OPERATION & MAINTENANCE MANUAL
INTERIM REMEDIAL MEASURES (IRM)
SOIL VAPOR EXTRACTION SYSTEM

130071

FORMER RON HILL CLEANERS
71 FOREST AVENUE
GLEN COVE, NEW YORK

DECEMBER 1996

PREPARED BY:

Charles Schmidgall

CHARLES SCHMIDGALL
ENVIRONMENTAL ENGINEER

REVIEWED BY:

Ed Weinberg

ED WEINBERG, P.E.

TYREE BROTHERS ENVIRONMENTAL SERVICES, INC.
208 ROUTE 109
FARMINGDALE, NEW YORK 11735

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1.0 INTRODUCTION

This Operation and Maintenance Manual has been prepared for a soil vapor extraction system (SVES) as part of the Interim Remedial Measures (IRM) at the Former Ron Hill Cleaners (Site #1-30-071) located at 71 Forest Avenue, Glen Cove, New York. The soil vapor extraction system (SVES) treats VOC's detected in the subsurface and was constructed to comply with Order on Consent Index No. D1-0001-94-11. The system was constructed by Tyree Brothers Environmental Services, Inc. (Tyree) according to the IRM Work Plan that was approved by the New York State Department of Environmental Conservation (NYSDEC) on March 15, 1996. The Air Permit Application was approved by the Nassau County Department of Health (DOH) on January 9, 1996.

This Operation and Maintenance (O&M) Manual is a guide for the personnel who will operate and maintain the SVES. The manual provides a description of operation and maintenance of the remedial system and is organized as follows:

Section 2.0 describes the construction of the system and Section 3.0 discusses system operation and maintenance requirements. Appendices A, B, and C consist of copies of the equipment manuals, permits, and the pilot test report (Tyree, November 1995), respectively.

2.0 CONSTRUCTION RECORD

Construction of the system was initiated in March 1995 with the installation of the vent wells. The sequence of the construction process and dates of the installation of the major components are as follows:

Installation of the four (4) vapor extraction wells - March 1995;
Implementation of soil vapor extraction pilot test - August 1995;
Air permit for construction of SVES approved by Nassau Co. DOH - Jan. 1996;
Construction of the 10'x14'x6" concrete pad for the remediation equipment - May 1996;
Installation of the two (2) granular activated carbon vessels - June 1996;
Installation of the 4 HP regenerative blower - June 1996;
Installation of the 200-amp 3-phase electrical service - June 1996;
Installation of the blower shed and fence around the area - June 1996;
Final installation and start-up of the system - August 1996; and
Initial air sampling - August 1996

The location of the vent wells are shown in Figure 1.

3.0 SYSTEM OPERATION

3.1 Description of Operation

The layout of the system is shown in Figure 2. The soil vent system consists of four (4) wells (VW-1, VW-2, VW-3, and VW-4) that were installed at depths of 80 feet, 67 feet, 20 feet, and 15 feet, respectively. The wells were constructed of 4" diameter Schedule 40 PVC screens and casing. The vent wells were connected to a 4" diameter PVC manifold that leads to the inlet of the blower. A 4-inch PVC ball valve was installed at the outlet of each of the vent wells to regulate the flow from each well. A 24"x24" Pemco square manhole was installed at each vent well.

Vapors are drawn from the vent wells by a Gast Model No. R6340 R-50 vacuum blower with a 3 HP 230 VAC, three-phase, explosion-proof motor, capable of 215 cfm at 80 inches water vacuum. A 19-gallon moisture separator, with epoxy coated steel interior, and an inline filter, Model No. AJ151G, are also part of the SVES as shown in a flow diagram provided in Appendix A, NES sheet 1.

The exhaust from the blower passes through two (2) Carbtrol G-6-2000 Vapor Phase Granulated Activated Carbon Adsorbers operating in series. Each of the adsorbers contains 2,000 pounds of carbon.

3.2 Operations and Maintenance

Initial operation and maintenance of the system required daily inspection for the first two days of operation. Thereafter, monthly visits are required to ensure proper operation, to document performance of the system, and to comply with the conditions of the Air Permit and the Air Monitoring Plan.

The monthly system inspections include:

Checking operating condition of all equipment;
Recording air flow rate;
Regular maintenace;
Air sampling with the photoionization detector (PID) and Drager Tubes as required by the Air Monitoring Plan; and
Other actions deemed necessary for proper operation of the remediation system .

Instruction manuals for the major system components are provided in Appendix A. These manuals are to be consulted for troubleshooting and non-routine maintenance requirements.

3.3 Management of Treatment Residuals

The SVES knockout drum will be emptied every time the system gets visited. The water from this drum will be discharged in the vicinity of the recovery area.

SVE air will be monitored before and after the two (2) 2,000 Lb. carbon cannisters. Monitoring will include: (1) taking PID readings; (2) collecting Drager tubes; and (3) occaisionally collecting carbon tubes. Once there is an indication that the carbon cannisters are spent, new carbon will be installed or the old carbon will be reactivated.

3.4 Responsible Parties

The system is operated by Tyree Brothers Environmental Services, Inc. on behalf of Bedford Affiliates. Regulatory oversight is provided by NYSDEC.

Contact names and addresses for these parties are as follows:

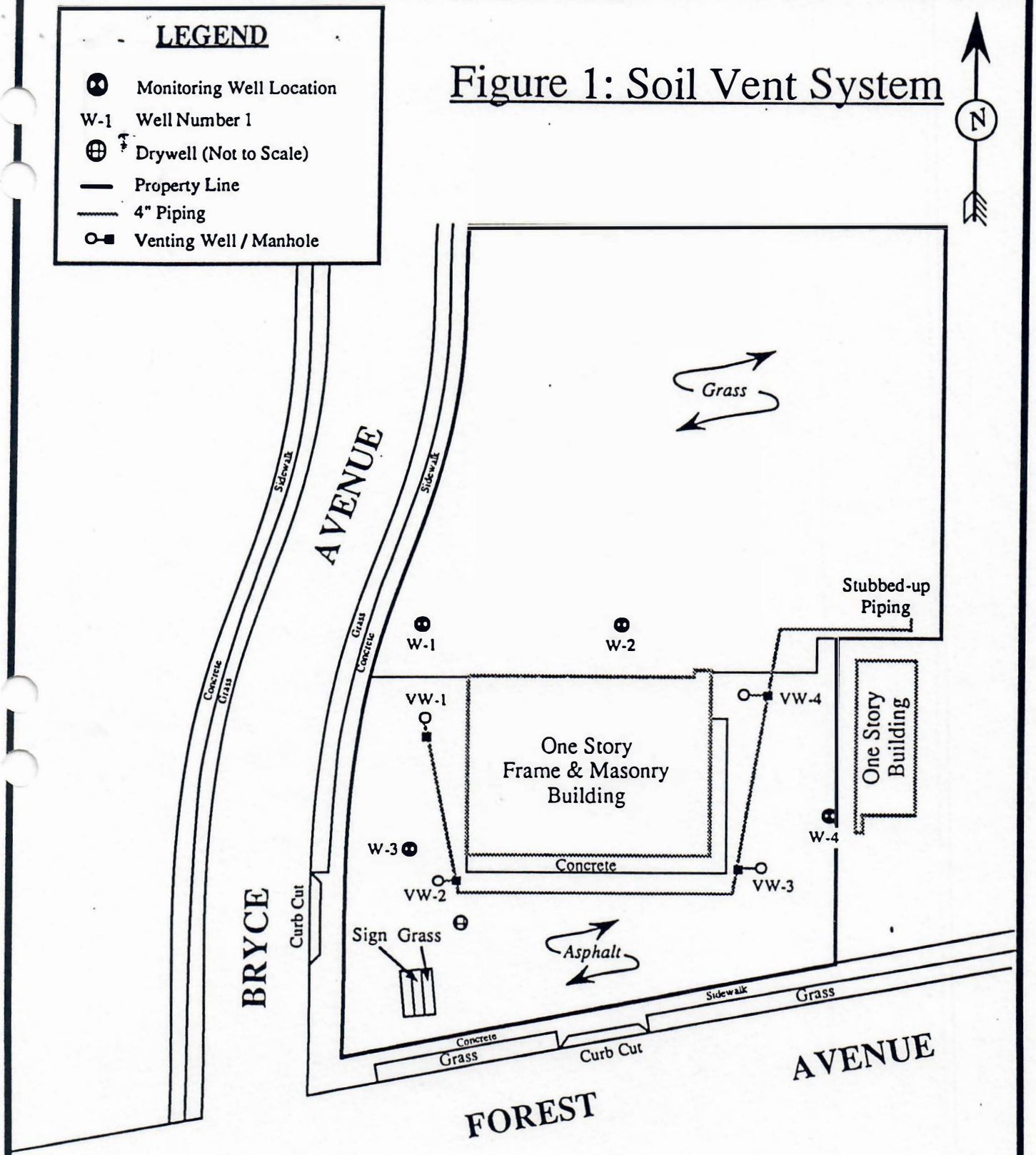
Operation and Maintenance:

Tyree Brothers Environmental Services, Inc.
208 Route 109
Farmingdale, New York 11735
Tel: (516) 249-3150
Attn: Charles Schmidgall

Regulatory:

NYSDEC, Region I
Building #40 - SUNY
Stony Brook, New York 11790
Tel: (516) 444-0246
Attn: Robert Becherer, P.E.
Jamie Ascher

Figure 1: Soil Vent System



Tyree Brothers Environmental Services, Inc. 208 Route 109 Farmingdale, New York 11735	***Ron Hill Cleaners*** *71 Forest Avenue* *Glen Cove, NY 11542*	DRAWN BY: D. Medaglia SITE CODE: 1-30-071 SCALE: 1" = 40' DATE: 1/7/95 CHECKED BY: C. Schmidgall

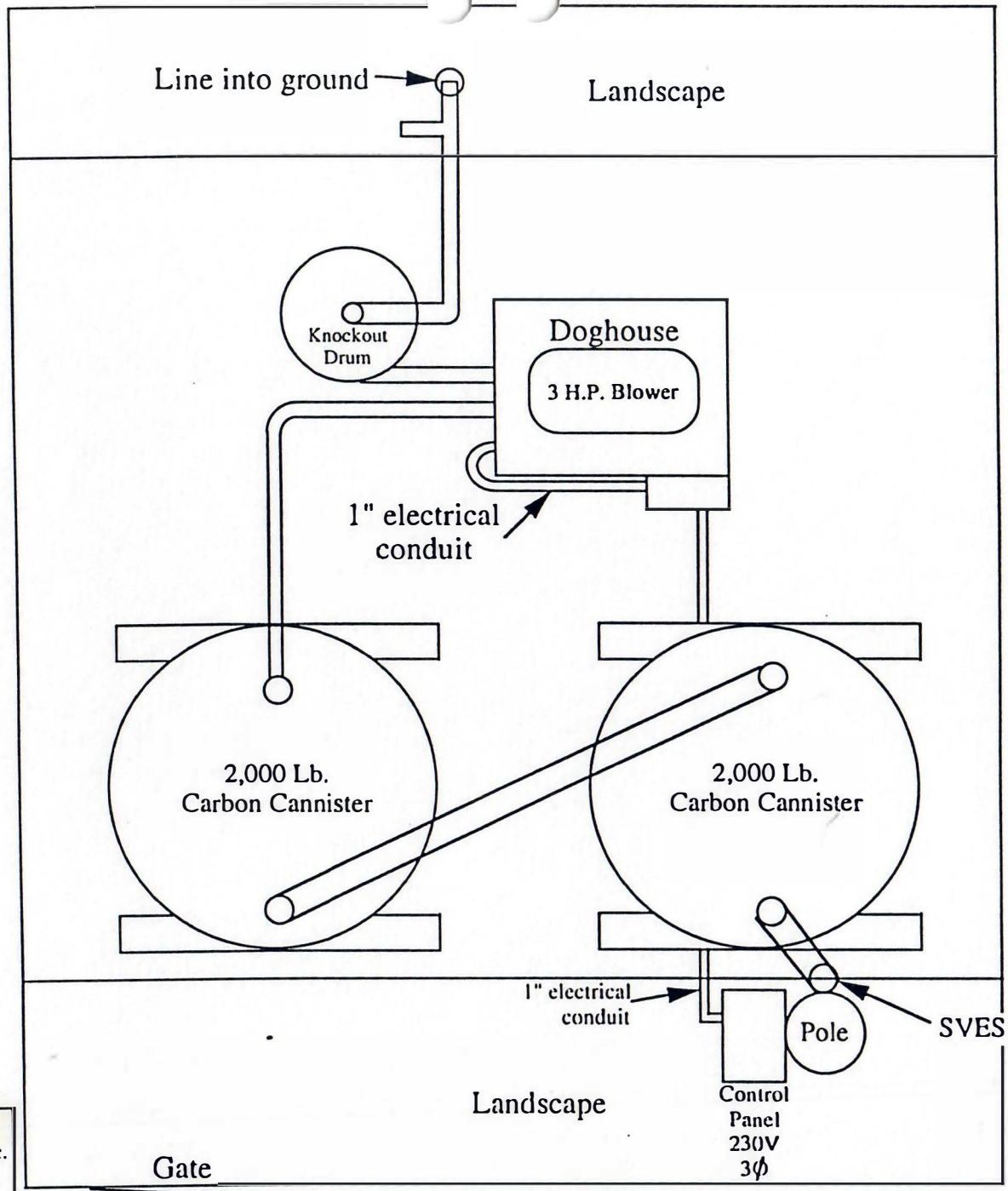


Figure 2: Remediation Layout Topview

Drawn by: C.Schmidgall
Scale: 1" = 2'
Date: 11-10-96
Checked by: E. Weinberg

Tyree Brothers
Environmental Services, Inc.
208 Route 109
Farmingdale, New York

Ron Hill Cleaners
71 Forest Avenue
Glen Cove, New York

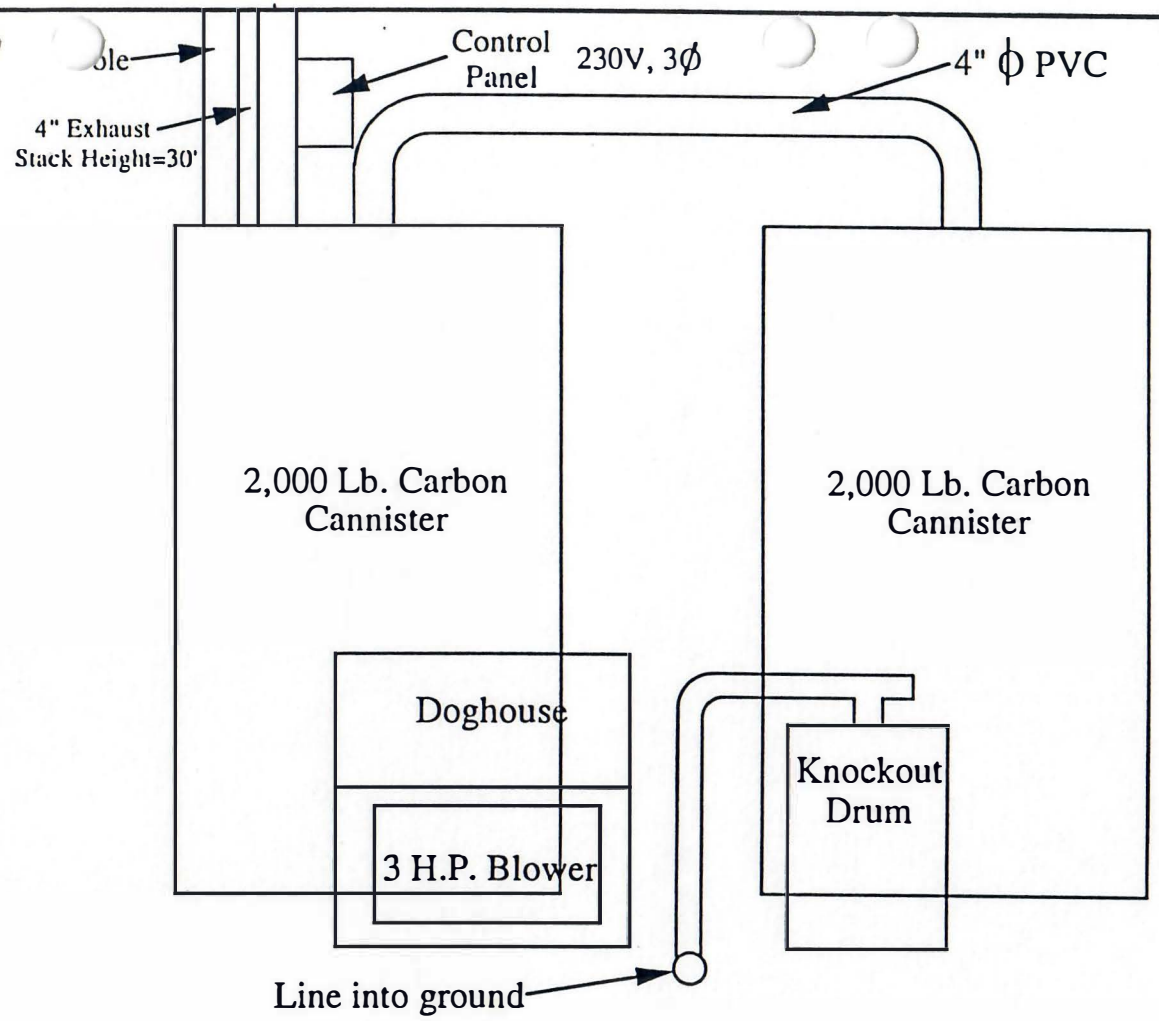


Figure 3:
Remediation Layout
Sideview

Drawn by: C.Schmidgall
Scale: 1" = 2'
Date: 11-10-96
Checked by: E. Weinberg

Tyree Brothers
Environmental Services, Inc.
208 Route 109
Farmingdale, New York

Ron Hill Cleaners
71 Forest Avenue
Glen Cove, New York

APPENDIX A

EQUIPMENT MANUALS

NES Soil Gas Unit, Seekonk, MA (508) 761-6611

Carbtrol Air Purification Adsorbers, Westport, CT (800) 242-1150

N A T I O N A L
ENVIRONMENTAL INC.
S Y S T E M S

36 Maple Avenue • Seekonk, Massachusetts 02771
508 761-6611 FAX 508 761-6898

System Manual

NES Job Name: Tyree - Glen Cove
NES Project Number: Q96-0116-A
Sales Order Number: SO96128

Sales Represenatative: Pixie Terreault
Technical Support: Matt Sweeney

N A T I O N A L
ENVIRONMENTAL INC.
S Y S T E M S

36 Maple Avenue • Seekonk, Massachusetts 02771
508 761-6611 FAX 508 761-6898

SOIL GAS UNIT

INSTALLATION, OPERATION, & MAINTENANCE MANUAL

Job Name: Tyree - Glen Cove Job #: Q96-0116-A Date: 06/21/96

SYSTEM DATA

Flow/Max	215 scfm Max.	Vacuum/Max	80 in H_2O
Motor Voltage	230 Vac	Phase	3
Control Voltage	- Vac	Phase	-
Horsepower	4	Full Load Amps	12

INSTALLATION

- Remove the packaging from the soil gas unit and inspect. Verify that gauges and other components are not damaged.
- Open the moisture separator and remove the cable tie that protects the ball float from moving during shipment.
- Mount the soil gas unit on a level concrete pad.
- Connect vapor extraction well piping to inlet of soil gas unit. On common units the inlet connection is a rubber coupling attached to the moisture separator. For units without a moisture separator, connect well piping to the threaded PVC pipe extending from the filter. For units without a moisture separator and without a filter, connect well piping to the threaded PVC pipe extending from the blower inlet. NES does not recommend installation without a moisture separator or without a filter.
- Connect discharge piping to threaded metal piping on outlet side of blower or silencer.
- Have a licensed electrician provide a properly sized circuit for your unit. Use the system data above to size the circuit. The source voltage must match what is written above since the controls will detect an undervoltage condition, (i.e. do not connect a 230 volt system to a 208 volt service).

Terminate the circuit at your unit according to the following:

Unit with Cable & Plug: Provide a receptacle with the same configuration as the plug on your 2unit.

Unit with Cable Only: Provide a junction box close to the unit and splice cable.

Unit without Cable & Plug: Continue conduit run into motor starter enclosure and terminate according to the drawings provided with the unit.

Positive Displacement Units Only

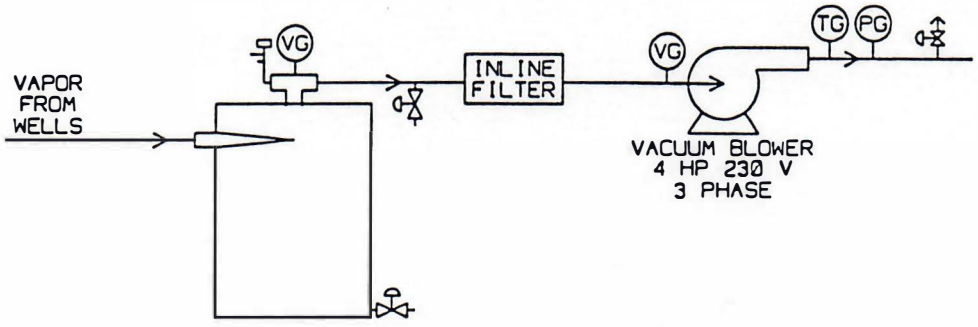
Check the blower unit for proper lubrication. Proper oil level cannot be overemphasized. Too little oil will ruin bearings and gears. Too much oil will cause overheating and can ruin gears and cause other damage. Check the level and alignment of the drive. Misaligned V-drives can cause the impellers to rub against the headplates and cause a reduction in the volumetric efficiency of the unit. Misaligned couplings can ruin bearings.

OPERATION

TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
1. Motor does not start.	a) Circuit not turned on or unit unplugged.	Turn on circuit or plug in.
	b) Low voltage	Measure source voltage & see if it agrees with voltage written in system data section. It may be necessary to change undervoltage coil. Contact NES.
	c) Moisture Separator full of water, or float switch disconnected.	Turn off power. Open separator. Check to see if it is full. If full, contact proper authorities & drain. Restart system.
	d) Short circuit	Check conductors. Monitor current with clamp on ammeter.
	e) Bad motor	Check resistance of motor windings. Contact NES.
2. Motor starts but runs only for a while.	a) Motor overloaded	Check current draw with ammeter. Decrease vacuum at system inlet. Open dilution valve.
	b) Effluent temperature too high or temperature switch disconnected.	Monitor effluent temperature compare to switch setpoint. Decrease effluent temperature by decreasing discharge pressure or by lowering inlet temperature.
	c) Motor temperature too high	Cool motor. Remove motor from extremely hot location.

P&ID



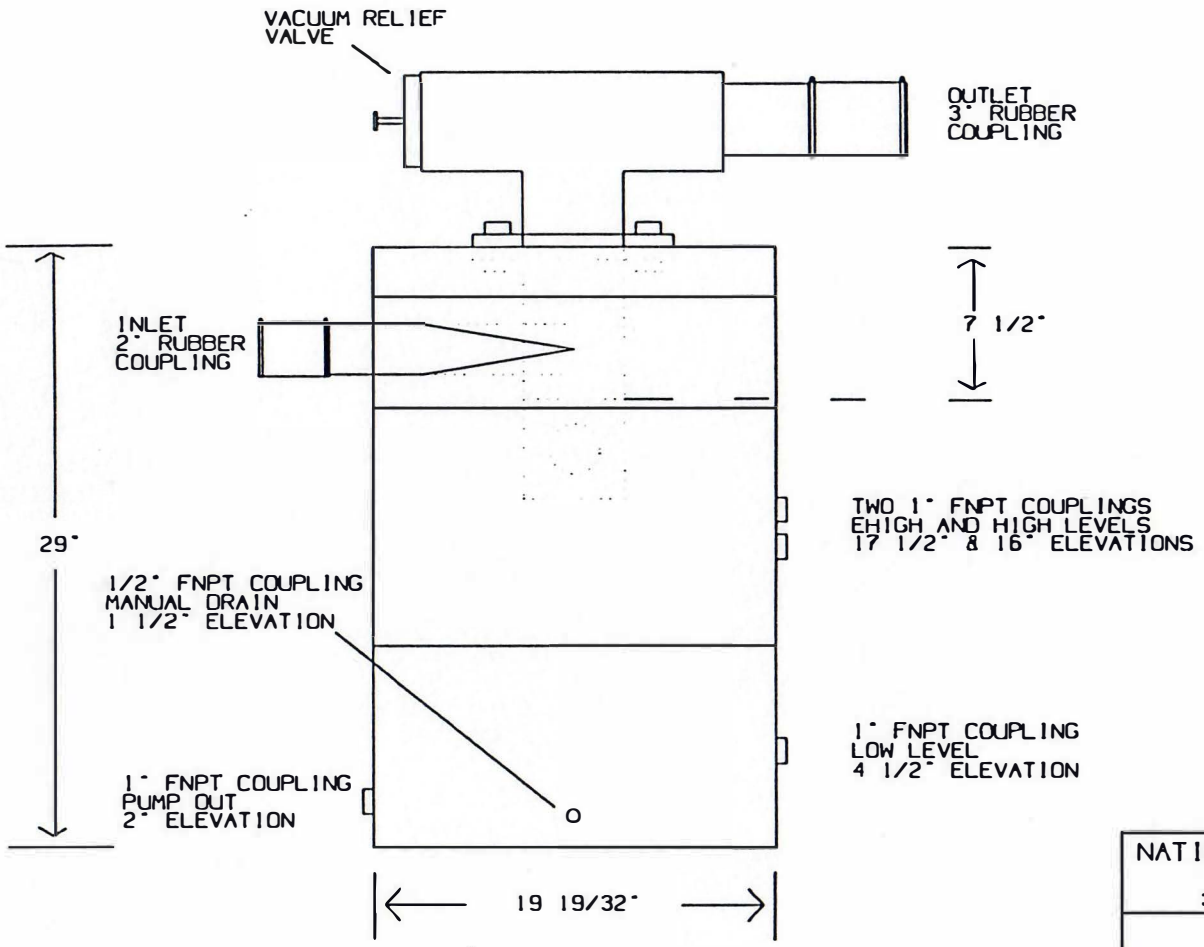
LEGEND	
CHECK VALVE	EH EMERGENCY HIGH SWITCH
BALL VALVE	H HIGH LEVEL FOR PUMP TURN ON
SAMPLE PORT	L LOW LEVEL FOR PUMP TURN OFF
RELIEF VALVE	PS PRESSURE SWITCH
SOLENOID VALVE	PG PRESSURE GAUGE
QUICK CONNECT	VS VACUUM SWITCH
	TG TEMPERATURE GAUGE
	VG VACUUM GAUGE
	FM FLOW METER

NATIONAL ENVIRONMENTAL SYSTEMS
508-761-6611
36 MAPLE AVENUE. SEEKONK. MA 02771

PROCESS AND INSTRUMENTATION DIAGRAM

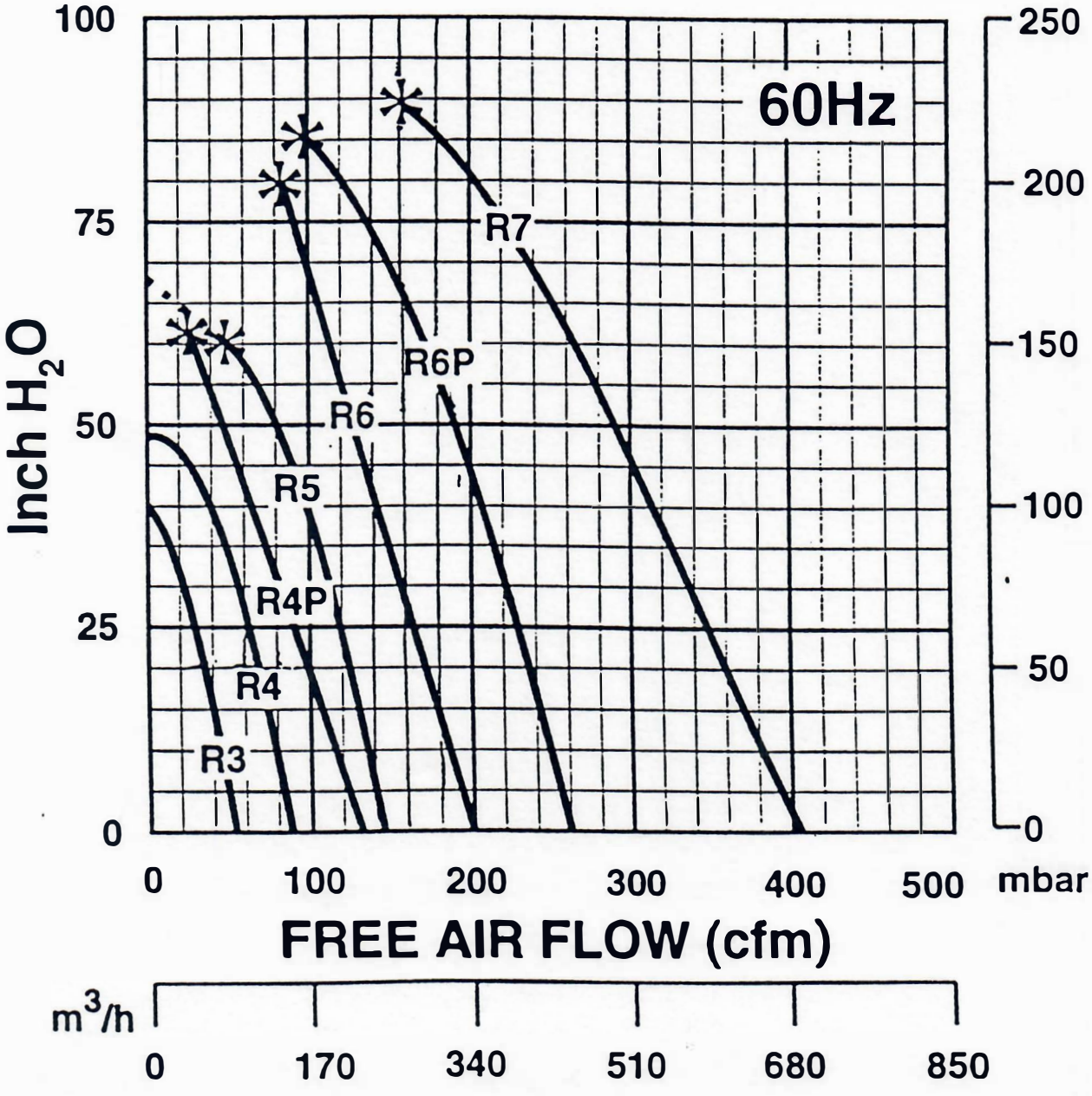
JOB NAME : TYREE - GLEN COVE			
NES PROJECT 0960116A		SHEET 1	
DATE: 06-21-96	DRAWN: MTS	\S096128\	REV:
SCALE: N. T. S.	DESIGN: MTS	P&ID	

MOISTURE SEPARATOR



NATIONAL ENVIRONMENTAL SYSTEMS 508-761-6611 36 MAPLE AVENUE. SEEKONK. MA 02771			
200 CFM MOISTURE SEPARATOR 19 GALLON CAPACITY			
JOB NAME : TYREE - GLEN COVE			
NES PROJECT 0960116A		SHEET 2	
DATE: 06-21-96	DRAWN: MTS	FILE NAME:	REV:
SCALE: N. T. S.	DESIGN: MTS	MS2	-

Vacuum


60Hz
R7
R6P
R6
R5
R4P
R4
R3
Inch H_2O
100
75
50
25
0
250
200
150
100
50
0
mbar
0
100
200
300
400
500
FREE AIR FLOW (cfm)
m^3/h
0
170
340
510
680
850

Gast Manufacturing Corp.
P.O. Box 97
Benton Harbor, MI 49023-0097
(616) 926-6171

You input the following requirements:

Estimated Vacuum in inches of water: 48
Estimated Pressure in inches of water: 4
Minimum Flow Required in cubic feet per minute: 125
Approximate temperature of the inlet air in degrees Fahrenheit: 68
Approximate altitude in feet above sea level: 135
Motor Phase: 3
Assume 60 HZ operation

Based on these inputs, we have calculated the following:

Model R5325R-50 produces an air flow of 74 c.f.m.

RECOMMENDATION:
Model R6340R-50, which will deliver an air flow of 131 c.f.m. in these conditions.

Accessories and Additional Recommendations

RECOMMENDED ACCESSORIES:
VACUUM SERVICE: Gast In-line filter AJ151G.
MOISTURE SEPARATOR: Gast RMS300 (19 gal) or RMS 400 (40 gal).
VACUUM GAUGE: Gast AE134.
PRESSURE GAUGE: Gast AE133.
CHECK VALVE: Gast AH326F.

Gast Manufacturing Corp.
P.O. Box 97
Benton Harbor, MI 49023-0097
(616) 926-6171

Model R6340R-50

Motor Specifications

Phase	HZ	HP	Voltage	Full Load Amps
3	50	4	208-230 / 460	13-12 / 6

Overall Dimensions

Height	Width	Depth	Net Weight
15.34 in	18.82 in	15.17 in	112 lb
390 mm	48 mm	385 mm	51 kg

Performance

Maximum Vacuum	Maximum Pressure	Maximum Flow
80 inH20	100 inH20	215 cfm
199 mbar	249 mbar	365 m^3h

Gast Manufacturing Corp.
P.O. Box 97
Benton Harbor, MI 49023-0097
(616) 926-6171

You input the following requirements:

Estimated Vacuum in inches of water: 48
Estimated Pressure in inches of water: 6
Minimum Flow Required in cubic feet per minute: 125
Approximate temperature of the inlet air in degrees Fahrenheit: 68
Approximate altitude in feet above sea level: 135
Motor Phase: 3
Assume 60 HZ operation

Based on these inputs, we have calculated the following:

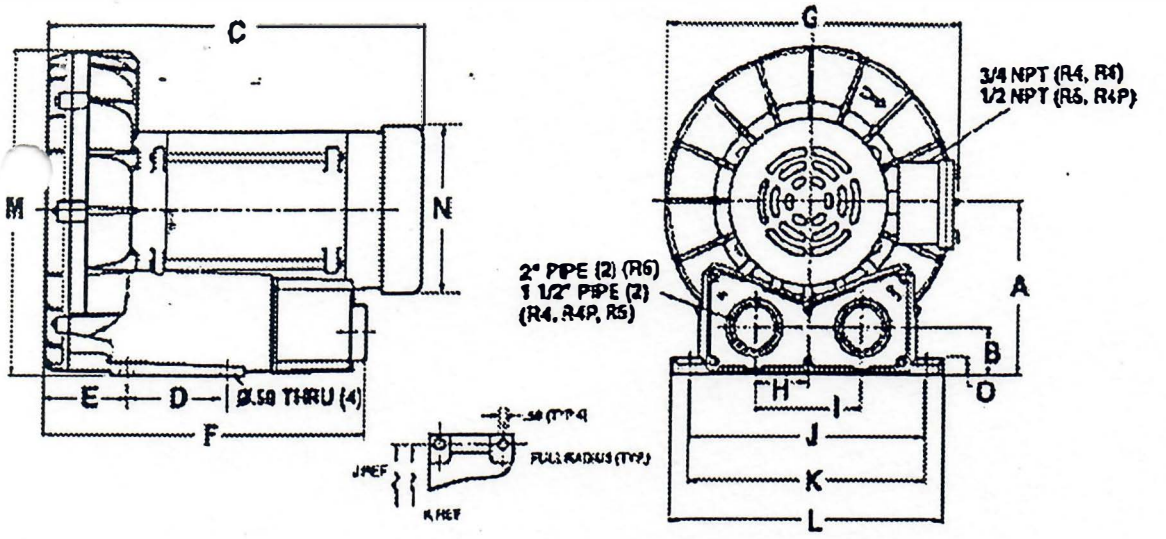
Model R5325R-50 produces an air flow of 70 c.f.m.

RECOMMENDATION:
Model R6340R-50, which will deliver an air flow of 129 c.f.m. in these conditions.

Accessories and Additional Recommendations

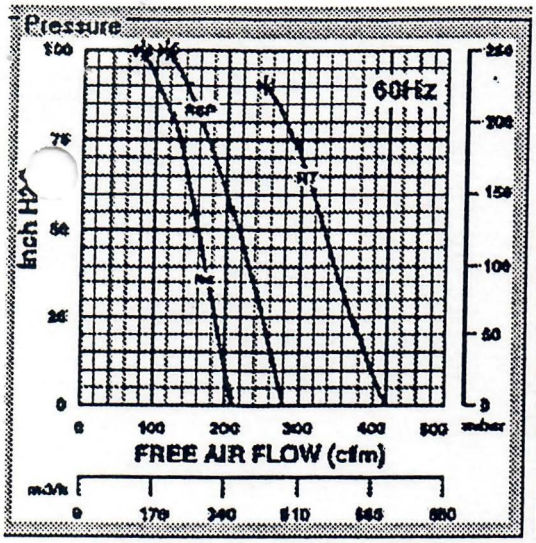
RECOMMENDED ACCESSORIES:
VACUUM SERVICE: Gast In-line filter AJ151G.
MOISTURE SEPARATOR: Gast RMS300 (19 gal) or RMS 400 (40 gal).
VACUUM GAUGE: Gast AE134.
PRESSURE GAUGE: Gast AE133.
CHECK VALVE: Gast AH326F.

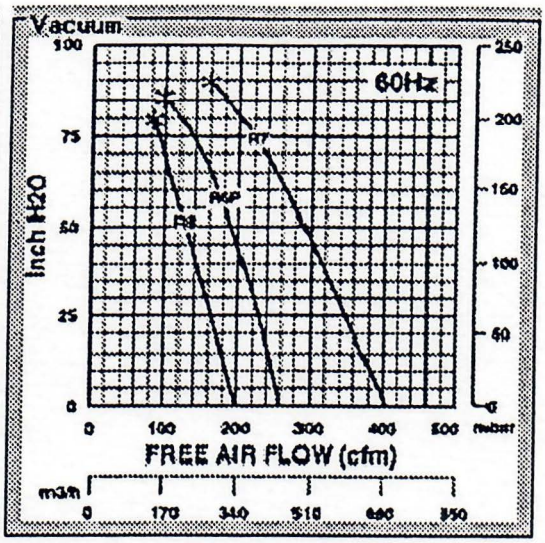
Model R6340R-50



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
N.	7.75	1.94	18.82	5.50	3.85	15.89	15.30	2.46	4.92	11.38	11.42	12.96	15.38	8.56	0.52
nm.	197	49	478	140	98	404	389	62	125	289	290	329	391	217	13

Model R6340R-50



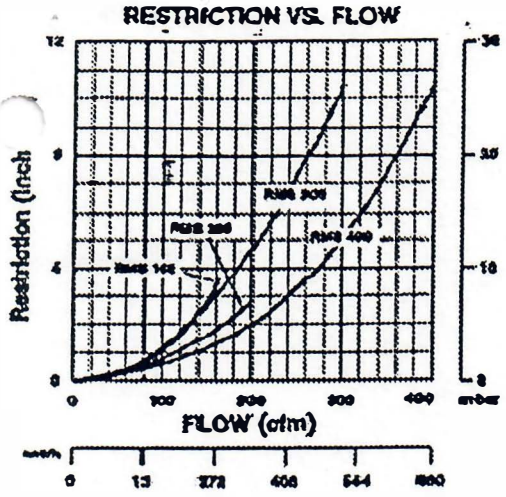


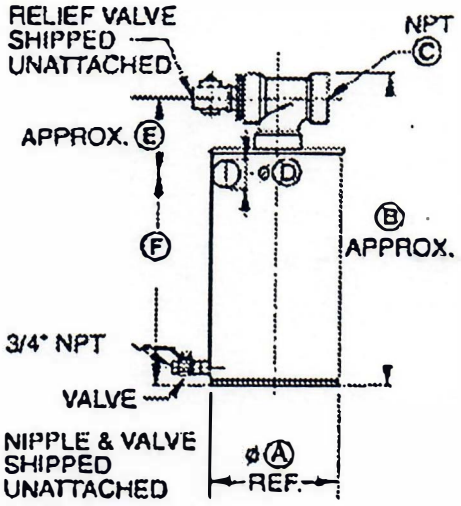
Print Curves

Close This Window

Moisture Separators

Moisture separators remove liquids from the gas stream in a vacuum process, helping protect the blower from corrosion and a buildup of mineral deposits.





Part. No.	Capacity	Dimensions A(dia.)	B	C(NPT)	D(dia.)	E	F	
RMS160	10 gal.	.8"	37.5"	2"	2"	7.5"	26.6"	R3, R4, R4P, R5 Blowers
RMS200	19 gal							R4, R4P, R5, R6 Blowers
RMS300	19 gal							R5, R6, R6P Blowers
RMS400	40 gal							R6P, R7 Blowers

Optional electric explosion-proof float switch, AJ213, is recommended for RMS series separators. 125/250 VAC, 5 amp.

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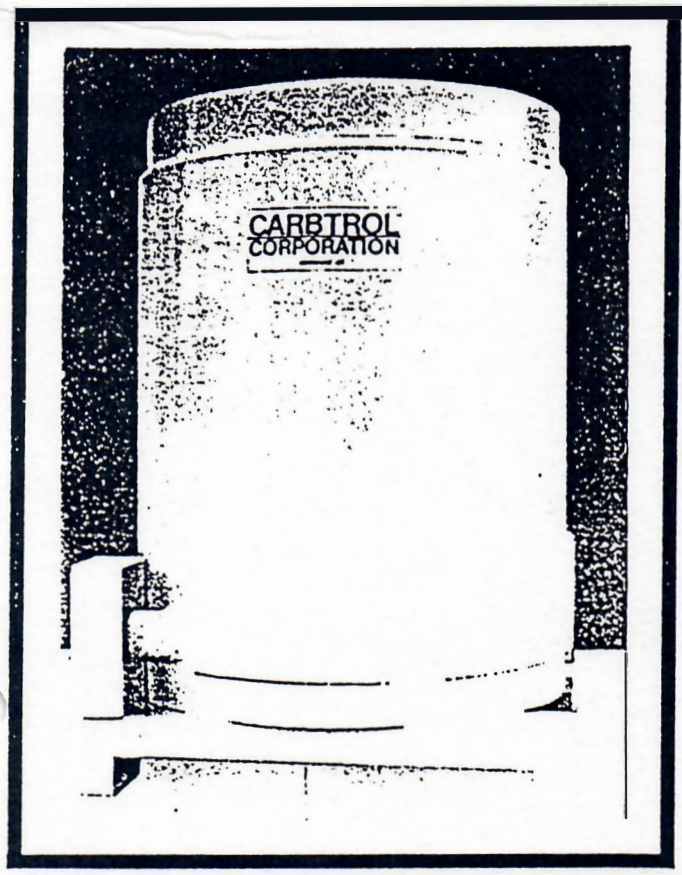
CARBTROL®

AIR PURIFICATION ADSORBERS

1,000 LB. ACTIVATED CARBON G-4
1,800 LB. ACTIVATED CARBON G-6



FEATURES

- Low pressure drop.
- High activity carbon.
- Fork lift fittings for easy handling.
- 4" Ø slotted inlet distributor.
- DOT rated. Acceptable for transport of hazardous waste.

SPECIFICATIONS

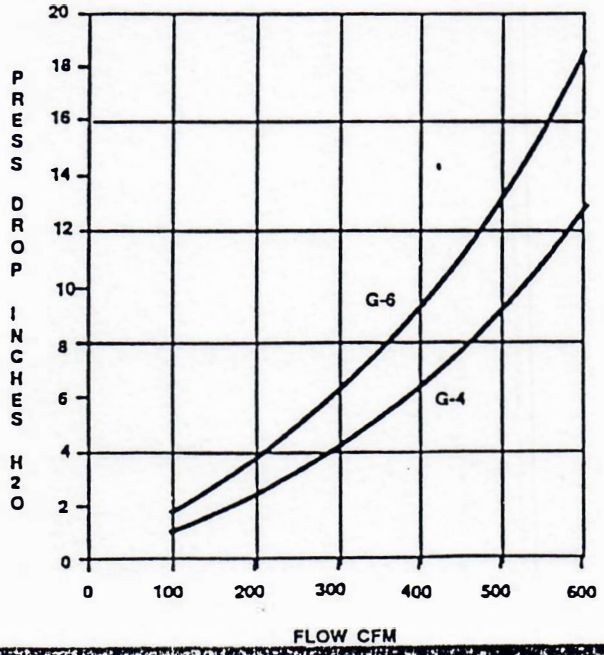
G-4

CARBON: 1,000 lbs.
DIMENSIONS: 45-1/2" Ø x 62" height
SHIPPING WT: 1,500 lbs.

G-6

CARBON: 1,800 lbs. *
DIMENSIONS: 45-1/2" Ø x 86" overall ht.
SHIPPING WT: 2,500 lbs.

* 2,000 lbs. option available



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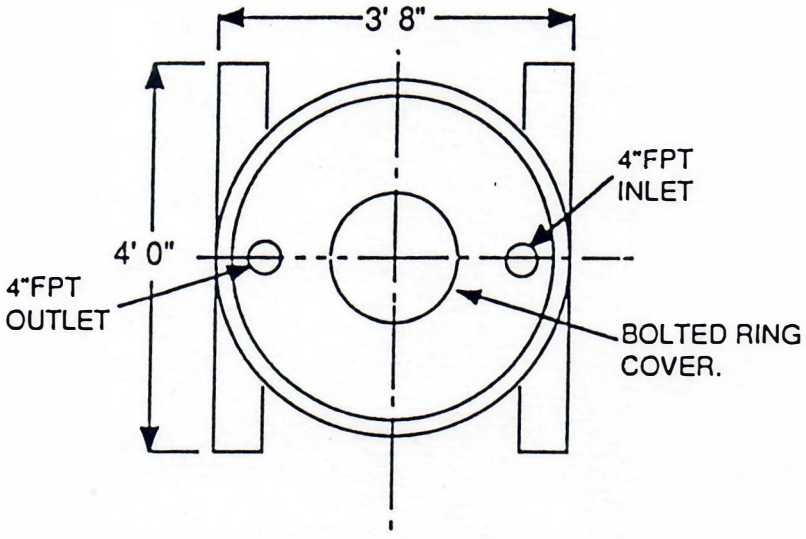
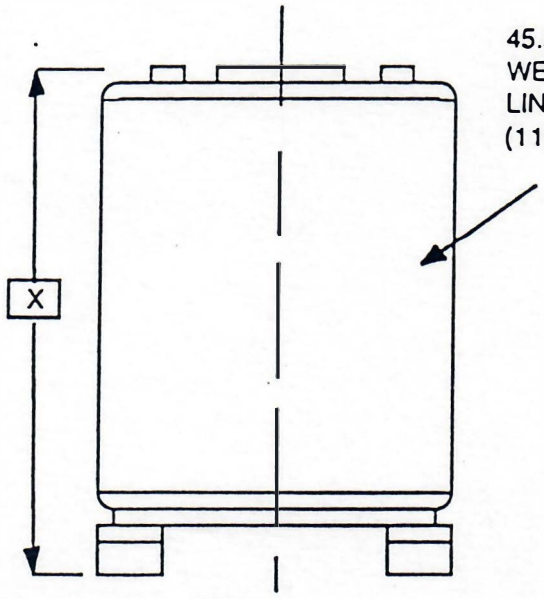
CARBTROL®

AIR PURIFICATION ADSORBERS

1,000 LB. ACTIVATED CARBON G-4
1,800 LB. ACTIVATED CARBON G-6





45.5"DIA, D.O.T.RATED,
WETTED PARTS EPOXY
LINED MILD STEEL.
(11 PSI DESIGN PRESS)

UNIT	DIM. "X"
G-4	5'-2"
G-6	7'-2"

CARBTROL® CORPORATION
51 Riverside Avenue, Westport, CT 06880 • 1-800-242-1150 • (203) 226-5642

CARBTROL®
CORPORATION

51 Riverside Avenue
Westport, Connecticut 06880
1-800-242-1150 • (203) 226-5642
FAX (203) 226-5322

READ THESE INSTRUCTIONS THOROUGHLY BEFORE STARTUP. IMPROPER STARTUP COULD RESULT IN AN UNSAFE CONDITION.

INSTALLATION AND OPERATING INSTRUCTIONS G-6 VAPOR PHASE CARBTROL® ADSORBERS

ADSORBER PREPARATION

When vapors contact activated carbon, the bed temperature may increase due to water vapor and contaminant chemical heat of adsorption.

Where organic concentrations above 500 ppmv are expected, contact Carbtrol Corp. for evaluation of the potential for heat buildup.

When the Carbtrol adsorber is initially installed, maintain a continuous air flow through the adsorber for the first 24 hours of operation, and monitor the effluent gas temperature. A rise in the gas temperature of greater than 50°F is an indication of excessive heat generation. Under these conditions, the unit should be removed from service and the cause of the excessive heat generation should be determined.

Where the reaction of the contaminated gas stream with activated carbon is unknown, Carbtrol recommends thoroughly wetting the carbon with water prior to startup. The following procedure is recommended for wetting the carbon bed:

> Remove the plastic shipping plugs from the inlet and outlet ports. Insert a hose into the outlet port and fill the adsorber with water. The filled adsorber must be allowed to stand for at least one hour.
>
> Remove the water before the adsorber is put into service using the 1" bottom drain coupling. Replace the 3/4" drain plug before putting the adsorber into operation.

INSTALLATION

To put the Carbtrol G-6 Adsorber into service, place the adsorber on a well drained, level grade or concrete pad in an accessible area, preferably close to the exhaust vent to be treated. Connect a full size pipe or hose from the process exhaust to the inlet port. Where required, a full sized vent line can be connected to the adsorber outlet port to direct treated gases from the immediate area.

Before operating the G-6 Adsorber, a minimum size 8 AWG copper grounding cable should be connected between thte cable clamp provided on the adsorber support steel, and the building electrical grounding system. If a grounding system is not available, this grounding cable should be connected to a suitably driven ground rod. (See N.E.C. Section 250.83).

Carbtrol adsorbers are not to be used for explosive gas applications. Where upset conditions may cause exceedence of the LEL (lower explosive limit), flame arresters and/or nitrogen blanketing of the process should be considered.

OPERATION

As the contaminated process exhaust gas passes through the adsorber, the granular activated carbon adsorbs the impurities while the purilfied process gas is discharged from the adsorber. After continued use, the carbon will become saturated with impurities and will require replacement.

Gas discharging from the G-6 Adsorber should be tested regularly to determine when the carbon bed is nearing saturation. Properly scheduled testing of the discharge gas will indicate when breakthrough has occurred and the adsorber should be changed.

The capacity of the activated carbon varies with the type and concentration of impurities in the gases handled. Therefore, the determination of effective adsorber life for a specific use will come with the practical experience of using it under a specific set of operating conditions.

It is recommended that an additional G-6 Adsorber be kept on site, so that when breakthrough of the on-line adsorber occurs, a replacement unit is readily available.

If it is required that the spare G-6 Adsorber should be arranged as a fully piped and ready stand-by unit to allow immediate use, a pipe and valve assembly can be provided to accomplish this switchover and adsorber changeout. Contact the factory for details.

Operating pressure for CARBTROL G-6 Adsorbers should not exceed 9 psig.

Install appropriate shipping plugs and follow all State and Federal EPA regulations when re-shipping spent carbon adsorbers.

WARNING:

A. Activated carbon can react adversely with some contaminants, which can cause excessive heat buildup. If the effect of the contaminant you wish to treat on activated carbon is unknown, then it must first be tested.

B. The initial heat of adsorption that occurs when vapors first contact activated carbon causes a rise of temperature in the carbon bed. As recommended above, maintained air flow or wetting of the carbon bed will minimize the initial heat buildup.

C. Carbtrol adsorbers should not be used with flammable vapors or flammable gas mixtures.

D. Activated carbon depletes oxygen in enclosed spaces. Follow NIOSH guidelines for safety in enclosed spaces.

WARRANTY

This product is designed to remove toxic pollutants from air. However, there is no assurance of its capacity. SELLER WARRANTS THAT THE GOODS ARE AS DESCRIBED. BUT NO OTHER WARRANTY IS GIVEN, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Seller will not be liable for loss or damage to property or any incidental or consequential loss or expense from property damage due directly or indirectly from the use of the product.

THOMAS S. GULOTTA
COUNTY EXECUTIVE

KATHLEEN A. GAFFNEY, M.D., M.P.H.
COMMISSIONER

COUNTY OF NASSAU
DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501-4250

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

January 9, 1996

Tyree Brothers Env. Serv. Inc.
208 Route 109
Farmingdale, New York 11735

Attention: B.N. Roopnarine

Re: Closed Ron Hill Cleaners
Glen Cove
28-0500-6463-00001I

Dear Mr. Roopnarine:

Your application for a permit to construct an air emission source(s) referenced above has been approved. In order to obtain a certificate to operate this emission source(s) for one year, please submit a fee of $200.00 (Statement of Charges enclosed). Upon receipt of this fee, an inspection of the source(s) will be performed by a representative of this Department.

Please note that operation of an air contamination source without having a valid certificate to operate is a violation of the New York State Environmental Conservation Law and subject to a penalty up to ten thousand ($10,000) dollars for each violation.

Please submit the requested fee to this office within 15 days to avoid any delays in processing your application for a certificate to operate.

If you have any questions, please contact Mr. Carlos Pareja at 516-571-2339.

Thank you for your cooperation.

Very truly yours,

Michael J. Alarcon

Michael J. Alarcon, M.C.E., P. E.
Director
Bureau of Environmental Engineering

E
MJA:rc
Enc.
0841J

Kathleen A. Gaffney, M.D., M.P.H.
Commissioner

STATEMENT OF CHARGES
OFFICE OF BILLING AND COLLECTION
NASSAU COUNTY DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD, MINEOLA, NEW YORK 11501

TEL.571-2338

28-0500-6463

NAME: TYREE ENVIRONMENTAL FACILITY NO.: 28-0500-6463 * ADDRESS: 208 ROUTE 109 FARMINGDALE, NY 11735 ATTN: B N ROOPNARINE 516-249-3150	TYPE OF INSTALLATION STATIONARY COMBUSTION INCINERATION UNIT [X] PROCESS EXHAUST or VENTILATION SYSTEMS UNIT GASOLINE DISPENSING	DATE: JAN 96 (~~FB~~ (FJ) FACILITY FEE: E/P FEE 00001 $200.00 TOTAL FEE DUE $200.00

FACILITY FEE COVERS EQUIPMENT ITEMIZED BELOW FOR:

PERMIT TO CONSTRUCT
PERIOD FROM_____TO_____

CERTIFICATE TO OPERATE
PERIOD FROM_____TO_____

INSPECTION
PERIOD FROM_____TO_____

[X] APPLICATION PROCESSING

P/C-C/O

FOR OFFICE USE ONLY

DATE PERMIT ISSUED:

DATE CERTIFICATE ISSUED:

CR DATE

03-Jan-96
F DRAWER

PLEASE RETURN WITHIN 15 DAYS : *YOUR CHECK MADE TO NASSAU COUNTY DEPARTMENT OF HEALTH
* ONE COPY OF THIS STATEMENT
* ONE COPY OF APPLICATION FORM

PROCESSING SHALL COMMENCE UPON RECEIPT OF TOTAL FEE DUE

* CLOSED RON HILL CLEANERS
71 FOREST AVE .
GLEN COVE , NY 11542

UP | LOCATION | FACILITY | EMISSION POINT | I

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 78-11-12 BEFORE ANSWERING ANY QUESTION

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

SECTION A

1. NAME OF OWNER / FIRM: Jerome Heller Bedford Affiliates
2. NUMBER AND STREET ADDRESS: 185 Great Neck Rd
3. CITY / TOWN / VILLAGE: Great Neck | 4. STATE: NY | 5. ZIP: 11022
6. OWNER CLASSIFICATION: A [X] COMMERCIAL B [ ] INDUSTRIAL C. [ ] UTILITY D. [ ] FEDERAL E [ ] STATE F [ ] MUNICIPAL G [ ] EDUC INST H [ ] HOSPITAL I [ ] RESIDENTIAL J [ ] OTHER
7. NAME & TITLE OF OWNERS REPRESENTATIVE: Tyree Environmental Technologies BHOT N ROOPNARINE | 8. TELEPHONE: (516) 249-3150
9. NAME OF AUTHORIZED AGENT: Tyree Environmental Technologies | 10. TELEPHONE: (516) 249-3150
11. NUMBER AND STREET ADDRESS: 208 Route 109
12. CITY - TOWN - VILLAGE: Farmingdale | 13. STATE: NY | 14. ZIP: 11735
15. NAME OF P.E. OR ARCHITECT PREPARING APPLICATION: WILLIAM H. ECS | 16. N.Y.S. P.E. OR ARCHITECT LICENSE NO.: 62070 | 17. TELEPHONE: (516) 249-3150
18. SIGNATURE OF OWNERS REPRESENTATIVE OR AGENT WHEN APPLYING FOR A PERMIT TO CONSTRUCT: Bhoy N Roopnarine
18. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM): Closed Ron Hill Cleaners
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS): 71 Forest Ave.
21. CITY - TOWN - VILLAGE: Glen Cove | 22. ZIP: 11542
23. BUILDING NAME OR NUMBER: Currently Payless Shoes | 24. FLOOR NAME OR NUMBER
25. START UP DATE: MO AS / YR AP | 26. DRAWING NUMBERS OF PLANS SUBMITTED
27. PERMIT TO CONSTRUCT: A [X] NEW SOURCE B [ ] MODIFICATION
28. CERTIFICATE TO OPERATE: A [ ] NEW SOURCE C. [ ] EXISTING SOURCE B [ ] MODIFICATION

SECTION B

29 EMISSION POINT ID.	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)
0001	130 ~~139~~	15	30	2"	70-90	95.5	125

37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON: Winter	Spring	Summer	Fall
	24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT: Soilvent System for remediation project due to ~~petroleum discharge~~ hazardous material discharge

EASTERN CONSULTING INC.
208 ROUTE 109
FARMINGDALE, NY 11735

STATE OF NEW YORK WILLIAM H. ECS LIC. No. 62070 REGISTERED PROFESSIONAL ENGINEER

SECTION D

42. EMISSION CONTROL EQUIPMENT I.D.	43. CONTROL TYPE	44. MANUFACTURER'S NAME AND MODEL NUMBER	45. DISPOSAL METHOD	46. DATE INSTALLED MONTH / YEAR	47. USEFUL LIFE
CA001	17	Carbitrol Carbon Canisters	9	AS / AP	0.25
48.	49.	50.	51.	52. /	53.

Useful life for Carbon will be approximately three (3) months

SECTION E

CALCULATIONS

Tetrachloroethylene analysis to find Lbs/Hr

Air samples were taken from each of the wells exclusively, so when we will run all four well together we are assuming a concentration of the exhaust to be the average of the four .

W1 = 1080 mg/m^3 W2 = 324 mg/m^3 W3 = 6510 mg/m^3 W4 = 8820 mg/m^3 AVG = $\frac{1080+324+6510+8820}{4}$ = 4184

Tetrachloroethylene = 4184 mg/m^3 (125 ft^3/min) (60 min/hr) (.02832 M^3/ft^3) (kg/1,000,000mg) (2.2046 lb/kg) = 1.96 Lbs/Hr

SECTION F

54. CONTAMINANT NAME	55. CAS NUMBER	56. INPUT CONCENTRATION	57. UNIT	58. ENV RATING	59. EMISSIONS ACTUAL	60. UNIT	61. HOW DET.	62. PERMISSIBLE	63. % CONTROL EFFICIENCY	64. HOURLY EMISSIONS (LBS/HR) EPP	65. ACTUAL	66. ANNUAL EMISSIONS (LBS/YR) ACTUAL	67.	68. PERMISSIBLE
Tetrachloroethylene	0 0 1 2 7 1 8 4				0196	1	1		99	1.96	.0196	171.7		0
69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.
84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.
99.	100.	101.	102.	103.	104.	105.	106.	107.	108.	109.	110.	111.	112.	113.
114.	115.	116.	117.	118.	119.	120.	121.	122.	123.	124.	125.	126.	127.	128.
129.	130.	131.	132.	133.	134.	135.	136.	137.	138.	139.	140.	141.	142.	143.

SECTION G

SOLID FUEL TYPE	SOLID FUEL TONS / YR	% S	LIQUID FUEL TYPE	LIQUID FUEL THOUSANDS OF GALLONS/YR	% S	GAS TYPE	GAS THOUSANDS OF CF/YR	BTU/CF	APPLICABLE RULE	APPLICABLE RULE
144.	145.	146.	147.	148.	149.	150.	151.	152.	153.	154.
	NA			NA			NA			

Upon completion of construction sign the statement below (yellow) and forward to the appropriate field representative

THE PROCESS EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS

155. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

156. LOCATION CODE	157. FACILITY ID NO	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY
					/ /	/ /	

AGENCY USE ONLY

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

166.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

168. DATE ISSUED	169. EXPIRATION DATE	170. SIGNATURE OF APPROVAL	171. FEE
/ /	/ /		

173.
1. [ ] INSPECTED BY _____ DATE _____
2. [ ] INSPECTION DISCLOSED DEVIATIONS AS BUILT OR PERMIT CHANGES INDICATED ON FORM
3. [ ] ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. [ ] APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALS

CONDITIONS

1 | 2
3 | 4
5 | 6
7 | 8

4-16-4 (2/87) – Text 12

PROJECT I.D. NUMBER

617.21 SEQR

Appendix C

State Environmental Quality Review

SHORT ENVIRONMENTAL ASSESSMENT FORM

For UNLISTED ACTIONS Only

PART I—PROJECT INFORMATION (To be completed by Applicant or Project sponsor)

1. APPLICANT /SPONSOR: Tyree Brothers Environmental Svces - Charles Schmidgall

2. PROJECT NAME: Closed Ron Hill Cleaners

3. PROJECT LOCATION:
Municipality: Glen Cove County: Nassau

4. PRECISE LOCATION (Street address and road intersections, prominent landmarks, etc., or provide map)

Closed Ron Hill Cleaners
71 Forest Ave
Glen Cove, NY

5. IS PROPOSED ACTION:
☒ New ☐ Expansion ☐ Modification/alteration

6. DESCRIBE PROJECT BRIEFLY:
Soil vent system for ground remediation project due to hazardous material discharge

7. AMOUNT OF LAND AFFECTED:
Initially 1 acres Ultimately 1 acres

8. WILL PROPOSED ACTION COMPLY WITH EXISTING ZONING OR OTHER EXISTING LAND USE RESTRICTIONS?
☒ Yes ☐ No If No, describe briefly

9. WHAT IS PRESENT LAND USE IN VICINITY OF PROJECT?
☐ Residential ☐ Industrial ☒ Commercial ☐ Agriculture ☐ Park/Forest/Open space ☐ Other
Describe:
Currently, this site is a Payless Shoe store.

10. DOES ACTION INVOLVE A PERMIT APPROVAL, OR FUNDING, NOW OR ULTIMATELY FROM ANY OTHER GOVERNMENTAL AGENCY (FEDERAL, STATE OR LOCAL)?
☐ Yes ☐ No If yes, list agency(s) and permit/approvals

11. DOES ANY ASPECT OF THE ACTION HAVE A CURRENTLY VALID PERMIT OR APPROVAL?
☐ Yes ☒ No If yes, list agency name and permit/approval

12. AS A RESULT OF PROPOSED ACTION WILL EXISTING PERMIT/APPROVAL REQUIRE MODIFICATION?
☐ Yes ☒ No

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: Tyree Brothers Environmental Svces Inc. Date: 11/21/95
c/o Charles Schmidgall

Signature: Charles Schmidgall

If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment

OVER

—ENVIRONMENTAL ASSESSMENT (To be completed by Agency)

S ACTION EXCEED ANY TYPE I THRESHOLD IN 6 NYCRR, PART 617.12? If yes, coordinate the review process and use the FULL EAF.
☐ Yes ☐ No

ACTION RECEIVE COORDINATED REVIEW AS PROVIDED FOR UNLISTED ACTIONS IN 6 NYCRR, PART 617.6? If No, a negative declaration be superseded by another involved agency.
☐ Yes ☐ No

ULD ACTION RESULT IN ANY ADVERSE EFFECTS ASSOCIATED WITH THE FOLLOWING: (Answers may be handwritten, if legible)

1. Existing air quality, surface or groundwater quality or quantity, noise levels, existing traffic patterns, solid waste production or disposal, potential for erosion, drainage or flooding problems? Explain briefly:

2. Aesthetic, agricultural, archaeological, historic, or other natural or cultural resources; or community or neighborhood character? Explain briefly:

3. Vegetation or fauna, fish, shellfish or wildlife species, significant habitats, or threatened or endangered species? Explain briefly:

4. A community's existing plans or goals as officially adopted, or a change in use or intensity of use of land or other natural resources? Explain briefly

C5. Growth, subsequent development, or related activities likely to be induced by the proposed action? Explain briefly.

C6. Long term, short term, cumulative, or other effects not identified in C1-C5? Explain briefly.

C7. Other impacts (including changes in use of either quantity or type of energy)? Explain briefly.

IS THERE, OR IS THERE LIKELY TO BE, CONTROVERSY RELATED TO POTENTIAL ADVERSE ENVIRONMENTAL IMPACTS?
☐ Yes ☐ No If Yes, explain briefly

1-1

RT III—DETERMINATION OF SIGNIFICANCE (To be completed by Agency)

INSTRUCTIONS: For each adverse effect identified above, determine whether it is substantial, large, important or otherwise significant. Each effect should be assessed in connection with its (a) setting (i.e. urban or rural); (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude. If necessary, add attachments or reference supporting materials. Ensure that explanations contain sufficient detail to show that all relevant adverse impacts have been identified and adequately addressed.

☐ Check this box if you have identified one or more potentially large or significant adverse impacts which MAY occur. Then proceed directly to the FULL EAF and/or prepare a positive declaration.

☐ Check this box if you have determined, based on the information and analysis above and any supporting documentation, that the proposed action WILL NOT result in any significant adverse environmental impacts AND provide on attachments as necessary, the reasons supporting this determination:

Name of Lead Agency

Print or Type Name of Responsible Officer in Lead Agency

Title of Responsible Officer

Signature of Responsible Officer in Lead Agency

Signature of Preparer (if different from responsible officer)

Date

Closed Ron Hill Cleaners
71 Forest Avenue
Glen Cove, New York

Using Maximum Short Term Emissions Equation

$$C_{ST} = CP * 420$$

Where $C_{ST} = 81{,}000\ ug/m^3$ (from Air Guide - 1)

So, the Maximum Potential Annual Impact CP = 192.86 ug/m^3

Stack Height Requirements

$$CP = \frac{4218 * Q}{He^{2.16}}$$

Where CP = 192.86 from previous equation
and the effective Stack Height He = 30'

So, the Hourly Emission Rate Q = 70.9 Lb/Hr

Maximum Emissions for a Stack Height of 30'

Tetrachloroethene = 70.9 Lb/Hr or 621,084 Lb/Yr

PERCHLOROETHYLENE

MATERIAL SAFETY DATA SHEET FOR U.S.A. AND CANADA

SECTION 1 -- PRODUCT INFORMATION

Safety-Kleen Corp. - 777 Big Timber Road - Elgin, IL. U.S.A. 60123
Safety-Kleen Canada Inc. - 3090 Blvd. Le Carrefour - Suite 300 - Chomedy Laval.Quebec, Canada H7T 2J7
For Product Technical Information Call 312-694-2750 (U.S.A.):
800-363-2260 (Eastern Canada); 514-686-2040 (Western Provinces/Call Collect)

24-HOUR EMERGENCY TELEPHONE	MEDICAL:	TRANSPORTATION:
These numbers are for emergency use only. If you desire non-emergency information about this product, please call a telephone number listed above.	800-752-7869 (U.S.A.) 312-942-5969 (CANADA) RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS, U.S.A.	708-888-4660 (U.S.A.) SAFETY-KLEEN ENVIRONMENT, HEALTH AND SAFETY DEPARTMENT 613-996-6666 (CANADA) CANUTEC

IDENTITY (TRADE NAME):	PERCHLOROETHYLENE
SYNONYMS:	TETRACHLOROETHYLENE
SK PART NUMBER:	775, 10775, 30775
FAMILY/CHEMICAL NAME:	CHLORINATED HYDROCARBON
PRODUCT USAGE:	DRY CLEANING SOLVENT
MSDS FORM PART NO.:	82342

SECTION 2 – HAZARDOUS COMPONENTS

NAME	SYNONYM	WT. %	CAS NO.	OSHA PEL TWA ppm	OSHA PEL STEL ppm	ACGIH TLV TWA ppm	ACGIH TLV STEL ppm	LD50[a]	LC50[b]
*Perchloroethylene	Tetrachloroethylene	99.5-100	127-18-4	25	N.Av.	50	200	2629	34200

N.Av. = Not Available
*See Section 15-Other Regulatory Information
[a]Oral-Rat LD50 (mg/kg)
[b]Inhalation-Rat LC50 (mg/m^3/8 hours)

SECTION 3 – PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR:	Clear, colorless, liquid with a mild ether-like odor.
ODOR THRESHOLD:	50ppm (For Perchloroethylene).
BOILING POINT:	250°F (121°C) (For Perchloroethylene).
VAPOR PRESSURE:	14mm Hg at 68°F (20°C) (For Perchloroethylene).
FREEZING POINT:	-7.6°F (-22°C) (For Perchloroethylene).
EVAPORATION RATE:	2.3 (Butyl Acetate = 1) (For Perchloroethylene).
VOLATILE:	100%
VOLATILE ORGANIC COMPOUNDS:	13.5 lbs/gal; 1623 g/l
DENSITY:	13.5 lbs/gal (For Perchloroethylene).

VAPOR DENSITY:	5.7 (Air = 1) (For Perchloroethylene).
SOLUBILITY IN WATER:	Slight (For Perchloroethylene).
pH	7-13
SPECIFIC GRAVITY:	1.623 (Water = 1) (For Perchloroethylene).
COEFFICIENT OF WATER/OIL DISTRIBUTION:	Not available.
MOLECULAR WEIGHT:	165.8 (For Perchloroethylene).

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	Not applicable.
AUTOIGNITION TEMPERATURE:	Not applicable.
CONDITIONS OF FLAMMABILITY:	Heat, sparks and flame.
FLAMMABLE LIMITS IN AIR:	*LOWER:* Not applicable. *UPPER:* Not applicable.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Decomposition and combustion products may be toxic. Heated containers may rupture, explode or be thrown into the air. Not sensitive to mechanical impact or static discharge.
EXTINGUISHING MEDIA:	Carbon dioxide, dry chemical.
FIRE FIGHTING PROCEDURES – SPECIAL:	Perchloroethylene NFPA 704 Rating 2-0-0 Keep storage containers cool with water spray. Use self-contained breathing apparatus (SCBA).
HAZARDOUS COMBUSTION PRODUCTS:	Thermal decomposition and burning may produce phosgene, chloride fumes and carbon monoxide.

SECTION 5 – REACTIVITY DATA

STABILITY:	Stable under normal temperatures and pressures, and not reactive with water.
INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):	Avoid alkalies. May form explosive mixtures with metals and alkaline materials.
HAZARDOUS POLYMERIZATION:	Not known to occur under normal temperatures and pressures.
HAZARDOUS DECOMPOSITION PRODUCTS:	None under normal temperatures and pressures. However, thermal decomposition may produce phosgene, chloride fumes and carbon monoxide.

SECTION 6 – HEALTH HAZARD DATA AND TOXICOLOGICAL PROPERTIES

PRIMARY ROUTES OF EXPOSURE: Eye and skin contact; inhalation.

EXPOSURE LIMITS: See Section 2.

SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE: *Eyes:* Contact may cause slight to moderate irritation.

Skin: Prolonged or repeated contact tends to remove skin oils, possibly leading to irritation and dermatitis. No significant skin absorption hazard.

Inhalation (Breathing): High concentrations of vapor or mist may be irritating to the respiratory tract, cause headaches, dizziness, nausea, impaired coordination, anesthesia and may have other central nervous system effects.

Ingestion (Swallowing): May cause irritation of the throat, nausea, vomiting and symptoms of central nervous system depression. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC: Repeated or prolonged exposure may cause conjunctivitis. Prolonged and/or repeated skin contact may cause drying or cracking or dermatitis. Repeated inhalation may cause respiratory tract irritation, central nervous system depression, liver and kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing skin, eye, liver, kidney, cardiovascular or central nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: IARC classifies chemicals by their carcinogenic risk, including agents that are known, probable or possible carcinogens. NTP classifies chemicals as either known carcinogens or for which there is a limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

Perchloroethylene is listed by IARC as a possible carcinogen. Perchloroethylene is classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

Also see Section 10.

OTHER POTENTIAL HEALTH HAZARDS: The following information is required by Canadian WEMIS regulations. Irritancy is covered in Signs and Symptoms of Exposure in Section 6. There is no known human sensitization, toxicologically synergistic product, reproductive toxicity, mutagenicity, or teratogenicity associated with this product.

SECTION 7 – EMERGENCY AND FIRST AID PROCEDURES

EYES: For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. If irritation or redness from exposure to vapors or mists develops, move victim away from exposure into fresh air. Consult physician if irritation or pain persists.

SKIN: Remove contaminated clothing and shoes. Wash skin twice with soap and water. Consult physician if irritation or pain persists.

INHALATION: (Breathing) Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if breathing has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

INGESTION: (Swallowing) If conscious, drink 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

SECTION 8 – PRECAUTIONS FOR SAFE USE AND HANDLING AND PREVENTIVE MEASURES

SPILL PROCEDURES: Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb with compatible absorbent material. Shovel into closable container for disposal. Wear protective equipment specified in Section 9. Contain away from surface waters and sewers.

WASTE DISPOSAL METHODS: Dispose in accordance with federal, state, provincial and local regulations. Contact Safety-Kleen regarding recycling or proper disposal.

HANDLING PRECAUTIONS: Avoid contact with eyes, skin, clothing or shoes. Use in well ventilated area and avoid breathing vapors or mists. Keep away from heat, sparks and flames.

SHIPPING AND STORING PRECAUTIONS: Keep container tightly closed when not in use and during transport. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. See Section 10 for Packing Group information.

PERSONAL HYGIENE: Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products. Clean contaminated clothing, shoes and protective equipment before reuse.

SECTION 9 – CONTROL MEASURES AND OTHER PREVENTIVE MEASURES

EYE PROTECTION:	Where there is likelihood of spill or splash, wear chemical goggles and faceshield. Contact lenses should not be worn.
PROTECTIVE GLOVES:	Use polyvinyl alcohol, Teflon or Viton® gloves to prevent contact with skin.
RESPIRATORY PROTECTION:	Use NIOSH/MSHA-approved respiratory protective equipment when concentration of vapors or mists exceeds applicable exposure limit. Depending on the airborne concentration, use a full-face respirator or gas mask with appropriate cartridges and canisters. A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance in the U.S.A. with OSHA General Industry Standard 29 CFR 1910.134 and in Canada with CSA Standard Z94.4-M1982.
ENGINEERING CONTROLS:	Provide local exhaust or general dilution ventilation needed to maintain concentrations of vapors or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.
OTHER PROTECTIVE EQUIPMENT:	Wear appropriate solvent-resistant boots, apron or other protective clothing where spills and splashes are possible. A source of clean water should be available in work areas for flushing the eyes and skin.

SECTION 10 – OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:	TETRACHLOROETHYLENE
DOT CLASS:	Class 6.1
DOT ID NUMBER:	UN1897, Packing Group III (Reportable Quantity = 100 lbs/container)
SARA TITLE III:	Product contains a toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituent is listed with an asterisk in Section 2 of this Material Safety Data Sheet. Product poses the following physical and/or health hazards as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III): Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard
CALIFORNIA:	This product contains detectable amounts of Perchloroethylene CAS No. 127-18-4 and Trichloroethylene CAS No. 79-01-6. These materials are listed by the State of California as known carcinogens.
TDGA:	Tetrachloroethylene, Class 6.1, UN1897, Packing Group III
WHMIS CLASSIFICATION:	D1B (Poisonous and Infectious Materials, Immediate and Serious Toxic Effects, Toxic Material); D2A (Poisonous and Infectious Materials, Other Toxic Effects, Very Toxic Material); D2B (Poisonous and Infectious Materials, Other Toxic Effects, Toxic Material)

SECTION 11 – PREPARATION INFORMATION

PREPARED BY: Product MSDS Coordinator

REVISED: March 20, 1991

ORIGINAL ISSUE DATE: July 20, 1989

SUPERSEDES: December 1, 1989

APPENDIX C

PILOT TEST REPORT

Tyree Environmental Technologies

SVE PILOT TEST
RON HILL CLEANERS
71 FOREST AVENUE
GLEN COVE, NEW YORK 11542

NOVEMBER 1995

PREPARED FOR:
DIVISION OF HAZARDOUS WASTE REMEDIATION
NEW YORK STATE DEPT. OF ENVIRONMENTAL CONSERVATION
SUNY-BUILDING #40
STONY BROOK, NEW YORK 11790-2356

PREPARED BY:

Charles Schmidgall

CHARLES SCHMIDGALL
HYDROGEOLOGIST

REVIEWED BY:

Bhoj Roopnarine

BHOJ N. ROOPNARINE P.E.

TYREE BROTHERS ENVIRONMENTAL SERVICES, INC.
208 ROUTE 109
FARMINGDALE, NEW YORK 11735
(516) 249-3150

INTRODUCTION

Tyree Brothers Environmental Services, Inc. (TBES) has been contracted by Bedford Affiliates to perform a Soil Vapor Extraction (SVE) Pilot Test at the closed Ron Hill Cleaners, located at 71 Forest Avenue in Glen Cove (hereinafter referred to as "the site").

The purpose of this pilot test is to determine the site specific radius of influence for a soil vapor extraction system (SVE). From the data generated by this test, TBES will design an SVE system that will recover Tetrachloroethene, (also known as Perchloroethylene or PCE) contamination that is adsorbed to the soil in the unsaturated zone.

HYDROGEOLOGY

The site is located in central Nassau County, New York near the north shore of Long Island. The site is approximately 1.7 miles south of Dosoris Pond which communicates directly with Long Island Sound. Regional groundwater flow, in this discharge portion of the aquifer system, is to the north-northwest, into the sound. The site is at an approximate elevation of 150 feet above mean sea level. The elevation of the water table, according to USGS Water Investigation Report 85-4321, is approximately 55 feet above sea-level. This translates into a depth below grade of roughly 95 feet during average periods. The water table is currently depressed several feet throughout the upper glacial aquifer. The site sits atop the Sands Point Moraine, which is Wisconsinan in age (21,750 BP.) and slopes upward to the north.

PILOT TEST LAYOUT

The Pilot test at this site was performed utilizing the existing wells on site. There are a total of eight (8) wells on site. Four of the wells were installed to monitor the groundwater on site (W-1, W-2, W-3, W-4). These wells were all installed to a depth of ninety feet, and consist of seventy feet of solid casing and twenty feet of slotted piping. Groundwater at this site occurs at approximately eighty feet. The four other wells on site are venting wells (VW-1, VW-2, VW-3, VW-4). These wells are all different depths and consist of all screen. Venting well #1, (VW-1) is 72', VW-2 is 67', VW-3 is 20', and VW-4 is 15'. These wells were installed to treat contamination at different depths.

DISCUSSION

Vacuum in the subsurface typically decays exponentially with distance. The vacuum response was, therefore, plotted against radial distance on semi-log paper. A vacuum of 0.1 inches of water was selected to define a significant radius of influence. As can be seen on the enclosed graphs, an applied vacuum of 56 inches of water in venting well #2, (VW-2) yielded a radius of influence of 100 feet. A vacuum of 48 inches of water applied to venting wells 3 and 4 yielded a radius of influence of 56 feet and 79 feet, respectively.

The laboratory analysis of the four air samples taken in the field revealed very high levels of Tetrachloroethylene, but non-detectable levels of Trichloroethene, (TCE). The air samples were taken from each of the four vent wells. The results are tabulated in Table 1.

Table 1
Air Sampling Results
(Samples collected 8-8-95)

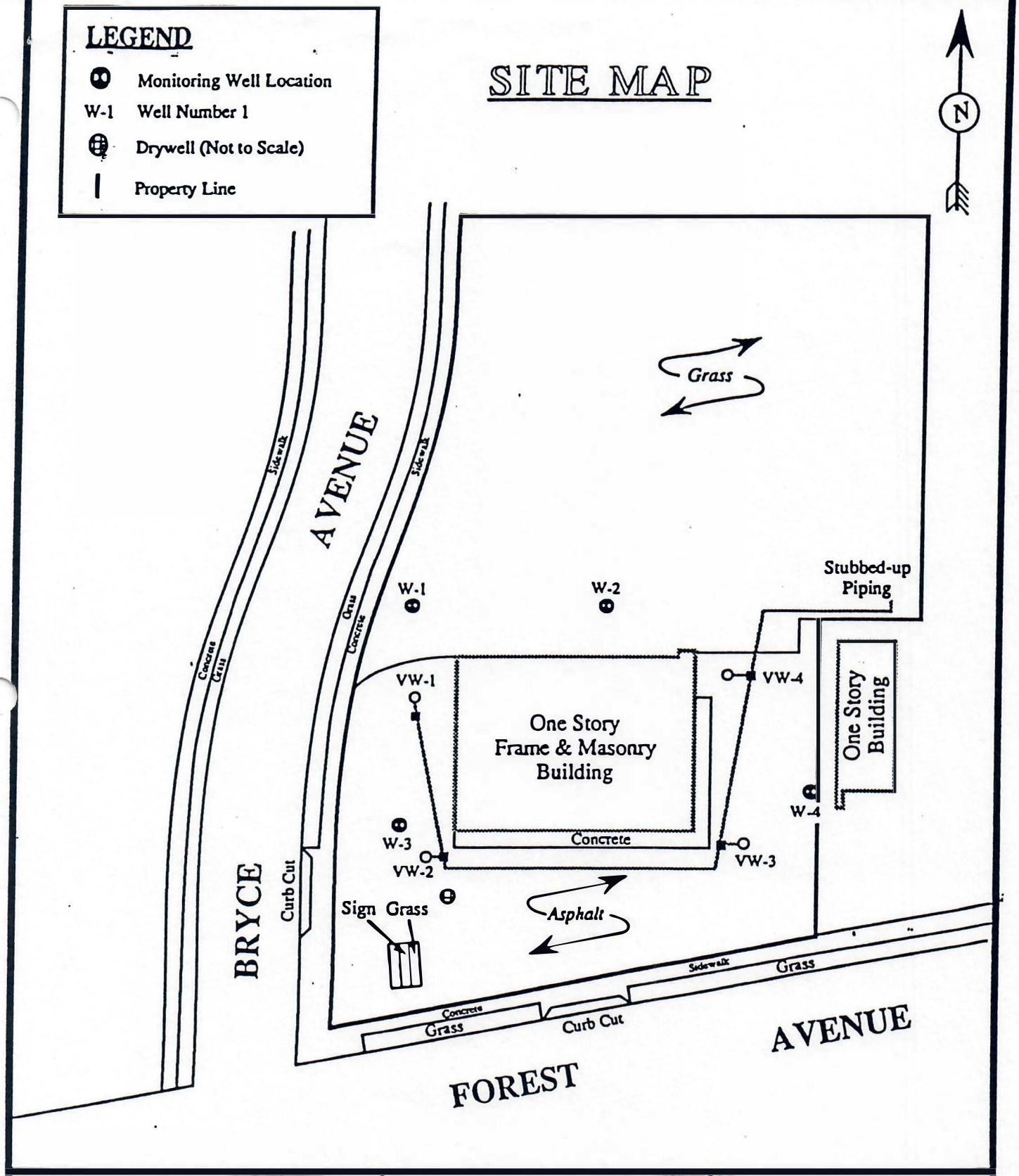
	Concentration (mg/M3)			
Analyte	VW-1	VW-2	VW-3	VW-4
Tetrachloroethylene	1080	324	6510	8820
Trichloroethylene	ND	ND	ND	ND

CONCLUSIONS AND RECOMMENDATIONS

TBES concludes from the pilot test results that Soil Vapor Extraction is a viable technology for the remediation of the subsurface at this site. The measured radius of influence varied from 56 feet to 100 feet when pumping from different wells. The radius of influence will also be increased when the system is turned on, since the parking lot has since been paved. PID readings from the blower exhaust obtained during the test indicated that very high levels of VOC's were being removed. The attached analytical results confirmed this.

Based on field screening of exhaust emissions, laboratory analytical data of air samples taken in the field, and the very large radius of influence experienced Soil Vapor Extraction SVE should prove to be a cost effective means of treating contamination on site.

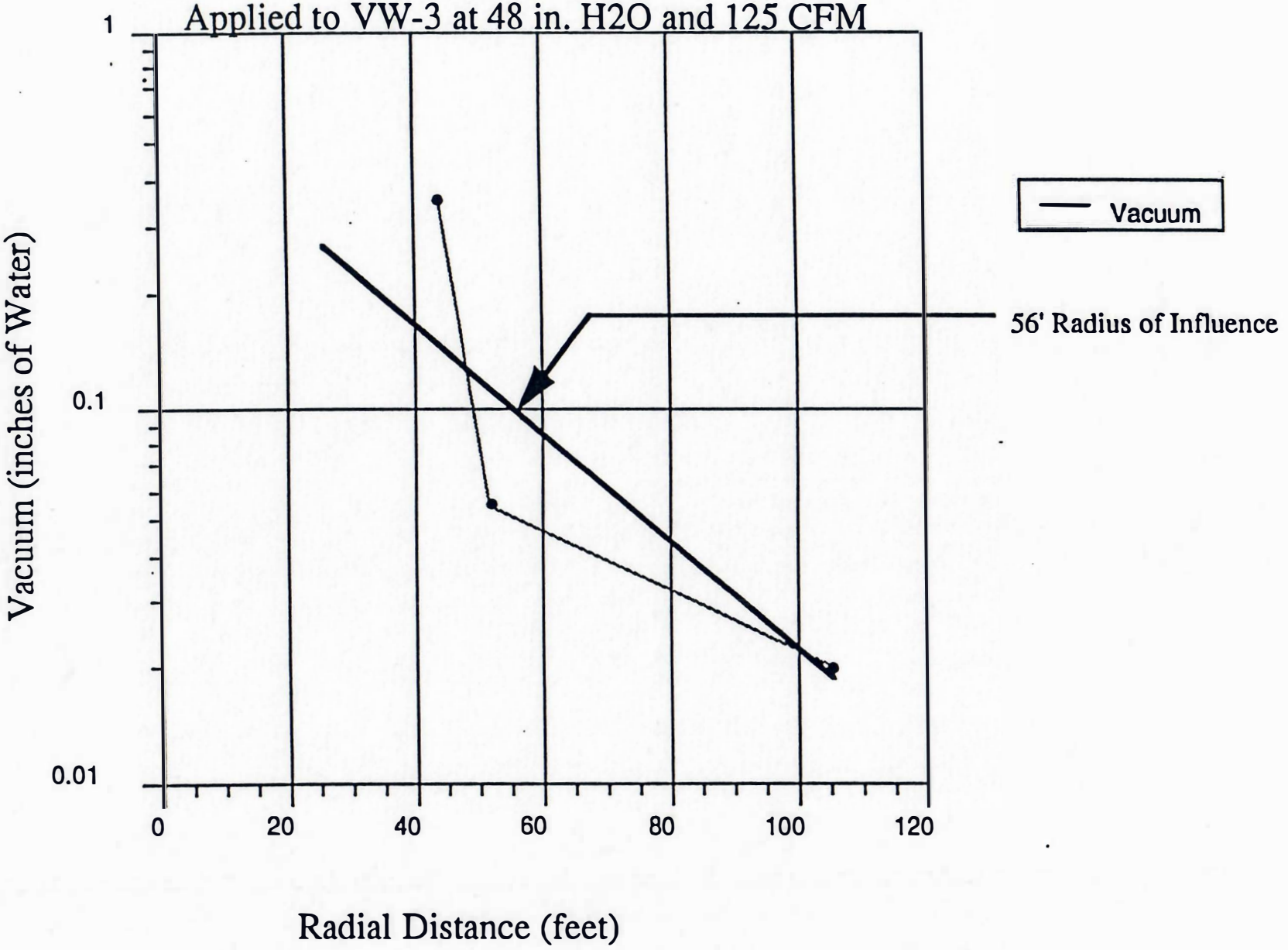
SITE MAP



Tyree Brothers Environmental Services, Inc. 208 Route 109 Farmingdale, New York 11735	*Ron Hill Cleaners* *71 Forest Avenue* *Glen Cove, NY 11542*	DRAWN BY: D. Medaglia SITE CODE: 1-30-071 SCALE: 1" = 40' DATE: 5/19/95

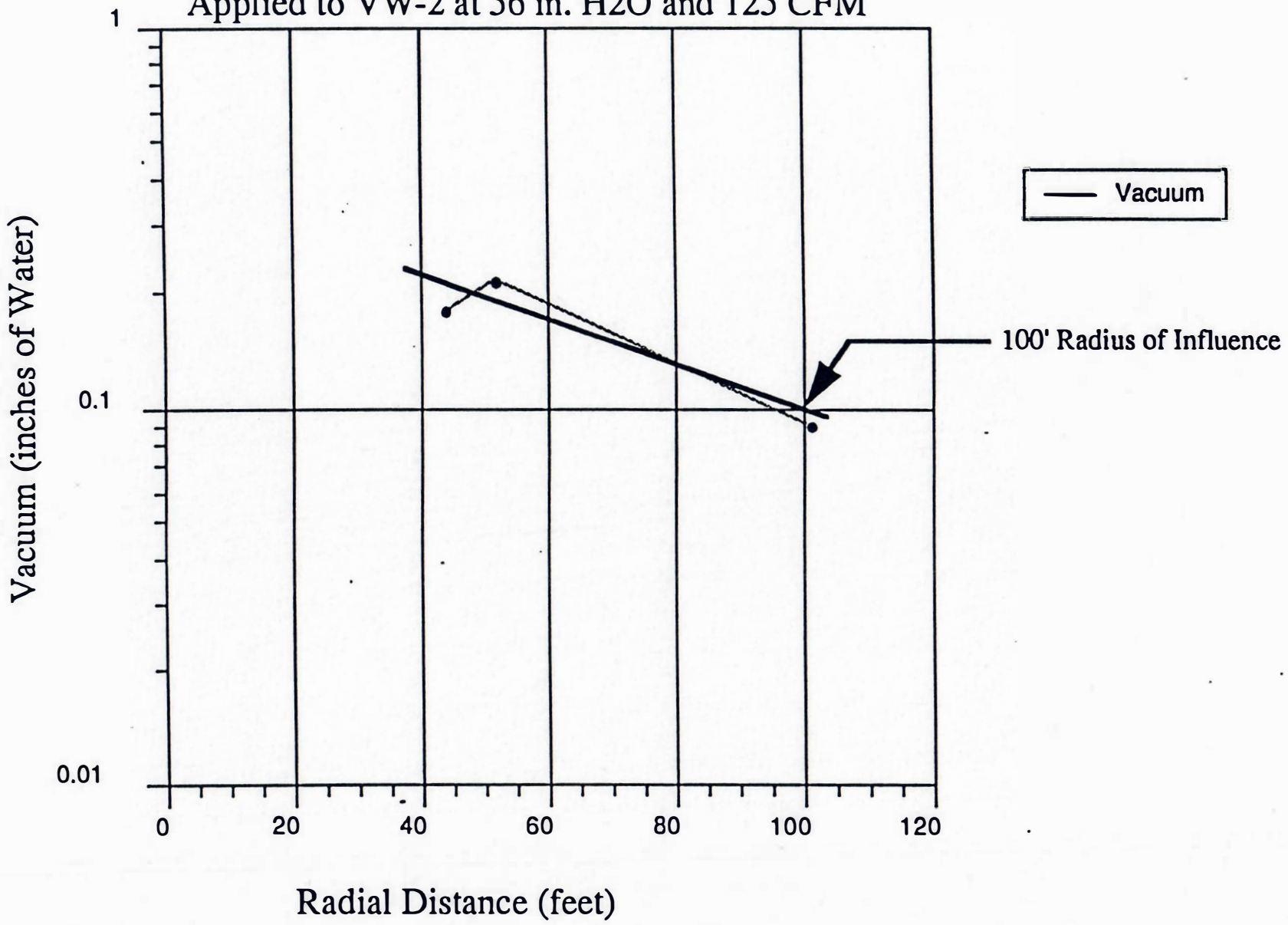
Ron Hill Cleaners
71 Forest Avenue
Glen Cove, New York

Applied to VW-3 at 48 in. H2O and 125 CFM



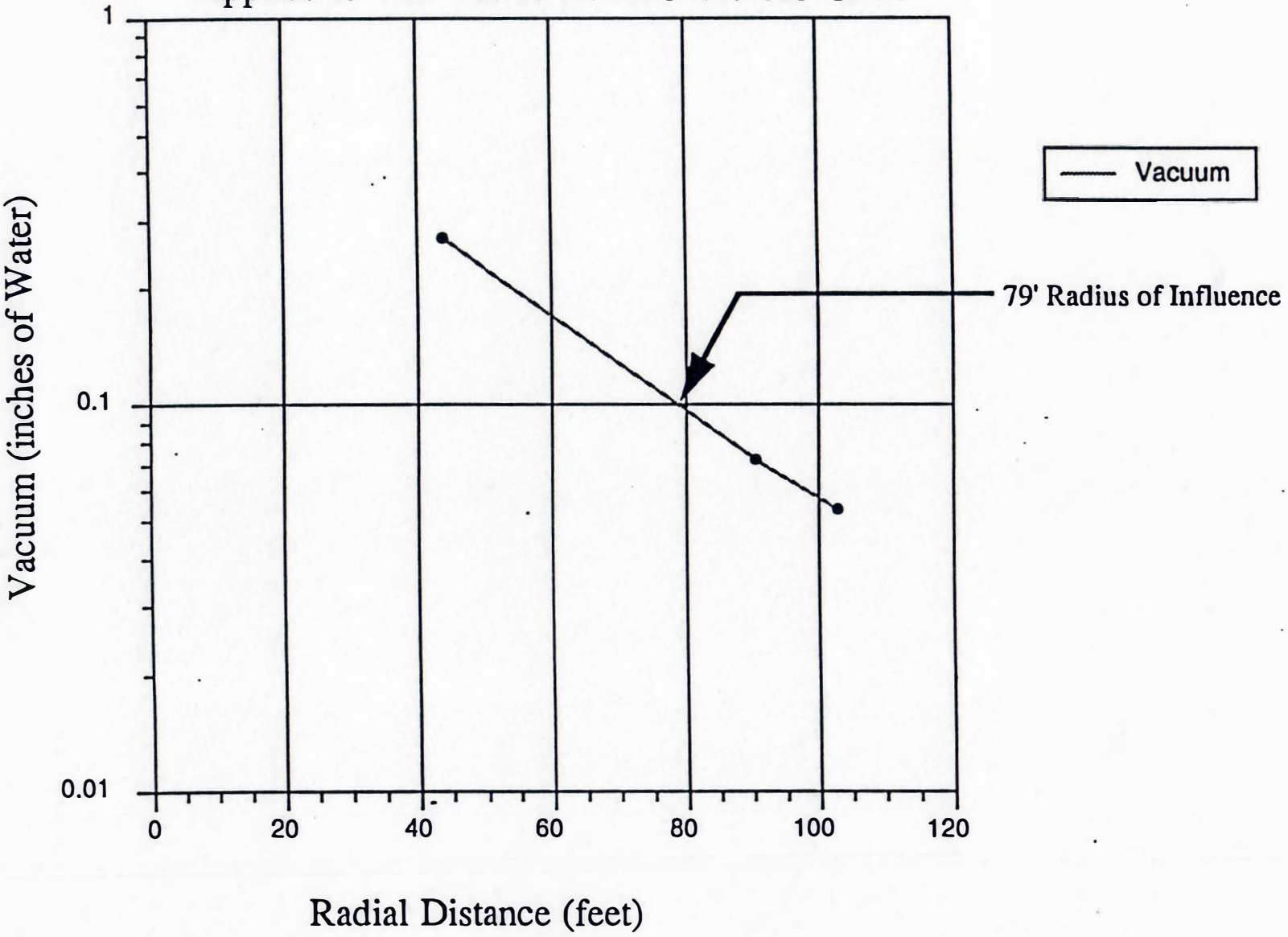
Ron Hill Cleaner
71 Forest Avenue
Glen Cove, New York

Applied to VW-2 at 56 in. H2O and 125 CFM



Ron Hill Cleaners
71 Forest Avenue
Glen Cove, New York

Applied to VW-4 at 48 in. H2O and 125 CFM



Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale, NY 11735 · Fax: 516-249-8344 · Phone: 516-249-1456

ANALYSIS REPORT - Tetrachloroethylene

08/28/95

Project
Ron Hill Cleaners
71 Forest Avenue
Glen Cove, NY
Manager: Bhoj Roopnarine

Custody Document D6102
Received: 08/08/95 10:00 AM
Sampled by: Charles Schimdgall
Job Number: 954016

Sample 1
Custody: D6102
Collected: 08/08/95
Location: Well 1
Remarks:

Type: Grab
Matrix: Air

Analysis Information
Analyzed: 08/12/95
Remarks:

Analyte	Concentration
Tetrachloroethylene	1080 mg/M3
TCE	ND mg/M3

ppb=ug/L, ug/Kg; ppm=mg/L, mg/Kg; ND=Not Detected; B=in blank; NA=Not Analyzed; MDL=Method Detection Limit; nd=Not Determined; E=Quantitated Above Calibration; IDL=Instrument Detection Limit. Results of soil samples based on dry weight basis; Air MDLs based on 1 Liter of sample.

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Job Number: 954016

Sample 2
Custody: D6102
Collected: 08/08/95
Location: Well 2
Remarks:

Type: Grab
Matrix: Air

Analysis Information
Analyzed: 08/12/95
Remarks:

Analyte	Concentration
Tetrachloroethylene	324 mg/M3
TCE	ND mg/M3

ppb=ug/L, ug/Kg; ppm=mg/L, mg/Kg; ND=Not Detected; B=in blank; NA=Not Analyzed; MDL=Method Detection Limit; nd=Not Determined; E=Quantitated Above Calibration; IDL=Instrument Detection Limit. Results of soil samples based on dry weight basis; Air MDLs based on 1 Liter of sample.

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ANALYSIS REPORT - Tetrachloroethylene

08/28/95

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Custody Document D6102
Received: 08/08/95 10:00 AM
Sampled by: Charles Schimdgall
Job Number: 954016

Sample 3
Custody: D6102
Collected: 08/08/95
Location: Well 3
Remarks:

Type: Grab
Matrix: Air

Analysis Information
Analyzed: 08/12/95
Remarks:

Analyte	Concentration
Tetrachloroethylene	6510 mg/M3
TCE	ND mg/M3

ppb=ug/L, ug/Kg; ppm=mg/L, mg/Kg; ND=Not Detected; B=in blank; NA=Not Analyzed; MDL=Method Detection Limit; nd=Not Determined; E=Quantitated Above Calibration; IDL=Instrument Detection Limit. Results of soil samples based on dry weight basis; Air MDLs based on 1 Liter of sample.

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ANALYSIS REPORT - Tetrachloroethylene

08/28/95

Project
Ron Hill Cleaners
71 Forest Avenue
Glen Cove, NY
Manager: Bhoj Roopnarine

Custody Document D6102
Received: 08/08/95 10:00 AM
Sampled by: Charles Schimdgall
Job Number: 954016

Sample 4
Custody: D6102
Collected: 08/08/95
Location: Well 4
Remarks:

Type: Grab
Matrix: Air

Analysis Information
Analyzed: 08/12/95
Remarks:

Analyte	Concentration
Tetrachloroethylene	8820 mg/M3
TCE	ND mg/M3

Reviewed by: Peggy Lanzo

ppb=ug/L, ug/Kg; ppm=mg/L, mg/Kg; ND=Not Detected; B=in blank; NA=Not Analyzed; MDL=Method Detection Limit; nd=Not Determined; E=Quantitated Above Calibration; IDL=Instrument Detection Limit. Results of soil samples based on dry weight basis; Air MDLs based on 1 Liter of sample.