AECOM
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December 5, 2012

Mr. Joseph Martella II
Rhode Island Department of Environmental Management
Office of Waste Management
235 Promenade Street
Providence, RI 02908-5767

RE: Addendum/Response to Remedial Action Workplan-Comments, 12/04/12
Former Gorham Silver Facility
Adelaide Avenue
Providence, RI
Case No. 97-030

Dear Mr. Martella:

On December 4, 2012, AECOM and Textron received your letter documenting the Rhode Island Department of Environmental Management's (RIDEM) questions and comments in response to the submittal of a Remedial Action Workplan (RAWP), dated October 2012 for the above referenced site. This letter addresses the RIDEM's questions and comments.

Item 1

Regarding RAWP Section 2.2 (Surface Water and Sediment Objectives), discussions are ongoing between the OWM and the Department's Office of Water Resources to determine if the current site specific remedial objective compliance standards for groundwater migrating to surface water need to be revised. Therefore, the Department reserves the right to require the adjustment or modification of the currently used site specific remedial objective compliance standards (applicable to the groundwater monitoring wells being used to monitor groundwater migrating into Mashpaug Cove) in the future at the Department's discretion.

Acknowledged

Item 2

Regarding RAWP Section 2.4 (Air Objectives) and Section 3.5 (Vapor Treatment), in accordance with the Department's Office of Air Resources (OAR), Air Pollution Control Regulation No. 9 – Air Pollution Control Permits, Rule 9.3.2 (Exemptions), prior to the construction, installation or modification of the air stripper vapor treatment system, Textron/AECOM must file a registration form with the OAR. Following the installation of the air stripper vapor treatment system, its proper operation must be evaluated by periodic compliance sampling with analytical laboratory testing of the inflow and outflow to verify actual emission values, and to demonstrate compliance with the applicable air pollution emissions thresholds in order to confirm that an Air Pollution Control (APC) permit is not required under the OAR APC Reg. No. 9.

In accordance with the Department's Office of Air Resources (OAR), Air Pollution Control Regulation No. 9 – Air Pollution Control Permits, Rule 9.3.2 (Exemptions), AECOM submitted an Air Registration to the OAR for the proposed remedial system dated October 30, 2012. A copy of the Air Registration is attached.

Item 3

Regarding RAWP Section 6.0 (Points of Compliance)

a) *In order to demonstrate and measure the progress of groundwater remediation of the chlorinated volatile organic compound (CVOC) groundwater plume, please include the periodic sampling and analysis of groundwater from monitoring wells that have historically exhibited significantly elevated concentrations of CVOCs. At a minimum please include the following monitor wells if they still exist: MW-222S, MW-224S, MW-226D, MW-227D, and MW-228S. Also, please include the sampling and analysis of groundwater from a monitoring well located downgradient of RW-1.*
b) *Based upon our recent conversations, the Department understands that the periodic site groundwater monitoring currently being performed by Shaw Environmental, Inc. (Shaw) will continue for at least one more year. As we discussed, it is the Department's position that several of the wells monitored by Shaw must be considered when evaluating the compliance status and effectiveness of the groundwater treatment system. Therefore, any alterations to the Shaw groundwater monitoring program must be approved by the Department before implementation.*

Revised Sample Locations

Monitoring Well	Location
CW-01	Sewer Intercept Compliance Well
CW-02	Sewer Intercept Compliance Well
CW-06	TPH Remediation Compliance Well
GZA-3	Mashapaug Pond Compliance Well
MW-109D	Mashapaug Pond Compliance Well
MW-112	Adelaide Ave. Compliance Well
MW-209D	Adelaide Ave. Compliance Well
MW-218D	Adelaide Ave. Compliance Well
MW-218S	Adelaide Ave. Compliance Well
MW-222S	Interior of Retail Building
MW-224S	Interior of Retail Building
MW-226D	Interior of Retail Building
MW-227D	Retail Parking Area
MW-228S	Retail Parking Area
MW-230S	Downgradient of RW-1
MW-230D	Downgradient of RW-1
NOTES: D-"deep" well, S-"shallow" well	

The table above has been modified per RIDEM's comment to identify proposed groundwater monitoring locations that will be sampled quarterly for one year following initiation of groundwater extraction activities. Textron will continue to monitor groundwater at the site. It is Textron's intention, after one year of remedial system operation and four rounds of groundwater monitoring at the above locations, to optimize periodic groundwater monitoring program. Textron will submit a proposed groundwater monitoring optimization plan following the fourth quarterly groundwater monitoring event.

Item 4

Regarding RAWP Section 11.0 (Set-up Plans), the first sentence references "sediment and surface soil removal." The Department has presumed that the reference to sediments is a typological or transcription error. Please verify this or clarify the sediment reference.

The phrase referenced above was a typographical error.

Item 5

Regarding RAWP Section 11.2 (Site Access), site access should be limited to authorized personnel only. Trespassers and unauthorized personnel must be restricted from entering the secured work area and temporary stockpile area.

Comment acknowledged - Trenches will be backfilled and/or covered at the end of the day and temporary fencing with "No Trespassing" signs will surround the immediate work area and temporary stockpile area.

Item 6

Regarding RAWP Section 11.5 (Stockpile Areas), all excavated soil must be presumed to be impacted and regulated until such time as it is demonstrated to the Department, through sampling and laboratory analysis, that it is not regulated. All excavated soil must be either containerized or placed upon and covered with plastic sheeting in the secured work area or stockpile area until backfilled into the excavated trenches. Regulated soil and clean fill must be segregated from each other in the stockpile area. If it is anticipated that stockpiled regulated soil will not be backfilled or transported from the site for proper disposal at the end of the work day, then temporary security fencing should be employed around the stockpile area. Best management practices must be utilized to minimize and control generation of dust during excavation, movement or storage of regulated soils. At the completion of site work, all exposed soils are required to be recapped with Department approved engineered controls consistent or better than the site surface conditions prior to the work that took place. Soils excavated from the site may not be re-used as fill on residential property.

Comment acknowledged - All trenches will be backfilled and/or covered with steel plates at the end of each workday. Soil that is in excess or is clearly impacted will be staged in a secure location for later backfill as part of construction activities or disposal. Prior to disposal, soil that is not used as backfill will be sampled and analyzed for waste characterization following the requirements of the chosen receiving facility.Dust will be controlled using water and plastic sheeting as necessary. No excavated soil will be used as fill for residential areas.

Item 7

Regarding RAWP Section 15.2 (Closure Requirements), in accordance with Rule 11.09 (Closure and Post Closure) of the Remediation Regulations, compliance with the Remedial Action Approval shall be documented in a Closure Report submitted to the Department for review and approval. In addition to the items listed on page 15-1, the Remedial Action Closure Report should also include the following items:

a) *Results of all analytical sampling of any media (e.g. soil, groundwater, effluent, dust or air) performed during the remedial activities;*
b) *All original laboratory data results from the remedial activities, compliance and confirmation sampling, as applicable; and*
c) *Documentation that all excess regulated soil, solid waste, remediation waste, etc. was properly disposed of off site at an appropriately licensed facility in accordance with all applicable laws.*

The Closure Report will include the above referenced items in addition to the items listed on page 15-1 of the RAWP.

Item 8

Regarding RAWP Section 17.1 (Primary Source Areas):

a) *The Department requests at a minimum for the first year of operation that groundwater sampling be performed and reported on a quarterly basis and semi annually thereafter. Periodic groundwater monitoring reports should be prepared after each groundwater sampling round and include at a minimum the following items:*
   - *i) The groundwater sampling results from the current round;*
   - *ii) A tabulated comparison of the current groundwater sampling results to the remedial objectives;*
   - *iii) An updated site figure depicting all sampling and point of compliance locations;*
   - *iv) Individual site figures depicting the current groundwater sampling round's concentration gradient for each contaminant of concern that currently exceeds the applicable groundwater remedial objective. At a minimum the list should include trichloroethylene and tetrachloroethylene;*
   - *v) The periodic water sampling and analysis results required under the Department's Rhode Island Pollution Elimination System (RIPDES) Permit (i.e. extracted groundwater influent prior to treatment and groundwater at the discharge point after treatment) collected during the current reporting period; and*
   - *vi) Periodic air stripper vapor treatment compliance sampling results and a comparison to applicable air pollution emissions thresholds.*

b) *The Department does not concur with the statement the "Compliance with remedial objectives in the primary source areas will be achieved when POC sampling indicates that the remedial objectives have substantially been met. Minor exceedances will be considered in compliance." It is the Department's position that compliance is determined when remedial objectives have been demonstrated to have been achieved to the Department's satisfaction. In the event that the remedial objectives cannot reasonably be achieved with the approved remedial approach, discussions about revising the remedial approach may be initiated.*

Periodic sampling of points of compliance will be conducted on the above referenced schedule. A periodic report coinciding with the discreet event will be prepared documenting, at a minimum, the above referenced items. Treated groundwater and air will be sampled and analyzed per the RIPDES Permit and Air Registration.

If you have any questions, please contact the undersigned at (401) 274-5685 or Greg Simpson of Textron at (401) 457-2635.

Sincerely yours,

Richard P. Michalewich Jr., PE
Sr. Project Manager

Sean Crowell, PE
Senior Engineer

AIR REGISTRATION SUBMITTAL

AECOM
10 Orms Street Suite 405
Providence, Rhode Island 02904

401-274-5685 tel
401-521-2730 fax

Letter of Transmittal

Attention:	RIDEM – Office of Air Resources	Date:	10/30/12
Project reference:	Frm Gorham Facility	Project number:	60271240.1.4

We are sending you the following:

Number of originals:	Number of copies:	Description:
1		Registration for Air Pollution Control Equipment

Enclosed is the Registration for Air Pollution Control Equipment for the proposed remediation system at the Former Gorham Silver Facility Site at 333 Adelaide Ave, Providence, RI. If you have any questions or comments, please contact me at 401-340-0611 or 401-274-5685 X32.

Signature

R:\Rem_Eng\Project Files\Textron\6630-235 Textron Gorham Providence\7.0 Deliverables\AirReg\Letter of Transmittalairreg.docx

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES

REGISTRATION OF AIR POLLUTION CONTROL EQUIPMENT

Return to: RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES
235 PROMENADE STREET
PROVIDENCE, RI 02908

Section A

1. FULL BUSINESS NAME Textron, Inc. PHONE (401) 457-2635
2. ADDRESS OF EQUIPMENT LOCATION 333 Adelaide Ave., Providence, RI
   SIC CODE _____ # EMPLOYEES NA
3. LOCATION ON PREMISES (BLDG., DEPT., AREA, ETC.) Cargo Container
4. NATURE OF BUSINESS Remediation System

Section B

1. TYPE OF EQUIPMENT: ☐ BAGHOUSE ☐ SCRUBBER ☐ AFTERBURNER
   ☐ SCR ☑ CARBON ADSORBER ☑ OTHER (SPECIFY)
2. MAKE AND MODEL NO.: Refer to attached Addendum
3. ESTIMATED STARTING DATE: 11/1/12 ESTIMATED COMPLETION DATE: TBD

Section C

1. GENERAL DESCRIPTION OF PROCESS FROM WHICH POLLUTANTS ARISE Treatment of extracted groundwater from a remediation system designed to contain and reduce CVOC impacts to groundwater.
2. PROCESS EQUIPMENT USED IN OPERATION Submersible pumps, bag filters, air stripper with blower and Vapor Phase Carbon Units, Liquid Phase Carbon Units and a Ion Exchange Resinted
3. OPERATING PROCEDURE: ☑ CONTINUOUS 24 HRS/DAY 7 DAYS/WEEK 365 WEEKS/YEAR
   ☐ BATCH _____ HRS/BATCH _____ BATCHES/WEEK _____ WEEKS/YEAR
4. LIST THE TYPE AND QUANTITY OF RAW MATERIALS USED PER HOUR OR PER BATCH ON AN ATTACHED SHEET.

Section D

EMISSIONS INFORMATION:

POLLUTANT	EMISSIONS BEFORE CONTROL EQUIPMENT	AFTER
See Attachment 5	See Attachment 5	See Attachment 5

INDICATE METHOD USED TO DETERMINE EMISSIONS See Attachment 5

Section E

SCRUBBER

1. WET:SCRUBBING LIQUID (A) COMPOSITION_____
   (B) FLOW RATE (GAL/MIN)_____
   (C) INJECTION RATE (PSI)_____
   (D)MAKE-UP RATE IF RE-CIRCULATED (GAL/MIN) _____

   PACKING-IF APPLICABLE (A) TYPE_____
   (B) DEPTH OF BED_____(FEET)
   (C) PACKING SURFACE_____(FT^2)
2. DRY:SCRUBBING REAGENT:_____ USAGE_____LB/HR.
   INJECTION RATIO:_____( )
   MIXING METHOD_____
3. PRESSURE DROP ACROSS CONTROL UNIT:_____INCHES WATER

BAGHOUSE/FABRIC FILTER

1. BAG/FILTER MATERIAL_____2. NUMBER OF BAGS_____
3. AIR/CLOTH RATIO_____ FEET/MINUTE
4. METHOD OF CLEANING: (A)☐ SHAKER ☐ PULSE ☐ REVERSE AIR ☐ OTHER-SPECIFY
   (B) FREQUENCY OF CLEANING_____
   (C) IS CLEANING AUTOMATIC OR MANUAL_____

CARBON ADSORBER

1. VOLUME OF EACH CARBON BED 36 (FT^3)
2. NUMBER OF BEDS 2
3. DIAMETER OF EACH BED 3.8 (FT)
4. DEPTH OF EACH BED 5.9 (FT)
5. ADSORPTION CAPACITY OF CARBON (LB/100 LB CARBON) 18.5
6. ADSORPTION CYCLE TIME 2700 to 4500 (HR)
7. REGENERATION CYCLE TIME NA (HR)
8. STEAM RATIO (LB STEAM/LB CARBON) NA
9. STEAM SOURCE NA

INCINERATION

1. THERMAL AFTERBURNER
   A. VOLUME OF COMBUSTION CHAMBER _____(FT^3)
   B. MINIMUM OPERATING TEMPERATURE_____(^oF)
   C. RESIDENCE TIME _____(SECONDS)
   D. EXCESS AIR _____%
2. CATALYTIC INCINERATION
   A. TYPE OF CATALYST_____
   B. VOLUME OF CATALYST_____(FT^3)
   C. SPACE VELOCITY _____(HR^{-1})
   D. CATALYST OPERATING TEMPERATURE_____(^oF)
3. BURNER MAKE AND MODEL NO._____
   CAPACITY (BTU/HR)_____
4. HEAT RECOVERY: ☐ YES ☐ NO
   TYPE:_____EFFICIENCY:_____%

Section F	OPERATING CONDITIONS
	1. GAS VOLUME THROUGH CONTROL SYSTEM: NORMAL 420 ACFM @ 60 °F MAXIMUM 420 ACFM @ 100 °F
	2. GAS TEMPERATURE: INLET 60 °F OUTLET 60 °F
	3. STACK INFORMATION: (A) I.D. 8 INCHES OR ____ INCHES X ____ INCHES (B) STACK HEIGHT ABOVE GROUND 25 FEET (C) CFM EXHAUSTED 420 (D) IS STACK EQUIPPED WITH RAIN HAT? ☑ YES ☐ NO
	4. DISTANCE FROM DISCHARGE TO NEAREST PROPERTY LINE ~100 FEET.

THIS REGISTRATION IS SUBMITTED IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 23-23 OF THE GENERAL LAWS, AS AMENDED, REGULATION 9, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF IS TRUE AND CORRECT.

SIGNATURE

SR PROJECT MANAGER
TITLE

GREGORY L. SIMPSON
PRINTED NAME

10/15/12
DATE

9/96

ADDENDUM TO REGISTRATION OF AIR POLLUTION CONTROL EQUIPMENT FORM

Air Stripper/Soil Vapor Extraction Installations
Required Information

1. Provide a plot plan to scale showing the location of the air stripper/soil vapor extraction system, locations of extraction wells, distances to all property lines and adjacent land uses (i.e. residential, commercial, etc.)

2. Provide an engineering drawing, dimensioned and to scale, for the air stripper (if applicable) which at a minimum includes the following information:

    a. Height of the air stripper
    b. Diameter of the air stripper
    c. Air flow (CFM)
    d. Liquid flow (gal/min)
    e. Packing depth

3. Provide an engineering drawing, dimensioned and to scale, for the air pollution control system. The inlet and outlet ducts of the air pollution control system must be accessible to allow sampling of the exhaust gases. For non-regenerable carbon adsorption systems, records must be kept on-site of the date that the carbon is replaced.

4. Provide documentation ensuring that the air pollution system is capable of reducing the emission of VOCs by at least 95%.

5. For the contaminated liquid, provide the following information:

    a. Identification of the contaminants to be removed
    b. Maximum and average concentration of these contaminants in the liquid
    c. Expected removal efficiency of the contaminants

Attachment 1

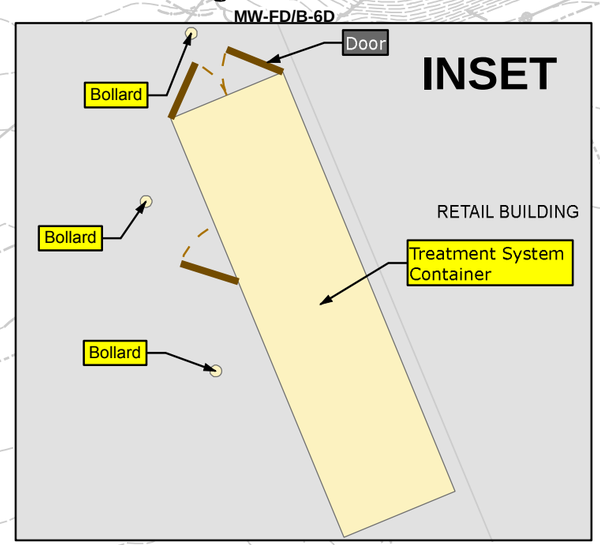
Plot Plan

Path: \\Uswtf1fp001\jobs\Rem_Eng\Project Files\Textron\6630-235 Textron Gorham Providence\6.0 Project Inputs\GIS\Projects\Figure_3_Treatment_System_Layout_11x17.mxd

MASHAPAUG POND

DP-I-0-5
DP-J-3-8
DP-L-5-10
DP-G-0-5
DP-F-0-2
DP-E-0-5
DP-A-12-17
MW-233
MW-GZA6/CW-4
MW-GZA1
MW-232S
MW-232D
DP-H-12-17
POND PIEZOMETER
DP-B-0-5
MW-231S
MW-231D
MW-230S
MW-230D
SEE INSET
D — D
MW-223S
MW-223D
MW-102
RETAIL BUILDING
MW-225S
MW-234S
MW-234I
MW-234D
RW-1
ATPZ-1
MW-222S
PARCEL A
MW-220S
MW-224S
MW-226D/DP-5
MW-226S
MW-235S
DP-K-5-10
MW-235D
MW-236S
DP-D-4-9
MW-236D
MW-237S
MW-237D
DP-C-7-12
DP-M-9-14
MW-GZA5/CW-5
MW-110D
MW-GZA3
MW-109D
MW-D/B-4
MW-FS/B-6S
MW-241
MW-FD/B-6D
CW-6
MW-107D
B — B
MW-GZA2
MW-221S
MW-228S
MW-105
RW-2
MW-227S
MW-227D
MW-GZA4
MW-106D
MW-104
MW-204D
MW-204S
A — A
MW-207S
MW-207D
MW-239
MW-108
MW-217S
MW-217D
MW-206S
MW-206D
MW-202D
MW-214
MW-202S
MW-208D
RW-3
MW-213
MW-201S
MW-201D
MW-215
MW-208S
MW-211
MW-210
MW-101S
MW-219A
MW-212
MW-203S
MW-103
MW-101D
MW-240
MW-216D
MW-216S
MW-203D
MW-205
MW-218D
MW-218S

INSET



NOTES:
Assumed there is a sufficient power source, in the electrical room, which will allow a 150 amp breaker to be installed to supply the treatment system with 208V, 3 phase. The electrical usage will be monitored with an E-mon D-mon Electrical Submeter.

VGAC located inside the treatment system container. Discharge stack to extend approximately 10 ft above the building roof top.

0 100 Feet

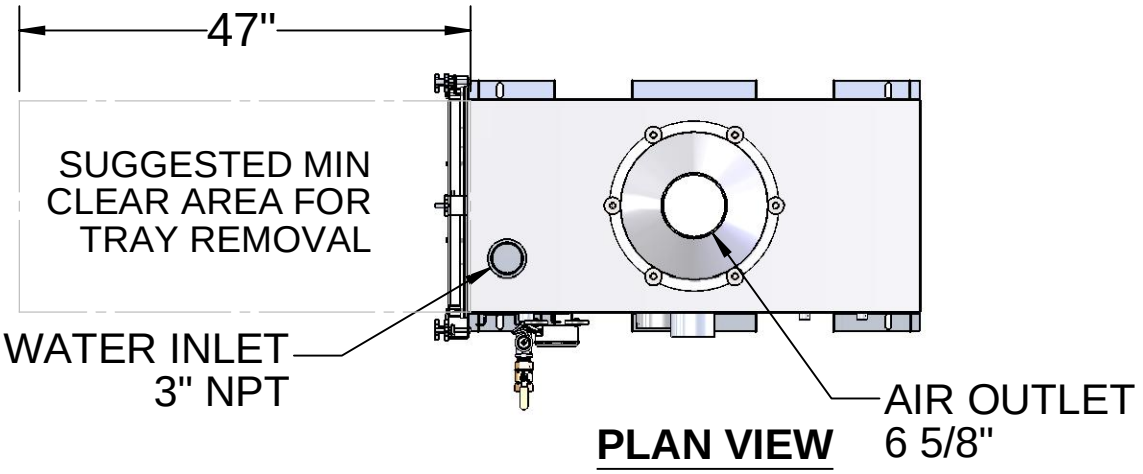
N W E S

AECOM

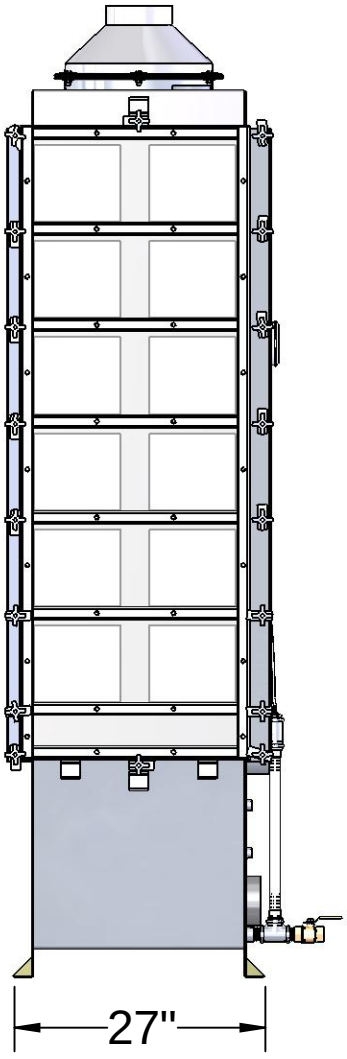
TEXTRON, INC. PROVIDENCE, RHODE ISLAND 60271240.1.1			TREATMENT SYSTEM LAYOUT
DATE: 09/14/12	DRWN: J.E.B.		FIGURE 1

Attachment 2

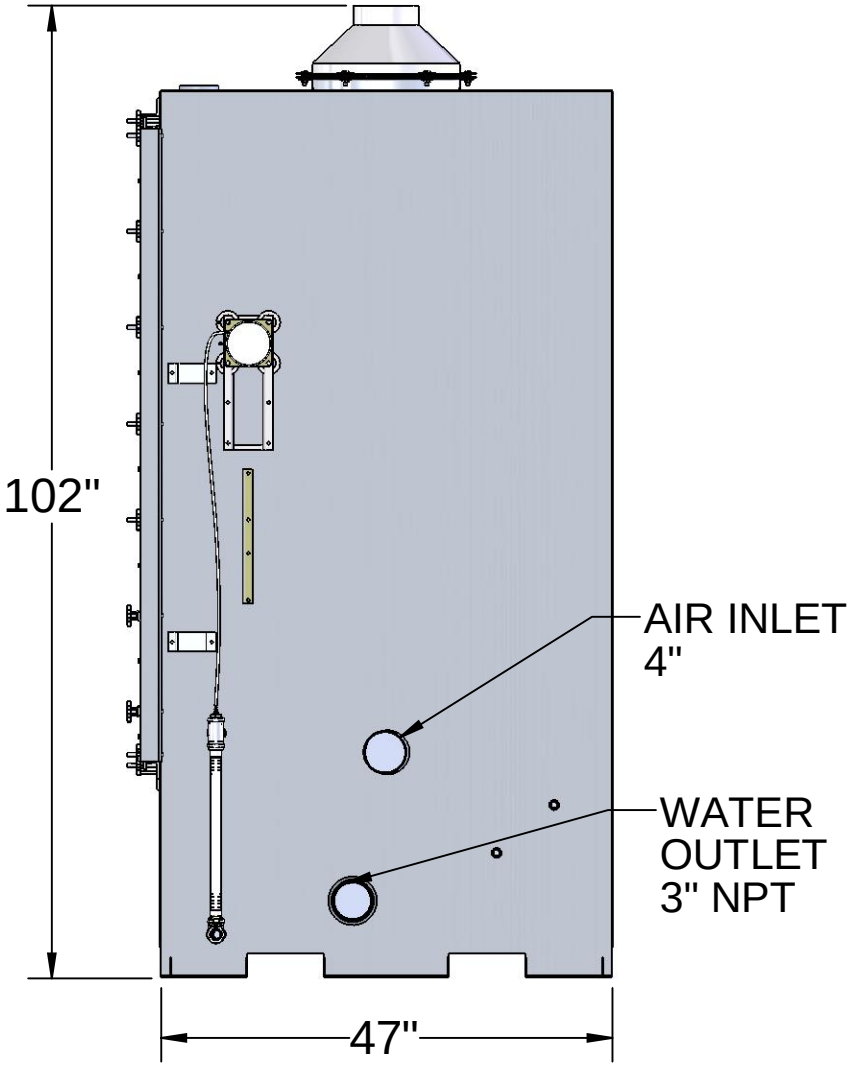
Air Stripper



PLAN VIEW



FRONT VIEW



SIDE VIEW

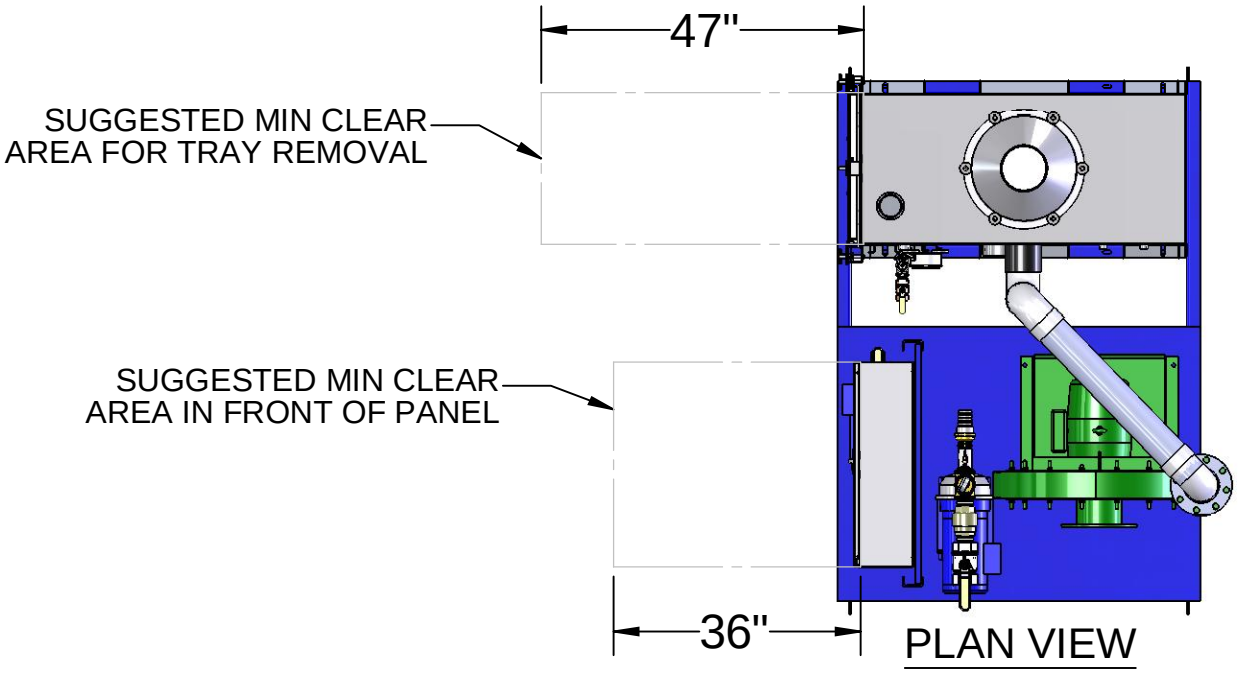
EZ-8.6SS (AIR STRIPPER ONLY)

FOR MORE SPECIFICATIONS CLICK ON:

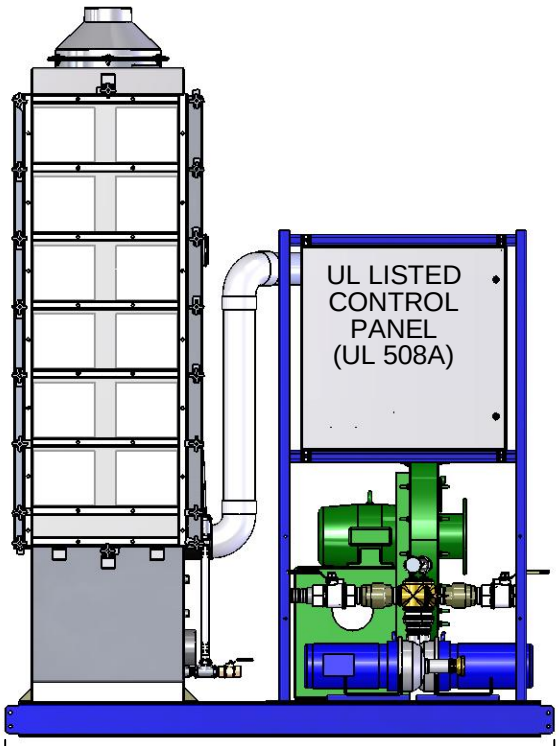
http://www.qedenv.com/Products/Airstrippers_VOC_Removal/Air_Stripper_Specifications/

NOT TO SCALE

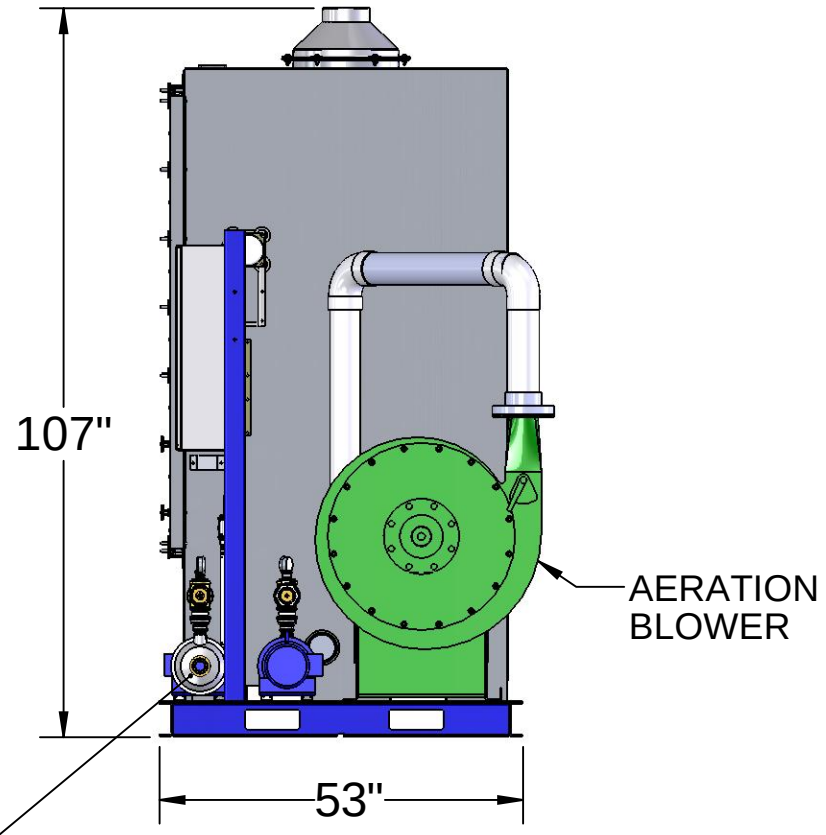
NOT FOR CONSTRUCTION, FOR REFERENCE ONLY



PLAN VIEW



FRONT VIEW



SIDE VIEW

EZ-8.6SS

EXAMPLE OF A SKID SYSTEM WITH CONTROL PANEL, PUMPS, AND BLOWER
CONTACT QED FOR INFORMATION ON ALL OPTIONS.
NOT TO SCALE

NOT FOR CONSTRUCTION, FOR REFERENCE ONLY

QED
Environmental Systems
A TestAmerica Company
THE LEADER IN ENVIRONMENTAL TESTING

Sliding Tray, High-Efficiency Air Strippers for VOC Removal

800-624-2026
www.qedenv.com

Flow Rates from 1 to 1,000 gpm and Options to Fit Every Treatment Project

Conventional air strippers need more than twice the access and tray removal space than E-Z Tray® air strippers.

Flow rates available from 1 to 1,000 gpm.

Air flows up through perforated trays creating a turbulent froth zone with a high air-to-liquid surface area for mass transfer of volatile organic compounds (VOCs)

Hinged door option allows for easy access without door removal.

Front access hatches seal tight and are removed quickly with hand-knobs.

Front access slide-out trays allow unit maintenance by one person.

Split-tray option reduces maximum tray weight to only 28 lbs., even on the 1,000 gpm unit!

E-Z Tray®

Easier tray cleaning and superior technical support make E-Z Tray® air strippers a smart choice!

The E-Z Tray® Air Stripper (U.S. Patent Number 5,518,668) is a sliding tray, stainless steel air stripper used to remove volatile organic compounds (VOC) from contaminated groundwater and waste streams. The exclusive design of the E-Z Tray stripper results in very high removal efficiencies in an easier to maintain process unit.

Any air stripping process subject to fouling conditions has to contend with periodic cleaning in order to retain treatment efficiencies and capacity. Tower air strip pers can become maintenance headaches when the tower packing becomes clogged and cemented together with bio-fouling or precipitants. When the perforated trays in stacking tray air strippers become fouled they require major disassembly, cranes or hoists, and lots of room.

Unlike these traditional types of air strippers, QED's E-Z Tray air strippers use removable, lightweight, front slide-out trays. This unique feature provides many advantages, including one person cleaning and less building space.

E-Z Tray air strippers are available in configurations with 4 or 6 trays, with maximum flow rates from 1-25 gpm (4-100 Lpm) all the way up to 1,000 gpm (3,784 Lpm).

NEW – High Capacity Process Air Strippers
These air strippers are engineered to serve in larger, process-type projects involving multiple treatment stages, where they are an effective component of large-scale water or wastewater processes in manufacturing, refining, chemical processing and other industries. They can act as a pre-treatment stage for other process elements, such as large aerobic biotreatment units, removing VOCs at much lower airflow rates to reduce the costs of off-gas treatment.

All of this combined with the easier maintenance and smaller footprint of QED's sliding tray air strippers, has led E-Z Tray to become the preferred choice for major remediation and process stream projects in the U.S. and abroad.

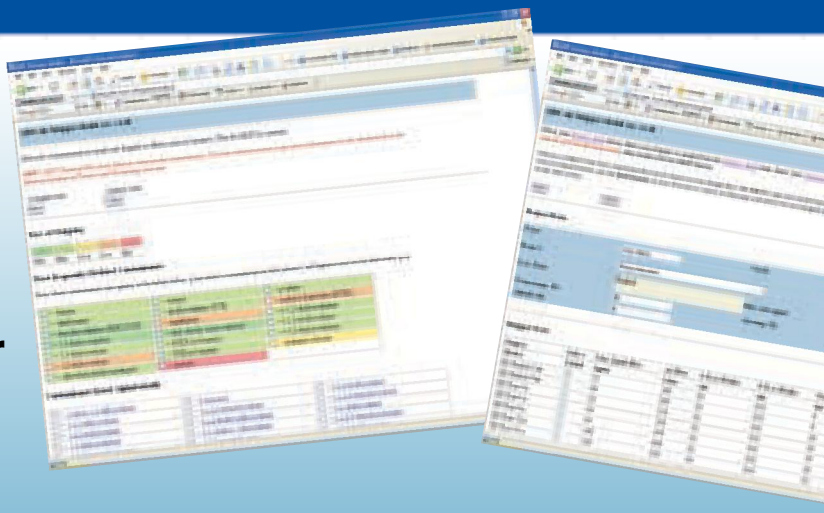
E-Z Tray Advantages

E-Z Tray	Tower Air Strippers	Stacking Tray Air Strippers
• Single person cleaning • Easy process monitoring and inspection, even while in operation • Reduced footprint for installation and maintenance • High removal efficiencies easier to maintain • Easily modeled online by customer to help process evaluation	• Condition of packing and liquid and air flow distribution are very difficult to observe • Small footprint but very tall structure required • More difficult to keep at design performance • More complex process assistance required	• Major disassembly steps and crew needed • Difficult to impossible to observe air and liquid flow distribution during operation • Lots of space needed for disassembly, to access all sides and to lift and store tray stages • More difficult to keep at design performance • Online modeler not offered

The QED VOC Removal Advantage

Proven equipment, expert help with its selection and installation, and support you can c

Exclusive Online Performance Modeler has been developed to assist you in selecting the most effective air stripping package for your groundwater cleanup project



E-Z Tray®
Model 6.4

E-Z Tray®
Model 16.4

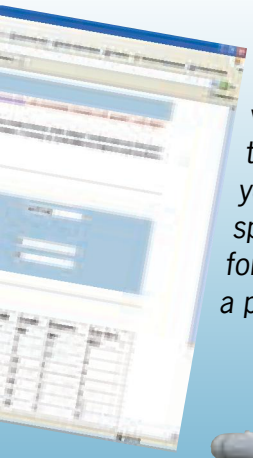
E-Z Tray®
Model 24.4

Air Stripper Specifications

Model No.	Maximum Flow Range	Dry Weight	Operating Weight	Shell Dimension (LxWxH)	Trays Per Tier
4.4	1-50 gpm (4-189 Lpm)	630 lbs. (286 kg)	985 lbs. (447 kg)	29 x 27 x 82 in. (74 x 69 x 208 cm)	4 x 29 lbs. (4 x 13 kg)
4.6	1-50 gpm (4-189 Lpm)	780 lbs. (354 kg)	1,219 lbs. (553 kg)	29 x 27 x 102 in. (74 x 69 x 259 cm)	6 x 29 lbs. (6 x 13 kg)
6.4	1-65 gpm (4-246 Lpm)	790 lbs. (358 kg)	1,285 lbs. (583 kg)	37 x 27 x 82 in. (94 x 69 x 208 cm)	4 x 40 lbs. (4 x 18 kg)
6.6	1-65 gpm (4-246 Lpm)	978 lbs. (443 kg)	1,591 lbs. (722 kg)	37 x 27 x 102 in. (94 x 69 x 259 cm)	6 x 40 lbs. (6 x 18 kg)
8.4	1-75 gpm (4-284 Lpm)	955 lbs. (433 kg)	1,580 lbs. (717 kg)	49 x 27 x 82 in. (124 x 69 x 208 cm)	4 x 50 lbs. (4 x 23 kg)
8.6	1-75 gpm (4-284 Lpm)	1,182 lbs. (536 kg)	1,956 lbs. (887 kg)	49 x 27 x 102 in. (124 x 69 x 259 cm)	6 x 50 lbs. (6 x 23 kg)
12.4	1-120 gpm (4-454 Lpm)	1,165 lbs. (528 kg)	2,105 lbs. (955 kg)	73 x 27 x 82 in. (185 x 69 x 208 cm)	4 x 60 lbs. (4 x 447 kg)
12.6	1-120 gpm (4-454 Lpm)	1,442 lbs. (654 kg)	2,606 lbs. (1,182 kg)	73 x 27 x 102 in. (185 x 69 x 259 cm)	6 x 60 lbs. (6 x 447 kg)
16.4	1-150 gpm (4-566 Lpm)	1,625 lbs. (737 kg)	2,870 lbs. (1,302 kg)	49 x 52 x 84 in. (124 x 132 x 213 cm)	8 x 50 lbs. (8 x 23 kg)
16.6	1-150 gpm (4-566 Lpm)	2,011 lbs. (912 kg)	3,553 lbs. (1,612 kg)	49 x 52 x 104 in. (124 x 132 x 264 cm)	12 x 50 lbs. (12 x 23 kg)
24.4	1-250 gpm (4-946 Lpm)	2,100 lbs. (953 kg)	3,980 lbs. (1,805 kg)	73 x 52 x 84 in. (185 x 132 x 213 cm)	8 x 60 lbs. (8 x 27 kg)
24.6	1-250 gpm (4-946 Lpm)	2,599 lbs. (1,179 kg)	4,926 lbs. (2,234 kg)	73 x 52 x 104 in. (185 x 132 x 264 cm)	12 x 60 lbs. (12 x 27 kg)
48.4	1-500 gpm (1,893 Lpm)	5,000 lbs. (2,268 kg)	12,500 lbs. (5,670 kg)	98 x 71 x 84 in. (249 x 180 x 213 cm)	16 x 60 lbs. (16 x 27 kg)
48.6	1-500 gpm (1,893 Lpm)	5,500 lbs. (2,495 kg)	13,000 lbs. (5,897 kg)	98 x 71 x 104 in. (249 x 180 x 264 cm)	24 x 60 lbs. (24 x 27 kg)
96.4	1-1,000 gpm (3,785 Lpm)	11,000 lbs. (4,990 kg)	25,000 lbs. (11,340 kg)	142 x 98 x 84 in. (361 x 249 x 213 cm)	32 x 60 lbs. (32 x 27 kg)
96.6	1-1,000 gpm (3,785 Lpm)	11,500 lbs. (5,216 kg)	30,000 lbs. (13,608 kg)	142 x 98 x 104 in. (361 x 249 x 264 cm)	48 x 60 lbs. (48 x 27 kg)

Standard construction is 304 SS, other alloys upon request. *Allow additional space for accessory components. (blower, piping, etc.)

count on when you need it



Try it for yourself today! Use our exclusive online stripper modeler at **www.qedenv.com/model/model.html** *to spec the exact size and configuration for your project. Then talk to a QED applications specialist toll-free at* **(800) 624-2026** *for fast, free system design assistance and a price quote.*

E-Z Tray®
Model 96.6

Active Area	Nominal Air Flow	Additional Space for Tray Removal*
2.8 ft.² (0.26 m²)	210 cfm (5.95 m³/min)	27 in. (69 cm)
2.8 ft.² (0.26 m²)	210 cfm (5.95 m³/min)	27 in. (69 cm)
3.8 ft.² (0.35 m²)	320 cfm (9.06 m³/min)	35 in. (89 cm)
3.8 ft.² (0.35 m²)	320 cfm (9.06 m³/min)	35 in. (89 cm)
5.6 ft.² (0.52 m²)	420 cfm (11.89 m³/min)	47 in. (119 cm)
5.6 ft.² (0.52 m²)	420 cfm (11.89 m³/min)	47 in. (119 cm)
8.8 ft.² (0.82 m²)	600 cfm (16.99 m³/min)	71 in. (180 cm)
8.8 ft.² (0.82 m²)	600 cfm (16.99 m³/min)	71 in. (180 cm)
11.1 ft.² (1.03 m²)	850 cfm (24.07 m³/min)	47 in. (119 cm)
11.1 ft.² (1.03 m²)	850 cfm (24.07 m³/min)	47 in. (119 cm)
17.5 ft.² (1.63 m²)	1,300 cfm (36.81 m³/min)	72 in. (183 cm)
17.5 ft.² (1.63 m²)	1,300 cfm (36.81 m³/min)	72 in. (183 cm)
27 ft.² (2.51 m²)	2,600 cfm (73.62 m³/min)	72 in. (183 cm)
27 ft.² (2.51 m²)	2,600 cfm (73.62 m³/min)	72 in. (183 cm)
54 ft.² (5.02 m²)	5,200 cfm (147.25 m³/min)	2 x 72 in. (2 x 183 cm)*
54 ft.² (5.02 m²)	5,200 cfm (147.25 m³/min)	2 x 72 in. (2 x 183 cm)*

How it Works

As contaminated groundwater enters through the top of the air stripper, millions of air bubbles are forced by blower pressure up through the perforated trays. This creates a turbulent froth zone with an extremely high air-to-liquid surface area for mass transfer of volatile organic compounds (VOCs) from liquid to air. Using the froth instead of a conventional tower packing delivers high VOC removal efficiencies even under fouling conditions, and is easier to inspect and maintain.

QED Quality Control, Manufacturing Standards and Customer Service

Experienced site owners, including major oil companies, are increasingly choosing E-Z Tray® air strippers from QED due to their unique features and solid technical support, including:

- **Lower long-term O&M costs due to easier tray maintenance than tower-type or stacking tray air strippers.**
- **Lightweight, slide-out trays don't require hoists, regardless of the size of the air stripper.**
- **E-Z Tray air strippers need less building space, which can lower building costs.**
- **QED's staff and resources are #1 in air stripper technical and service support, including for unusual applications.**
- **Online Performance Modeler tool available 24/7 to help you select the proper air stripper.**
- **QED quote & delivery times are quick and dependable.**

Visit qedenv.com/air-strippers to view and use the exclusive Online Performance Modeler, which allows you to model your process conditions and select the most efficient air stripping package for your VOC removal project. You can also view case studies where E-Z Tray air strippers were the top choice in successful projects.

The World Leader in Air-Powered Remediation

For Remediation, Landfills and Groundwater Sampling

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Environmental Systems
A TestAmerica Company
THE LEADER IN ENVIRONMENTAL TESTING

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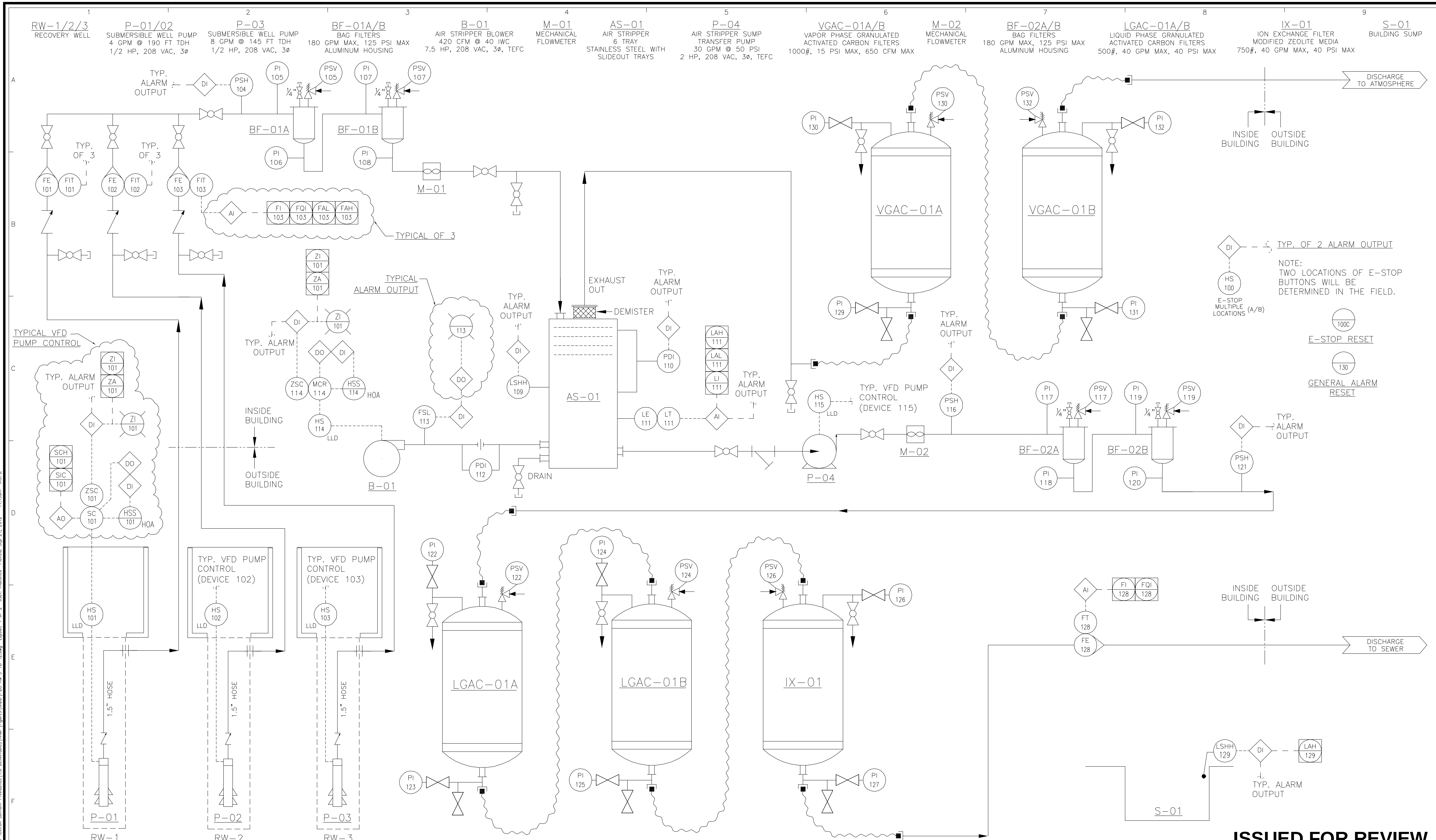
F: 510-346-0414
info@qedenv.com
www.qedenv.com

CODE 2336 4/09

Attachment 3

Air Pollution Control Equipment



RW-1/2/3 RECOVERY WELL
P-01/02 SUBMERSIBLE WELL PUMP 4 GPM @ 190 FT TDH 1/2 HP, 208 VAC, 3Ø
P-03 SUBMERSIBLE WELL PUMP 8 GPM @ 145 FT TDH 1/2 HP, 208 VAC, 3Ø
BF-01A/B BAG FILTERS 180 GPM MAX, 125 PSI MAX ALUMINUM HOUSING
B-01 AIR STRIPPER BLOWER 420 CFM @ 40 IWC 7.5 HP, 208 VAC, 3Ø, TEFC
M-01 MECHANICAL FLOWMETER
AS-01 AIR STRIPPER 6 TRAY STAINLESS STEEL WITH SLIDEOUT TRAYS
P-04 AIR STRIPPER SUMP TRANSFER PUMP 30 GPM @ 50 PSI 2 HP, 208 VAC, 3Ø, TEFC
VGAC-01A/B VAPOR PHASE GRANULATED ACTIVATED CARBON FILTERS 1000#, 15 PSI MAX, 650 CFM MAX
M-02 MECHANICAL FLOWMETER
BF-02A/B BAG FILTERS 180 GPM MAX, 125 PSI MAX ALUMINUM HOUSING
LGAC-01A/B LIQUID PHASE GRANULATED ACTIVATED CARBON FILTERS 500#, 40 GPM MAX, 40 PSI MAX
IX-01 ION EXCHANGE FILTER MODIFIED ZEOLITE MEDIA 750#, 40 GPM MAX, 40 PSI MAX
S-01 BUILDING SUMP
DISCHARGE TO ATMOSPHERE
INSIDE BUILDING
OUTSIDE BUILDING
TYP. ALARM OUTPUT
TYP. OF 3
TYPICAL OF 3
TYPICAL ALARM OUTPUT
TYPICAL VFD PUMP CONTROL
EXHAUST OUT
DEMISTER
DRAIN
TYP. VFD PUMP CONTROL (DEVICE 115)
TYP. VFD PUMP CONTROL (DEVICE 102)
TYP. VFD PUMP CONTROL (DEVICE 103)
1.5" HOSE
TYP. OF 2 ALARM OUTPUT
NOTE: TWO LOCATIONS OF E-STOP BUTTONS WILL BE DETERMINED IN THE FIELD.
E-STOP MULTIPLE LOCATIONS (A/B)
E-STOP RESET
GENERAL ALARM RESET
DISCHARGE TO SEWER
BF-01A
BF-01B
M-01
B-01
AS-01
P-04
M-02
BF-02A
BF-02B
VGAC-01A
VGAC-01B
LGAC-01A
LGAC-01B
IX-01
S-01
P-01
P-02
P-03
RW-1
RW-2
RW-3

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www.aecom.com

TEXTRON INC
PROVIDENCE, RI

PROJ. NUMBER: 60271240

DATE: 9/12/12

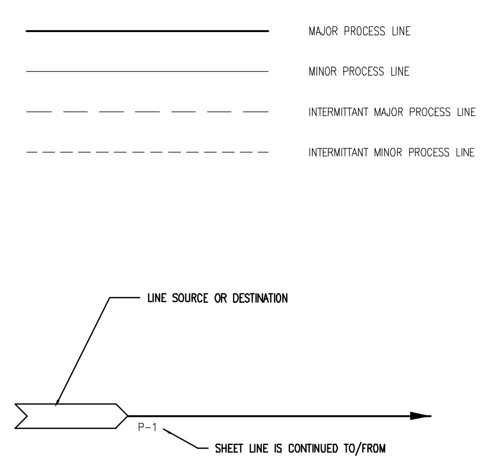
PIPING AND INSTRUMENTATION DIAGRAM SHEET 1 OF 2

DRAWING NUMBER: 5

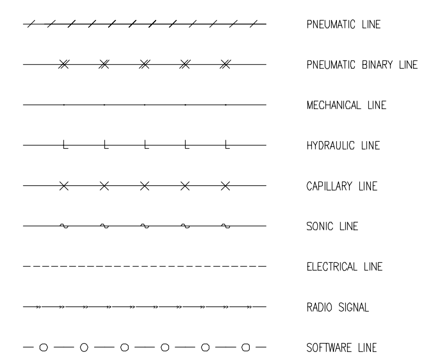
SHEET NUMBER: 1 OF 2

REVISION 0

PIPING SYMBOLS



INSTRUMENT LINE DESIGNATION



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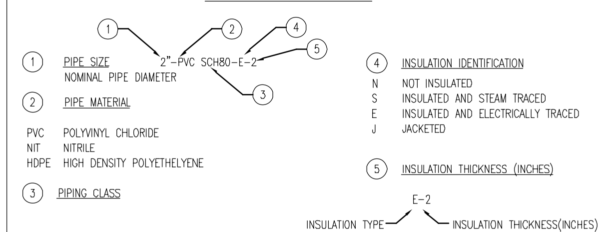
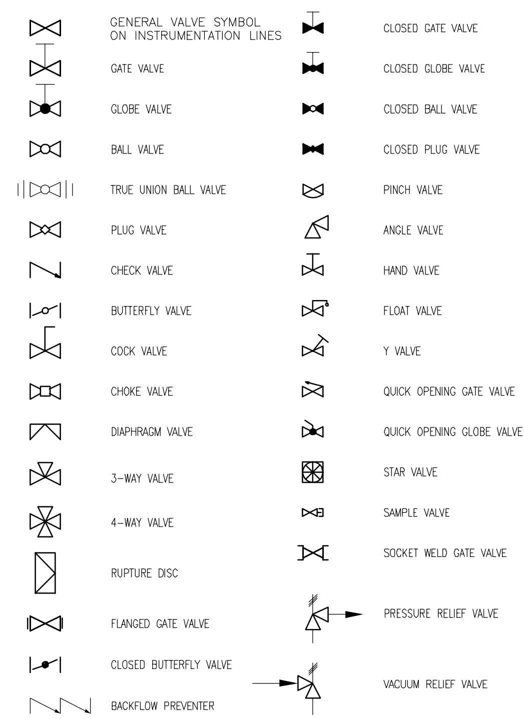
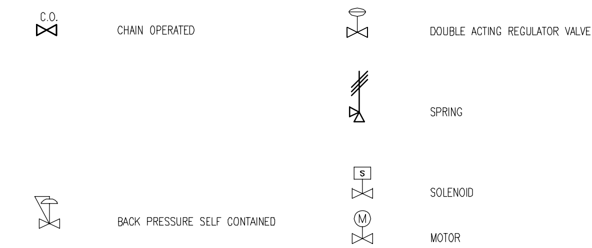


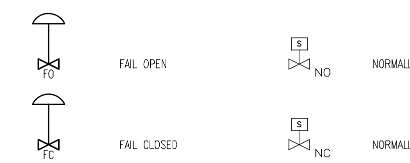
VALVE SYMBOLS



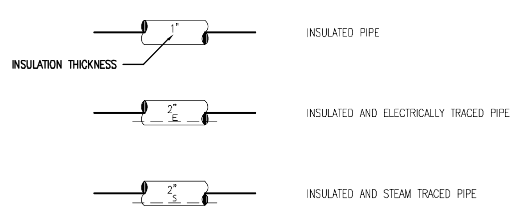
VALVE ACTUATORS



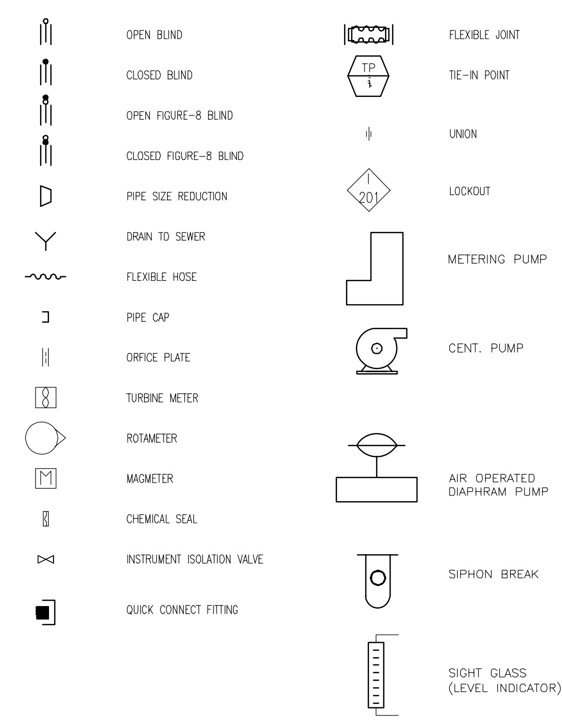
ACTUATOR STATUS



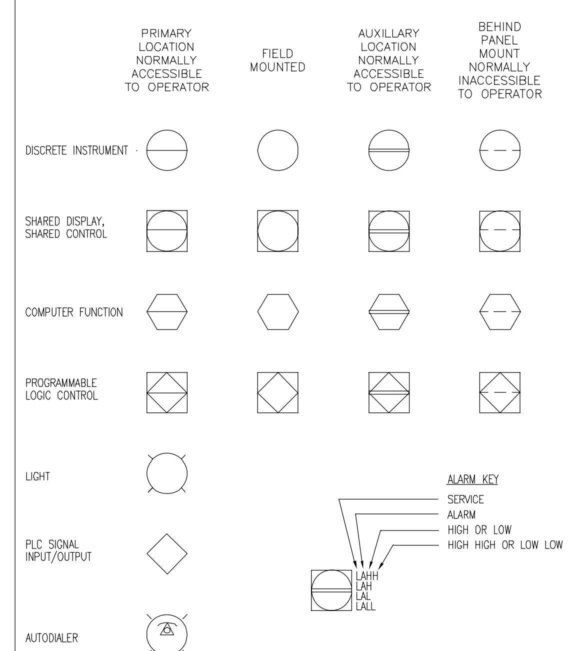
INSULATION DESIGNATION



MISCELLANEOUS SYMBOLS



INSTRUMENT TAGS



INSTRUMENT TAG LETTER IDENTIFICATION

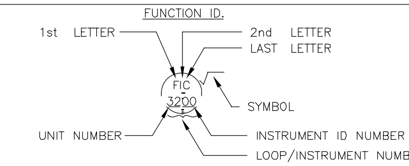
	1st LETTER	2nd LETTER	3rd LETTER	4th LETTER	LAST LETTER
A	ANALYZER	ALARM	ALARM	ALARM	ALARM
B	BURNER (FLAME)				
C	CONTROL (LOOP)	CONTROLLER	CLOSED	CONTROLLER	CONTROLLER
D	DENSITY	DIFFERENTIAL *	DEVIATION		DRIVE, OPERATOR
E	VOLTAGE	ELEMENT			ELEMENT
F	FLOW	RATIO *	FLOW	FLOW	
G	GAUGE				GLASS
H	HAND (MANUAL)		HIGH	HIGH	HIGH
I	AMPERES	INDICATOR			INDICATOR
J	POWER				MTR PB & LGT
K	TIME (COUNT)				
L	LEVEL	LEVEL	LOW	LOW	LOW
M	MOTOR				METER
N					
O	OPERATIONAL				
P	PRESSURE	PRESSURE	PRESSURE		PNEUMATIC
Q	SPECIAL	INTEGRATE	INTEGRATE	INTEGRATE	INTEGRATE
R	RELIEF	RECORDER	RELAY	RECORDER	RECORDER
S	SPEED, SOLENOID	SAFETY *, SELECTOR, SWITCH	SWITCH	SWITCH	SWITCH
T	TEMPERATURE	TEMPERATURE	TOTALIZER		TRANSMITTER
U	MULTIVARIABLE	MULTIVARIABLE			MULTIVARIABLE
V	VIBRATION	VALVE	VALVE	VALVE	VALVE
W	WEIGHT				WELL
X					
Y	USERS CHOICE				TRANSDUCER
Z	POSITION				COMPUTER

SYMBOLS SUCH AS CO_2, O_2, BTU, $\sqrt{\ }$, Σ, , ETC SHOULD BE SHOWN NEXT TO INSTRUMENT TAG.

FUNCTION IDENTIFICATION

FIRST LETTER = MEASURED OR INDICATING VARIABLE
* = MODIFIES MEASURED OR INDICATING VARIABLE
SUCCEEDING LETTERS = READOUT AND/OR FUNCTIONS

FUNCTION ID.



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TEXTRON INC
PROVIDENCE, RI

PROJ. NUMBER: 60271240

DATE: 9/12/12

PIPING AND INSTRUMENTATION DIAGRAM SHEET 2 OF 2

DRAWING NUMBER: 5

SHEET NUMBER: 2 OF 2

REVISION 0

FILTRATION MEDIA :
~~8x30 RE-ACTIVATED CARBON~~
4x10 RE-ACTIVATED CARBON

GENERAL DESCRIPTION

Select Re-Activated carbon from domestic sources is quality screened during our purchasing process for activity, density and fines. The use of re-activated carbon is recommended as a lower cost alternative for most sites where drinking water quality is not necessary. In many cases our re-activated carbon meets and exceeds imported virgin carbon. In addition all carbon either sold by itself or installed in our filtration units is traced by lot number to the installation or sale.

~~8x30 (Liquid Phase) Standard Specifications:~~	Standard	~~Value~~
Iodine Number	ASTM D-4607	800 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	8x30 US Mesh
Ash		10% Maximum
Total Surface Area (N2BET)		1050 Minimum
Pore Volume (cc/g)		0.75

4*10 (Vapor Phase) Standard Specifications:	Standard	Value
Carbon Tetrachloride Activity Level	ASTM D-3467	40 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	4x10 US Mesh
Ash		10% Maximum
Total Surface Area (N2BET)		1050 Minimum
Pore Volume (cc/g)		0.75

Packaging:		
50 Pound Bags	50 Pound Drums	Bulk Tanker
1,000 Pound Bulk Sacks	200 Pound Drums	

Tetrasolv Filtration, Inc. • 1200 East 26th Street • Anderson, Indiana 46016 • USA
Toll Free: 800-441-4034 Telephone: 765-643-3941 • Fax: 765-643-3949
www.tetrasolv.com • info@tetrasolv.com

PROTECT V
Carbon Adsorber Canisters

Description

The PROTECT V vapor phase carbon adsorber canisters are air or vapor treatment units for use in applications requiring higher pressures or slight vacuum conditions. PROTECT V canisters contain all of the operating elements required for utilization of granular activated carbon in air or vapor treatment, including a flat carbon bed support across the entire bed cross sectional area and plenum area below this support for effective air introduction and distribution across the bed. The canisters are constructed of unlined carbon steel with a stainless steel screen bed support for use with activated carbon in air treatment.

The PROTECT V vapor phase carbon adsorber canisters are available in 2 convenient sizes that will contain 1000 or 2000 pounds of granular activated carbon for treating air or vapor sources typically up to 750 cfm at pressures up to 15 psig and up to 15 inches of Mercury of vacuum.

The PROTECT V vapor phase adsorbers can be provided with any of Calgon Carbon's wide variety of vapor phase activated carbon products that can be selected for a specific air or vapor treatment application. Most commonly used are Type AP4-60 grade virgin activated carbon, which is a 4mm pelletized activated carbon with a carbon Tetrachloride Number of 60 for higher purity air or vapor, or optimal usage for low levels of organic contamination, or Type VPR quality controlled reactivated grade vapor phase carbon for a more economical carbon product for general air treatment.

Features

The PROTECT V vapor phase carbon adsorber canisters offer several important features that make it an effective value driven option for higher pressure air or vapor phase treatment applications:

- Sturdy carbon steel construction
- Capable of operating up to 15 psig which will manage most vent or higher pressure exhaust fan situations.
- Capable of operating up to 5 inches of Mercury vacuum.
- Exterior painted with a durable urethane finish
- Operating temperature up to 200°F
- Top 16 inch diameter access port for activated carbon media fill and removal
- Carbon bed support across the full canister cross sectional area, consisting of 20 mesh type 316 stainless steel screen placed on slotted steel plate for vapor distribution across the entire bed for maximum activated carbon utilization and low pressure drop.
- Top lifting lugs and bottom fork guides for portability

Specifications

Canister	Sturdy 3/16" thick carbon steel canister with 3/16" thick steel concave bottom head (inside flat bottom) and top dished head
Pressure	Recommended 15 psig maximum operating pressure (shop hydrotested in excess of recommended pressure)
Vacuum	Recommended maximum 15" Hg vacuum operation
Temperature	Recommended 200°F maximum
Internal coating	None – unfinished steel
External Coating	Direct-to-Metal polyurethane
Inlet (bottom side)	6" FPT coupling (shipped with plug)
Inlet distributor	Stainless steel screen bed support on slotted steel plate
Vent / sample port	3/4" FPT coupling
Outlet (top side)	6" FPT coupling (shipped with plug)
Drain	3/4" FPT coupling with 3/4" threaded plug
Access Port	16" diameter access port with threaded damp ring and BUNA-N gasket.
Dimensions	Refer to Model chart

PROTECT V
Carbon Adsorber Canisters

Installation

PPROTECT V canisters are shipped ready for installation with the dry activated carbon fill installed in the unit. The canisters are self supporting and should be set on a level accessible area as near as possible to the emission source. Standard installation does not utilize any anchoring devices. Installation is simple, requiring a flexible hose, duct or pipe to connect the vent or emission source to the 6 inch FPT bottom inlet of the canister.

The PROTECT V canister's treated air discharge is a 6 inch FPT connection on the upper side of the vessel and can be left open or equipped with flexible hose, duct or pipe to direct the treated air to a desired discharge point. If the canister is located outside and to be vented directly, then a U-shaped outlet pipe or rain hat (such as a pipe tee) is recommended to be installed to prevent precipitation from entering the unit.

The recommended air flow for the PROTECT V canisters are listed in the table. If higher flows are anticipated, then either a larger canister should be utilized or two or more PROTECT V canisters can be placed in parallel operation.

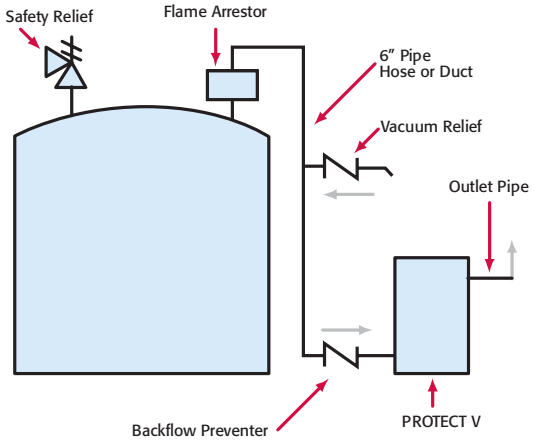
The recommended maximum static pressure and vacuum capabilities are also listed. These ratings should not be exceeded, as the canister could be irreparably damaged.

PROTECT V canisters can be used to treat vents directly from storage tank or other process vessels. The motive force for the air or vapor can be produced by either a blower or by using the positive pressure inside the tank or process vessel. In many cases, the pressure or surge of pressure within the tank or vessel is sufficient to overcome the pressure drop across the canister, thus eliminating the need for a blower. Please consult the pressure drop data in this bulletin for more information.

When PROTECT V canisters are used to control vapors from organic solvent storage tanks, refer to the typical installation drawing in the bulletin and the following recommended precautions:

- A safety relief valve must be provided on the storage tank. This protects the storage tank should the canister become plugged or blocked in any fashion. Such a vent would open in an emergency situation, thereby relieving pressure within the storage tank.
- Under appropriate conditions, a flame arrestor and/or backflow preventer must be installed as shown in the typical installation drawing. This prevents backflow of air through the canister when the storage tank is being emptied.
- High organic compound concentration in the vented air or vapor – defined as being greater than 0.5 to 1.0 volume % - may cause an elevated heat of adsorption in the carbon bed. This effect can be dissipated by pre-wetting the carbon to provide a heat sink, adding dilution air to the vented air or vapor to reduce the concentration, or by adding water spray to the vented air or vapor to provide an ongoing heat sink.

Typical PROTECT V Installation at Storage Tank



If PROTECT V canisters are used to control organic compound emissions from air-strippers, soil venting or other high moisture content air or vapor streams, then it is recommended that the humidity in the air stream be reduced to under 50%. High humidity may cause water vapor to condense within the carbon pores, filling the pores with water and preventing the air or vapor with organic contamination from accessing the internal surface of the activated carbon where adsorption takes place. Therefore, lower humidity will optimize the adsorptive capacity of the activated carbon. Also, for applications that may carry condensed water, it is recommended to install a drain or condensate trap on the inlet duct or piping.

Carbon Exchange or Replacement

When the treated air or vapor exceeds the desired contaminant concentration, the granular activated carbon in the PROTECT V canister should be replaced with fresh activated carbon. The canister is to be isolated from the process by either closing and locking the inlet and outlet valves, or physically disconnecting the canister from the inlet and outlet pipe or hose. The carbon exchange procedure can either take place where the canister is installed, or the disconnected canister can be moved to another location for this activity.

The spent granular activated carbon can be removed by using a vacuum media removal procedure through the top access port. Fresh granular activated carbon can be filled using bags or "supersacks" by loading into the canister through the top access port. Once the fresh carbon is installed, the access port securely closed, and the inlet and outlet connections are reestablished, follow the procedures under the Installation section.

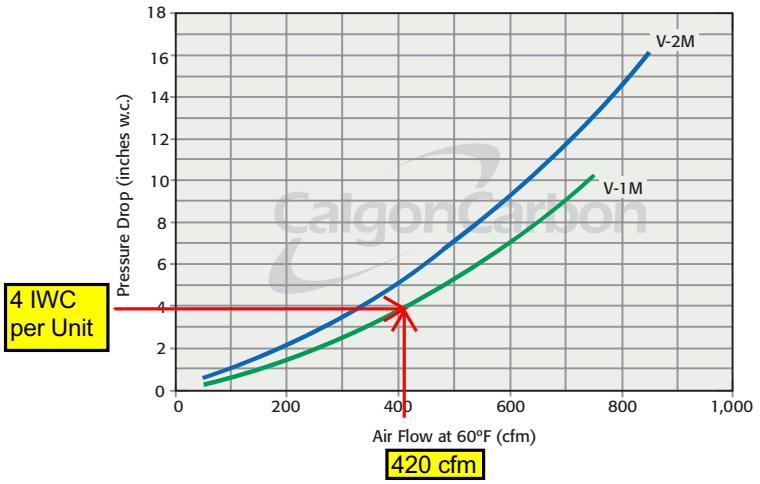
Contact Calgon Carbon Corporation for resupply of the carbon products for effective air or vapor treatment. Calgon Carbon Corporation can also provide complete turnkey services, including removal and management of the spent carbon and refilling the canister with the fresh carbon.

PROTECT V
Carbon Adsorber Canisters

Pressure Drop Curve

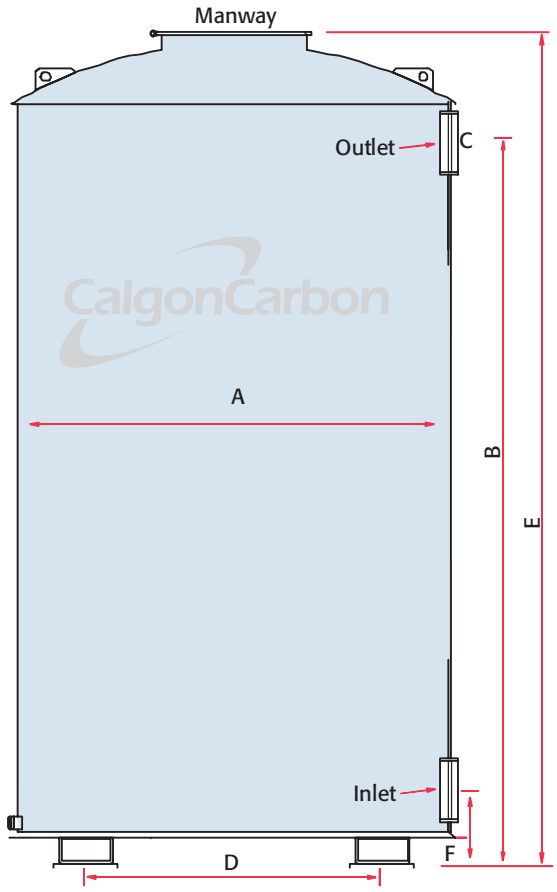
Pressure drop through a PROTECT V canister is a function of the process air flow as shown in the graph. If higher flows or lower pressure drop is needed, multiple canisters can be installed in parallel operation. The maximum pressure in the canister should not exceed 15 psig, regardless of the pressure drop across the unit.

Pressure Drop Curve



Calgon Carbon Air Purification Systems

The PROTECT V canisters are designed for a variety of higher pressure air or vapor applications at low to moderate air flows. Calgon Carbon Corporation offers a wide range of carbon adsorption systems and services for a range of air or vapor flow rates and carbon usages to meet specific applications.



Drawing not to scale.

Model Information

Model Number	V-1M	V-2M
GAC or media volume (cu ft)	36	72
GAC amount (pounds)	1000	2000
Recommended max flow rate (cfm)	675	750
Weight, empty (pounds)	1000	1150
Approximate operating weight (pounds)	2000	3150
Diameter (A) in.	45.5	48
Height to outlet (B) in. (approx)	70.5	82.5
Inlet /Outlet (C) fpt, in.	6	6
Forkguides (D) in.	33	33
Overall Height (E) in. (approx)	84	96
Height to inlet (F) in. (approx)	8	8
Overall width; in. (approx)	45.5	48

PROTECT V
Carbon Adsorber Canisters

Safety Considerations

While complying with the recommended installation instructions, plant operators should also be aware of these additional heat-related safety considerations:

- When in contact with activated carbon, some types of organic chemical compounds, such as those from the ketone and aldehyde families and some organic acids or organic sulfur compounds, may react on the carbon surface causing severe exotherms or temperature excursions. **If you are unaware or unsure of the reaction of an organic compound on activated carbon, appropriate tests should be performed before placing a PROTECT V canister in service.**
- Heat of adsorption can lead to severe temperature excursions at high concentrations of organic compounds in the inlet air or vapor. Heating may be controlled by diluting the inlet air or adding water vapor as a heat sink, by time weighting the inlet concentration to allow heat to dissipate, or by pre-wetting the carbon.
- **Do not use PROTECT V canisters with ST1-X carbon in petrochemical or chemical industry applications.**
- ST1-X carbon can liberate heat by reacting chemically with oxygen. To prevent heat buildup within a canister, the carbon must not be confined without adequate air flow to dissipate the heat. In situations where there is insufficient or disrupted air flow through the vessel, the chemical reaction can be prevented by sealing the inlet and outlet connections to the canister.
- For temperatures greater than 140°F, Calgon Carbon recommends that personnel protection be provided. The form of protection is determined per the end users specific plant practices and standards. Also note that at elevated temperatures, the paint may discolor.

Safety Message

Activated carbon will preferentially remove oxygen from air. In closed or partially closed containers or vessels, oxygen depletion may reach hazardous levels. If workers are to enter a container or vessel containing activated carbon, appropriate air sampling and work procedures for potentially low oxygen content spaces should be followed, including all applicable Federal and State requirements.

Warranty

Calgon Carbon Corporation warrants that the PROTECT V canister will be free from defects in materials and workmanship for a period of 90 days following the date of purchase. In the event of a breach of this warranty, Calgon Carbon Corporation will, in its discretion, repair or replace any defective parts or the complete unit during the warranty period. This warranty does not apply to defects caused by (i) normal wear and tear, (ii) accident, disaster or event of force majeure, (iii) misuse, fault or negligence of or by Buyer, (iv) use of the PROTECT V canister in a manner for which it is not designed, (v) external causes such as, but not limited to, power failure or electrical power surges, or (vi) improper storage and handling of the PROTECT V canister. **Except as expressly provided in this warranty statement, Calgon Carbon Corporation disclaims all other warranties, whether express or implied, oral or written, including without limitations all implied warranties or merchantability or fitness for particular purpose. Calgon Carbon Corporation does not warrant that the PROTECT V canisters are error-free or will accomplish any particular result. Any advice or assistance furnished by Calgon Carbon Corporation in relation to the PROTECT V canister provided for hereunder shall not give rise to any warranty or guarantee of any kind. This warranty will take precedence over any and all other warranties unless specifically disclaimed and referenced by Calgon Carbon Corporation.**

Limitations of Liability

Carbon Carbon Corporation' liability and the Buyer's exclusive remedy for any cause of action arising out this transaction, including, but not limited to, breach of warranty, negligence and/or indemnification, is expressly limited to a maximum of the purchase price of the canister sold hereunder. All claims of whatsoever nature shall be deemed waived unless made in writing within forty-five (45) days of the occurrence giving rise to the claim. Under no circumstance shall Calgon Carbon Corporation be liable for any incidental, consequential, punitive, exemplary, or special damages of any kind arising as a result of or in connection with the PROTECT V canisters regardless of the cause giving rise to any claim. Nor shall Calgon Carbon Corporation be liable for loss of profits or fines imposed by governmental agencies. In no event shall Calgon Carbon Corporation's liability exceed the purchase price paid by purchaser, for any reason, whether by reason of breach of contract, tort, indemnification, warranty or otherwise. This limitation of liability statement will take precedence over any and all other liability provisions unless specifically disclaimed and referenced by Calgon Carbon Corporation.

CalgonCarbon

Making Water and Air Safer and Cleaner

Calgon Carbon Corporation
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9 Temasek Boulevard
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Your local representative

Attachments 4 and 5

Air Pollution Control Equipment Calculations and Contaminated Liquid Information

QED Air Stripper Model ver. 2.0 — 10/23/2012

Site Data

Name: David Macone
e-mail: David.Macone@AECOM.com
Project: Former Gorham Silver Facility
Units: English
Altitude: 75 ft
Air Temp: 55 F
Flow: 18 gpm
Water Temp: 55 F
Stripper: EZ-Tray 8.x - Click for details
Stripper Air Flow: 420 cfm
Stripper Max Flow: 75 gpm

Water Results

Contaminant	Influent (ppb)	Target (ppb)	4-Tray Results (ppb)	4-Tray % Removal	6-Tray Results (ppb)	6-Tray % Removal
trichloroethylene (TCE)	2777.1	0	< 1	100.000	< 1	100.000
tetrachloroethylene (PERC,PCE)	811.1	0	< 1	100.000	< 1	100.000
c-1,2-dichloroethylene	113.1	0	< 1	100.000	< 1	100.000
1,1-dichloroethylene	144.9	0	< 1	100.000	< 1	100.000
vinyl chloride (chloroethylene)	11.9	0	< 1	100.000	< 1	100.000
1,1,1-trichloroethane	3685.2	0	< 1	100.000	< 1	100.000
1,1-dichloroethane	141	0	< 1	100.000	< 1	100.000

Air Results

Contaminant	4-Tray (ppmV)	4-Tray (lb/hr)	6-Tray (ppmV)	6-Tray (lb/hr)
trichloroethylene (TCE)	2.8409	0.02503	2.8411	0.02503
tetrachloroethylene (PERC,PCE)	0.6574	0.00731	0.6574	0.00731
c-1,2-dichloroethylene	0.1568	0.00102	0.1568	0.00102
1,1-dichloroethylene	0.2009	0.00131	0.2009	0.00131
vinyl chloride (chloroethylene)	0.0256	0.00011	0.0256	0.00011
1,1,1-trichloroethane	3.7132	0.03321	3.7133	0.03321
1,1-dichloroethane	0.1915	0.00127	0.1915	0.00127

Notes

PH-> 1-800-624-2026 or 1-734-995-2547, FX-> 1-734-995-1170. E-mail->info@qedenv.com. WEB->www.qedenv.com.

The QED modeler estimates unit performance for the listed contaminants. ***Results assume -***

1. *Contaminants are in the dissolved-phase, within a water matrix*
2. *Stripper Influent air is contaminant-free*
3. *Influent liquid does not have surfactants, oil, grease, other immiscible phase(s) or other Henry's constant altering additions present, such as dissolved phase polar organic contaminants*
4. *The air stripper is operated within the given parameters listed above and as instructed in the E-Z Tray O&M manual*

Stripper performance shall meet or exceed either the required effluent concentration(s) or effluent estimates, whichever is greater, for the conditions supplied and assumes the influent concentrations of each contaminant are less than 25% solubility in water. QED makes no claim of the model's accuracy beyond the 25% solubility in water limit.

Contact Us

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Name - David Macone

Company - Company

Phone - Phone **Fax -** Fax

e-mail - David.Macone@AECOM.com **Project -** Former Gorham Silver Facility

Application Notes

Send Reset

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http://64.9.214.199/cgi-bin/remodel.pl?
u=e&tw=55&ta=55&f=18&a=75&s=8.x&n=David&e=David.Macone@AECOM.com&p=Fo
rme&c=189,2777.1;182,811.1;81,113.1;16,144.9;195,11.9;9,3685.2;15,141
;
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Flow: 18 gpm
Water Temp: 55 F
Stripper: EZ-Tray 8.x - Click for details
Stripper Air Flow: 420 cfm
Stripper Max Flow: 75 gpm

Water Results

Contaminant	Influent (ppb)	Target (ppb)	4-Tray Results (ppb)	4-Tray % Removal	6-Tray Results (ppb)	6-Tray % Removal
trichloroethylene (TCE)	7775.6	0	< 1	100.000	< 1	100.000
tetrachloroethylene (PERC,PCE)	5270.4	0	< 1	100.000	< 1	100.000
c-1,2-dichloroethylene	422.2	0	< 1	100.000	< 1	100.000
1,1-dichloroethylene	224.5	0	< 1	100.000	< 1	100.000
vinyl chloride (chloroethylene)	58.6	0	< 1	100.000	< 1	100.000
1,1,1-trichloroethane	15050	0	< 1	100.000	< 1	100.000
1,1-dichloroethane	543.3	0	< 1	100.000	< 1	100.000

Air Results

Contaminant	4-Tray (ppmV)	4-Tray (lb/hr)	6-Tray (ppmV)	6-Tray (lb/hr)
trichloroethylene (TCE)	7.9543	0.07008	7.9547	0.07008
tetrachloroethylene (PERC,PCE)	4.2719	0.04750	4.2719	0.04750
c-1,2-dichloroethylene	0.5853	0.00380	0.5854	0.00381
1,1-dichloroethylene	0.3113	0.00202	0.3113	0.00202
vinyl chloride (chloroethylene)	0.1260	0.00053	0.1260	0.00053
1,1,1-trichloroethane	15.1642	0.13564	15.1646	0.13565
1,1-dichloroethane	0.7378	0.00490	0.7379	0.00490

Notes

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2. *Stripper Influent air is contaminant-free*
3. *Influent liquid does not have surfactants, oil, grease, other immiscible phase(s) or other Henry's constant altering additions present, such as dissolved phase polar organic contaminants*
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rme&c=189,7775.6;182,5270.4;81,422.2;16,224.5;195,58.6;9,15050;15,543
.3;
```

QED Air Stripper Model ver. 2.0 — 10/23/2012

Site Data

Name: David Macone
e-mail: David.Macone@AECOM.com
Project: Former Gorham Silver Facility
Units: English
Altitude: 75 ft
Air Temp: 55 F
Flow: 30 gpm
Water Temp: 55 F
Stripper: EZ-Tray 8.x - Click for details
Stripper Air Flow: 420 cfm
Stripper Max Flow: 75 gpm

Water Results

Contaminant	Influent (ppb)	Target (ppb)	4-Tray Results (ppb)	4-Tray % Removal	6-Tray Results (ppb)	6-Tray % Removal
trichloroethylene (TCE)	2338.1	0	< 1	100.000	< 1	100.000
tetrachloroethylene (PERC,PCE)	905.2	0	< 1	100.000	< 1	100.000
c-1,2-dichloroethylene	97.6	0	< 1	100.000	< 1	100.000
1,1-dichloroethylene	137.7	0	< 1	100.000	< 1	100.000
vinyl chloride (chloroethylene)	11.2	0	< 1	100.000	< 1	100.000
1,1,1-trichloroethane	3111.6	0	< 1	100.000	< 1	100.000
1,1-dichloroethane	119	0	< 1	100.000	< 1	100.000

Air Results

Contaminant	4-Tray (ppmV)	4-Tray (lb/hr)	6-Tray (ppmV)	6-Tray (lb/hr)
trichloroethylene (TCE)	3.9857	0.03511	3.9866	0.03512
tetrachloroethylene (PERC,PCE)	1.2228	0.01360	1.2228	0.01360
c-1,2-dichloroethylene	0.2254	0.00147	0.2255	0.00147
1,1-dichloroethylene	0.3182	0.00207	0.3182	0.00207
vinyl chloride (chloroethylene)	0.0401	0.00017	0.0401	0.00017
1,1,1-trichloroethane	5.2249	0.04674	5.2255	0.04674
1,1-dichloroethane	0.2691	0.00179	0.2694	0.00179

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rme&c=189,2338.1;182,905.2;81,97.6;16,137.7;195,11.2;9,3111.6;15,119;
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Water Temp: 55 F
Stripper: EZ-Tray 8.x - Click for details
Stripper Air Flow: 420 cfm
Stripper Max Flow: 75 gpm

Water Results

Contaminant	Influent (ppb)	Target (ppb)	4-Tray Results (ppb)	4-Tray % Removal	6-Tray Results (ppb)	6-Tray % Removal
trichloroethylene (TCE)	6592.3	0	1.4	99.979	< 1	100.000
tetrachloroethylene (PERC,PCE)	5963.1	0	< 1	100.000	< 1	100.000
c-1,2-dichloroethylene	370.7	0	< 1	100.000	< 1	100.000
1,1-dichloroethylene	220.6	0	< 1	100.000	< 1	100.000
vinyl chloride (chloroethylene)	65.2	0	< 1	100.000	< 1	100.000
1,1,1-trichloroethane	12674	0	1.3	99.990	< 1	100.000
1,1-dichloroethane	464.4	0	< 1	100.000	< 1	100.000

Air Results

Contaminant	4-Tray (ppmV)	4-Tray (lb/hr)	6-Tray (ppmV)	6-Tray (lb/hr)
trichloroethylene (TCE)	11.2379	0.09901	11.2402	0.09903
tetrachloroethylene (PERC,PCE)	8.0553	0.08957	8.0556	0.08958
c-1,2-dichloroethylene	0.8561	0.00556	0.8566	0.00557
1,1-dichloroethylene	0.5098	0.00331	0.5098	0.00331
vinyl chloride (chloroethylene)	0.2337	0.00098	0.2337	0.00098
1,1,1-trichloroethane	21.2819	0.19037	21.2841	0.19038
1,1-dichloroethane	1.0501	0.00697	1.0513	0.00698

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4. *The air stripper is operated within the given parameters listed above and as instructed in the E-Z Tray O&M manual*

Stripper performance shall meet or exceed either the required effluent concentration(s) or effluent estimates, whichever is greater, for the conditions supplied and assumes the influent concentrations of each contaminant are less than 25% solubility in water. QED makes no claim of the model's accuracy beyond the 25% solubility in water limit.

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rme&c=189,6592.3;182,5963.1;81,370.7;16,220.6;195,65.2;9,12674;15,464
.4;
```

Project #:	60216659-03	Page:	1	of	2
Client:	Textron Inc	Date:	October 8, 2012		
Site:	Providence, RI	By:	David Macone, PE		
Subject:	VGAC Usage	App.:			

AECOM

Air Stripper Off Gas Treatment - Vapor Phase Granular Activated Carbon Usage Calculation

VGAC Usage Assumptions:

Data used to generate the VGAC usage rate was procured from the following sources:

1) Compound concentrations are based on the QED Air Stripper Modeling, with a 420 cfm, and the anticipated influent groundwater concentrations at the expected and maximum design treatment rates (see attachments).

2) Service Tech Inc, has supplied the following equation to estimate the VGAC carbon usage per compound:

Molecular Weight x Concentration (ppmv) x Air Flow Rate (CFM) x 2x10^-5 = # Carbon Consumed per Day

Expected Off Gas Concentrations

	Expected		Maximum		
Pumping Rate (gpm):	18		30		
	Avg	**Max**	**Avg**	**Max**	
Tetrachloroethylene (PCE)	0.6574	4.2719	1.2228	8.0556	ppm_v
1,1,1-Trichloroethane	3.7133	15.1646	5.2255	21.2841	ppm_v
1,1-Dichloroethane	0.1915	0.7379	0.2694	1.0513	ppm_v
1,1-Dichloroethylene	0.2009	0.3113	0.3182	0.5098	ppm_v
cis-1,2-Dichloroethylene	0.1568	0.5854	0.2255	0.8566	ppm_v
Trichloroethylene (TCE)	2.8411	7.9547	3.9866	11.2402	ppm_v
Vinyl Chloride (VC)	0.0256	0.1260	0.0401	0.2337	ppm_v

Expected VOC Loading

Air Stripper Blower Flow Rate (CFM):	420					
	Avg	**Max**		**Avg**	**Max**	
VOC per day:	1.60	6.13	lbs	2.34	9.17	lbs

Project #:	60216659-03	Page:	2	of	2
Client:	Textron Inc	Date:	October 25, 2012		
Site:	Providence, RI	By:	David Macone, PE		
Subject:	VGAC Usage	App.:			

AECOM

Expected VGAC Usage

		Expected		Maximum		
Pumping Rate (gpm):		18		30		
	Mole Weight	**Avg**	**Max**	**Avg**	**Max**	
Tetrachloroethylene (PCE)	165.83	0.9157	5.9506	1.7033	11.2212	# carbon/day
1,1,1-Trichloroethane	133.41	4.1613	16.9941	5.8559	23.8519	# carbon/day
1,1-Dichloroethane	98.96	0.1592	0.6134	0.2239	0.8739	# carbon/day
1,1-Dichloroethylene	96.94	0.1636	0.2535	0.2591	0.4151	# carbon/day
cis-1,2-Dichloroethylene	96.95	0.1277	0.4767	0.1836	0.6976	# carbon/day
Trichloroethylene (TCE)	131.39	3.1357	8.7794	4.3999	12.4055	# carbon/day
Vinyl Chloride (VC)	62.49	0.0134	0.0661	0.0210	0.1227	# carbon/day
Total:		8.7	33.1	12.6	49.6	# carbon/day

Adsorption Capacity of Carbon

	Expected	Maximum
Pumping Rate (gpm):	18	30
Adsorption Capacity of Carbon (# VOC/100 # Carbon):		18.50

Expected VGAC Change Outs

Number of VGACs in Series:	2	
# of Carbon per Vessel:	1000	(see attachments for VGAC specifications)
Safety Factor:	25%	

	Expected		Maximum	
Pumping Rate (gpm):	18		30	
	Avg	**Max**	**Avg**	**Max**
VGAC Days to Exhaustion:	184	48	127	32

Adsorption Cycle Time

Hour of Operation per Day:	24			
	Expected		**Maximum**	
Pumping Rate (gpm):	18		30	
	Avg	**Max**	**Avg**	**Max**
Cycle Time (hr):	4,426	1,159	3,036	774

See Attachments

Table 1 - RW-1 Expected System Influent Concentrations

Textron, Inc.

333 Adelaide Avenue

Providence, Rhode Island

	RW-1 AREA														
	MW-234S			MW-230S	MW-234I			MW-234D			MW-230D	RW1		MW-JS	
Compound	**11/30/09**	**06/03/11**	**06/10/11**	**12/02/09**	**11/30/09**	**06/03/11**	**06/10/11**	**12/02/09**	**06/03/11**	**06/10/11**	**12/01/09**	**07/27/11**	**07/29/11**	**May-1989**	**Avg**
Total Suspended Solids	---	---	---	---	---	---	---	---	---	---	---	5000	5000	---	**5000.00**
1,1 - Dichloroethane	**166**	18.1	---	131	4.2	5.2	---	3.7	<1	---	0.9	17.2	95.2	---	**62.41**
1,1 - Dichloroethylene	37.1	<1.0	---	32.3	13.4	11.6	---	19.6	13.5	---	1.7	1.2	**41.2**	---	**19.61**
1,1,1 - Trichloroethane	**1060**	35	---	697	8.5	27.6	---	12	24	---	5.8	47.7	917	---	**398.97**
Vinyl Chloride	0.5	<1.0	---	0.4	0.6	<1.0	---	2.7	2.4	---	**1**	<1	<20	---	**1.86**
Trichloroethylene	489	35	---	**3484**	20.8	27.6	---	23.2	24	---	34.4	29.6	772	---	**694**
cis-1,2 - Dichloroethylene	**100**	<1.0	---	87.4	22.1	27.5	---	97.9	95.8	---	1.6	2.9	33.8	---	**39.17**
Tetrachloroethylene	2.6	**3.3**	---	1.3	1	<1.0	---	1	1.3	---	0.2	1.1	<20	---	**2.83**
Silver	---	<0.25	<5	---	---	<0.25	<5	---	<0.25	<5	---	---	---	<10	---
Arsenic	---	<1.5	<4	---	---	<1.5	<4	---	<1.5	<4	---	---	---	<10	---
Cadmium	---	<0.2	<2.5	---	---	<0.2	<2.5	---	<0.2	3	---	<3	<3	<5	---
Copper	---	1	<5	---	---	1.1	<5	---	1.4	97.8	---	<2.4	**4.8**	<20	**3.30**
Total Iron	---	---	6,360	---	---	---	30,100	---	---	89,800	---	**49**	24.9	<100	**41.30**
Nickel	---	<0.2	<5	---	---	2.6	**5.1**	---	31.6	169	---	<9	<5	<4	**2.76**
Lead	---	<0.2	<7.5	---	---	<0.2	<7.5	---	<0.2	11	---	<7.5	<0.28	**5**	**2.16**
Selenium	---	<1.0	<15	---	---	<1.0	<15	---	<1.0	<15	---	---	---	<10	---
Zinc	---	<4.5	<7.5	---	---	<4.5	<5	---	<4.5	89.6	---	**26.8**	16.9	<20	**9.21**
Trivalent Chromium	---	---	<5	---	---	---	<5	---	---	<5	---	---	---	---	---
Hexavelent Chromium	---	---	<5	---	---	---	<5	---	---	<5	---	---	---	---	---
Antimony	---	<0.8	<6	---	---	<0.8	<6	---	<0.8	19	---	<6	<6	<100	---

Note: Based on groundwater data presented in the Shaw - Status Report Actives for February and August 2011 and February and August 2012, AECOM - Preliminary Hydrogeologic Evaluation of Groundwater Pump and Treat Remediation submitted in December 2011, AECOM - RIPDES Application and RIPDES Discharge Monitoring Report (DMR) for July 1, 2011 through September 30, 2001 submitted on July 8 and October 13, 2011 respectively, and the Hunter Inc - Soil and Groundwater Contamination Site Assessment submitted on May 25, 1989 for groundwater metals data only.

Data not used in averaging or considered a maximum concentration.

* = Filtered Sample

Table 2 - RW-2 Expected System Influent Concentrations

Textron, Inc.

333 Adelaide Avenue

Providence, Rhode Island

	RW-2 AREA									
	DP2S	**DP2D**	**MW-222S**	**MW-224S**	**MW-228D**	**MW-228S**	**MW-220S**	**GZA-4**	**MW-105**	
Compound	**03/12/08**	**03/13/08**	**03/28/08**	**03/28/08**	**04/01/08**	**04/01/08**	**7/28/2011**	**May-1989**	**May-1989**	**Avg**
Total Suspended Solids	----	---	---	---	---	---	---	---	---	---
1,1 - Dichloroethane	<50	**1710**	270	577	9.7	44.3	---	---	---	**439.3**
1,1 - Dichloroethylene	194	**748**	139	447	422	103	---	---	---	**342.2**
1,1,1 - Trichloroethane	1030	**52800**	4500	17800	3.5	114	---	---	---	**12707.9**
Vinyl Chloride	<50	<100	<100	<100	1.9	<1	---	---	---	**29.6**
Trichloroethylene	**23900**	21600	2070	6440	912	578	---	---	---	**9250.0**
cis-1,2 - Dichloroethylene	408	**1260**	<100	244	76.4	16.5	---	---	---	**342.5**
Tetrachloroethylene	<500	107	<100	<100	5.4	**3610**	---	---	---	**678.7**
Silver	---	---	---	---	---	---	---	**1**	<1	**0.75**
Arsenic	---	---	---	---	---	---	---	<10	<1	**---**
Cadmium	---	---	---	---	---	---	---	<5	<5	**---**
Copper	---	---	---	---	---	---	---	60	**150**	**105.00**
Total Iron	---	---	---	---	---	---	85.2	<100	**600**	**245.07**
Nickel	---	---	---	---	---	---	---	<40	**70**	**45.00**
Lead	---	---	---	---	---	---	---	**22**	<5	**12.25**
Selenium	---	---	---	---	---	---	---	<10	<10	**---**
Zinc	---	---	---	---	---	---	---	70	**140**	**105.00**
Trivalent Chromium	---	---	---	---	---	---	---	---	--	**---**
Hexavelent Chromium	---	---	---	---	---	---	---	---	---	**---**
Antimony	---	---	---	---	---	---	---	<100	<100	**---**

Note: Based on groundwater data presented in the Shaw - Status Report Actives for February and August 2011 and February and August 2012, AECOMs - Preliminary Hydrogeologic Evaluation of Groundwater Pump and Treat Remediation submitted in December 2011, and Hunter Inc - Soil and Groundwater Contamination Site Assessment submitted on May 25, 1989 for groundwater metals data only

Table 3 - RW-3 Expected System Influent Concentrations

Textron, Inc.

333 Adelaide Avenue

Providence, Rhode Island

	RW-3 AREA																			
	MW-101D				MW-101S				MW-201D				MW-202D				MW-202S			
Compound	**02/28/11**	**08/23/11**	**08/28/12**	**08/08/12**	**02/28/11**	**08/23/11**	**08/28/12**	**08/08/12**	**02/28/11**	**08/23/11**	**08/28/12**	**08/08/12**	**02/28/11**	**08/23/11**	**08/28/12**	**08/08/12**	**02/28/11**	**08/23/11**	**08/28/12**	**08/08/12**
Total Suspended Solids	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1 - Dichloroethane	<10	<10	<10	<5	<1	<1	<1	<0.5	<100	<10	<50	<5	<10	<1	<10	<0.5	<1	<1	<1	<0.5
1,1 - Dichloroethylene	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
1,1,1 - Trichloroethane	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Vinyl Chloride	<20	<20	<20	<5	<2	<2	<2	<0.5	<200	<20	<100	<5	<20	<2	<20	<0.5	<2	<2	<2	<0.5
Trichloroethylene	<20	<20	58	<5	<2	<2	<2	<0.5	380	230	150	210	<20	<2	<20	<0.5	<2	<2	<2	<0.5
cis-1,2 - Dichloroethylene	<20	<20	200	<5	11	3.3	6.9	14	<200	<20	<100	<5	<20	2.9	<20	<0.5	<2	5.7	3	2.5
Tetrachloroethylene	570	3800	220	490	16	34	45	29	**9600**	8400	10000	6600	5100	210	200	610	30	56	120	73
Silver	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Arsenic	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Cadmium	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Copper	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Total Iron	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Nickel	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Lead	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Selenium	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Zinc	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Trivalent Chromium	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Hexavelent Chromium	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---
Antimony	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---

	RW-3 AREA																			
	MW-207D				MW-207S				MW-218D				MW-218S				MW-213	MW-101S	MW-R	
Compound	**02/28/11**	**08/23/11**	**08/28/12**	**08/08/12**	**02/28/11**	**08/23/11**	**08/28/12**	**08/08/12**	**02/28/11**	**08/23/11**	**08/28/12**	**08/08/12**	**02/28/11**	**08/23/11**	**08/28/12**	**08/08/12**	**7/28/2011**	**May-1989**	**May-1989**	**Avg**
Total Suspended Solids	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
1,1 - Dichloroethane	<1	<1	<1	<0.5	<10	<1	<10	<0.5	<10	<1	<1	<0.5	<1	<1	<1	<0.5	---	---	---	**3.67**
1,1 - Dichloroethylene	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	---	---	**---**
1,1,1 - Trichloroethane	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	---	---	**---**
Vinyl Chloride	<2	<2	<2	<0.5	<20	<2	<20	<0.5	<20	<2	<2	<0.5	<2	<2	<2	4.5	---	---	---	**7.17**
Trichloroethylene	<2	23	<2	<0.5	45	<2	<20	23	<20	12	11	17	<2	<2	<2	<0.5	---	---	---	**33.46**
cis-1,2 - Dichloroethylene	<2	30	<2	<0.5	40	<2	20	15	<20	<2	<2	2.7	<2	<2	<2	8.5	---	---	---	**15.97**
Tetrachloroethylene	10	1100	120	34	1300	130	340	530	300	300	190	230	<2	2.3	<2	2.3	---	---	---	**1399.08**
Silver	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	<10	<10	**---**
Arsenic	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	<10	<10	**---**
Cadmium	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	<5	<5	**---**
Copper	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	<20	<20	**---**
Total Iron	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	77.6	**100**	<100	**75.87**
Nickel	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	<40	<40	**---**
Lead	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	**15**	12	**13.50**
Selenium	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	<10	<10	**---**
Zinc	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	<20	**20**	**15.00**
Trivalent Chromium	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	---	---	**---**
Hexavelent Chromium	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	---	---	**---**
Antimony	----	---	---	---	----	---	---	---	----	---	---	---	----	---	---	---	---	<100	<100	**---**

Note: Based on groundwater data presented in the Shaw - Status Report Actives for February and August 2011 and February and August 2012, AECOMs - Preliminary Hydrogeologic Evaluation of Groundwater Pump and Treat Remediation submitted in December 2011, and Hunter Inc - Soil and Groundwater Contamination Site Assessment submitted on May 25, 1989 for groundwater metals data only.

Table 4 - Expected System Influent Concentrations

Textron, Inc.

333 Adelaide Avenue

Providence, Rhode Island

Average & Maximum System Influent Concentrations

	RW-1		RW-2 Area		RW-3 Area	
Compound	**Avg**	**Max**	**Avg**	**Max**	**Avg**	**Max**
Total Suspended Solids	---	---	---	---	---	---
1,1 - Dichloroethane	62.4	166.0	439.3	1,710.0	3.7	*50.0*
1,1 - Dichloroethylene	19.6	41.2	342.2	447.0	*100.0*	*200.0*
1,1,1 - Trichloroethane	399.0	1,060.0	12,707.9	52,800.0	*100.0*	*200.0*
Vinyl Chloride	1.9	1.0	29.6	*50.0*	7.2	*100.0*
Trichloroethylene	694.0	3,484.0	9,250.0	23,900.0	33.5	380.0
cis-1,2 - Dichloroethylene	39.2	100.0	342.5	1,260.0	16.0	*100.0*
Tetrachloroethylene	2.8	3.3	678.7	3,610.0	1,399.1	9,600.0
Silver	---	---	0.75	1.00	---	---
Arsenic	---	---	---	---	---	---
Cadmium	---	---	---	---	---	---
Copper	3.30	4.80	105.00	150.00	---	---
Total Iron	41.30	49.00	245.07	600.00	75.87	100.00
Nickel	2.76	5.10	45.00	70.00	---	---
Lead	2.16	5.00	12.25	22.00	13.50	15.00
Selenium	---	---	---	---	---	---
Zinc	9.21	26.80	105.00	140.00	15.00	20.00
Trivalent Chromium	---	---	---	---	---	---
Hexavelent Chromium	---	---	---	---	---	---
Antimony	---	---	---	---	---	---

Note: 1) Where compound sometimes detected, convert ND to 1/2 ND, but not used when detections were never above the detection limit.

2) Italic values indicate detection limits were used.

Expected Flow Rate

				Total Pumping Rate
Pumping Rate (gpm):	**5.0**	**5.0**	**8.0**	**18.0**

Maximum Flow Rate

				Total Pumping Rate
Pumping Rate (gpm):	**7.0**	**7.0**	**16.0**	**30.0**

Weighed Average & Maximum System Influent Concentrations

	Expected System Influent Concentrations @ 18 gpm		**Expected System Influent Concentrations @ 30 gpm**	
Compound	**Avg**	**Max**	**Avg**	**Max**
Total Suspended Solids	5000	5000	5000	5000
1,1 - Dichloroethane	141.0	543.3	119.0	464.4
1,1 - Dichloroethylene	144.9	224.5	137.7	220.6
1,1,1 - Trichloroethane	3,685.2	15,050.0	3,111.6	12,674.0
Vinyl Chloride	11.9	58.6	11.2	65.2
Trichloroethylene	2,777.1	7,775.6	2,338.1	6,592.3
cis-1,2 - Dichloroethylene	113.1	422.2	97.6	370.7
Tetrachloroethylene	811.1	5,270.4	905.2	5,963.1
Silver	0.75	1.00	0.75	1.00
Arsenic	---	---	---	---
Cadmium	---	---	---	---
Copper	69.00	77.40	54.15	77.40
Total Iron	113.26	224.72	107.28	204.77
Nickel	23.88	37.55	23.88	37.55
Lead	10.00	14.17	10.56	14.30
Selenium	---	---	---	---
Zinc	38.39	55.22	34.65	49.59
Trivalent Chromium	---	---	---	---
Hexavelent Chromium	----	---	---	---
Antimony	---	---	---	---