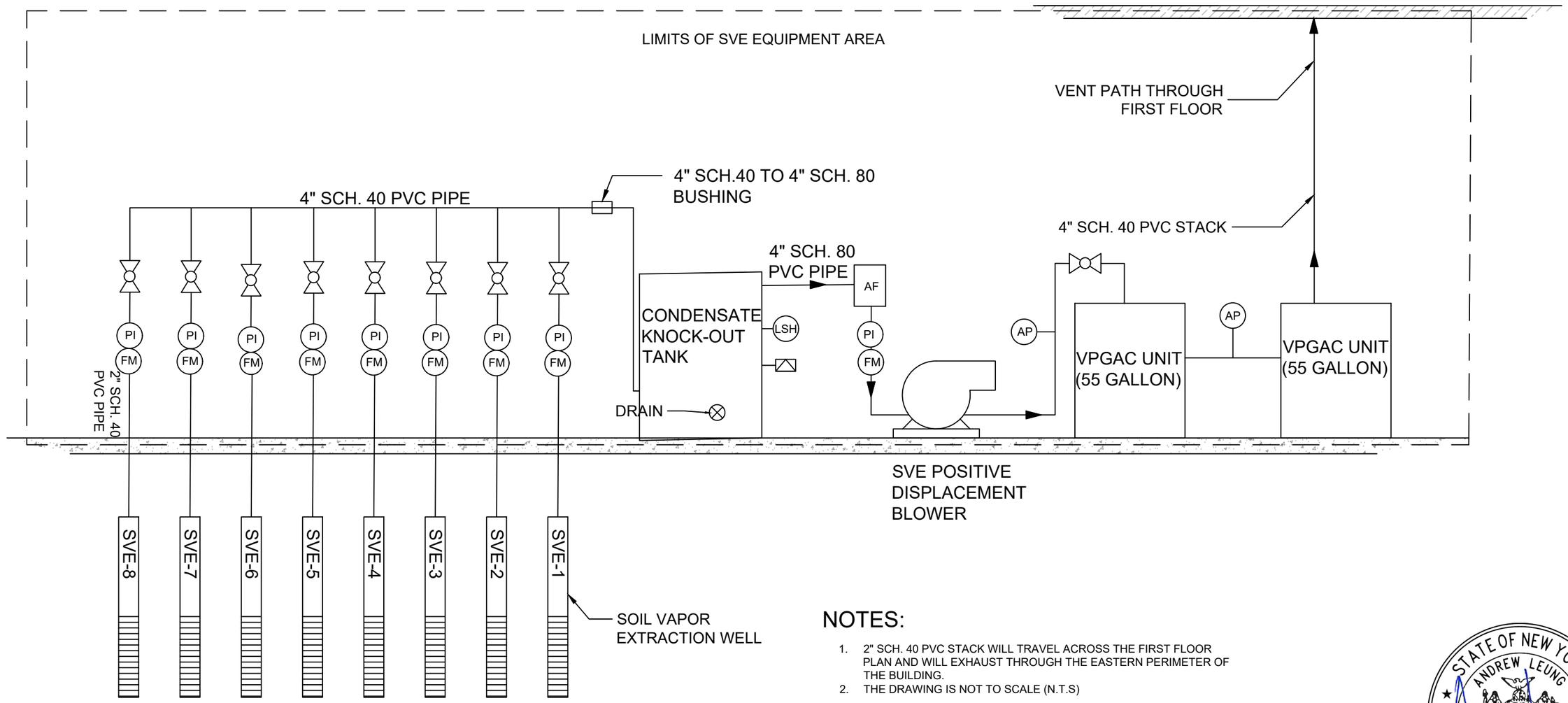


MONITORING POINT
SCALE: N.T.S

YU & Associates Engineers, P.C.
Geotechnical, Environmental and Civil Engineering
611 River Drive - 3rd Floor
Elmwood Park, NJ 07407
Tel: (201) 791-0075
Fax: (201) 791-4533

SVE WELL CONSTRUCTION DETAILS
BCP Site ID# C241269
43-25 & 43-27 52nd STREET
WOODSIDE
QUEENS NEW YORK

JOB NO.: 22254	SCALE: N.T.S	DATE: 05/09/2024	FIG. 3



LEGEND:

- SOLID 2" Ø SCHEDULE 40 PVC SVE PIPING
- SVE REGENERATIVE BLOWER
- (AP) ACCESS POINT FOR SAMPLING
- BALL VALVE
- (AF) AIR FILTER
- FLOW DIRECTION
- (LSH) LEVEL SWITCH HIGH
- VACUUM RELIEF VALVE
- (PI) PRESSURE INDICATOR
- (FM) FLOW MEASUREMENT PORT
- VPGAC VAPOR PHASE GRANULAR ACTIVATED CARBON

NOTES:

1. 2" SCH. 40 PVC STACK WILL TRAVEL ACROSS THE FIRST FLOOR PLAN AND WILL EXHAUST THROUGH THE EASTERN PERIMETER OF THE BUILDING.
2. THE DRAWING IS NOT TO SCALE (N.T.S)

STATE OF NEW YORK
ANDREW LEUNG
EXCELSIOR
063018
LICENSED PROFESSIONAL ENGINEER

YU & Associates Engineers, P.C.
Geotechnical, Environmental and Civil Engineering
611 River Drive - 3rd Floor
Elmwood Park, NJ 07407
Tel: (201) 791-0075
Fax: (201) 791-4533

SVE SYSTEM PROCESS DIAGRAM
BCP Site ID# C241269
43-25 & 43-27 52nd STREET
WOODSIDE
QUEENS NEW YORK

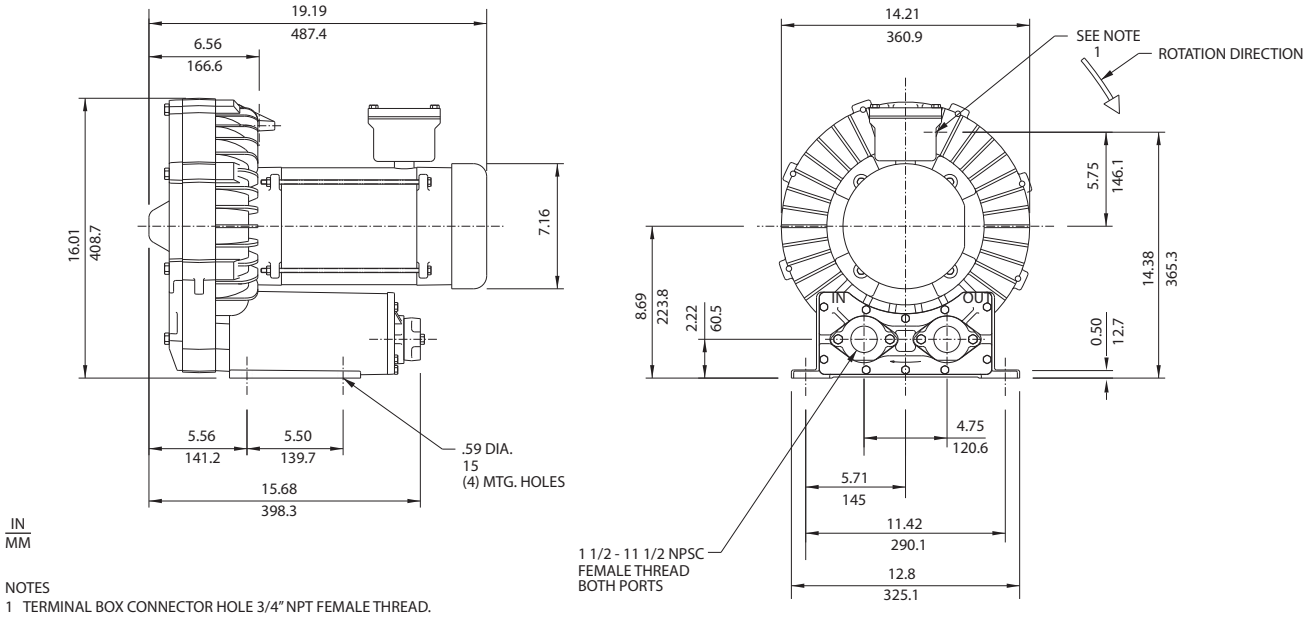
JOB NO.:	22254	SCALE:	N.T.S	DATE:	05/09/2024	FIG.	4

APPENDIX A

EN 523 & CP 523

ROTRON®

3.0 HP High Pressure Sealed Regenerative w/Explosion-Proof Motor



NOTES
1 TERMINAL BOX CONNECTOR HOLE 3/4" NPT FEMALE THREAD.
2 DRAWING NOT TO SCALE, CONTACT FACTORY FOR SCALE CAD DRAWING.
3 CONTACT FACTORY FOR BLOWER MODEL LENGTHS NOT SHOWN.

		Part/Model Number			
		EN523M5L	EN523M72L	CP523FU5LR	CP523FU72LR
Specification	Units	038223	038184	TBD	038968
Motor Enclosure - Shaft Mtl.	-	3	3	3	3
Horsepower	-	Explosion-proof-CS	Explosion-proof-CS	Chem XP-SS	Chem XP-SS
Phase - Frequency Voltage	-	Single-60 hz	Three-60 hz	Single-60 hz	Three-60 hz
Motor Nameplate Amps	AC	230	230/460	230	230/460
Max. Blower Amps	Amps (A)	15.5-14.5	7.4/3.7	15.5-14.5	7.4/3.7
Locked Rotor Amps	Amps (A)	18.1-16.7	8/4	18.1-16.7	8/4
Service Factor	Amps (A)	94-88	62/31	94-88	62/31
Starter Size	-	1	0/0	1	0/0
Thermal Protection	-	1.0	1.0	1.0	1.0
XP Motor Class - Group	-	Class B - Pilot Duty	Class B - Pilot Duty	Class B - Pilot Duty	Class B - Pilot Duty
	-	I-D	I-D	I-D	I-D
Shipping Weight	Lbs	126	126	150	126
	Kg	57.2	57.2	68	57.2

Voltage - ROTRON motors are designed to handle a broad range of world voltages and power supply variations. Our dual voltage 3 phase motors are factory tested and certified to operate on both: **208-230/415-460 VAC-3 ph-60 Hz** and **190-208/380-415 VAC-3 ph-50 Hz**. Our dual voltage 1 phase motors are factory tested and certified to operate on both: **104-115/208-230 VAC-1 ph-60 Hz** and **100-110/200-220 VAC-1 ph-50 Hz**. All voltages above can handle a ±10% voltage fluctuation. Special wound motors can be ordered for voltages outside our certified range.

Operating Temperatures - Maximum operating temperature: Motor winding temperature (winding rise plus ambient) should not exceed 140°C for Class F rated motors or 120°C for Class B rated motors. Blower outlet air temperature should not exceed 140°C (air temperature rise plus inlet temperature). Performance curve maximum pressure and suction points are based on a 40°C inlet and ambient temperature. Consult factory for inlet or ambient temperatures above 40°C.

Maximum Blower Amps - Corresponds to the performance point at which the motor or blower temperature rise with a 40°C inlet and/or ambient temperature reaches the maximum operating temperature.

XP Motor Class - Group - See Explosive Atmosphere Classification Chart in Section I

AMETEK DYNAMIC FLUID SOLUTIONS
75 North Street, Saugerties, NY 12477
USA: +1 215-256-6601 - Europe: +49 7703 930909 - Asia: +86 21 5763 1258
Customer Service Fax: +1 215.256.1338
www.ametekdfs.com

AMETEK®
PRECISION MOTION CONTROL
DYNAMIC FLUID SOLUTIONS

EN 523 & CP 523

ROTRON®

3.0 HP High Pressure Sealed Regenerative w/Explosion-Proof Motor

FEATURES

- Manufactured in the USA - ISO 9001 and NAFTA compliant
- Maximum flow: 84 SCFM
- Maximum pressure: 140 IWG
- Maximum vacuum: 135 IWG
- Standard motor: 3.0 HP, explosion-proof
- Cast aluminum blower housing, impeller , cover & manifold; cast iron flanges (threaded); teflon® lip seal
- UL & CSA approved motor with permanently sealed ball bearings for explosive gas atmospheres Class I Group D minimum
- Sealed blower assembly
- Quiet operation within OSHA standards

MOTOR OPTIONS

- International voltage & frequency (Hz)
- Chemical duty, high efficiency, inverter duty or industry-specific designs
- Various horsepowers for application-specific needs

BLOWER OPTIONS

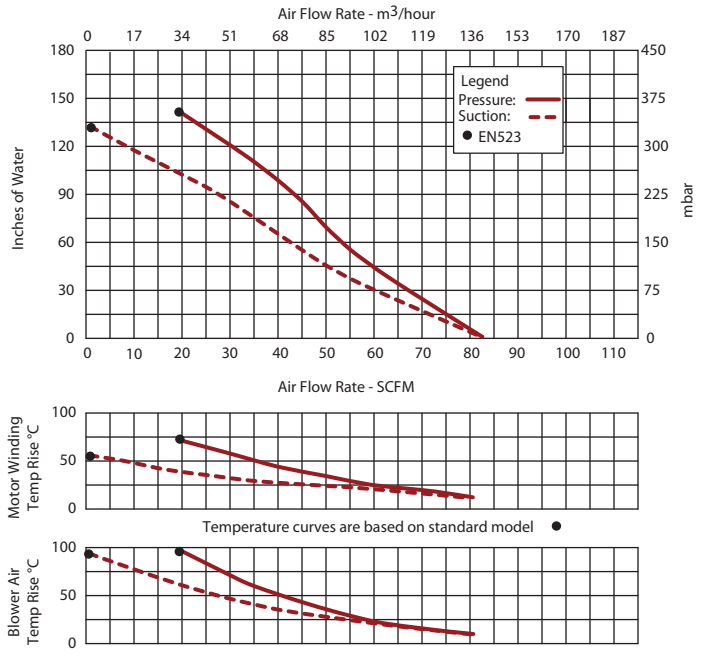
- Corrosion resistant surface treatments & sealing options
- Remote drive (motorless) models
- Slip-on or face flanges for application-specific needs

ACCESSORIES

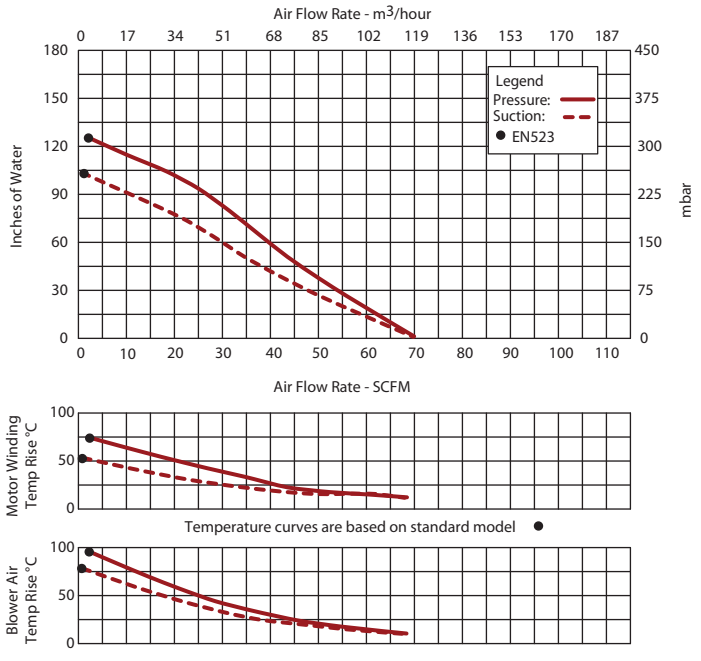
- Flowmeters reading in SCFM
- Filters & moisture separators
- Pressure gauges, vacuum gauges, & relief valves
- Switches - air flow, pressure, vacuum, or temperature
- External mufflers for additional silencing
- Air knives (used on blow-off applications)
- Variable frequency drive package

Blower Performance at Standard Conditions

60 Hz



50 Hz



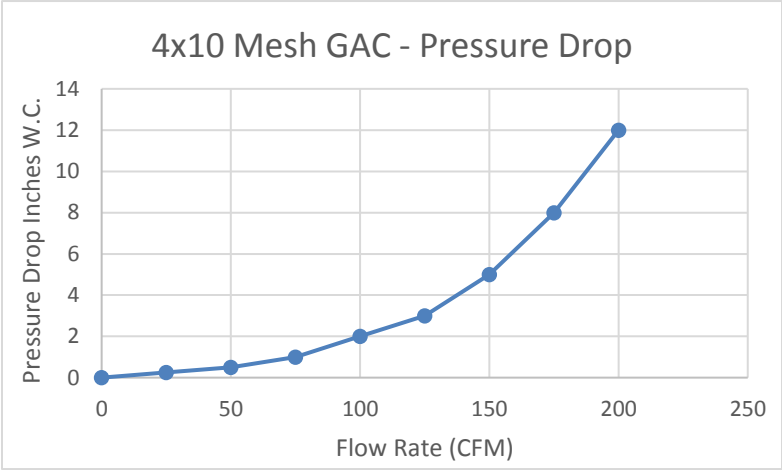
AMETEK DYNAMIC FLUID SOLUTIONS
75 North Street, Saugerties, NY 12477
USA: +1 215-256-6601 - Europe: +49 7703 930909 - Asia: +86 21 5763 1258
Customer Service Fax: +1 215.256.1338
www.ametekdfs.com

AMETEK®
PRECISION MOTION CONTROL
DYNAMIC FLUID SOLUTIONS

Enviro-Equipment, Inc.
Remediation Division

VPCD-55 – Vapor Phase Carbon Drum

Available as empty drums with no media or filled with reactivated carbon, virgin carbon or a variety of specialty medias upon request.



VPCD-55 Specifications			
Dimensions	2'10" Tall x 24" Diameter	Internal Piping	SCH 40 PVC
Inlet / Outlet	2" Female NPT	Internal Coating	Epoxy
GAC Fill	200 Pounds	Max Pressure / Temp	10 PSIG / 140 F
Shipping Weight	250 Pounds	Bed Depth / Volume	2.4 Feet / 6.6 cubic feet
Operational Weight	325 Pounds	Cross Sectional Bed Area	2.8 square Feet

APPENDIX B

Technical Report

prepared for:

YU & Associates
611 River Drive, 3rd Floor
Elmwood Park NJ, 07407
Attention: Chengyu Hang

Report Date: 04/26/2024
Client Project ID: 22254 43-52nd St
York Project (SDG) No.: 24D1614

Stratford, CT Laboratory IDs:
NY:10854, NJ: CT005, PA: 68-0440, CT: PH-0723

Richmond Hill, NY Laboratory IDs:
NY:12058, NJ: NY037, CT: PH-0721, NH: 2097,
EPA: NY01600

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 04/26/2024
Client Project ID: 22254 43-52nd St
York Project (SDG) No.: 24D1614

YU & Associates
611 River Drive, 3rd Floor
Elmwood Park NJ, 07407
Attention: Chengyu Hang

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on April 25, 2024 and listed below. The project was identified as your project: **22254 43-52nd St**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
24D1614-01	EF-1	Vapor Extraction	04/24/2024	04/25/2024
24D1614-02	IF-1	Vapor Extraction	04/24/2024	04/25/2024

General Notes for York Project (SDG) No.: 24D1614

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854, NJ Cert No. CT005, PA Cert No. 68-04440, CT Cert No. PH-0723; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058, NJ Cert No. NY037, CT Cert No. PH-0721, NH Cert No. 2097, EPA Cert No. NY01600.

Approved By: Cassie L. Mosher

Cassie L. Mosher
Laboratory Manager

Date: 04/26/2024

Sample Information

Client Sample ID: **EF-1** **York Sample ID:** **24D1614-01**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24D1614	22254 43-52nd St	Vapor Extraction	April 24, 2024 9:50 am	04/25/2024

VOA, TO15 Isooctane (2,2,4-TMP) Add On

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
540-84-1	*** 2,2,4-Trimethylpentane**	**0.841**		ug/m³	0.234	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 15:10	YR

Volatile Organics, EPA TO15 Full List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m³	0.69	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 15:10	YR
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.55	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	0.69	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	0.77	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	0.55	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.40	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.099	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
120-82-1	1,2,4-Trichlorobenzene	ND	ICVE	ug/m³	0.74	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
95-63-6	**1,2,4-Trimethylbenzene**	**3.3**		ug/m³	0.49	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
106-93-4	1,2-Dibromoethane	ND		ug/m³	0.77	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	0.60	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.40	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
78-87-5	1,2-Dichloropropane	ND		ug/m³	0.46	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	0.70	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
108-67-8	**1,3,5-Trimethylbenzene**	**0.74**		ug/m³	0.49	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
106-99-0	1,3-Butadiene	ND		ug/m³	0.66	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	0.60	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	0.46	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 15:10	YR
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	0.60	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR

Sample Information

Client Sample ID: EF-1 **York Sample ID:** 24D1614-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24D1614	22254 43-52nd St	Vapor Extraction	April 24, 2024 9:50 am	04/25/2024

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/m³	0.72	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
78-93-3	**2-Butanone**	**2.9**		ug/m³	0.29	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
591-78-6	* 2-Hexanone	ND		ug/m³	0.82	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 15:10	YR
107-05-1	3-Chloropropene	ND		ug/m³	1.6	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
108-10-1	**4-Methyl-2-pentanone**	**1.8**		ug/m³	0.41	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
67-64-1	**Acetone**	**12**		ug/m³	0.48	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
107-13-1	Acrylonitrile	ND		ug/m³	0.22	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
71-43-2	**Benzene**	**0.51**		ug/m³	0.32	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
100-44-7	Benzyl chloride	ND		ug/m³	0.52	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
75-27-4	Bromodichloromethane	ND		ug/m³	0.67	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
75-25-2	Bromoform	ND		ug/m³	1.0	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
74-83-9	Bromomethane	ND	TO-CCV	ug/m³	0.39	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
75-15-0	Carbon disulfide	ND		ug/m³	0.31	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
56-23-5	**Carbon tetrachloride**	**0.31**		ug/m³	0.16	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
108-90-7	Chlorobenzene	ND		ug/m³	0.46	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
75-00-3	Chloroethane	ND	TO-CCV, TO-LCS-L	ug/m³	0.26	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
67-66-3	Chloroform	ND		ug/m³	0.49	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
74-87-3	**Chloromethane**	**1.5**		ug/m³	0.21	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.099	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	0.45	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
110-82-7	**Cyclohexane**	**0.55**		ug/m³	0.34	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
124-48-1	Dibromochloromethane	ND		ug/m³	0.85	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR

Sample Information

Client Sample ID: EF-1 **York Sample ID:** 24D1614-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24D1614	22254 43-52nd St	Vapor Extraction	April 24, 2024 9:50 am	04/25/2024

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-71-8	**Dichlorodifluoromethane**	**2.2**		ug/m³	0.49	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
141-78-6	*** Ethyl acetate**	**6.6**		ug/m³	0.72	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 15:10	YR
100-41-4	**Ethyl Benzene**	**10**		ug/m³	0.43	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
87-68-3	Hexachlorobutadiene	ND		ug/m³	1.1	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
67-63-0	**Isopropanol**	**18**		ug/m³	0.49	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
80-62-6	Methyl Methacrylate	ND		ug/m³	0.41	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m³	0.36	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
75-09-2	**Methylene chloride**	**0.76**		ug/m³	0.69	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
91-20-3	* Naphthalene	ND	ICVE	ug/m³	1.0	1	EPA TO-15 Certifications: NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
142-82-5	**n-Heptane**	**2.8**		ug/m³	0.41	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
110-54-3	**n-Hexane**	**0.60**		ug/m³	0.35	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
95-47-6	**o-Xylene**	**14**		ug/m³	0.43	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
179601-23-1	**p- & m- Xylenes**	**42**		ug/m³	0.87	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
622-96-8	*** p-Ethyltoluene**	**2.5**		ug/m³	0.49	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 15:10	YR
115-07-1	*** Propylene**	**0.55**		ug/m³	0.17	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 15:10	YR
100-42-5	**Styrene**	**0.68**		ug/m³	0.43	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
127-18-4	**Tetrachloroethylene**	**1.0**		ug/m³	0.68	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
109-99-9	* Tetrahydrofuran	ND		ug/m³	0.59	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 15:10	YR
108-88-3	**Toluene**	**29**		ug/m³	0.38	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.40	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	0.45	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR
79-01-6	Trichloroethylene	ND		ug/m³	0.13	1	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-NY037	04/24/2024 12:00	04/26/2024 15:10	YR

Sample Information

Client Sample ID: EF-1 **York Sample ID:** 24D1614-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24D1614	22254 43-52nd St	Vapor Extraction	April 24, 2024 9:50 am	04/25/2024

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-69-4	**Trichlorofluoromethane (Freon 11)**	**1.1**		ug/m³	0.56	1	EPA TO-15	04/24/2024 12:00	04/26/2024 15:10	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
108-05-4	Vinyl acetate	ND		ug/m³	0.35	1	EPA TO-15	04/24/2024 12:00	04/26/2024 15:10	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
593-60-2	Vinyl bromide	ND		ug/m³	0.44	1	EPA TO-15	04/24/2024 12:00	04/26/2024 15:10	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
75-01-4	Vinyl Chloride	ND		ug/m³	0.13	1	EPA TO-15	04/24/2024 12:00	04/26/2024 15:10	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			

Sample Information

Client Sample ID: IF-1 **York Sample ID:** 24D1614-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24D1614	22254 43-52nd St	Vapor Extraction	April 24, 2024 9:55 am	04/25/2024

VOA, TO15 Isooctane (2,2,4-TMP) Add On

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
540-84-1	*** 2,2,4-Trimethylpentane**	**2.06**		ug/m³	0.234	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:			

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m³	0.69	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:			
71-55-6	1,1,1-Trichloroethane	ND		ug/m³	0.55	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	0.69	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	0.77	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	0.55	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.40	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.099	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
120-82-1	1,2,4-Trichlorobenzene	ND	ICVE	ug/m³	0.74	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
95-63-6	**1,2,4-Trimethylbenzene**	**40**		ug/m³	0.49	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			

Sample Information

Client Sample ID: IF-1 **York Sample ID:** 24D1614-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24D1614	22254 43-52nd St	Vapor Extraction	April 24, 2024 9:55 am	04/25/2024

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-93-4	1,2-Dibromoethane	ND		ug/m³	0.77	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	0.60	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.40	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
78-87-5	1,2-Dichloropropane	ND		ug/m³	0.46	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	0.70	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
108-67-8	**1,3,5-Trimethylbenzene**	**8.8**		ug/m³	0.49	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
106-99-0	1,3-Butadiene	ND		ug/m³	0.66	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	0.60	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	0.46	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 16:04	YR
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	0.60	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
123-91-1	1,4-Dioxane	ND		ug/m³	0.72	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
78-93-3	**2-Butanone**	**3.1**		ug/m³	0.29	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
591-78-6	* 2-Hexanone	ND		ug/m³	0.82	1	EPA TO-15 Certifications:	04/24/2024 12:00	04/26/2024 16:04	YR
107-05-1	3-Chloropropene	ND		ug/m³	1.6	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
108-10-1	**4-Methyl-2-pentanone**	**4.1**		ug/m³	0.41	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
67-64-1	**Acetone**	**34**		ug/m³	0.48	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
107-13-1	Acrylonitrile	ND		ug/m³	0.22	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
71-43-2	**Benzene**	**2.2**		ug/m³	0.32	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
100-44-7	Benzyl chloride	ND		ug/m³	0.52	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
75-27-4	Bromodichloromethane	ND		ug/m³	0.67	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
75-25-2	Bromoform	ND		ug/m³	1.0	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
74-83-9	Bromomethane	ND	TO-CCV	ug/m³	0.39	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR
75-15-0	**Carbon disulfide**	**0.34**		ug/m³	0.31	1	EPA TO-15 Certifications:	04/24/2024 12:00 NELAC-NY12058,NJDEP-NY037	04/26/2024 16:04	YR

Sample Information

Client Sample ID: IF-1 **York Sample ID:** 24D1614-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24D1614	22254 43-52nd St	Vapor Extraction	April 24, 2024 9:55 am	04/25/2024

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
56-23-5	**Carbon tetrachloride**	**0.38**		ug/m³	0.16	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
108-90-7	Chlorobenzene	ND		ug/m³	0.46	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
75-00-3	Chloroethane	ND	TO-CCV, TO-LCS-L	ug/m³	0.26	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
67-66-3	Chloroform	ND		ug/m³	0.49	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
74-87-3	**Chloromethane**	**1.7**		ug/m³	0.21	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	0.099	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	0.45	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
110-82-7	**Cyclohexane**	**0.69**		ug/m³	0.34	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
124-48-1	Dibromochloromethane	ND		ug/m³	0.85	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
75-71-8	**Dichlorodifluoromethane**	**2.3**		ug/m³	0.49	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
141-78-6	*** Ethyl acetate**	**1.2**		ug/m³	0.72	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:			
100-41-4	**Ethyl Benzene**	**19**		ug/m³	0.43	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
87-68-3	Hexachlorobutadiene	ND		ug/m³	1.1	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
67-63-0	**Isopropanol**	**6.0**		ug/m³	0.49	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
80-62-6	Methyl Methacrylate	ND		ug/m³	0.41	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m³	0.36	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
75-09-2	**Methylene chloride**	**0.76**		ug/m³	0.69	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
91-20-3	* Naphthalene	ND	ICVE	ug/m³	1.0	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NJDEP-NY037			
142-82-5	**n-Heptane**	**2.3**		ug/m³	0.41	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
110-54-3	**n-Hexane**	**2.0**		ug/m³	0.35	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
95-47-6	**o-Xylene**	**28**		ug/m³	0.43	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			
179601-23-1	**p- & m- Xylenes**	**86**		ug/m³	0.87	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications: NELAC-NY12058,NJDEP-NY037			

Sample Information

Client Sample ID: IF-1 **York Sample ID:** 24D1614-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
24D1614	22254 43-52nd St	Vapor Extraction	April 24, 2024 9:55 am	04/25/2024

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
622-96-8	*** p-Ethyltoluene**	**46**		ug/m³	0.49	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:			
115-07-1	*** Propylene**	**4.1**		ug/m³	0.17	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:			
100-42-5	**Styrene**	**1.6**		ug/m³	0.43	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		
127-18-4	**Tetrachloroethylene**	**270**		ug/m³	0.68	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		
109-99-9	*** Tetrahydrofuran**	**1.5**		ug/m³	0.59	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:			
108-88-3	**Toluene**	**23**		ug/m³	0.38	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.40	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	0.45	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		
79-01-6	**Trichloroethylene**	**0.91**		ug/m³	0.13	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		
75-69-4	**Trichlorofluoromethane (Freon 11)**	**1.2**		ug/m³	0.56	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		
108-05-4	Vinyl acetate	ND		ug/m³	0.35	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		
593-60-2	Vinyl bromide	ND		ug/m³	0.44	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		
75-01-4	**Vinyl Chloride**	**0.36**	TO-LCS -H	ug/m³	0.13	1	EPA TO-15	04/24/2024 12:00	04/26/2024 16:04	YR
							Certifications:	NELAC-NY12058,NJDEP-NY037		

Analytical Batch Summary

Batch ID: BD42056 **Preparation Method:** EPA TO15 PREP **Prepared By:** YR

YORK Sample ID	Client Sample ID	Preparation Date
24D1614-01	EF-1	04/24/24
24D1614-02	IF-1	04/24/24
BD42056-BLK1	Blank	04/25/24
BD42056-BS1	LCS	04/25/24
BD42056-DUP1	Duplicate	04/25/24

Batch ID: BD42057 **Preparation Method:** EPA TO15 PREP **Prepared By:** YR

YORK Sample ID	Client Sample ID	Preparation Date
24D1614-01	EF-1	04/24/24
24D1614-02	IF-1	04/24/24
BD42057-BLK1	Blank	04/25/24
BD42057-BS1	LCS	04/25/24
BD42057-DUP1	Duplicate	04/25/24

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BD42056 - EPA TO15 PREP											
Blank (BD42056-BLK1)											Prepared & Analyzed: 04/25/2024
1,1,1,2-Tetrachloroethane	ND	0.69	ug/m³								
1,1,1-Trichloroethane	ND	0.55	"								
1,1,2,2-Tetrachloroethane	ND	0.69	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.77	"								
1,1,2-Trichloroethane	ND	0.55	"								
1,1-Dichloroethane	ND	0.40	"								
1,1-Dichloroethylene	ND	0.099	"								
1,2,4-Trichlorobenzene	ND	0.74	"								
1,2,4-Trimethylbenzene	ND	0.49	"								
1,2-Dibromoethane	ND	0.77	"								
1,2-Dichlorobenzene	ND	0.60	"								
1,2-Dichloroethane	ND	0.40	"								
1,2-Dichloropropane	ND	0.46	"								
1,2-Dichlorotetrafluoroethane	ND	0.70	"								
1,3,5-Trimethylbenzene	ND	0.49	"								
1,3-Butadiene	ND	0.66	"								
1,3-Dichlorobenzene	ND	0.60	"								
1,3-Dichloropropane	ND	0.46	"								
1,4-Dichlorobenzene	ND	0.60	"								
1,4-Dioxane	ND	0.72	"								
2-Butanone	ND	0.29	"								
2-Hexanone	ND	0.82	"								
3-Chloropropene	ND	1.6	"								
4-Methyl-2-pentanone	ND	0.41	"								
Acetone	ND	0.48	"								
Acrylonitrile	ND	0.22	"								
Benzene	ND	0.32	"								
Benzyl chloride	ND	0.52	"								
Bromodichloromethane	ND	0.67	"								
Bromoform	ND	1.0	"								
Bromomethane	ND	0.39	"								
Carbon disulfide	ND	0.31	"								
Carbon tetrachloride	ND	0.16	"								
Chlorobenzene	ND	0.46	"								
Chloroethane	ND	0.26	"								
Chloroform	ND	0.49	"								
Chloromethane	ND	0.21	"								
cis-1,2-Dichloroethylene	ND	0.099	"								
cis-1,3-Dichloropropylene	ND	0.45	"								
Cyclohexane	ND	0.34	"								
Dibromochloromethane	ND	0.85	"								
Dichlorodifluoromethane	ND	0.49	"								
Ethyl acetate	ND	0.72	"								
Ethyl Benzene	ND	0.43	"								
Hexachlorobutadiene	ND	1.1	"								
Isopropanol	ND	0.49	"								
Methyl Methacrylate	ND	0.41	"								
Methyl tert-butyl ether (MTBE)	ND	0.36	"								
Methylene chloride	ND	0.69	"								

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BD42056 - EPA TO15 PREP											
Blank (BD42056-BLK1)											Prepared & Analyzed: 04/25/2024
Naphthalene	ND	1.0	ug/m³								
n-Heptane	ND	0.41	"								
n-Hexane	ND	0.35	"								
o-Xylene	ND	0.43	"								
p- & m- Xylenes	ND	0.87	"								
p-Ethyltoluene	ND	0.49	"								
Propylene	ND	0.17	"								
Styrene	ND	0.43	"								
Tetrachloroethylene	ND	0.68	"								
Tetrahydrofuran	ND	0.59	"								
Toluene	ND	0.38	"								
trans-1,2-Dichloroethylene	ND	0.40	"								
trans-1,3-Dichloropropylene	ND	0.45	"								
Trichloroethylene	ND	0.13	"								
Trichlorofluoromethane (Freon 11)	ND	0.56	"								
Vinyl acetate	ND	0.35	"								
Vinyl bromide	ND	0.44	"								
Vinyl Chloride	ND	0.13	"								
LCS (BD42056-BS1)											Prepared & Analyzed: 04/25/2024
1,1,1,2-Tetrachloroethane	10.5		ppbv	10.0		105	70-130				
1,1,1-Trichloroethane	10.3		"	10.0		103	70-130				
1,1,2,2-Tetrachloroethane	10.1		"	10.0		101	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11.4		"	10.0		114	70-130				
1,1,2-Trichloroethane	9.47		"	10.0		94.7	70-130				
1,1-Dichloroethane	9.76		"	10.0		97.6	70-130				
1,1-Dichloroethylene	9.21		"	10.0		92.1	70-130				
1,2,4-Trichlorobenzene	7.78		"	10.0		77.8	70-130				
1,2,4-Trimethylbenzene	10.4		"	10.0		104	70-130				
1,2-Dibromoethane	9.39		"	10.0		93.9	70-130				
1,2-Dichlorobenzene	12.2		"	10.0		122	70-130				
1,2-Dichloroethane	8.79		"	10.0		87.9	70-130				
1,2-Dichloropropane	8.70		"	10.0		87.0	70-130				
1,2-Dichlorotetrafluoroethane	11.0		"	10.0		110	70-130				
1,3,5-Trimethylbenzene	10.2		"	10.0		102	70-130				
1,3-Butadiene	10.9		"	10.0		109	70-130				
1,3-Dichlorobenzene	9.71		"	10.0		97.1	70-130				
1,3-Dichloropropane	8.45		"	10.0		84.5	70-130				
1,4-Dichlorobenzene	9.59		"	10.0		95.9	70-130				
1,4-Dioxane	7.90		"	10.0		79.0	70-130				
2-Butanone	8.93		"	10.0		89.3	70-130				
2-Hexanone	7.91		"	10.0		79.1	70-130				
3-Chloropropene	9.57		"	10.0		95.7	70-130				
4-Methyl-2-pentanone	7.71		"	10.0		77.1	70-130				
Acetone	7.65		"	10.0		76.5	70-130				
Acrylonitrile	10.2		"	10.0		102	70-130				
Benzene	10.6		"	10.0		106	70-130				
Benzyl chloride	9.76		"	10.0		97.6	70-130				
Bromodichloromethane	8.70		"	10.0		87.0	70-130				
Bromoform	9.92		"	10.0		99.2	70-130				
Bromomethane	7.11		"	10.0		71.1	70-130				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BD42056 - EPA TO15 PREP											
LCS (BD42056-BS1)								Prepared & Analyzed: 04/25/2024			
Carbon disulfide	11.0		ppbv	10.0		110	70-130				
Carbon tetrachloride	11.0		"	10.0		110	70-130				
Chlorobenzene	9.76		"	10.0		97.6	70-130				
Chloroethane	6.62		"	10.0		66.2	70-130	Low Bias			
Chloroform	10.4		"	10.0		104	70-130				
Chloromethane	10.7		"	10.0		107	70-130				
cis-1,2-Dichloroethylene	8.51		"	10.0		85.1	70-130				
cis-1,3-Dichloropropylene	8.68		"	10.0		86.8	70-130				
Cyclohexane	9.60		"	10.0		96.0	70-130				
Dibromochloromethane	9.63		"	10.0		96.3	70-130				
Dichlorodifluoromethane	10.4		"	10.0		104	70-130				
Ethyl acetate	9.22		"	10.0		92.2	70-130				
Ethyl Benzene	9.79		"	10.0		97.9	70-130				
Hexachlorobutadiene	13.7		"	10.0		137	70-130	High Bias			
Isopropanol	10.3		"	10.0		103	70-130				
Methyl Methacrylate	8.51		"	10.0		85.1	70-130				
Methyl tert-butyl ether (MTBE)	9.74		"	10.0		97.4	70-130				
Methylene chloride	9.85		"	10.0		98.5	70-130				
Naphthalene	8.43		"	10.0		84.3	70-130				
n-Heptane	10.0		"	10.0		100	70-130				
n-Hexane	9.84		"	10.0		98.4	70-130				
o-Xylene	10.3		"	10.0		103	70-130				
p- & m- Xylenes	20.9		"	20.0		105	70-130				
p-Ethyltoluene	10.7		"	10.0		107	70-130				
Propylene	10.4		"	10.0		104	70-130				
Styrene	10.9		"	10.0		109	70-130				
Tetrachloroethylene	10.0		"	10.0		100	70-130				
Tetrahydrofuran	9.22		"	10.0		92.2	70-130				
Toluene	8.59		"	10.0		85.9	70-130				
trans-1,2-Dichloroethylene	9.78		"	10.0		97.8	70-130				
trans-1,3-Dichloropropylene	8.44		"	10.0		84.4	70-130				
Trichloroethylene	8.77		"	10.0		87.7	70-130				
Trichlorofluoromethane (Freon 11)	10.6		"	10.0		106	70-130				
Vinyl acetate	9.39		"	10.0		93.9	70-130				
Vinyl bromide	12.4		"	10.0		124	70-130				
Vinyl Chloride	13.5		"	10.0		135	70-130	High Bias			

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BD42056 - EPA TO15 PREP											
Duplicate (BD42056-DUP1)	*Source sample: 24D1284-01 (Duplicate)								Prepared: 04/25/2024 Analyzed: 04/26/2024		
1,1,1,2-Tetrachloroethane	ND	1.1	ug/m³		ND					25	
1,1,1-Trichloroethane	ND	0.89	"		ND					25	
1,1,2,2-Tetrachloroethane	ND	1.1	"		ND					25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.3	"		ND					25	
1,1,2-Trichloroethane	ND	0.89	"		ND					25	
1,1-Dichloroethane	ND	0.66	"		ND					25	
1,1-Dichloroethylene	ND	0.16	"		ND					25	
1,2,4-Trichlorobenzene	ND	1.2	"		ND					25	
1,2,4-Trimethylbenzene	2.7	0.80	"		2.8				2.90	25	
1,2-Dibromoethane	ND	1.3	"		ND					25	
1,2-Dichlorobenzene	ND	0.98	"		ND					25	
1,2-Dichloroethane	ND	0.66	"		ND					25	
1,2-Dichloropropane	ND	0.76	"		ND					25	
1,2-Dichlorotetrafluoroethane	ND	1.1	"		ND					25	
1,3,5-Trimethylbenzene	ND	0.80	"		ND					25	
1,3-Butadiene	ND	1.1	"		ND					25	
1,3-Dichlorobenzene	ND	0.98	"		ND					25	
1,3-Dichloropropane	ND	0.76	"		ND					25	
1,4-Dichlorobenzene	ND	0.98	"		ND					25	
1,4-Dioxane	ND	1.2	"		ND					25	
2-Butanone	890	0.48	"		980				9.90	25	
2-Hexanone	95	1.3	"		98				3.82	25	
3-Chloropropene	ND	2.6	"		ND					25	
4-Methyl-2-pentanone	ND	0.67	"		ND					25	
Acrylonitrile	ND	0.35	"		ND					25	
Benzene	ND	0.52	"		ND					25	
Benzyl chloride	ND	0.85	"		ND					25	
Bromodichloromethane	ND	1.1	"		ND					25	
Bromoform	ND	1.7	"		ND					25	
Bromomethane	ND	0.63	"		ND					25	
Carbon disulfide	ND	0.51	"		ND					25	
Carbon tetrachloride	0.31	0.26	"		0.41				28.6	25	Non-dir.
Chlorobenzene	ND	0.75	"		ND					25	
Chloroethane	ND	0.43	"		ND					25	
Chloroform	ND	0.80	"		ND					25	
Chloromethane	0.71	0.34	"		0.98				32.0	25	Non-dir.
cis-1,2-Dichloroethylene	ND	0.16	"		ND					25	
cis-1,3-Dichloropropylene	ND	0.74	"		ND					25	
Cyclohexane	ND	0.56	"		ND					25	
Dibromochloromethane	ND	1.4	"		ND					25	
Dichlorodifluoromethane	2.3	0.81	"		2.2				7.14	25	
Ethyl acetate	ND	1.2	"		2.1					25	
Ethyl Benzene	1.1	0.71	"		1.1				0.00	25	
Hexachlorobutadiene	ND	1.7	"		ND					25	
Isopropanol	1000	0.80	"		1100				7.95	25	
Methyl Methacrylate	ND	0.67	"		ND					25	
Methyl tert-butyl ether (MTBE)	ND	0.59	"		ND					25	
Methylene chloride	ND	1.1	"		ND					25	
Naphthalene	ND	1.7	"		ND					25	
n-Heptane	3.7	0.67	"		3.7				0.00	25	

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc. - Stratford

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BD42056 - EPA TO15 PREP											
Duplicate (BD42056-DUP1)	*Source sample: 24D1284-01 (Duplicate)								Prepared: 04/25/2024 Analyzed: 04/26/2024		
n-Hexane	3.8	0.58	ug/m³		3.6				4.65	25	
o-Xylene	2.1	0.71	"		2.0				3.51	25	
p- & m- Xylenes	4.1	1.4	"		4.1				0.00	25	
p-Ethyltoluene	1.9	0.80	"		2.1				8.00	25	
Propylene	47	0.28	"		48				2.67	25	
Styrene	ND	0.70	"		ND					25	
Tetrachloroethylene	ND	1.1	"		ND					25	
Tetrahydrofuran	1.9	0.96	"		1.9				2.53	25	
Toluene	2.5	0.62	"		2.6				7.23	25	
trans-1,2-Dichloroethylene	ND	0.65	"		ND					25	
trans-1,3-Dichloropropylene	ND	0.74	"		ND					25	
Trichloroethylene	ND	0.22	"		ND					25	
Trichlorofluoromethane (Freon 11)	1.6	0.92	"		1.5				6.06	25	
Vinyl acetate	ND	0.58	"		ND					25	
Vinyl bromide	ND	0.72	"		ND					25	
Vinyl Chloride	ND	0.21	"		ND					25	
Batch BD42057 - EPA TO15 PREP											
Blank (BD42057-BLK1)									Prepared & Analyzed: 04/25/2024		
2,2,4-Trimethylpentane	ND	0.234	ug/m³								
LCS (BD42057-BS1)									Prepared & Analyzed: 04/25/2024		
2,2,4-Trimethylpentane	40.4	0.234	ug/m³				70-130				
Duplicate (BD42057-DUP1)	*Source sample: 24D1284-01 (Duplicate)								Prepared: 04/25/2024 Analyzed: 04/26/2024		
2,2,4-Trimethylpentane	ND	0.382	ug/m³		ND					25	

Sample and Data Qualifiers Relating to This Work Order

TO-LCS-L	The result reported for this compound may be biased low due to its behavior in the analysis batch LCS where it recovered less 70% of the expected value.
TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
TO-IPA	The value for isopropanol is estimated. Dilutions are not conducted for this species as not to preclude actionable analytes by dilution.
TO-CCV	The value reported is ESTIMATED for this compound due to its behavior during continuing calibration verification (>30% Difference from initial calibration).
ICVE	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration verification (recovery exceeded 30% of expected value).
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615 | 132-02 89th Ave, Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

Field Chain-of-Custody Record - AIR

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 241014

YOUR Information	Report To:	Invoice To:
Company: Yu and Associates	Company: ←	Company: ←
Address: 611 River drive 3rd floor Elmwood park, NJ 07407	Address: Same as left	Address: Same as left
Phone.: ~~201-791~~ 201-873-7543	Phone.: ←	Phone.: ←
Contact: Chengyu Hang	Contact: ←	Contact: ←
E-mail: CHang@yu-associates.com	E-mail: ←	E-mail: ←

YOUR Project Number: 22254

YOUR Project Name: 43-52nd St

YOUR PO#:

Turn-Around Time

RUSH - Next Day	X
RUSH - Two Day	
RUSH - Three Day	
RUSH - Four Day	
Standard (5-7 Day)	

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below)
Malcolm Renker

Air Matrix Codes
AI - Indoor Ambient Air
AO - Outdoor Amb. Air
AE - Vapor Extraction Well/ Process Gas/Effluent
AS - Soil Vapor/Sub-Slab

Samples From
New York: X
New Jersey:
Connecticut:
Pennsylvania:
Other:

Report / EDD Type (circle selections)
Summary Report | CT RCP | Standard Excel EDD
QA Report | CT RCP DQA/DUE | EQuIS (Standard)
NY ASP A Package | NJDEP Reduced Deliv. | NYSDEC EQuIS
(NY ASP B Package) | NJDKQP | NJDEP SRP HazSite
Other:

YORK Reg. Comp.
Compared to the following Regulation(s): (please fill in)

Certified Canisters: Batch ___ Individual ___

Please enter the following REQUIRED Field Data

Reporting Units: ug/m³ ___ ppbv ___ ppmv ___

Sample Identification	Date/Time Sampled	Air Matrix	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Canister ID	Flow Cont. ID	Analysis Requested
EF-1	4/24/24 9:50	AE					TO-15
IF-1	4/24/24 9:55	AE					TO-15

Comments:

Detection Limits Required
≤ 1 ug/m³ ___ NYSDEC V1 Limits ___
Routine Survey ___ Other ___

Sampling Media
6 Liter Canister
Tedlar Bag: X

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
[signature]	4/25/24 1006 AM	[signature] 4/25/24	1007 AM	[signature] 4/25/24	~~1700~~ MF 1821
Ramon Duran	4/25/24 1708	Ramon Duran	4/25/24		
				Samples Received in LAB by: [signature]	4/25/24 1821

APPENDIX C

Flex-Flo™

Flowmeter

The 700 Series Flex-Flo™ meter is a simple and rugged flow rate indicator for air, water and other transparent fluids. It is particularly well adapted for applications that fall within standardized flow ranges at moderate pressures and temperatures. The 700 Series features a rugged cast aluminum housing with metal threaded connections, a full air tempered glass window and the ability to install the meter in horizontal (left to right) and vertical (up or down) flow orientations - all at an economical cost.

The unique wedge shape of the housing enhances the self-cleaning capabilities of the meter which has large internal cavities that resist accumulations of foreign material. Unlike other variable area tube and float designs, the Flex-Flo™ may be installed in a horizontal piping system or even in down flow applications.

Features

- Instantaneous flow rate measurement
- Observe fluid conditions for color, clarity and flow.
- Use in horizontal (left to right flow) or vertical (up or down flow) piping systems.
- Available all aluminum construction is not susceptible to deterioration from UV exposure in outdoor applications.
- Design resists particulate and scale.
- Low pressure loss.
- Rugged cast aluminum construction at pricing competitive with plastic “rotameters”.

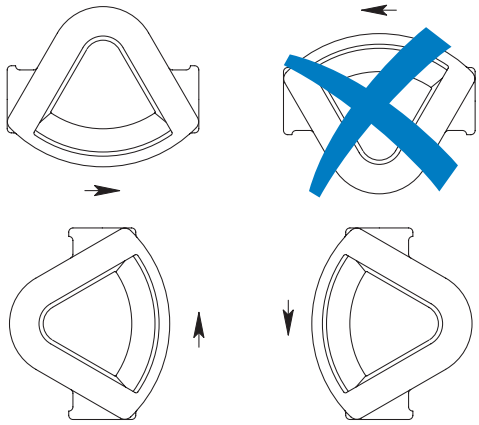
Principle of Operation

Flex-Flo™ meters are variable area flow rate meters (“rotameter”). The internal volume of the housing enlarges from the inlet to the outlet. The primary element is a tempered alloy vane with one end affixed to the apex of the meter housing. As the flow rate changes the vane flexes in direct proportion. As the operation of the primary sensor is not dependant upon gravity, the Flex-Flo™ 700 Series may be used in horizontal (left to right flow) as well as vertical (up or down flow) piping systems.

Applications

- Air
- Water
- Other compatible fluids
- Environmental remediation
- Process monitoring
- OEM systems

Mounting Positions



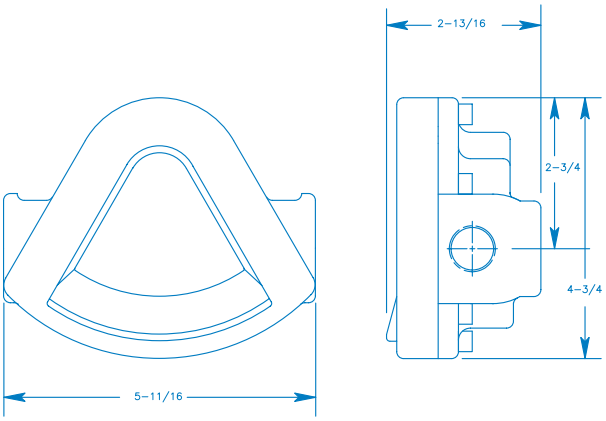
Specifications

Materials of Construction:	
Body/Housing:	Aluminum
Window:	Tempered Glass
Vane:	17-7ph Stainless steel
O-ring:	EPM
Flow Orientation:	Horizontal,Left to Right Vertical, Up Vertical, Down
Pressure Limit:	114.7psia/7.9 bar a (100psig/6.9 bar g)
Temperature Limit:	212°F (100°C)
Repeatability:	± 1% of Full Scale
Accuracy:	± 5% of Full Scale @68°F and 14.7 psia (0 psig)
Process Connections:	½” NPT ¾” NPT 1” NPT 1½” NPT 2” NPT 3” NPT 4” NPT

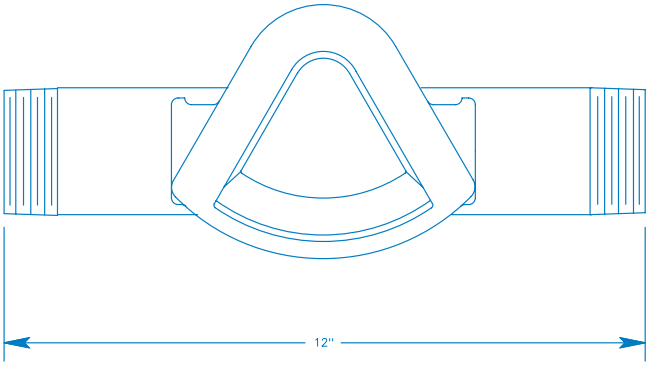
ERDCO Engineering Corporation 721 Custer Ave. Evanston, IL 60202-2200 ■ **tel** 847.328.0550 ■ **fax** 847.328.3535
mail P.O. Box 6318 Evanston, IL 60204-6318 ■ **e-mail** *info@erdco.com* ■ **website** *www.erdco.com*

Flowmeter

½" to 1" connections



1½" to 4" connections



Flow Ranges by Connection Size:

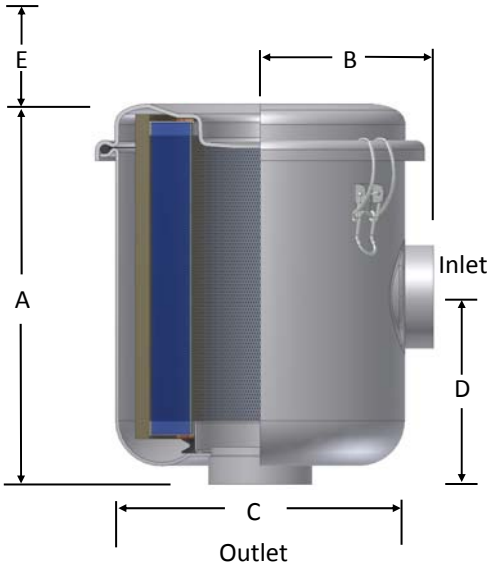
½" NPT	¾" NPT	1" NPT	1½ " NPT	2" NPT	3" NPT	4" NPT
0.5-5	1-10	2-20	3-30	5-50	10-100	50-500
1-10	3-30	3-30	10-100	15-150	30-300	70-700
		5-50	20-200	25-250	50-500	100-1000

Model Number System

The example 711-08T150S describes a 700 Series Flex-Flo™ meter with an aluminum housing, glass window, with a 15-150 SCFM Air flow range. Connections are 2" NPT.

7 Series	**1** Housing Material	**1** - Window Material	**08** Size	**T** Type	**150** Range	**S** Units
7-700	**1**-Aluminum	**1**-Tempered Glass	**02**-½" **03**-¾" **04**-1" **06**-1½" **08**-2" **12**-3" **16**-4"	**T**- NPT	**005**..... 0.5-5 **010**..... 1-10 **020**..... 2-20 **030**..... 3-30 **050**..... 5-50 **100**..... 10-100 **150**..... 15-150 **200**..... 20-200 **250**..... 25-250 **300**..... 30-300 **500**..... 50-500 **700**..... 70-700 **1000**.... 100-1000	**G**- GPM Water @ 68°F **S**- SCFM Air @ 68°F & 14.7 psia (0 psig)

”L” Style Vacuum Filters
CSL Series 3/8” - 3” FPT



Features

- Seamless drawn housings
- Brazed fittings
- Stainless steel torsion clips for durability
- Positive engagement O-ring seal system
- Rugged all steel construction with powder coat finish

Benefits

- Large dirt holding capacity and easy field cleaning, especially when mounted horizontally or inverted
- Designed to handle high vacuum applications
- Low pressure design

Technical Specifications

- Vacuum Rating: Medium vacuum service**
- Temp (continuous): min -15°F (-26°C) max 220°F (104°C)
- Filter change out differential: 15-20” H2O over initial Δ P
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

** See Vacuum Filter Technical Data for vacuum service data.

Options

ATEX Available

- Vacuum gauge
- Dome hood for high holding capacity
- Material/Finishes: stainless steel, epoxy coating
- Support brackets
- Alternative top-to-canister fastening system for low pressure or pulsating systems

FPT Outlet Connections

FPT Inlet/ Outlet	Assembly SCFM Rating	Assembly Part Number		Dimensions - inches				Suggested Service HT.	Approx.	Replacement Element Part No.		Element SCFM
		Polyester	Paper	A	B	C	D	E	Wt. lbs	Polyester	Paper	Rating
3/8"	18	CSL-825-039HC	CSL-824-039HC	3 5/8	2 1/4	3 3/4	1 7/8	3	0.88	825	824	25
1/2"	18	CSL-825-050HC	CSL-824-050HC	3 5/8	2 1/4	3 3/4	1 7/8	3	0.88	825	824	25
1/2"	20	CSL-843-050HC	CSL-842-050HC	4 1/8	3	5 7/8	2 1/2	3	3	843	842	55
3/4"	24	CSL-825-075HC	CSL-824-075HC	3 5/8	2 1/4	3 3/4	1 7/8	3	0.88	825	824	25
3/4"	25	CSL-843-075HC	CSL-842-075HC	4 1/8	3	5 7/8	2 1/2	3	3	843	842	55
1"	35	CSL-843-100HC	CSL-842-100HC	4 1/4	3 1/4	5 7/8	2 5/8	3	3	843	842	55
1"	40	CSL-849-100HC	CSL-848-100HC	6 3/4	4 1/8	7 1/3	4 1/2	5	5	849	848	115
1 1/4"	55	CSL-843-125HC	CSL-842-125HC	4 1/4	3 1/4	5 7/8	2 5/8	3	3	843	842	55
1 1/4"	60	CSL-849-125HC	CSL-848-125HC	6 3/4	4 1/8	7 5/16	4 1/2	5	5	849	848	115
1 1/2"	80	CSL-849-150HC	CSL-848-150HC	6 3/4	4 1/8	7 5/16	4 1/2	5	5	849	848	115
2"	175	CSL-851-200HC	CSL-850-200HC	10	4 9/16	7 11/16	5	9	15	851	850	290
2 1/2"	210	CSL-851-250HC	CSL-850-250HC	10 1/2	5 1/8	7 11/16	5 1/2	9	15	851	850	290
3"	300	CSL-239-300C	CSL-238-300C	15 3/4	8 7/8	13 1/4	8 3/4	11	33	239	238	570

See Vacuum Filter Technical Data section for sizing guidelines.

Dimension tolerance ± 1/4”

Note: Model offerings and design parameters may change without notice. See www.solbergmfg.com for most current offering.

www.solbergmfg.com • sales@solbergmfg.com • Sales: 630.773.1363 • Fax: 630.773.0727

Enviro-Equipment Inc.
Remediation Division
10120 Industrial Drive
Pineville NC 28134
704 556 7723

EEI ALUMINUM AIR WATER SEPARATORS

STANDARD AWS SPECIFCATION

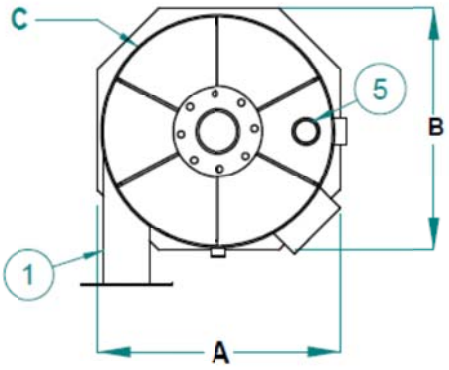
TYPE	WORKING VOLUME @(LSH)	AVAILABLE CONNECTION TYPE																CLEAN OUT PIPE	A	B	C (DIA.)	D	E	F	G	H	J
		FLANGE						MNPT					FNPT														
		2"	3"	4"	6"	8"	10"	2"	3"	4"	6"	8"	2"	3"	4"	6"	8"										
AWS30	12 GAL	X	X	X	-	-	-	X	X	X	-	-	X	X	X	-	-	6"	-	-	16 1/4"	25"	2"	19"	30"	33 1/2"	6"
AWS60	24 GAL	X	X	X	X	-	-	X	X	X	X	-	X	X	X	-	-	6"	24"	24"	23"	25"	2"	23"	30"	36 1/2"	6"
AWS80	47 GAL	X	X	X	X	-	-	X	X	X	X	-	X	X	X	-	-	8"	24"	24"	23"	39"	2"	39"	48"	54 3/4"	12"
AWS120	50 GAL	X	X	X	X	X	-	X	X	X	X	-	X	X	X	-	-	8"	24"	24"	23"	49"	2"	49"	60"	66 3/4"	12"
AWS220	107 GAL	-	X	X	X	X	X	X	X	X	X	-	X	X	X	-	-	8"	34"	34"	33 1/2"	49"	2"	49"	60"	66 3/4"	12"

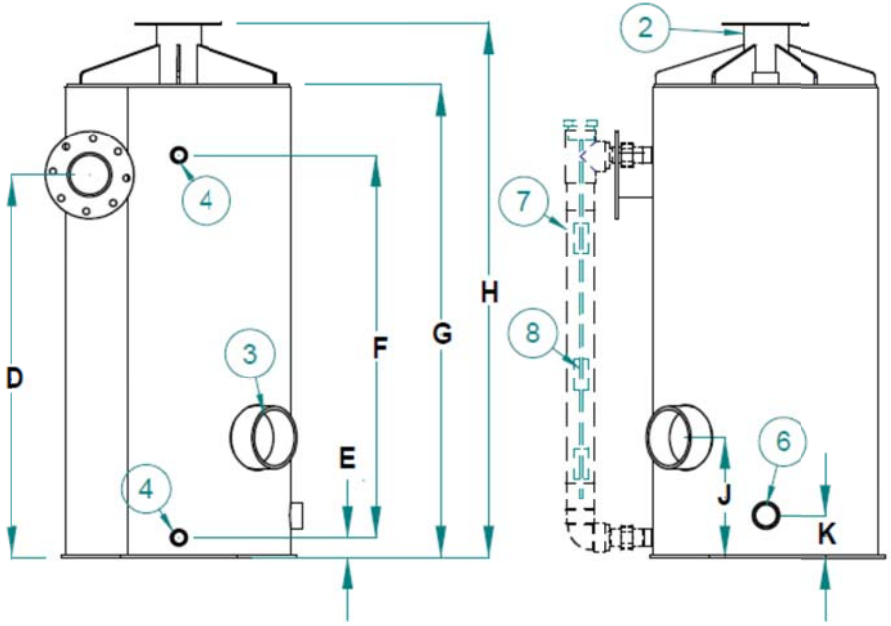
RECOMMENED AIR FLOW (ACFM)						
	2"	3"	4"	6"	8"	10" *
ACFM	120	280	320	500	750	1000

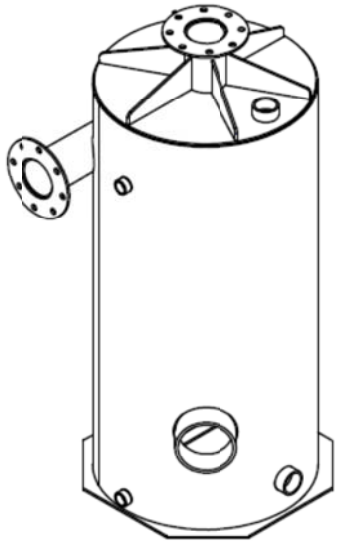
NOTES:
1.MATERIAL : 1/8" & 3/16" ALUMINUM SHT 5052
2. PROBE (SIGHT TUBE) : 2" CLEAR PVC
3. CUSTOM SIZES AVAILABLE

Enviro-Equipment Inc.
Remediation Division
10120 Industrial Drive
Pineville NC 28134
704 556 7723

ITEM #	DESCRIPTION
1	INLET PIPE (SEE TABLE FOR AVAILABLE SIZE AND CONNECTION TYPE)
2	OUTLET PIPE (SEE TABLE FOR AVAILABLE SIZE AND CONNECTION TYPE)
3	CLEAN OUT
4	1" FNPT (MULTI LEVEL PROBE)
5	2" FNPT
6	2" FNPT
7	SIGHT TUBE 2" CLEAR PVC
8	MULTI LEVEL PROBE



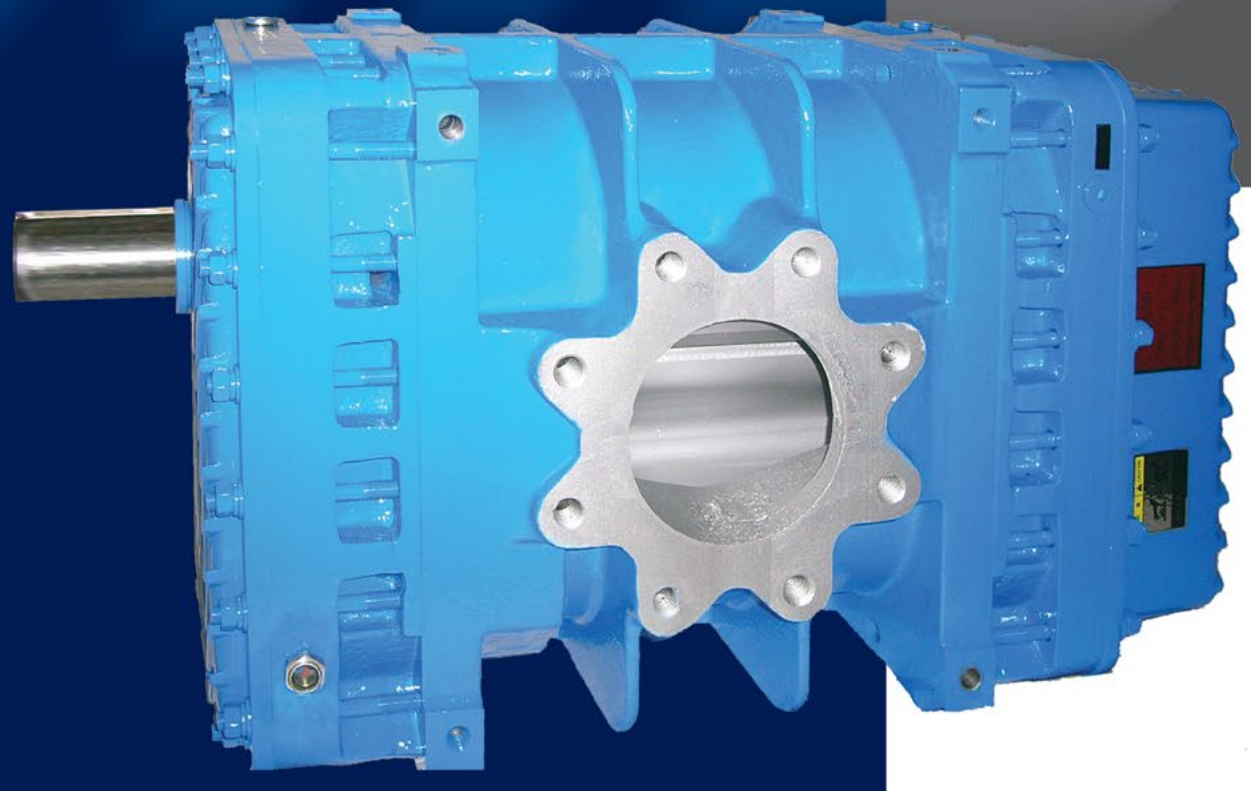




EurusBlower

MB Series

Bi-lobe Positive Displacement Blower & Vacuum Pumps



www.eurusblower.com

Shandong Zhangqiu Blower Co., Ltd. **est. 1968**

est. 2008

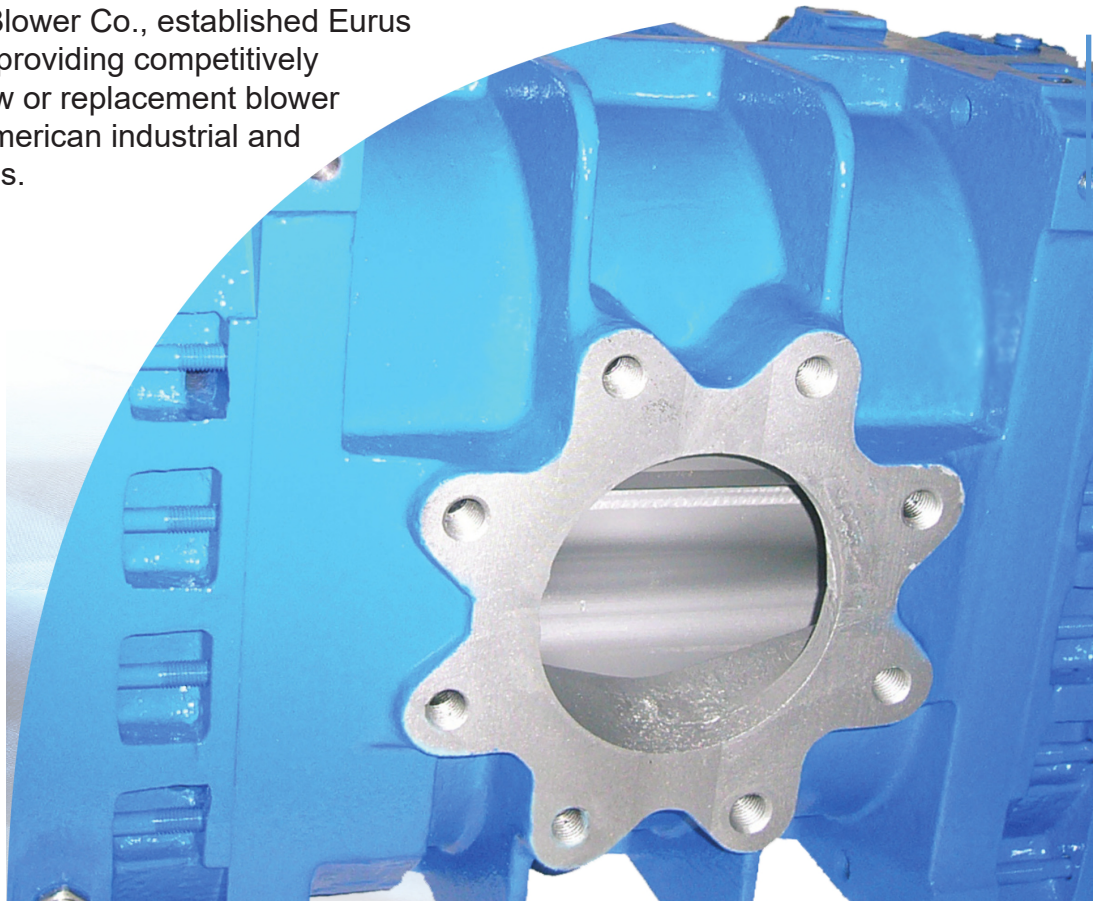
EurusBlower

Over 50 Years Experience

Shandong Zhangqiu Blower Co., Ltd. was founded in 1968 on the principles of providing quality, value and dependability. After 30 years of establishing a solid foundation in China, they began to export their blowers in the late 1990's. The company quickly became known as a leader in blower technology across international markets.

In 2008, with over 40 years of PD blower manufacturing experience, Shandong Zhangqiu Blower Co., established Eurus Blower in the U.S. with a vision of providing competitively priced, high quality blowers for new or replacement blower applications to North and South American industrial and wastewater treatment marketplaces.

- **Quality**
- **Value**
- **Dependability**



Eurus Blower: Built For Long Life

• Heavy duty, oversized bearings designed for longer L10 life in industrial applications.

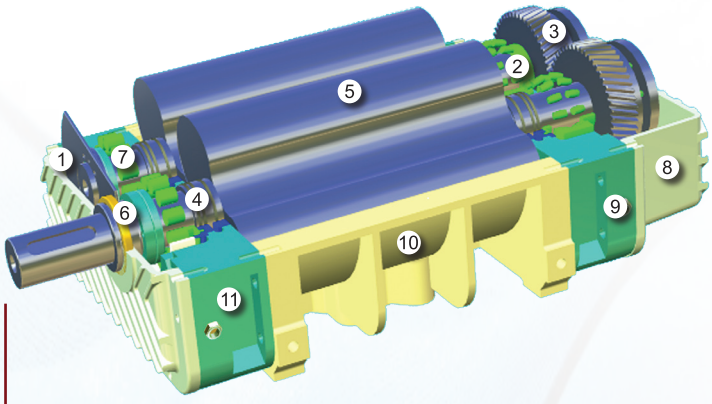
• Dual-splash aluminum tank design ensures gear and bearing longevity.

• One piece integrated ductile iron rotors and shafts, large shaft diameters, one piece high strength housing, and one piece end plates reduce torsion and vibration.

• Housings are designed for horizontal or vertical mounting configurations.

• Multi-piston ring air and oil seals minimize maintenance costs and ensure delivery without oil and air cross contamination.

• A viton lip seal on a wearable shaft sleeve with o-rings prevents oil from leaking and extends the life of the shaft.



1. Taper-lock Shaft Mounting

2. Oversized Bearings

3. Precision Helical Timing Gears

4. Multi-piston Ring Oil/Air Seals

5. Ductile Iron Rotor

6. Viton Oil Seals on Wearable Shaft Sleeves

7. Roller Drive Bearing

8. Aluminum Oil Covers

9. Oil Sight Glasses

10. Cast Iron Housing

11. High Strength End Plate

Pressure Performance

Model	SPEED	Theoretical Capacity	4PSIG		6PSIG		8PSIG		10PSIG		12PSIG		15PSIG	
	RPM	CFM	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
MB 3004	1450	67	34	1.4	27	2.1								
	3000	138	107	3.5	101	4.9	96	5.9	92	7.3	88	8.4		
	4000	184	155	4.7	149	6.5	144	7.9	140	9.6	136	11.3	133	13.7
	5000	230	202	5.8	197	8.0	192	9.8	188	12.0	184	14.2	181	17.1
MB 3006	1450	99	57	1.8	49	3.0	43	4.0						
	3000	204	162	5.1	154	7.2	148	8.7	144	10.6	138	12.4		
	4000	272	231	6.8	224	9.5	218	11.5	213	13.9	208	16.3		
	5000	340	300	8.4	293	11.6	287	14.2	283	17.5	278	20.5		
MB 3007	1450	113	70	2.8	61	4.1	55	4.8						
	3000	234	190	6.0	181	8.3	175	10.0	171	12.3				
	4000	312	268	7.8	262	11.0	256	13.3	251	16.1				
	5000	390	350	9.8	342	13.4	337	16.5	332	20.2				
MB 4504	1150	121	85	1.8	76	3.4	68	4.5	62	5.5				
	2000	210	173	3.9	164	5.6	157	7.5	150	9.4	144	11.3	135	14.0
	3000	315	279	6.3	270	8.6	263	11.5	256	14.4	250	17.2	240	21.4
	4000	420	385	9.1	376	11.8	369	15.7	362	19.7	356	23.6	345	29.2
MB 4506	1150	182	125	3.2	112	4.8	101	6.4	92	8.0				
	2000	316	259	5.7	246	8.4	236	11.1	226	13.9	217	16.7	206	20.9
	3000	474	417	9.0	404	12.7	394	16.9	384	21.2	375	25.4	364	31.8
	4000	632	575	12.7	562	17.2	552	23.0	542	28.7	533	34.5	522	43.1
MB 4509	1150	271	189	4.8	170	7.1	155	9.5	141	11.9				
	2000	472	389	8.3	371	12.5	355	16.6	341	20.8	329	24.9	312	31.2
	3000	708	625	12.6	607	18.9	591	25.2	577	31.5	565	37.8	548	47.2
	4000	944	861	17.0	843	25.6	827	34.1	813	42.6	801	51.1	784	63.9
MB 4512	1150	362	255	6.3	231	9.5	211	12.7	193	15.9				
	2000	630	523	11.1	499	16.6	479	22.2	461	27.7	444	33.3	423	41.6
	3000	945	838	16.8	814	25.2	794	33.6	776	42.0	759	50.4	738	63.0
	4000	1260	1153	22.7	1129	34.1	1109	45.5	1091	56.8	1074	68.2	1053	85.2
MB 4518	1150	544	388	9.5	353	14.3	323	19.0	297	23.8	274	28.6		
	2000	946	790	16.6	755	25.0	725	33.3	699	41.6	676	49.9		
	3000	1419	1263	25.2	1228	37.8	1198	50.4	1172	63.0	1149	75.5		
	4000	1892	1736	34.0	1701	51.0	1671	68.0	1645	85.0	1622	102.0		
MB 6010	1150	574	429	10.1	397	15.1	369	20.1	345	25.1	323	30.2		
	1750	873	729	15.4	696	23.1	669	30.8	644	38.4	623	46.1	593	57.7
	2300	1148	1003	20.3	970	30.5	943	40.7	919	50.8	897	61.0	867	76.3
	3000	1497	1352	26.8	1320	40.2	1292	53.6	1268	67.0	1246	80.4	1217	100.5
MB 6016	1150	873	691	15.3	650	22.9	615	30.6	585	38.2	557	45.9		
	1750	1328	1146	23.4	1105	35.1	1071	46.8	1040	58.5	1013	70.2	975	87.8
	2300	1746	1564	31.0	1523	46.4	1488	61.9	1458	77.4	1430	92.9	1393	116.1
	3000	2277	2095	40.8	2054	61.2	2019	81.7	1989	102.1	1961	122.5	1924	153.1
MB 6024	1150	1310	1082	22.9	1031	34.4	988	45.9	950	57.3	915	68.8		
	1750	1993	1765	35.1	1714	52.6	1671	70.1	1633	87.7	1599	105.2		
	2300	2620	2392	46.3	2341	69.5	2298	92.7	2260	115.8	2225	139.0		
	3000	3417	3189	61.0	3138	91.5	3095	122.0	3057	152.5	3022	183.0		
MB 8020	970	1917	1542	34.9	1458	51.6	1387	68.3	1325	85.0	1269	101.8	1217	118.5
	1450	2867	2489	56.4	2406	81.4	2335	106.4	2273	131.4	2216	156.3	2164	181.3
	1750	3460	3082	68.4	2998	98.5	2927	128.7	2865	158.8	2808	189.0	2757	219.1
	2050	4054	3674	86.3	3590	121.7	3519	157.0	3457	192.3	3401	227.6	3349	263.0
MB 8026	970	2440	2030	44.8	1937	66.1	1859	87.4	1790	108.7				
	1450	3648	3189	73.1	3086	105.0	2999	136.8	2922	168.7				
	1750	4403	3945	93.1	3841	131.6	3754	170.0	3677	208.5				
	2050	5155	4613	118.1	4490	163.1	4387	208.2	4296	253.2				

Notes:Pressure ratings based on inlet air at standard pressure of 14.7psia,standard temperature of 68°F, and specific gravity of 1.0

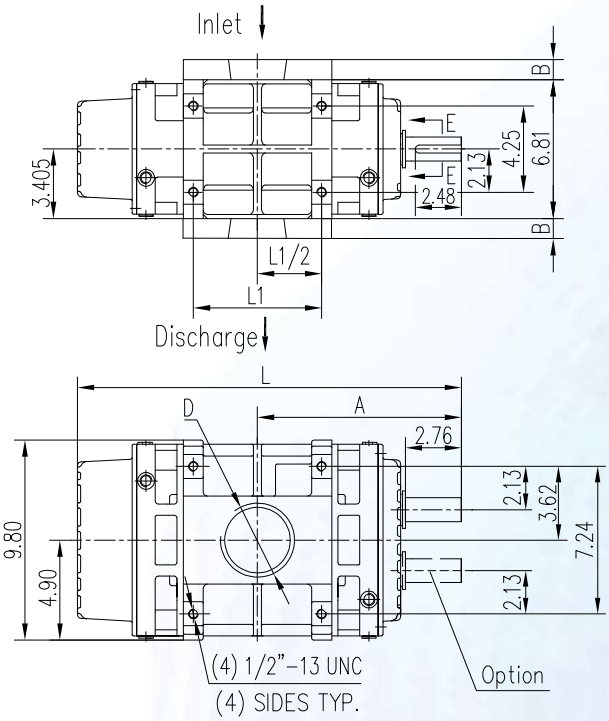
Vacuum Performance

Model	SPEED	Theoretical Capacity	4" Hg		6" Hg		8" Hg		10" Hg		12" Hg		15" Hg	
	RPM	CFM	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
MB 3004V	1450	67	43	0.7	37	1.0	30	1.4	23	1.8				
	3000	138	115	2.2	109	2.8	103	3.5	97	4.2	91	4.9	81	5.9
	4000	184	162	2.8	157	3.6	151	4.6	145	5.5	139	6.5	130	7.8
	5000	230	209	3.7	204	4.6	199	5.7	193	6.8	188	7.9	178	9.5
MB 3006V	1450	99	66	1.0	59	1.8	51	2.2	43	2.7				
	3000	204	171	3.1	163	4.0	155	5.1	148	6.1	140	7.1	127	8.6
	4000	272	239	4.1	232	5.3	225	6.7	218	8.1	210	9.4	198	11.4
	5000	340	308	5.4	302	6.7	294	8.3	287	9.9	280	11.5	268	13.8
MB 3007V	1450	113	80	1.4	72	1.9	63	2.4	55	2.9				
	3000	234	199	3.6	191	4.7	183	5.8	175	7.1	166	8.2	153	10.0
	4000	312	279	4.8	272	6.1	263	7.7	255	9.3	247	10.9	234	13.2
	5000	390	359	6.2	351	7.8	344	9.6	336	11.5	328	13.3	315	16.0
MB 4504V	1150	121	92	1.1	83	1.6	76	2.2	68	2.6				
	1750	184	155	1.6	146	2.4	139	3.3	131	4.0	123	4.7		
	3000	315	286	2.8	278	4.2	270	5.6	262	7.0	254	8.4	240	10.5
	4000	420	391	3.8	383	5.7	375	7.7	367	9.6	359	11.5	345	14.3
MB 4506V	1150	182	139	1.6	127	2.3	116	3.1	104	3.9	93	4.7		
	1750	277	234	2.4	222	3.6	211	4.8	199	6.0	187	7.2		
	3000	474	431	4.2	419	6.2	408	8.3	397	10.4	385	12.5	365	15.6
	4000	632	589	5.6	577	8.5	566	11.3	555	14.1	543	16.9	523	21.2
MB 4509V	1150	271	209	2.3	192	3.5	176	4.7	159	5.8	142	7.0		
	1750	413	351	3.6	334	5.3	317	7.1	301	8.9	283	10.7		
	3000	708	646	6.2	629	9.3	612	12.4	596	15.5	578	18.6	549	23.2
	4000	944	882	8.4	865	12.6	848	16.7	832	20.9	814	25.1	785	31.4
MB 4512V	1150	362	282	3.1	259	4.7	238	6.2	217	7.8	194	9.3		
	1750	551	471	4.8	448	7.1	427	9.5	406	11.9	383	14.3		
	3000	945	864	8.3	842	12.4	821	16.5	800	20.6	777	24.8	739	30.9
	4000	1260	1179	11.2	1157	16.7	1136	22.3	1115	27.9	1092	33.5	1054	41.8
MB 4518V	1150	544	426	4.7	394	7.0	363	9.3	332	11.7	299	14.0	244	17.5
	1750	828	710	7.1	678	10.7	647	14.3	616	17.8	583	21.4		
	3000	1419	1301	12.4	1269	18.5	1238	24.7	1207	30.9	1174	37.1	1119	46.4
	4000	1892	1774	16.7	1742	25.0	1711	33.4	1680	41.7	1647	50.1	1592	62.6
MB 6010V	1150	574	465	4.9	435	7.4	406	9.9	377	12.3	347	14.8		
	1750	873	764	7.6	734	11.3	706	15.1	677	18.9	646	22.7	595	28.3
	2600	1297	1188	11.3	1159	17.0	1130	22.7	1101	28.3	1071	34.0	1019	42.5
	3000	1497	1388	13.2	1358	19.7	1329	26.3	1301	32.9	1270	39.5	1219	49.4
MB 6016V	1150	873	736	7.5	698	11.3	662	15.0	626	18.8	587	22.5		
	1750	1328	1191	11.5	1153	17.2	1117	23.0	1081	28.7	1043	34.5	978	43.1
	2600	1973	1836	17.3	1799	25.9	1763	34.5	1726	43.2	1688	51.8	1623	64.7
	3000	2277	2140	20.0	2102	30.1	2066	40.1	2030	50.1	1991	60.1	1927	75.2
MB 6024V	1150	1310	1138	11.3	1091	16.9	1046	22.5	1001	28.2	953	33.8	872	42.2
	1750	1993	1822	17.2	1775	25.8	1730	34.4	1684	43.0	1636	51.6	1556	64.6
	2600	2961	2790	25.8	2743	38.7	2698	51.6	2652	64.5	2604	77.4	2524	96.8
	3000	3417	3246	30.0	3198	44.9	3153	59.9	3108	74.9	3060	89.9	2979	112.3
MB 8020V	970	1917	1634	17.9	1557	26.1	1483	34.3	1408	42.5	1329	50.7		
	1600	3164	2878	34.6	2800	48.1	2727	61.7	2652	75.2	2573	88.8	2440	109.1
	1750	3460	3174	37.7	3097	52.5	3023	67.3	2948	82.1	2869	96.9	2736	119.1
	2050	4054	3766	50.4	3689	67.7	3615	85.1	3540	102.4	3461	119.8	3329	145.8
MB 8026V	970	2440	2132	23.1	2046	33.6	1965	44.0	1882	54.5	1795	65.0	1649	80.7
	1600	4025	3681	45.4	3585	62.7	3494	79.9	3402	97.2	3305	114.5	3141	140.4
	1750	4403	4058	54.0	3963	72.9	3872	91.8	3779	110.7	3682	129.5	3519	157.9
	2050	5155	4748	72.3	4635	94.4	4527	116.5	4417	138.6	4302	160.8	4108	194.0

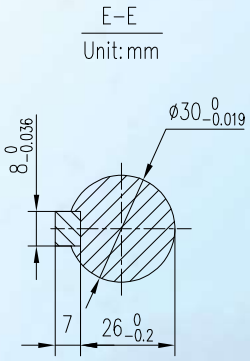
Notes:Vacuum ratings based on inlet air at standard temperature of 68°F, discharge of 30"Hg and specific gravity of 1.0

EurusBlower

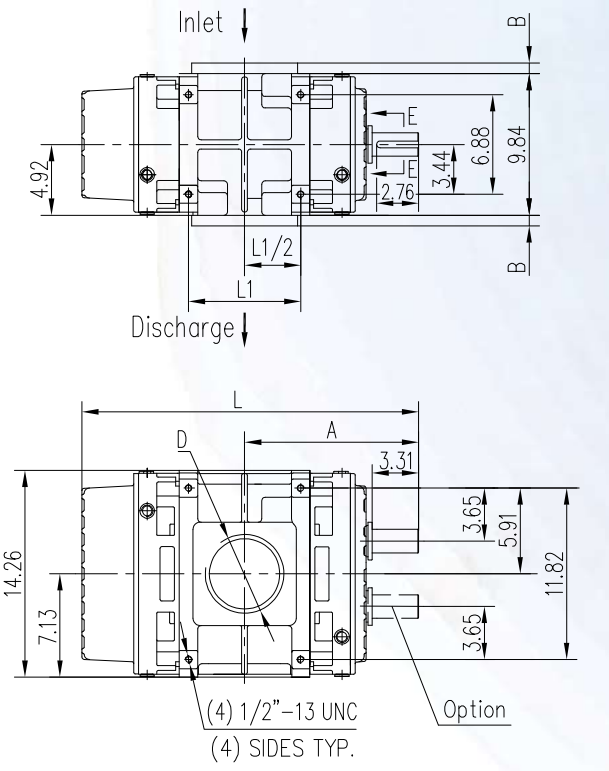
Outline Drawing for Series MB Roots Type Blower

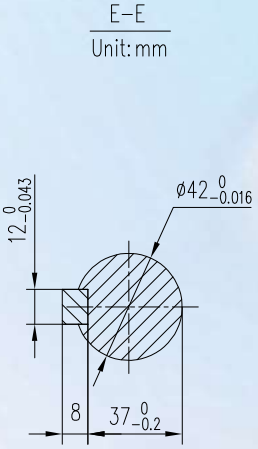


Unit: inch



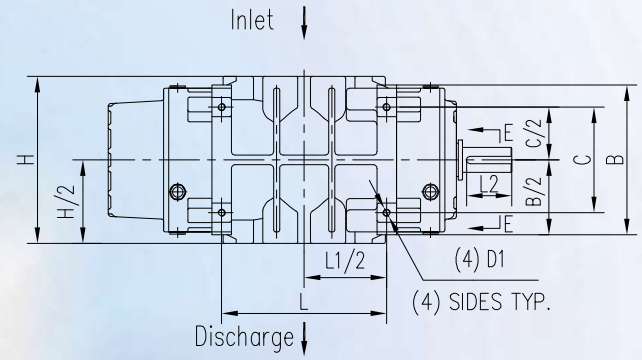
Type	A	B	L	L1	D	Wt. (lb)
MB3004	8.54	1	15.91	3.35	NPT2"	107
MB3006	9.53	1.18	17.87	5.31	NPT2.5"	125
MB3007	10.02	1.18	18.86	6.3	NPT2.5"	133





Type	A	B	L	L1	D	Wt. (lb)
MB4504	9.49		18.25	2.74	NPT2.5"	231
MB4506	10.49	1.38	20.24	4.72	NPT4"	271
MB4509	12.01	1.38	23.23	7.75	NPT5"	332

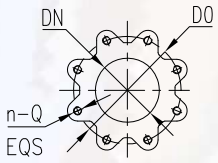
Outline Drawing for Series MB Roots Type Blower

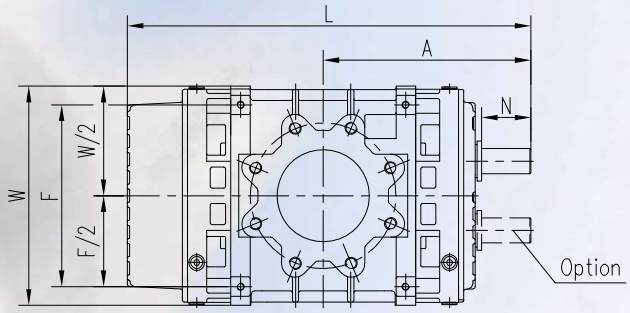


Unit: inch

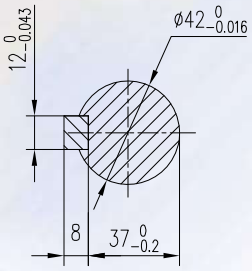
Inlet and Outlet Flange Size

ANSI 150lb

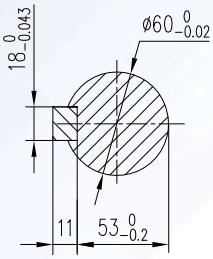




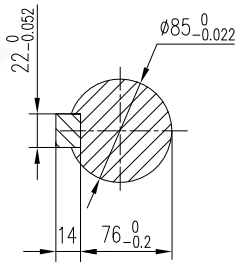
E-E Unit: mm
MB4512,MB4518



E-E Unit: mm
MB6010,MB6016,MB6024



E-E Unit: mm
MB8020,MB8026



Model	A	B	C	F	L	L1	L2	N	W	H	DO	DN	n-Q	D1	Wt.(lb)
MB4512	13.50	9.75	6.87	11.81	26.23	10.73	2.76	3.31	14.25	11	ø9.5"	6"	8-3/4"-10 UNC	1/2"-13 UNC	385
MB4518	16.50	9.75	6.87	11.81	32.21	16.73		3.31	14.25	11.14	ø11.75"	8"	8-3/4"-10 UNC	1/2"-13 UNC	473
MB6010	15.24	12.99	9.17	15.75	29.41	8.88	3.94	4.41	19.02	14.80	ø9.5"	6"	8-3/4"-10 UNC	5/8"-11 UNC	673
MB6016	18.00	12.99	9.17	15.75	34.92	14.37		4.41	19.02	14.80	ø11.75"	8"	8-3/4"-10 UNC	5/8"-11 UNC	881
MB6024	22.00	12.99	9.17	15.75	42.95	22.36		4.41	19.02	14.80	ø14.25"	10"	12-7/8"-9 UNC	5/8"-11 UNC	1123
MB8020	22.62	18.11	12.2	20.87	43.8	18.5	5.51	6.3	26.77	19.88	ø11.75"	8"	8-3/4"-10 UNC	5/8"-11 UNC	1499
MB8026	25.37	18.11	12.2	20.87	49.31	23.62		6.3	26.77	19.88	ø14.25"	10"	12-7/8"-9 UNC	5/8"-11 UNC	1731

EurusBlower

3701 S. Harvard Ave.
Suite A, #544
Tulsa, OK 74135-2282

p: (918) 361-0285

www. eurusblower.com

sales@eurusblower.com

MB210807

Legend® DSL Series
Dual Splash Lubrication

Positive Displacement Blowers
& Vacuum Pumps

GARDNER DENVER
1859 2009
SESQUICENTENNIAL

GD
GARDNER DENVER

Experience Proven Results

Sutorbilt® Legend® DSL Series

Gardner Denver

– Tradition

– Quality

– Innovation

– Results

Sutorbilt Legend DSL

Improving a great, trusted and proven product was the challenge. The Legend DSL integrates proven experience with world-class blower design and manufacturing to create a product worthy of the name “Legend.”

Quality + Tradition = Trust

- Tradition: 150 years of quality manufacturing with proven results
- Every Legend DSL is manufactured in our ISO 9001 certified facility in Sedalia, Missouri
- Each Legend DSL is individually tested to meet rigorous performance specifications
- Superior and consistent quality can be found in each Legend DSL as a result of:
  - Continual investment in the training of world-class manufacturing personnel
  - Quality inspections throughout the entire manufacturing process
- Requested by leading Original Equipment Manufacturers (OEMs) worldwide for a wide range of applications
- A Legend is at the heart of an ever-expanding variety of air solutions working every minute of every day
- Supported by a worldwide network of experienced and trusted sales and service professionals
- Quiet Series available with reduced noise up to 5 dBA
- The Legend DSL Warranty
  - **30 months** from the date of shipment or
  - **24 months** from the date of installation, whichever occurs first

Experience Proven Results
with the Legend DSL

Legend DSL Provides

– Pressure to 15 psig

– Vacuum to 16" Hg

– Airflow to 950 cfm

– 24/30 Warranty

Innovation

- Refined timing and locking device incorporates frictional keyless shaft gear locking rings
  - Improves blower life with more resistance to slipped timing
  - Allows for easier maintenance
- Spherical roller bearing on drive shaft (4–6" gear diameters only)
  - Provides greater allowance for misaligned drives, and improves longevity

Results

- Drop-in replacement for current Legend products
- Operating temperatures which can be up to 15°F cooler compared to leading competitive brands
- Greater durability with an increased capacity for overhung load by as much as 30%
- Unmatched strength and rigidity from increased mass, which can be up to 37% more than leading competitive brands
- Universal mounting feet allows for easy field conversion

Advanced Engineering Capabilities

Finite Element Analysis (FEA) – thermal analysis

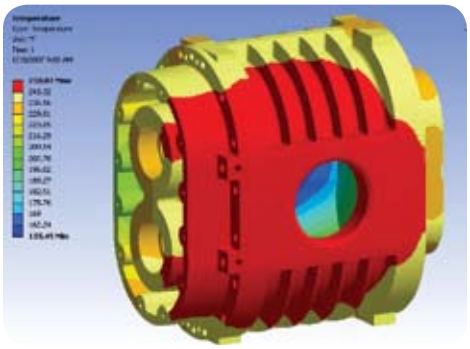


Figure 1 – Previous design was developed without the benefit of FEA thermal analysis.

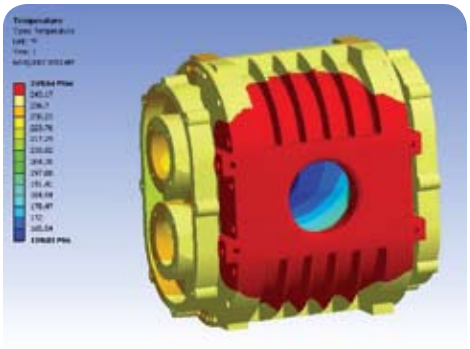
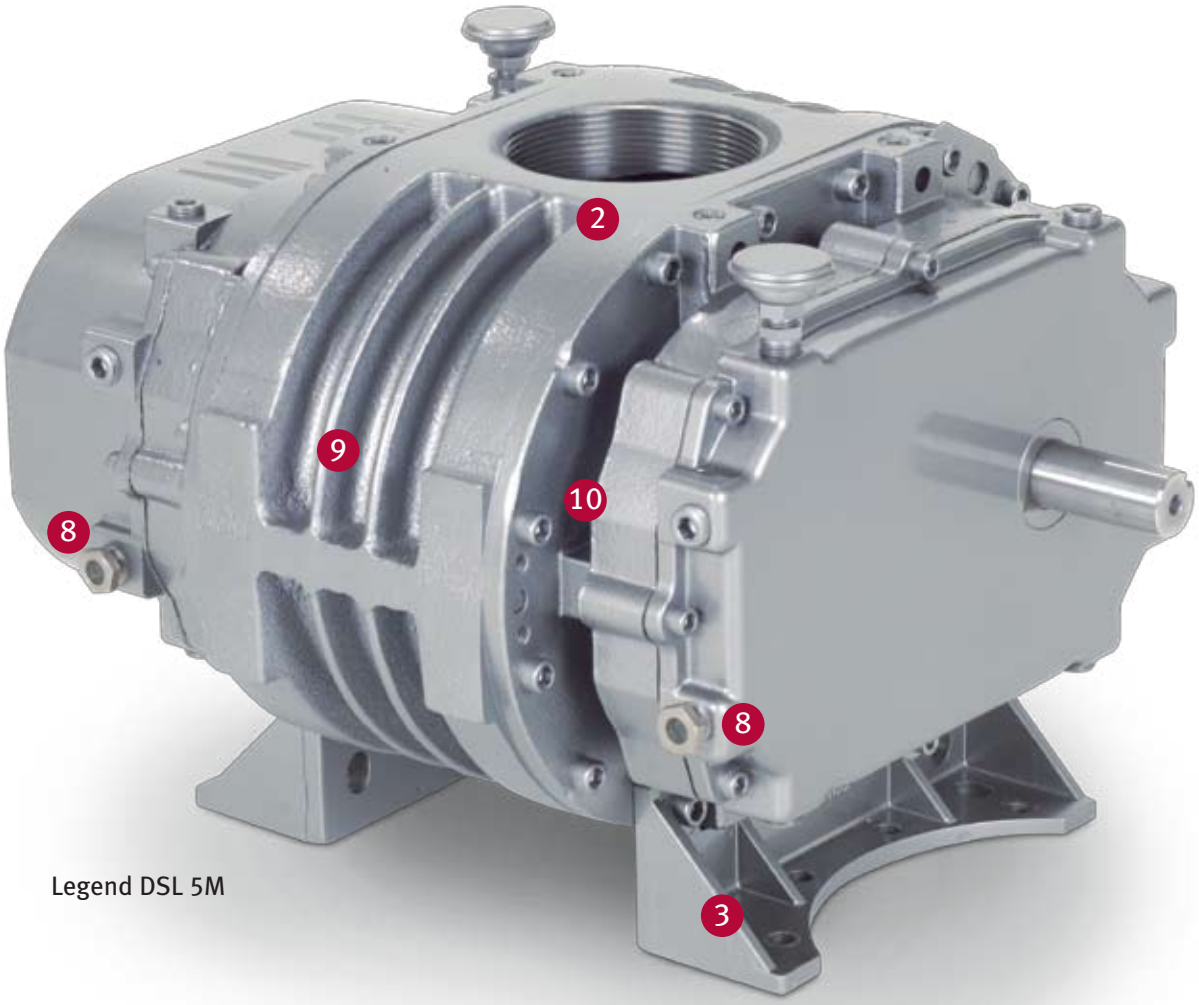


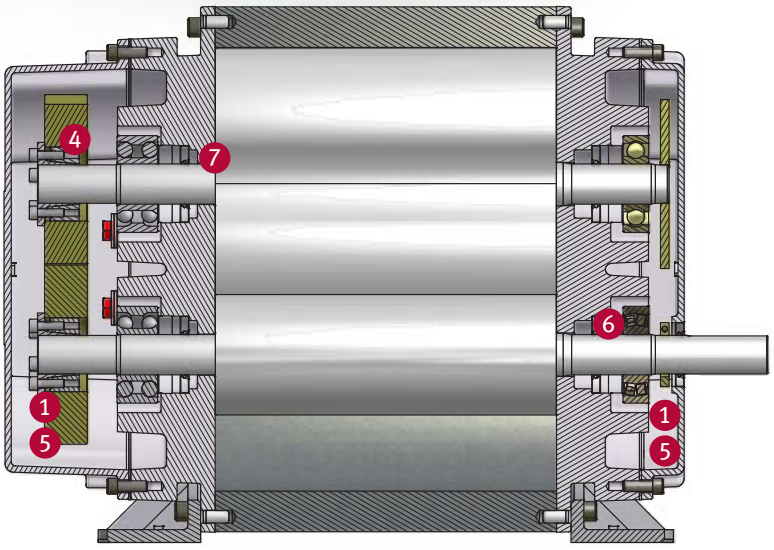
Figure 2 – With FEA thermal analysis, a good design was made great.

- Innovative bearing housing design with air gaps reduce drive end sump temperatures which can be up to 15°F, extending lubricant, bearing, and blower life

Legendary DSL Design Features & Benefits



Legend DSL 5M



1. Dual Splash Lubrication

- Reliable splash lubrication on both gear and drive ends for longer product life
- One-piece slingers are securely clamped on both shafts to ensure efficient lubrication, and allow installation flexibility

2. Single Piece Cylinder Provides Greater Strength & Rigidity

- Heavy-duty reinforced cast iron cylinder retains internal clearance
- DSL design utilizes the existing Legend cylinder and rotors with proven results

3. Universal Feet

- Drop-in replacement for current Legend design
- Reduce inventory and provide installation flexibility
- One set of feet for vertical and horizontal configurations

4. Improved Timing = Improved Reliability

- Grip rings expand against the bore and compress on the shaft for a secure, mechanical shrink fit
- Replaces pinning of timing gears
- Easier and more cost effective to teardown and rebuild

5. Larger Sump Capacities = Cooler Running Bearings

- Sump capacity is increased as much as 30% on drive end and 62% on gear end over leading competition

6. Greater Overhung Load Capacity Increases Blower Life

- Improving overhung load capabilities by as much as 30%
- Belt drive capabilities are independent of blower/motor orientation for improved packaging options
- Spherical roller drive bearing provides better misalignment capabilities (4–6" gear diameter)
- Cylindrical drive bearing on 3" gear diameter

7. High Temperature Viton® Oil Seals

- Maximize the seal life in continuous, severe-duty applications to provide leak-free operation

8. Site Glasses

- Installed on side of unit and can be readily converted in the field

9–10. Cooler Operating Temperatures Increases Blower Life

- Integral ribs (9) improve heat dissipation and performance
- Engineered air gap (10) to isolate the oil sumps from hot air
- Engineered lubrication channels ensure ample lubrication reaches critical components

Robust Design Improves Performance & Efficiency

- Additional weight provides more rigidity to the blower allowing greater efficiency and tighter clearances
- The Legend DSL weights are greater than leading competitive brands which can be up to 37% heavier

Mechanical Gas Seals

- The Legend DSL design accommodates mechanical gas seals for critical gas applications

LOW PRESSURE

SI ZE	DIA. INLET & OUTLET	DISPL. CU. FT./ REV.	RPM	2 PSIG		3 PSIG		4 PSIG		5 PSIG		6 PSIG		7 PSIG	
				CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3L 3LV	2½"-S	0.104	1,760 2,265 2,770 3,600	149 202 254 341	1.9 2.4 2.9 3.7	142 194 247 333	2.8 3.5 4.3 5.3	135 188 240 327	3.7 4.7 5.5 7.1	130 182 235 321	4.5 5.6 6.8 8.9	124 177 230 316	5.2 6.7 8.2 10.6	120 172 225 311	6.1 7.8 9.6 12.4
4L 4LV	3"-S	.170	1,760 2,190 2,620 3,600	253 326 400 566	3.0 3.7 4.4 5.8	243 316 389 556	4.5 5.3 6.3 8.7	234 307 381 547	5.7 7.1 8.4 11.6	227 300 373 539	7.1 8.8 10.6 14.5	220 293 366 533	8.5 10.6 12.7 17.4	213 286 360 526	9.9 12.4 14.8 20.3
5L 5LV	4"-S	.350	1,500 1,760 2,100 2,850	463 554 673 936	5.2 5.8 7.0 9.5	449 540 659 922	7.5 8.8 10.5 14.2	438 529 648 910	10.0 11.7 13.9 18.9	427 518 637 900	12.4 14.6 17.4 23.6	418 509 628 890	14.9 17.5 20.9 28.4	409 500 619 882	17.4 20.4 24.4 33.1
6L 6LV	6"-F	.718	1,170 1,760 1,930 2,350	739 1,162 1,284 1,586	8.0 12.0 13.1 16.0	716 1,139 1,261 1,563	11.9 18.0 19.7 24.0	697 1,120 1,242 1,544	15.9 24.0 26.3 32.0	680 1,103 1,225 1,527	19.9 29.9 32.8 40.0	664 1,088 1,210 1,512	23.9 35.9 39.4 48.0	650 1,074 1,196 1,497	27.9 41.9 46.0 56.0

MEDIUM PRESSURE

SIZE	DIA.INLET & OUTLET	DISPL.CU. FT./REV.	RPM	7 PSIG		9 PSIG		10 PSIG		12 PSIG		13 PSIG		14 PSIG	
				CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3M 3MV	2"-S	0.060	1,760 2,265 2,770 3,600	64 95 125 175	3.6 4.6 5.5 7.2	59 89 119 169	4.6 5.8 7.1 9.2	87 117 167	6.4 7.9 10.2	112 162	9.5 12.3				
4M 4MV	2½"-S	.117	1,760 2,190 2,620 3,600	144 194 245 359	6.8 8.5 10.2 14.0	136 186 236 351	8.8 10.9 13.1 18.0	132 182 233 347	9.8 12.1 14.5 20.0						
5M 5MV	4"-S	.210	1,500 1,760 2,100 2,850	237 292 363 521	10.5 12.3 14.6 19.9	227 281 353 510	13.4 15.8 18.8 25.5	222 277 348 506	14.9 17.5 20.9 28.4	213 268 339 497	17.9 21.0 25.1 34.0	209 263 335 493	19.4 22.8 27.2 36.9		
6M 6MV	5"-S	.383	1,170 1,760 1,930 2,350	332 558 622 784	14.9 22.4 24.5 29.9	316 542 607 768	19.1 28.8 31.5 38.4	309 535 600 761	21.2 32.0 35.0 42.7	296 522 587 748	25.5 38.3 42.0 51.2	289 515 580 741	27.6 41.5 45.5 55.5	283 509 574 735	29.7 44.7 49.1 59.7

HIGH PRESSURE

SIZE	DIA. INLET & OUTLET	DISPL. CU. FT./REV.	RPM	7 PSIG		8 PSIG		9 PSIG		11 PSIG		13 PSIG		15 PSIG	
				CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3H 3HV	1¼"-S	0.045	1,760 2,265 2,770 3,600	46 69 91 129	2.6 3.4 4.1 5.4	44 66 89 126	3.0 3.9 4.7 6.1	41 64 87 124	3.4 4.3 5.3 6.9	60 83 120	5.3 6.5 8.4	117	10.0	113	11.5
4H 4HV	1½"-S	.069	1,760 2,190 2,620 3,600	80 110 139 207	4.0 5.0 6.0 8.2	77 107 137 204	4.6 5.7 6.9 9.4	74 104 134 201	5.2 6.4 7.7 10.6	99 129 196	7.9 9.4 13.0	124 192	11.1 15.3	188	17.7
5H 5HV	2½"-S	.140	1,500 1,760 2,100 2,850	154 191 238 343	7.0 8.2 9.8 13.2	151 187 235 340	8.0 9.3 11.1 15.1	147 183 231 336	9.0 10.5 12.5 17.0	140 177 224 329	10.9 12.8 15.3 20.8	171 218 323	15.2 18.1 24.6	165 213 318	17.5 20.9 28.4
6H 6HV	3"-S	.227	1,170 1,760 1,930 2,350	188 321 360 455	8.8 13.3 14.5 17.7	182 316 355 450	10.1 15.1 16.6 20.2	177 311 350 445	11.3 17.0 18.7 22.8	168 302 340 436	13.8 20.8 22.8 27.8	159 293 332 427	16.4 24.6 27.0 32.9	285 324 419	28.4 31.1 37.9

LOW VACUUM

SIZE	DIA. INLET & OUTLET	DISPL. CU. FT./REV.	RPM	2 "Hg		4 "Hg		8 "Hg		10 "Hg		12 "Hg		14 "Hg	
				CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3L 3LV	2½"-S	0.104	1,760 2,265 2,770 3,600	158 211 264 350	1.1 1.3 1.5 1.9	147 200 252 338	1.9 2.4 2.9 3.7	128 180 233 319	3.6 4.6 5.4 7.0	118 171 223 309	4.5 5.5 6.7 8.7	108 160 213 299	5.1 6.6 8.1 10.5	288	12.2
4L 4LV	3"-S	.170	1,760 2,190 2,620 3,600	266 339 412 579	1.6 1.9 2.3 3.1	250 323 396 563	3.0 3.7 4.3 5.7	224 297 370 537	5.6 6.9 8.3 11.4	211 284 357 524	7.0 8.7 10.4 14.3	197 270 343 510	8.4 10.4 12.4 17.1	329 495	14.5 20.0
5L 5LV	4"-S	.350	1,500 1,760 2,100 2,850	480 571 690 953	2.6 3.1 3.6 4.8	459 550 669 932	5.1 5.7 6.8 9.3	424 515 634 896	9.8 11.5 13.7 18.6	406 497 616 879	12.2 14.3 17.1 23.2	388 479 598 860	14.7 17.2 20.5 27.9	459 578 840	20.1 24.0 32.5
6L 6LV	6"-F	.718	1,170 1,760 1,930 2,350	766 1,190 1,312 1,614	4.1 5.9 6.5 7.9	732 1,115 1,278 1,579	7.8 11.8 12.9 15.7	674 1,097 1,219 1,521	15.7 23.5 25.8 31.4	645 1,068 1,191 1,492	19.6 29.4 32.3 39.3	615 1,038 1,160 1,462	23.5 35.3 38.7 47.2	1,005 1,127 1,429	41.2 45.2 55.0

MEDIUM VACUUM

SIZE	DIA. INLET &OUTLET	DISPL. CU. FT./REV.	RPM	6 "Hg		10 "Hg		12 "Hg		14 "Hg		15 "Hg		16 "Hg	
				CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3M 3MV	2"-S	0.060	1,760 2,265 2,770 3,600	76 106 136 186	1.6 2.0 2.4 3.1	63 93 124 174	2.6 3.3 4.0 5.0	57 87 117 167	3.1 3.9 4.7 6.0	110 160	5.4 7.0	156	7.5		
4M 4MV	2½"-S	.117	1,760 2,190 2,620 3,600	161 211 262 376	3.0 3.7 4.4 5.9	142 193 243 358	4.9 6.0 7.1 9.8	132 183 233 348	5.8 7.2 8.6 11.8	222 337	10.0 13.7	331	14.7	325	15.7
5M 5MV	4"-S	.210	1,500 1,760 2,100 2,850	258 313 384 542	4.5 5.2 6.2 8.4	235 290 361 519	7.3 8.6 10.3 13.9	223 277 349 506	8.8 10.3 12.3 16.7	209 264 335 493	10.3 12.1 14.4 19.5	328 485	15.4 20.9	477	22.3
6M 6MV	5"-S	.383	1,170 1,760 1,930 2,350	363 589 655 815	6.3 9.4 10.3 12.6	328 554 619 780	10.4 15.7 17.2 21.0	310 536 601 762	12.5 18.8 20.7 25.2	290 516 581 741	14.6 22.0 24.1 29.3	279 505 570 731	15.7 23.5 25.8 31.4	267 493 558 719	16.7 25.1 27.5 33.5

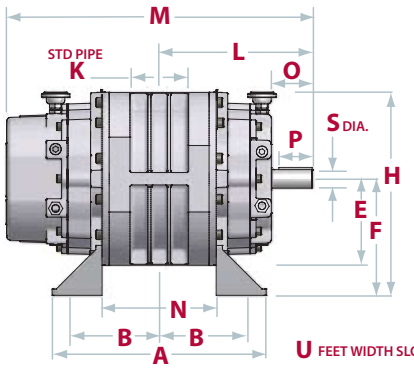
HIGH VACUUM

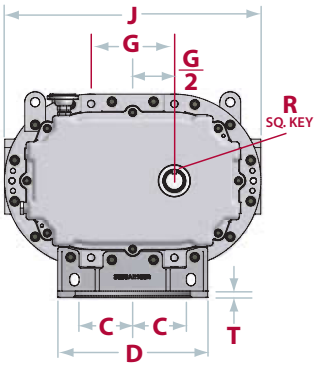
SIZE	DIA. INLET & OUTLET	DISPL. CU. FT./REV.	RPM	6 "Hg		8 "Hg		12 "Hg		14 "Hg		15 "Hg		16 "Hg	
				CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3H 3HV	1¼"-S	0.045	1,760 2,265 2,770 3,600	55 78 100 138	1.1 1.4 1.7 2.3	50 73 95 133	1.5 1.9 2.3 3.0	40 62 85 122	2.2 2.8 3.5 4.5	79 117	4.1 5.3	76 113	4.4 5.7	110	6.0
4H 4HV	1½"-S	.069	1,760 2,190 2,620 3,600	91 121 151 218	1.7 2.1 2.5 3.5	85 115 144 212	2.3 2.8 3.4 4.6	72 102 132 199	3.4 4.2 5.1 6.9	95 124 192	4.9 5.9 8.1	105 120 188	5.8 6.3 8.7	184	9.3
5H 5HV	2½"-S	.140	1,500 1,760 2,100 2,850	170 206 254 359	2.9 3.4 4.1 5.6	161 198 245 350	3.9 4.6 5.5 7.4	144 180 228 333	5.9 6.9 8.2 11.2	134 171 218 323	6.8 8.0 9.6 13.0	165 213 318	8.6 10.3 14.0	312	14.9
6H 6HV	3"-S	.227	1,170 1,760 1,930 2,350	209 343 381 477	3.7 5.6 6.1 7.5	197 331 370 165	4.8 7.4 8.2 9.9	173 307 345 441	7.4 11.2 12.2 14.9	159 293 332 427	8.7 13.0 14.3 17.4	152 286 325 420	9.3 14.0 15.3 18.6	278 317 412	14.9 16.3 19.9

Performance based on inlet air at standard temperature of 68˚F, an ambient pressure of 14.7 psia and 36% relative humidity.
For performance at non-standard conditions, contact your authorized Gardner Denver representative.

Dimensional Data — Horizontal Configurations

SIZE	WT.	CONN.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U
3H	71	S	6.75	2.69	2.69	7.75	3.88	5.00	3.50	8.88	11.26	1.25	5.86	12.05	3.50	1.78	1.63	0.19	0.75	0.25	.62 x 1.12
3M	79	S	7.62	3.13	2.69	7.75	3.88	5.00	3.50	8.88	11.26	2.00	6.30	12.92	4.36	1.78	1.63	0.19	0.75	0.25	.62 x 1.12
3L	95	S	10.24	4.44	2.69	7.75	3.88	5.00	3.50	8.88	11.26	2.5	7.61	15.55	7.00	1.78	1.63	0.19	0.75	0.25	.62 x 1.12
4H	98	S	7.25	3	3	8.25	4.19	6.25	4	10.44	12.38	1.5	6.88	13.75	4	2.38	1.81	.19	.875	.38	.5 x .75
4M	117	S	9.5	4.13	3	8.25	4.19	6.25	4	10.44	12.38	2.5	8	16	6.25	2.38	1.81	.19	.875	.38	.5 x .75
4L	142	S	12	5.38	3	8.25	4.19	6.25	4	10.44	12.38	3	9.25	18.5	8.75	2.38	1.81	.19	.875	.38	.5 x .75
5H	196	S	10.88	3.5	3.5	9	5.19	7	5	12.19	15.38	2.5	8.19	16.38	4.88	2.5	2	.25	1.125	.38	.5625 x .75
5M	215	S	12.88	4.5	3.5	9	5.19	7	5	12.19	15.38	4	9.19	18.38	6.88	2.5	2	.25	1.125	.38	.5625 x .75
5L	255	S	16.88	6.5	3.5	9	5.19	7	5	12.19	15.38	4	11.19	22.38	10.88	2.5	2	.25	1.125	.38	.5625 x .75
6H	329	S	9.75	3.94	4	16.5	6	8.75	6	14.75	18	3	9.19	18.63	5.75	2.94	2	.31	1.375	.5	.75 x 1
6M	377	S	13	5.56	4	16.5	6.19	8.75	6	14.94	18	5	10.81	21.88	9	2.94	2	.31	1.375	.5	.75 x 1
6L	549	F	20	9.06	4	16.5	7.5	8.75	6	16.25	18	6	14.31	28.88	16	2.94	2	.31	1.375	.5	.75 x 1





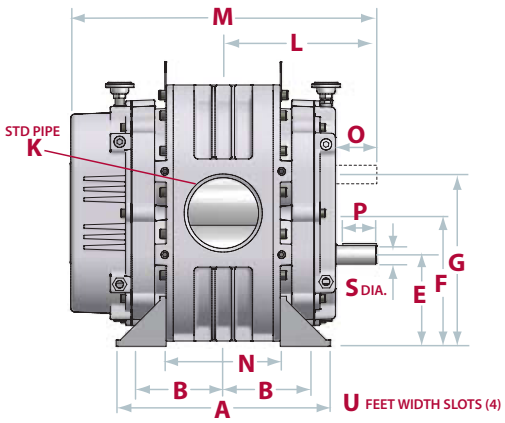
LHC
LEFT HAND
(OPTIONAL ASSEMBLY)

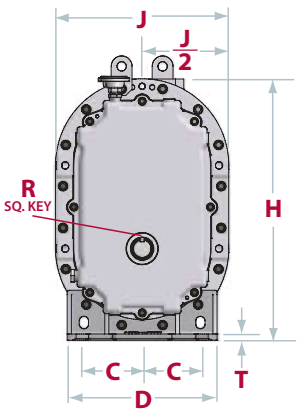
RHC
RIGHT HAND
(STANDARD ASSEMBLY)
CENTER TIMED FOR ROTATION
IN EITHER DIRECTION

Dimensional Data — Vertical Configurations

SIZE	WT.	CONN.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U
3H	71	S	6.75	2.69	2.69	7.75	4.50	6.25	8.00	11.88	7.75	1.25	5.86	12.05	3.5	1.78	1.63	0.19	.75	0.25	.62 x 1.12
3M	79	S	7.62	3.13	2.69	7.75	4.50	6.25	8.00	11.88	7.75	2.00	6.30	12.92	4.36	1.78	1.63	0.19	.75	0.25	.62 x 1.12
3L	95	S	10.24	4.44	2.69	7.75	4.50	6.25	8.00	11.88	7.75	2.50	7.61	15.55	7.00	1.78	1.63	0.19	.75	0.25	.62 x 1.12
4H	98	S	7.25	3	3	8.25	4.5	6.5	8.5	12.69	8.38	1.5	6.88	13.75	4	2.38	1.81	.19	.875	.38	.5 x .75
4M	117	S	9.5	4.13	3	8.25	4.5	6.5	8.5	12.69	8.38	2.5	8	16	6.25	2.38	1.81	.19	.875	.38	.5 x .75
4L	142	S	12	5.38	3	8.25	4.5	6.5	8.5	12.69	8.38	3	9.25	18.5	8.75	2.38	1.81	.19	.875	.38	.5 x .75
5H	196	S	10.88	3.5	3.5	9	5.5	8	10.5	15.88	10.38	2.5	8.19	16.38	4.88	2.5	2	.25	1.125	.38	.5625 x .75
5M	215	S	12.88	4.5	3.5	9	5.5	8	10.5	15.88	10.38	4	9.19	18.38	6.88	2.5	2	.25	1.125	.38	.5625 x .75
5L	255	S	16.88	6.5	3.5	9	5.5	8	10.5	15.88	10.38	4	11.19	22.38	10.88	2.5	2	.25	1.125	.38	.5625 x .75
6H	329	S	9.75	3.94	4	10.5	8.75	11.75	14.75	20.75	12	3	9.19	18.63	5.75	2.94	2	.31	1.375	.5	.75 x 1
6M	377	S	13	5.56	4	10.5	8.75	11.75	14.75	20.75	12.38	5	10.81	21.88	9	2.94	2	.31	1.375	.31	.75 x 1
6L	549	F	20	9.06	4	10.5	8.75	11.75	14.75	20.75	15	6	14.31	28.88	16	2.94	2	.31	1.375	.31	.75 x 1

S = Threaded connections standard NPT. F = flange connections. Inlet and outlet connections are the same type and size.
Dimensions are in inches. Weights are in pounds and are approximate.





THC
TOP HAND
(OPTIONAL ASSEMBLY)

BHC
BOTTOM HAND
(STANDARD ASSEMBLY)
CENTER TIMED FOR ROTATION
IN EITHER DIRECTION

Genuine Gardner Denver Parts & Lubricants

- Maintain the Gardner Denver performance advantage and reliability with Genuine GD Replacement Parts available through authorized sales and service representatives
- Protect your Gardner Denver investment with AEON® PD, the only lubricant specially formulated for all blowers in any environment
  - – Now available:
    - ›› AEON® PD-XD (eXtreme Duty)
    - ›› Designed specifically for high ambient and high discharge temperature applications
  - – Also available:
    - ›› AEON® PD (standard applications)
    - ›› AEON® PD-FG (Food Grade)

Quality Promise

- Gardner Denver industrial blowers are manufactured under rigid ISO 9001 quality standards
- All models are thoroughly tested to meet the highest performance standards for unequaled service life under the most severe operating conditions

Gardner Denver®

ENERGY STAR PARTNER

GARDNER DENVER ISO 9001 CERTIFIED QUALITY SYSTEM

Member CAGI

Please recycle after use.

www.GardnerDenverProducts.com pd.blowers@gardnerdenver.com

Gardner Denver, Inc. 1800 Gardner Expressway, Quincy, IL 62305
Customer Service Department Telephone: (800) 682-9868 FAX: (217) 221-8780

 PD-SBL-DSL 3rd Ed. 5/09