Standard Exemption No. 32405
B-3 SVE
April and June 1996

SWMU B-3 SOIL VAPOR EXTRACTION (SVE) SYSTEM EXEMPTION REGISTRATION

Section 3

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SWMU B-3 SVE

FORM PI-7

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

REGISTRATION FORM FOR STANDARD EXEMPTIONS

FORM PI-7

Please mail to: TNRCC, Office of Air Quality, New Source Review Division (MC-162), PO Box 13087, Austin, TX 78711-3087

I. Company Name Department of the Army, Camp Stanley
(Corporation, Company, Government Agency, Firm, etc.)

Mailing Address 25800 Ralph Fair Road, Boerne, TX 78006

Individual Authorized to Act for Applicant: Name LTC Dean C. Schmelling Title Post Commander

Address 25800 Ralph Fair Road, Boerne, TX 78006 Telephone (210) 221-7461 Fax ( )

II. LOCATION OF EXEMPT FACILITY (Latitude and Longitude must be to the nearest second):

Name of Plant or Site Department of the Army, Camp Stanley

Street Address 25800 Ralph Fair Road, Boerne, TX 78006

Nearest City Boerne County Bexar Latitude 29° 42' 34" Longitude 98° 36' 51"

SITE REQUIREMENTS: A. Submit a plot plan to scale of the property showing the location of plant boundaries, plant equipment, and surrounding area.
B. Furnish an area map with a scale showing the facility location relative to highways and towns.

III. TYPE OF FACILITY:

A. Applicable Standard Exemption Number(s) from TNRCC List Exemption Number 68, 118
B. Name of Facility and Company's Facility Number
C. TNRCC Account Identification Number
D. Previous Special Exemption or Permit Number
E. Operating Schedule: Hours/day 24 Days/week 7 Weeks/year 52
F. Proposed Start of Construction (Date) Operation (Date)
G. Permanent [X] Portable [ ]
H. Length of time at this site, if portable

IV. PROCESS INFORMATION

Description of Process: Prepare and attach a written description of the exempt process and applicable checklists (when available). The description must be in sufficient detail to indicate that the facility will conform to the specified exemption.

V. EMISSIONS DATA Furnish a description of the basis for emission rates including fugitives. (Calculations, emission factors, measurement, NSPS, etc.)

Emission Point Number	Name of Source	Name of Air Contaminant	Emission Rate of Each Air Contaminant			
			lb/hr		tons/yr	
			Gaseous	Particulate	Gaseous	Particulate
EPN 8	B-3 SVE System	TCE	0.79		3.5	
		DCE	0.31		1.34	
		Vinyl Chloride	0.13		0.59	

VI. The required copy of the application has been sent to the Regional Office of the TNRCC: [X]Yes [ ]No
The required copy of the application has been sent to the Local Programs (if applicable): [X]Yes [ ]No

VII. I, LTC Dean C. Schmelling (Name) Post Commander (Title)
state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption. The facility will operate in compliance with all Regulations of the Texas Natural Resource Conservation Commission and with Federal Environmental Protection Agency Regulations governing air pollution.

DATE SIGNATURE

Rev. 9-15-95

SWMU B-3 SVE

PROCESS DESCRIPTION

Soil Vapor Extraction (SVE) System

CSSA has conducted a SVE pilot test on soils located in Solid Waste Management Unit (SWMU) B-3. The purpose of the pilot test is to determine if SVE is a viable alternative for soils remediation at SWMU B-3 and to collect sufficient data to design a full-scale SVE system to be used for soil remediation. The basic theory of soil vapor extraction is to apply a negative pressure, or vacuum, to the subsurface to create a pressure gradient. This gradient produces advective air flow which will remove vapor-phase compounds and also promote continued volatilization of organic compounds adsorbed in site soils. the vacuum is created by using blowers or vacuum pumps, and is applied to the subsurface soils through extraction wells. Specific objectives of the SVE pilot test are to estimate the following variables:

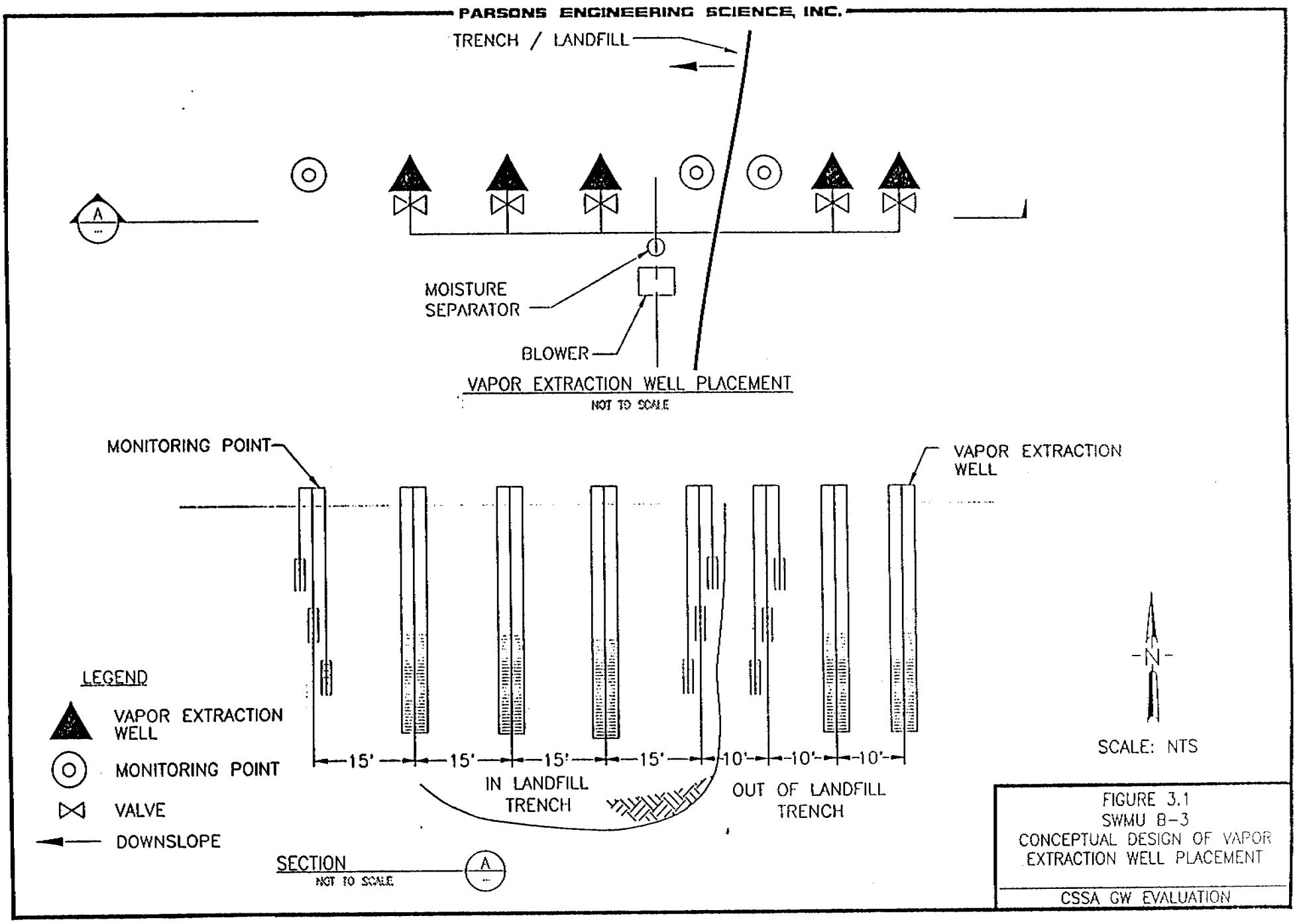
- Soil permeability to vapor flow;
- Radius of influence of the extraction well;
- Vacuum variability with depth;
- Vapor concentration before, during, and after the test.

The SVE pilot test system extracted primarily, trichloroethylene (TCE), and *cis*-1,2, dichloroethylene (DCE), from surrounding soils. Soil gas samples taken from SWMU B-3 revealed the presence of chlorinated hydrocarbons at the following maximum soil gas concentrations:

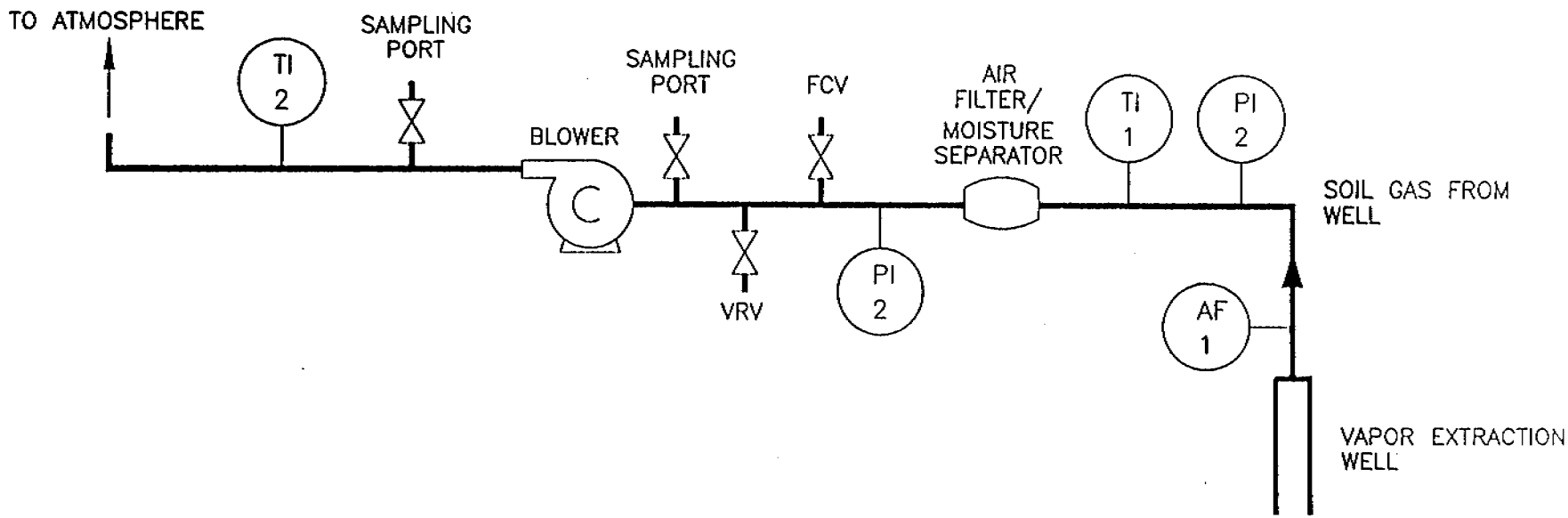
Chemical Compound	Soil gas concentration (ppmv)
TCE	480
DCE	250
Vinyl Chloride	170

SWMU B-3 SVE SYSTEM

PROCESS FLOW DIAGRAMS



February 1996



LEGEND

AF 1	AIR FLOW INDICATOR
PI 2	PRESSURE INDICATOR
TI 1	TEMPERATURE INDICATOR
FCV	FLOW CONTROL VALVE
VRV	VACUUM RELIEF VALVE

FIGURE 3.4
PROPOSED BLOWER SYSTEM
INSTRUMENTATION DIAGRAM

CSSA GW EVALUATION

DETL:CSSA 1/4/96

SWMU B-3 SVE
EMISSION DATA

Soil Vapor Extraction (SVE) System

Standard Exemption 118 (c) Emission Calculations

The speciated chlorinated hydrocarbon emission rates and calculated emission limits derived from Standard Exemption No. 118(c) are presented in the table below. Also shown is the equation for calculating the emission rate.

In order to compare the worst case scenario with the emission limits established in the applicable Standard Exemption, the maximum soil gas concentrations will be used in the calculations. During an SVE operation, the soil gas concentrations typically start at a maximum concentration and decrease asymptotically to steady state conditions. Therefore, the soil gas concentrations presented in the emission calculations are the maximum concentrations of chemical compounds in the initial soil gas 30 minutes after the pilot system was turned on. In addition, emission rates were calculated using the maximum flow rate of 80 standard cubic feet per minute (SCFM).

Chemical constituent emission limits (E) for Standard Exemption 118(c) are calculated by using the equation E = L/K, where L is the value as listed in table 118A and K is the value from standard exemption list 118(c).

Calculated VS. Exempted Emission Rates

Chemical Compound	Soil gas conc. (ppmv)	Air Displacement (SCFM)	Molecular Weight (lb/lb-mole)	Calculated emission rate (lb/hr)	Calculated emission rate (tons/yr)	L (mg/M^3)	E - Exempted emission rate (lb/hr)
TCE	480	80	131.4	0.79	3.5	135	16.875
DCE	250	80	97.0	0.31	1.34	79	9.8750
Vinyl Chloride	170	80	62.5	0.13	0.59	2	0.25

Emission Rate Equation

Chlorinated hydrocarbon emission rate (lb/hr) = (contaminant concentration) x (contaminants molecular weight in lb/lb-mole) x (air pump rate in cubic feet per minute) x (1.581×10^{-7} lb-mole-min./ft^3-ppmv-hr). For calculation of yearly emission rates, it was assumed that the SVE system will operate 24 hours a day, 7 days a week, 52 weeks per year at the 30 minute soil gas concentrations.

Conclusion

The calculated emission rates are compared with E, the emission limit rate expressed in Standard Exemption 118. As seen in the table above, the soil vapor extraction test system satisfies the requirements of Standard Exemption No. 118(c).

STANDARD EXEMPTION 68

APPLICABLE CHECKLISTS

Standard Exemption 68
Checklist

Contaminated Water and Soil Remediation Equipment

REGISTRATION IS REQUIRED BEFORE CONSTRUCTION OF FACILITIES COVERED BY THIS STANDARD EXEMPTION MAY BEGIN

The following checklist is designed to help you confirm that you meet Standard Exemption 68 (STDX 68) requirements. **Any "no" answers indicate that the claim of exemption may not meet all requirements for the use of Standard Exemption 68.** If you do not meet all the requirements, you may alter the project design/operation in such a way that all the requirements of the exemption are met or obtain a construction permit.

YES	NO	NA	DESCRIPTION
x			Have you included a description of how this exemption claim meets the general rule for the use of standard exemptions (§116.211 checklist is available)?
x			Will the remediation be at the property where the contamination originally occurred or at a nearby property secondarily affected by the contamination?
		x	Is the total emissions rate of petroleum hydrocarbons (except benzene) less than or equal to one (1) pound per hour? Attach calculations and supporting data such as soil/water contaminant concentrations.
		x	Do benzene emissions meet the emissions limits of STDX 118(c)? Attach calculations, contaminant concentrations, and a scaled map showing the emission(s) point(s) and nearby off-property receptors.
x			Do chemical emissions other than those from petroleum hydrocarbons meet the requirements of STDX 118(b) and (c)? Attach calculations, contaminant concentrations, and a scaled map showing the emission(s) point(s).
x			Will the handling, processing, and conditioning of contaminated and remediated soil be free of visible emissions (except for moisture)?
		x	If you use abatement equipment to meet the exemption's emissions limits, does it completely satisfy one of the conditions stated in STDX 68(e)(1)-(4)? Which one? _ _ Describe the abatement process in an attachment.

Revised 10/95

Standard Exemption 118
Checklist
Facilities and Modifications

A PI-7 WITH REQUIRED ATTACHMENTS MUST BE SUBMITTED WITHIN TEN DAYS OF INSTALLATION OR MODIFICATION OF FACILITIES UNDER THIS EXEMPTION

The following checklist has been designed to help you confirm that you meet Standard Exemption 118 (STDX 118) requirements. Any "no" answers indicate that the claim of exemption may not meet all the requirements for the use of Standard Exemption 118. If you do not meet all the requirements, you may alter the project design/operation in such a way that all requirements of the exemption are met or obtain a construction permit.

YES	NO	NA	DESCRIPTION
x			Have you included a description of how this exemption claim meets the general rule for the use of standard exemptions (§116.211 checklist is available)?
x			Have you reviewed all other exemptions to determine that none authorize the proposed construction or change had all requirements been met?
		x	If this claim is to qualify the use of other chemicals at a facility authorized by another exemption, are all the requirements of that specific exemption met? Have you included a description of how that exemption's requirements are met?
x			Is each emission source located at least 100 feet from any recreational area, residence, or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located? Attach a scaled map.
x			Do all the chemicals that will be part of new or changed emissions at the facility appear in Table 118A or in the 1985-86 version of the list of Threshold Limit Values (TLV) published by the American Conference of Governmental Industrial Hygienists? List the compounds and their L value from Table 118A or their TLV.
x			Are the calculated new or increased emissions, including fugitives, for each chemical less than or equal to 5 tons per year? Attach calculations.
x			Are the calculated new or increased emissions, including fugitives, for each chemical less than or equal to "E" pounds per hour as determined using the formula in STDX 118(c) or 6 pounds per hour, whichever is lower? Attach both the "E" and emissions calculations for each compound.
x			Have you attached to the PI-7 a complete description of the project?
x			Are all the facilities, in which the compounds listed in STDX 118(e) are handled, located at least 300 feet from the nearest property line and 600 feet from the nearest

off-property receptor? Your attached scaled map should show the effected facilities, the nearest fence lines, and receptors.

—	—	x	Are the total on-property quantities of each compound listed in STDX 118(e) always less than or equal to 500 pounds? This requirement does not apply to permit authorizations.
—	—	x	Are all compounds listed in STDX 118(e) handled only in unheated containers operated in compliance with U.S. Department of Transportation Regulations (49 CFR 171 through 178)?
—	—	x	Are procedures and equipment in place to ensure that containers containing chemicals listed in STDX 118(e) never vent to, or are never opened directly to, the atmosphere? Attach descriptions as necessary.
—	—	x	For physical changes or modifications to existing facilities, does all air pollution abatement equipment remain unchanged (i.e. no change or addition is allowed)? (This requirement does not mean that new facilities may not have control equipment.)
x	—	—	Will all visible emissions, except uncombined water, have opacity less than or equal to 5 percent in any five-minute period?

Texas Natural Resource Conservation Commission Standard Exemption Registrations, Revision 1: SWMU B-3 SVE Site

Department of the Army
Camp Stanley Storage Activity
Boerne, Texas

June 1996

Texas Natural Resource Conservation Commission
Standard Exemption Registrations, Revision 1:
SWMU B-3 SVE Site

June 1996

Prepared for

Department of the Army
Camp Stanley Storage Activity
Boerne, Texas

Prepared by

Parsons Engineering Science
8000 Center Park Drive, Suite 200
Austin, TX 78754

Project Number 721397.09

This report has been printed on recycled paper.

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INTRODUCTION

Camp Stanley Storage Activity (CSSA), Boerne, Texas is a subinstallation of the US Army Red River Depot (RRAD), located in Texarkana, Texas. The primary mission of CSSA is receipt, storage, and issuance of ordnance, as well as quality assurance testing and maintenance of military weapons and ammunition. CSSA is located in northwestern Bexar County, approximately 19 miles northwest of downtown San Antonio (see area map). Bexar County is an attainment county.

The Texas Natural Resource Conservation Commission (TNRCC) has issued an Air Quality Permit for the operation of a cold solvent cleaning facility to CSSA (permit no. 29466, account ID no. BG-0841-S). This report includes standard exemption registration revision 1 for soil remediation activities (standard exemptions 68 and 118) at CSSA. A plot plan of the entire installation showing all boundaries is provided in this report. All stationary emission sources are indicated on this plot plan, including exempt sources as well as permitted sources.

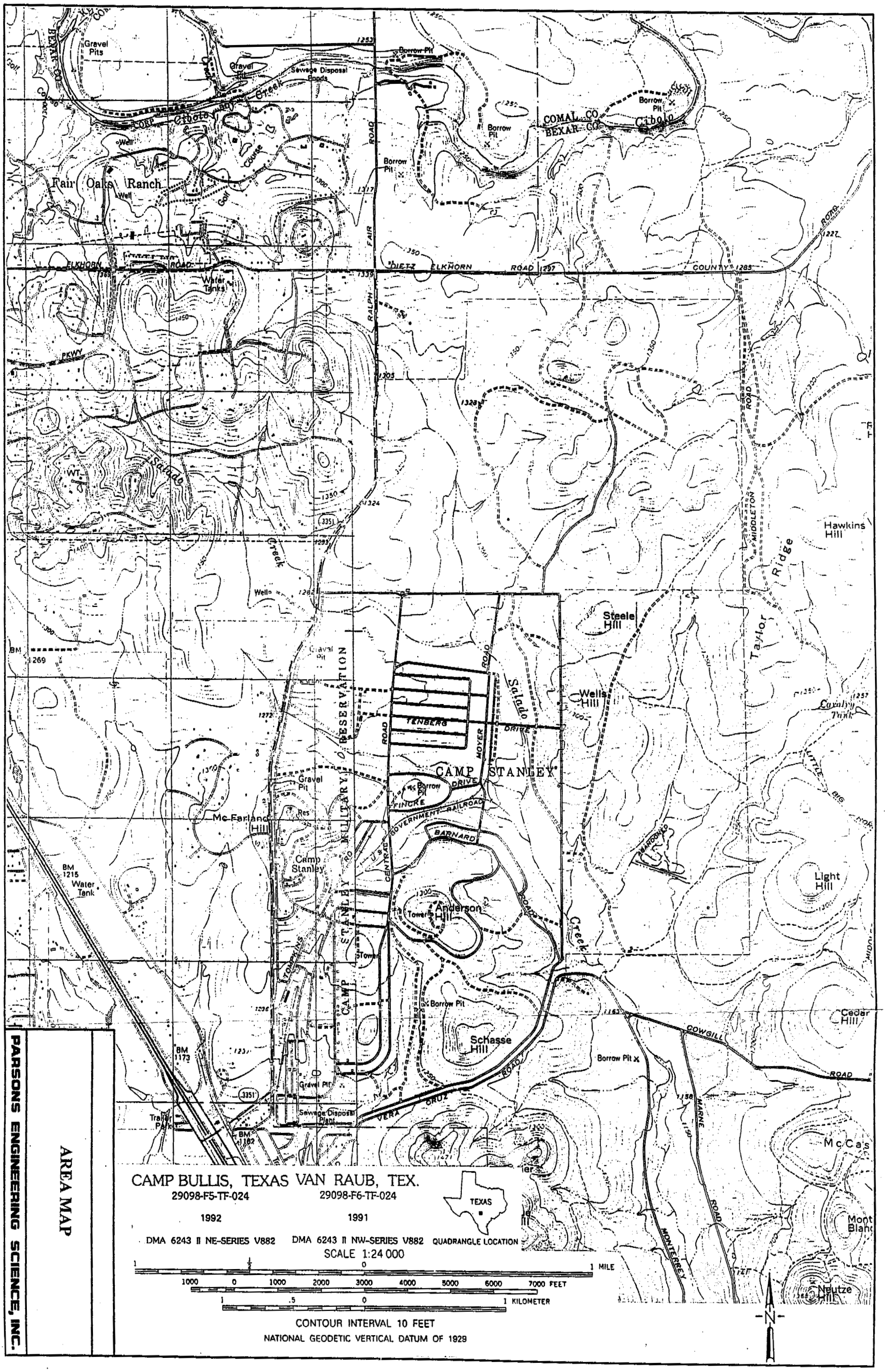
The exempt source represented by this registration meets all requirements of 30 TAC 116.211 and the respective exemption requirements.

This registration includes all necessary data for determining the applicability of the standard exemption requirements for the soil vapor extraction (SVE) system installed at solid waste management unit (SWMU) B-3. Also included is a copy of a letter dated May 10, 1996 from the TNRCC identifying the insufficiencies of the previous SVE registration submitted in April of 1996.

AREA MAP

XREF: BASE

EXT-SGS 1/15/96



CAMP BULLIS, TEXAS VAN RAUB, TEX.

29098-F5-TF-024 1992 DMA 6243 II NE-SERIES V882

29098-F6-TF-024 1991 DMA 6243 II NW-SERIES V882

TEXAS QUADRANGLE LOCATION

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

AREA MAP

PARSONS ENGINEERING SCIENCE, INC.

FORM PI-7

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

REGISTRATION FORM FOR STANDARD EXEMPTIONS

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Individual Authorized to Act for Applicant: Name LTC Dean C. Schmelling Title Post Commander

Address 25800 Ralph Fair Road, Boerne, TX 78015-4800 Telephone (210) 221-7461 Fax ( )

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Nearest City Boerne County Bexar Latitude 29° 42' 34" Longitude 98° 36' 51"

SITE REQUIREMENTS: A. Submit a plot plan to scale of the property showing the location of plant boundaries, plant equipment, and surrounding area.
B. Furnish an area map with a scale showing the facility location relative to highways and towns.

III. TYPE OF FACILITY:

A. Applicable Standard Exemption Number(s) from TNRCC List Exemption Number 68, 118
B. Name of Facility and Company's Facility Number
C. TNRCC Account Identification Number BG-0841-5
D. Previous Special Exemption or Permit Number 32405
E. Operating Schedule: Hours/day 24 Days/week 7 Weeks/year 52
F. Proposed Start of Construction _____ (Date) Operation _____ (Date)
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Description of Process: Prepare and attach a written description of the exempt process and applicable checklists (when available). The description must be in sufficient detail to indicate that the facility will conform to the specified exemption.

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		Vinyl Chloride	0.01		0.06	

VI. The required copy of the application has been sent to the Regional Office of the TNRCC: [X]Yes [ ]No
The required copy of the application has been sent to the Local Programs (if applicable): [X]Yes [ ]No

VII. I, LTC Dean C. Schmelling (Name) Post Commander (Title)
state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption. The facility will operate in compliance with all Regulations of the Texas Natural Resource Conservation Commission and with Federal Environmental Protection Agency Regulations governing air pollution.

DATE_____ SIGNATURE_____

Rev. 9-15-95

PROCESS DESCRIPTION

Soil Vapor Extraction (SVE) System

CSSA has conducted a SVE pilot test on soils located in SWMU B-3. The purpose of the pilot test is to determine if SVE is a viable alternative for soils remediation at SWMU B-3 and to collect sufficient data to design a full-scale SVE system to be used for soil remediation. The basic theory of soil vapor extraction is to apply a negative pressure, or vacuum, to the subsurface to create a pressure gradient. This gradient produces advective air flow which will remove vapor-phase compounds and also promote continued volatilization of organic compounds adsorbed in site soils. The vacuum is created by using blowers or vacuum pumps, and is applied to the subsurface soils through extraction wells. Specific objectives of the SVE pilot test are to estimate the following variables:

- Soil permeability to vapor flow;
- Radius of influence of the extraction well;
- Vacuum variability with depth;
- Vapor concentrations before, during, and after the test.

The SVE pilot test system was constructed and tested during early March, 1996 at SWMU B-3. The primary activities performed were siting and construction of the SVE system, soil sampling, soil gas sampling, air permeability testing, air emission sampling, and blower optimization. Construction of vapor extraction well(s) (VEW) and vapor monitoring point(s) (VMP) are described in this process description. General soil, soil gas, and air emission sampling procedures are also described. The SVE system layout and results of the pilot system are discussed below.

Site Layout

The layout of the installed SVE pilot test system is shown on Figure 1. The locations of the VEWs and VMPs were selected using the following criteria:

- Based on GC headspace analysis and soil gas survey results, soil vapor concentrations are highest in this area;
- Boring log descriptions from borings completed in this area indicate the depth to competent limestone is at least 10 feet and that subsurface soils are representative of the landfilled trenches and surrounding lithologies;
- Surface geophysical survey data from this area indicate the probable boundary of a primary landfill trench is close to this area, which allows for testing to be performed on subsurface soils inside and outside the trench limits; and
- If necessary and appropriate, the site layout (pilot test VEWs and VMPs) could easily be incorporated into a full-scale SVE system to remediate the site.

A total of six VEWs and six multi-depth VMPs were placed within the B-3 landfill area. As shown on Figure 1, three VEWs and two VMPs (identified as VEW-1, VEW-2, VEW-3, MPA, and MPD) were placed within the main B-3 landfill trench area limits, one

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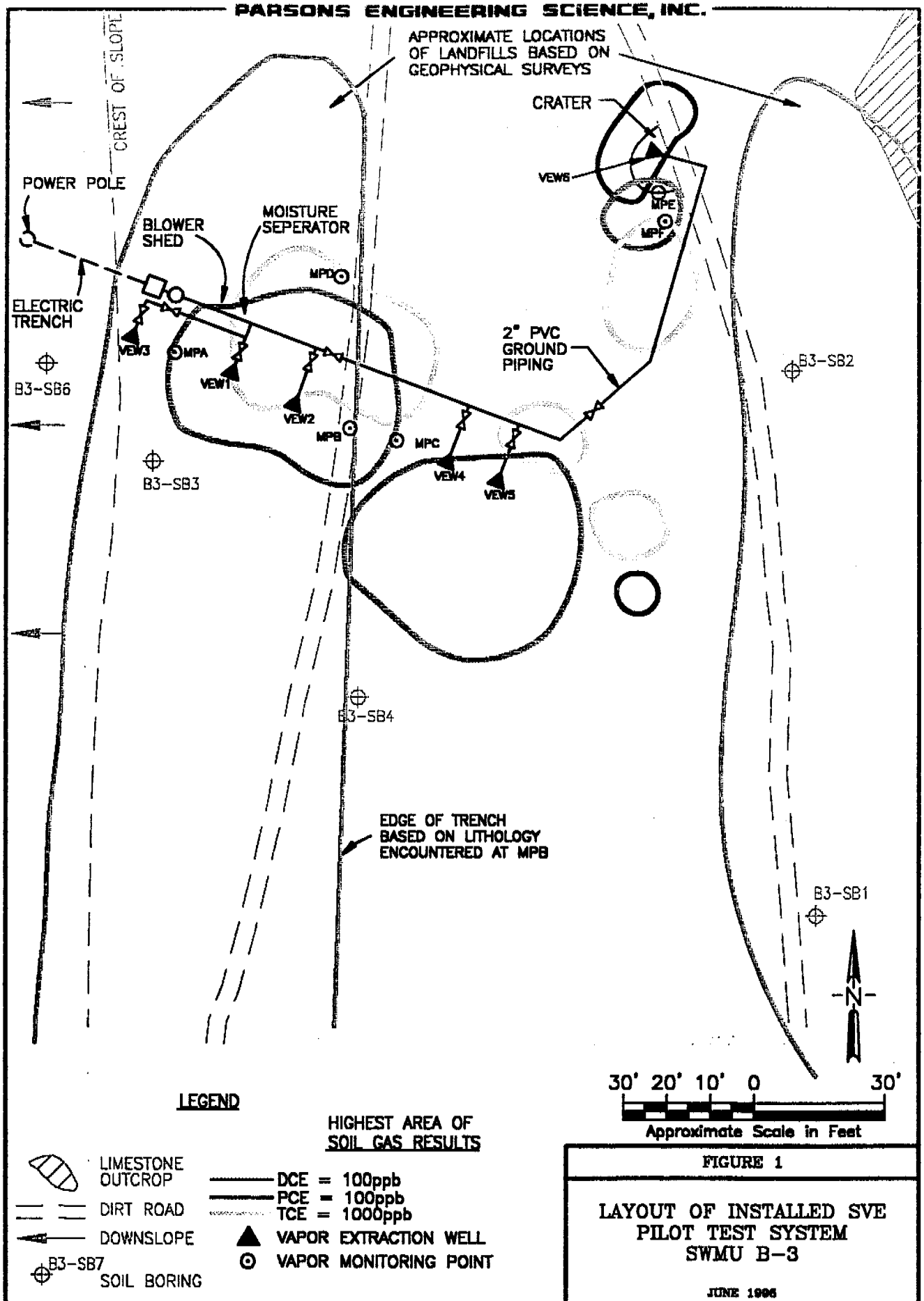


FIGURE 1

LAYOUT OF INSTALLED SVE PILOT TEST SYSTEM SWMU B-3

JUNE 1996

CAMP STANLEY STORAGE ACTIVITY

B3-STX1.DWG 5/16/96

VMP (MPB) was installed in the transition zone on the edge of the main trench boundary, and one VMP (MPC) and two VEWs (VEW-4 and VEW-5) were installed in limestone material outside the landfill limits. All of these VMPs and VEWs, except MPD, were installed in a line that traverse the portion of the landfill exhibiting the greatest contaminant concentrations during the soil gas survey. MPD was constructed approximately 30 feet north of the line. A second test system was installed northeast of the primary test line in an isolated area that also exhibited high levels of contamination in soil gas. This system consists of one VEW (VEW-6) and two VMPs (MPE and MPF).

Construction of Test System

The system consists of a vacuum regenerative blower, a moisture separator (knock out pot), an air filter, flow control and air bleed valves, pressure and temperature gauges, a flow measurement port, sampling ports, and 2-inch PVC pipe manifolded to the top of five of the six VEWs. The vacuum blower used for the pilot test is a Gast[R] Regenair R5 Series Model R5325A-2.

The VEWs were connected to the blower using 2-inch schedule 40 PVC with all connections and flow control valves placed above ground level to allow easy access. An electric fence was placed around the test site to protect the aboveground pipe from free roaming cattle in the area surrounding SWMU B-3 and to prevent vehicles from traversing the site. CSSA electricians connected power from the electric service pole west of the site to a control box and power monitor for the operation of the electric fence.

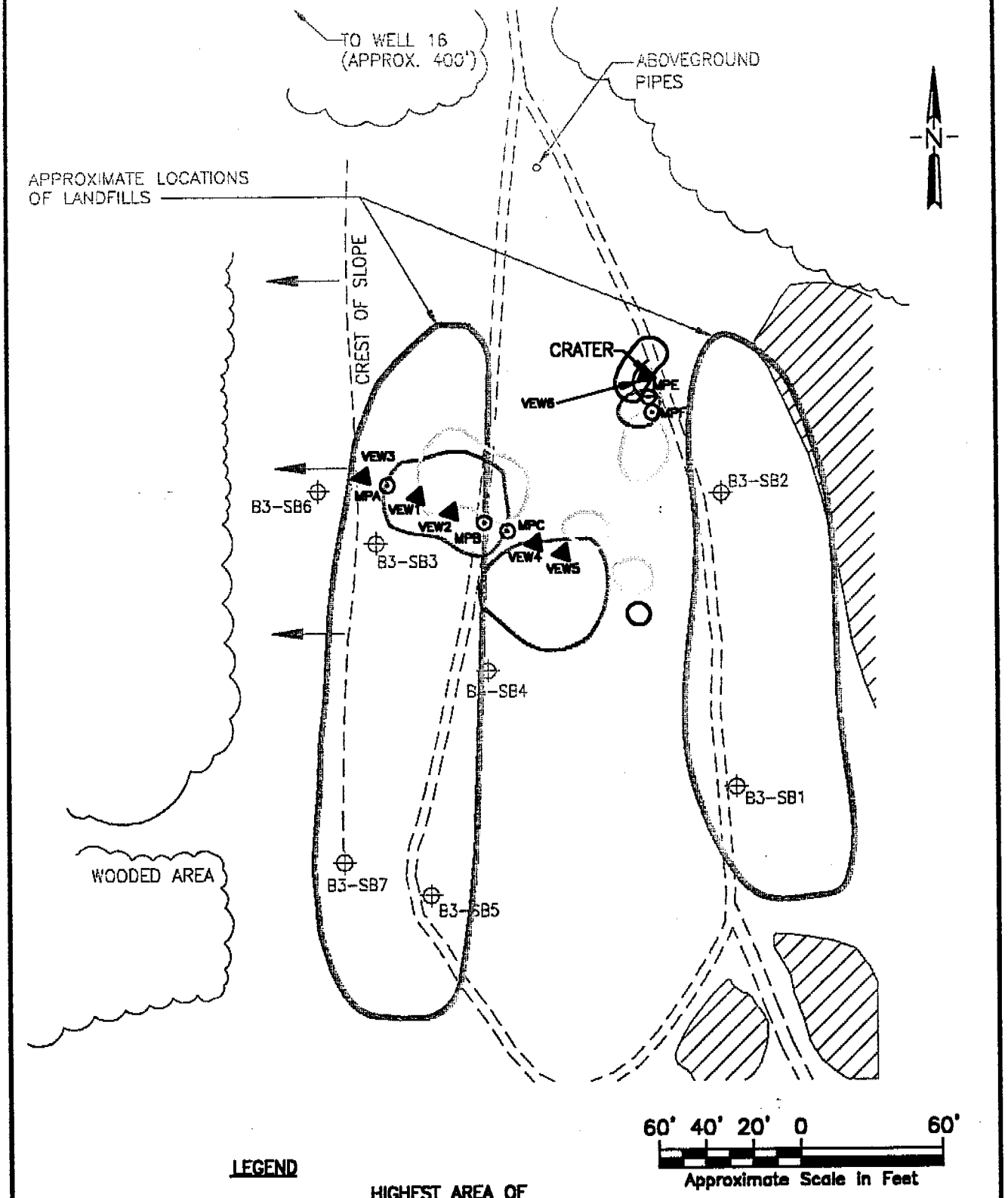
As shown on Figure 1, the VEWs are manifolded together with individual control valves to turn on and off the vacuum to each VEW. Each VEW was also constructed with a pressure monitoring port to allow measurement of pressure responses in the VEW when not being utilized as an extraction well. This flexibility in the system design allowed extraction from any or all of the VEWs and collection of data from the disturbed landfill trenches and undisturbed soils outside the trenched areas.

The 2.5 hp blower unit was mounted in a small shed on the west side of SWMU B-3. The moisture separator and filter system with appropriate gauges and pressure relief controls for the blower system are located outside the blower shed. Electrical power is wired to the blower from an electric service pole located approximately 45 feet west of the blower shed. CSSA electricians connected power and a control box for the blower.

The as-built construction layout of the SVE pilot test system is shown on Figure 2 relative to the SWMU boundary as determined by the geophysical surveys and the locations of soil gas "hot spots".

SVE Pilot Test and Characterization Results

The results of soil and soil gas sampling performed to support the pilot study and the results of air emissions sampling are described in below. The results of soil and soil gas chemistry are also discussed in this process description.



LEGEND

LIMESTONE OUTCROP
DIRT ROAD
DOWNSLOPE
B3-SB7 SOIL BORING

HIGHEST AREA OF SOIL GAS RESULTS
DCE = 100ppb
PCE = 100ppb
TCE = 1000ppb
VAPOR EXTRACTION WELL
VAPOR MONITORING POINT

FIGURE 2

LOCATIONS OF VEW AND VMPs AT SWMU B-3

JUNE 1996

CAMP STANLEY STORAGE ACTIVITY

B3-STX2.DWG 5/14/96

Soil Chemistry

Soils in the B-3 trench area consist of clay and silty clays with white caliche fragments near the surface, progressing with depth to massive limestone. The depth to limestone is variable across the site. Towards the eastern portion of the site, the limestone becomes shallow and is exposed at the surface east of the pilot test layout. The cap and fill material encountered in the main trench consisted of dark brown, reddish brown, and black material with fragments of limestone, plastic and metal debris, and charred wood mixed with poorly sorted coarse sand with very nonplastic clay.

Outside the trench limits, the soils consisted of dark brown silty clay and clay soils from the surface to the top of limestone. The limestone appeared highly weathered, pale yellow to gray with occasional hard massive limestone interbedded. Intervals of vugs, some with calcite growths, bedding, bioturbation, and fracturing were observed. Some interbedding of clay and weathered shale was also observed in the core samples evaluated. No moisture was encountered in any of the soil borings drilled, and none accumulated in any of the VEWs constructed.

Fifteen soil samples were collected at the site from ten of twelve soil borings drilled for VEW or VMP construction. Samples were not collected from the two VEW borings located outside the trench area (VEW-4 and VEW-5) because no evidence of contamination was indicated during drilling. Another factor in the decision was the need to use air rotary coring to penetrate the limestone to the planned depth of the VEWs. The test methods for these soil samples are discussed above. The analytical results of the soil samples are presented on Table 1. Geotechnical results are provided on Table 2.

Only five VOCs were detected in the fifteen samples analyzed by method SW-8260, chlorobenzene, *cis*-1,2,-dichloroethene (DCE), perchloroethene (PCE), toluene, and trichloroethene (TCE). The highest concentrations were detected in VEW-1, VEW-2, MPA, and MPD, which are all located within the limits of the main landfill trench. In borings with multiple sample depths, the greatest VOC concentrations were detected in samples collected from deeper depths. Samples collected from 13 to 15 feet below ground level (bgl) had the greatest levels of VOC contamination of all samples collected within the limits of the B-3 trench.

Samples collected from the soil borings drilled northeast of the main test area had significantly less VOC contamination than those in the main trench area. VEW-6, MPE, and MPF encountered fill material to a depth of 6 feet with numerous discolorations and debris observed in the samples, however, the micro-tip hydrocarbon instrument did not indicate significant levels of VOCs during screening of the soil core samples.

Delineation of Volatile Organic Compounds

Based on the results of collected data, the estimated area of the B-3 landfill trench that requires treatment for VOCs is 15,000 square feet (150 feet by 100 feet). The estimated thickness of this potentially contaminated soil is 15 feet, which totals 225,000 cubic feet (or 8333 cubic yards). The average porosity of the fill material in the trench

Table 1 Analytical Results for Soil Samples

SWMU B-3, Camp Stanley Storage Activity, Texas

Constituents / Sample ID: / Depth (feet) / Date Collected	VEW-1 (9-11) 2/20/96	VEW-1 (13-14) 2/20/96	VEW-2 (14-15) 2/22/96	VEW-3 (15-17) 2/23/96	VEW-6 6-8 feet 2/20/96
Volatile Organic Compounds, SW8260A (in µg/kg)					
Chlorobenzene	2,000 U	2,000	2,000 U	20 U	20 U
cis-1,2-Dichloroethene	27,800	5,000	9,200	20 U	7.44
Tetrachloroethane	2,500 U	25,000 U	2,500 U	25 U	167
Toluene	1,500 U	12,3000	1,500 U	15 U	15 U
Trichloroethene	1,000 U	222,000	68,500	10 U	2,143
Total Metals (in mg/kg)					
Arsenic, SW7060A	1.4	NA	1.4	1.8	15.0
Barium, SW6010A	37.0	NA	13.0	18.0	160.0
Chromium, SW6010A	8.0	NA	4.5	5.8	120.0
Copper, SW6010	45.0	NA	6.6	8.0	580.0
Nickel, SW6010A	6.5	NA	5.8	8.9	100.0
Zinc, SW6010A	63.0	NA	110.0	6.9	850.0
Cadmium, SW7131	1.2	NA	0.3	0.1 U	12.0
Lead, SW7421	1,600.00	NA	8.0	5.7	8,700.0
Mercury, SW7471A	0.1 U	NA	0.1 U	0.1 U	0.21

NA - Not Analyzed
U - Estimated Value

Table 1 Analytical Results for Soil Samples, continued

Constituents / Sample ID / Depth (feet) / Date Collected	MPA (4-5) 2/22/96	MPA (9.5-11) 2/22/96	MPA (14-15) 2/22/96	MPB (8-9) 2/22/96	MPC (4-6) 2/23/96	MPD (4-6) 2/22/96	MPD (8-10) 2/22/96
Volatile Organic Compounds, SW8260A (in µg/kg)							
Chlorobenzene	200 U	4.0 U	2,000 U	200 U	20 U	200 U	200 U
cis-1,2-Dichloroethene	200 U	4.0 U	2,900	200 U	20 U	200 U	200 U
Tetrachloroethane	250 U	5.0 U	2,500 U	250 U	25 U	250 U	250 U
Toluene	150 U	3.0 U	1,500 U	150 U	15 U	150 U	150 U
Trichloroethene	370	16.0	16,800	220	155	1,200	2,500
Total Metals (in mg/kg)							
Arsenic, SW7060A	NA	NA	1.7	0.8	1.8	NA	6.7
Barium, SW6010A	NA	NA	16.0	30.0	39.0	NA	93.0
Chromium, SW6010A	NA	NA	6.4	6.7	9.3	NA	30.0
Copper, SW6010	NA	NA	6.7	7.3	12.0	NA	160.0
Nickel, SW6010A	NA	NA	10.0	5.2	8.2	NA	29.0
Zinc, SW6010A	NA	NA	8.2	18.0	21.0	NA	4,200.0
Cadmium, SW7131	NA	NA	0.2	0.2	0.7	NA	11.0
Lead, SW7421	NA	NA	7.2	21.0	31.0	NA	980.0
Mercury, SW7471A	NA	NA	0.1 U	0.1 U	0.1 U	NA	0.1 U

NA - Not Analyzed
U - Estimated Value

Table 1 Analytical Results for Soil Samples, continued

Constituents / Sample ID / Depth (feet) / Date Collected	MPD (14-15) 2/22/96	MPE (7-9) 2/21/96	MPF (5-6) 2/21/96
Volatile Organic Compounds, SW8260A (in µg/kg)			
Chlorobenzene	2,000 U	200 U	220
cis-1,2-Dichloroethene	20,500	360	200 U
Tetrachloroethane	<2,500 U	650	250 U
Toluene	1,500 U	150 U	<150 U
Trichloroethene	16,900	4,200	100 U
Total Metals (in mg/kg)			
Arsenic, SW7060A	NA	NA	1.5
Barium, SW6010A	NA	NA	43.0
Chromium, SW6010A	NA	NA	12.0
Copper, SW6010	NA	NA	31.0
Nickel, SW6010A	NA	NA	6.8
Zinc, SW6010A	NA	NA	140.0
Cadmium, SW7131	NA	NA	0.9
Lead, SW7421	NA	NA	120.0
Mercury, SW7471A	NA	NA	<0.1

NA - Not Analyzed
U - Estimated Value

Table 2
Geotechnical and Physical Property Results of Soil Samples Collected at SWMU B-3

Camp Stanley Storage Activity, Texas

Parameter / Sample ID: / Depth (feet) / Date Collected	VEW-1 (13-14) 2/20/96	VEW-2 (8-10) 2/22/96	VEW-3 (13-14) 2/23/96	VEW-6 (6-8) 2/20/96	MPA (9.5-11) 2/22/96
Soil pH	8.2	8.0	8.1	7.3	7.9
Total Organic Carbon (mg/kg)	1,020	15,200	2,700	78,200	3,960
Total Phosphate (mg/kg)	224	1,020	230	860	405
Total Kjeldahl Nitrogen (mg/kg)	63	260	170	410	260
Moisture Content (percent)	7.8	14.1	27.2	26.6	15.6
Measured Porosity (percent)	34.5	29.4	27.3	26.9	18.3
Measured Bulk Density (g/cm^3)	1.90	1.86	2.01	1.55	2.36
Particle Size (percent)					
Sand (>0.002 in)	10	25	3	54	6
Silt (0.00.2-0.00015 in)	45	53	67	39	63
Clay (<0.00015 in)	45	22	30	7	31

Table 2, Geotechnical and Physical Property Results, continued

Parameter / Sample ID: / Depth (feet) / Date Collected	MPB (8-9) 2/22/96	MPC (4-6) 2/23/96	MPD (8-10) 2/22/96	MPE (6.5-7) 2/21/96	MPF (5-6) 2/21/96
Soil pH	7.8	7.8	8.3	8.0	7.8
Total Organic Carbon (mg/kg)	13,700	24,300	12,300	2,020	29,400
Total Phosphate (mg/kg)	743	912	768	246	820
Total Kjeldahl Nitrogen (mg/kg)	690	1,200	290	130	210
Moisture Content (percent)	8.25	14.3	14.5	22.4	24.3
Measured Porosity (percent)	34.9	31.4	34.1	25.6	32.6
Measured Bulk Density (g/cm^3)	1.76	1.94	2.05	1.86	2.23
Particle Size (percent)					
Sand (>0.002 in)	4	1	21	5	15
Silt (0.00.2-0.00015 in)	67	64	47	59	64
Clay (<0.00015 in)	29	35	32	36	21

was 30 percent, which converts into a bulk density of 1.85 g/cm^3 (or 115 lb/ft^3). Based on these assumptions, the total mass of fill material in the trench requiring treatment is approximately 25,875,000 pounds (11,747,250 kilograms) of solid material.

The two VOCs requiring treatment based on the comparison to applicable criteria (i.e. TNRCC Risk Reduction Rules) are TCE and DCE. The average concentrations of these compounds are 32.9 mg/kg and 6.6 mg/kg, respectively. Based on these estimates, the total quantities of TCE and DCE needed to be extracted from the main trench area are 386 kilograms (850 pounds) TCE and 78 kilograms (170 pounds) DCE. These estimates are based on the limited characterization data that was collected. Additional characterization data may be necessary to obtain more accurate estimates of the mass of contamination requiring treatment to determine the required treatment duration.

Soil Gas Chemistry

During the performance of the SVE pilot test, initial soil gas was screened at each VMP interval and VEW location for oxygen, carbon dioxide, and total volatile hydrocarbons (TVH). Soil gas screening was also performed following approximately 96 hours of system operation to assess the changes in soil gas chemistry. Soil gas samples were collected by attaching a vacuum pump to the sampling point using flexible tubing and pulling soil gas from the soil formation through the screened intervals of the VMPs and VEWs. Before collecting each sample, the sample point was purged to remove at least the casing and gravel pack volume to ensure a representative and consistent sample of soil gas from the surrounding formation was obtained. A 30-second purge was used for each VMP interval, and the VEWs were purged for 5 minutes.

After purging the VMP, the flexible tubing was attached to a vacuum sampling chamber (dessicater). An air sampling Tedlar™ bag was connected to the sampling tube within the sampling chamber. A vacuum pump was attached to the vacuum sampling chamber to create a low pressure system within the dessicater, causing air to be drawn up from the screened interval into the sample bag. Once full, the sample in the Tedlar™ bag was connected to field instruments to measure oxygen, carbon dioxide, and TVH. The oxygen and carbon dioxide were measured using a GasTech 3252 OX meter and the TVH was measured with a Microtip meter.

Based on the screening results, soil gas sample points were selected for analytical testing to confirm the actual contaminant concentrations present in the soil gas. The analytical sample collection procedures are similar to the screening sampling procedures except that the full Tedlar™ bag was transferred to a 6-liter Summa^R canister. This transfer was accomplished by connecting the bag to a special fitting on the top of the canister. The canister, which possesses a vacuum of up to 6 liters, is opened, and the vacuum inside the canister pulls the sample from the bag. The samples were analyzed for VOCs.

Soil gas samples were collected from the six VMPs and six VEWs installed at the site for initial field screening measures. Each VMP has three screened sampling intervals

whereas each VEW has only one screened interval. The VMPs have screened intervals of less than one foot, so they provide more discrete sampling points with regard to depth than the VEWs. Each VEW is screened across approximately 10 feet of the formation. The sample points were initially field screened for oxygen, carbon dioxide, and TVH to determine which points would be most suitable for collection of soil gas samples for analytical laboratory testing. Table 3 lists the results from the initial field screening. Also listed in Table 3 are measurements of the vacuum pressures exerted on each sample point during sample point purging. This pressure data provides information on the apparent tightness of the screened formation being tested.

The field screening results indicate that anaerobic conditions exist at several of the subsurface locations. The majority of these locations are within the limits of the main landfill trench at depths of 10 feet or greater. These anaerobic conditions are indicative of biological activity, most likely caused by the biodegradation activities of organic carbon (including organic contaminants) in the trench. Carbon dioxide, a byproduct of organic compound degradation, was also encountered at high levels in the anoxic soils to further support the presence of biological activity. The only low oxygen level encountered outside the trench was in MPC at a depth of 14 feet. This VMP was set in an interval of weathered limestone outside the trench limits. The low oxygen level suggests that subsurface pathways may exist that allow communication of the trench to some portions of the natural limestone surrounding the trench. According to the results, the most depleted oxygen levels appear to be associated with the deeper zones of the trench located at VEW-1, and extend west to MPA and VEW-3 and north to MPD. The oxygen levels increase as sample points move east from VEW-1 to VEW-2 and MPB. The differences observed in MPC-14 and MPB-13 suggest that little or no communication exists between these two VMPs.

TVH levels were measured to assess the approximate range of contamination present at different portions of the site. In general, high TVH readings were encountered in deeper soils within the landfill trench. High TVH readings were observed at each point where low oxygen levels were encountered. In addition, high TVH readings were also measured at VEW-2 and MPB. Both of these points had relatively high oxygen levels.

Soil gas samples were collected at four of the screened points to quantify and characterize the VOCs present in the soil gas. These samples were collected in Summa™ canisters for analytical laboratory testing. The points sampled were selected based on the results of the initial field screening effort and included VEW-01, MPA-15, MPD-15, and MPE-04. The samples from within the main trench area provide data for assessing contamination in fill material. The sample collected from MPE-04 provides data to assess the fill material encountered northeast of the main trench. These two areas do not appear to interconnected by subsurface air pathways. The analytical results of the VOCs detected for the initial soil gas are shown on Table 4. The primary contaminants encountered include TCE, DCE, and vinyl chloride. This data supports the occurrence of TCE bioremediation at the site. DCE and vinyl chloride are intermediary breakdown products of TCE.

Table 3 Initial Soil Gas Chemistry, Screening Results
SWMU, B-3, Camp Stanley Storage Activity, Texas

Sample Location	Oxygen (%)	Carbon Dioxide (%)	TVH (ppm)	Vacuum (in. H_2O)
MPA-5	7.0	14.0	395	30
MPA-10	3.5	13.0	>2500	63
MPA-15	6.0	13.0	>2500	45
MPB-5	17.5	2.5	890	50
MPB-9	18.0	2.5	1100	55
MPB-13	18.0	2.5	>2500	60
MPC-5	17.0	8.0	260	35
MPC-9.5	18.0	7.5	320	35
MPC-14	1.5	15.0	>2500	40
MPD-4.5	16.5	4.5	760	35
MPD-10	15.0	5.0	1631	40
MPD-15	1.0	15.0	>2500	75
MPE-4	18.0	2.5	550	35
MPE-8	17.0	3.8	890	35
MPE-12	11.0	6.5	1348	50
MPF-4.5	18.0	4.0	600	35
MPF-8.5	13.0	7.0	855	>150
MPF-12.5	9.0	10.5	1500	95
VEW-01	1.0	20.0	2000	30
VEW-02	12.0	8.0	>2500	40
VEW-03	4.0	17.0	520	30
VEW-04	6.0	17.5	822	>150
VEW-05	5.0	18.0	1196	30
VEW-06	17.0	4.0	922	40

Table 4 Initial Soil Gas Chemistry, Analytical Results
Camp Stanley Storage Activity, Texas

Constituents Sample ID:	VEW-01	MPA-15	MPD-15	MPE-04
Volatile organic compounds, EPA TO-14 (in ppbv)				
1,2,4-Trimethylbenzene	17,000 U	**40,000**	**33,000**	890 U
1,3,5-Trimethylbenzene	17,000 U	**26,000**	16,000 U	890 U
cis-1,2-Dichloroethene	**830,000**	**1,800,000**	**2,300,000**	**41,000**
Tetrachloroethene	17,000 U	17,000 U	16,000 U	**5,400**
Trichloroethene	**140,000**	**520,000**	**510,000**	**36,000**
Vinyl chloride	**100,000**	**490,000**	**68,000**	890 U

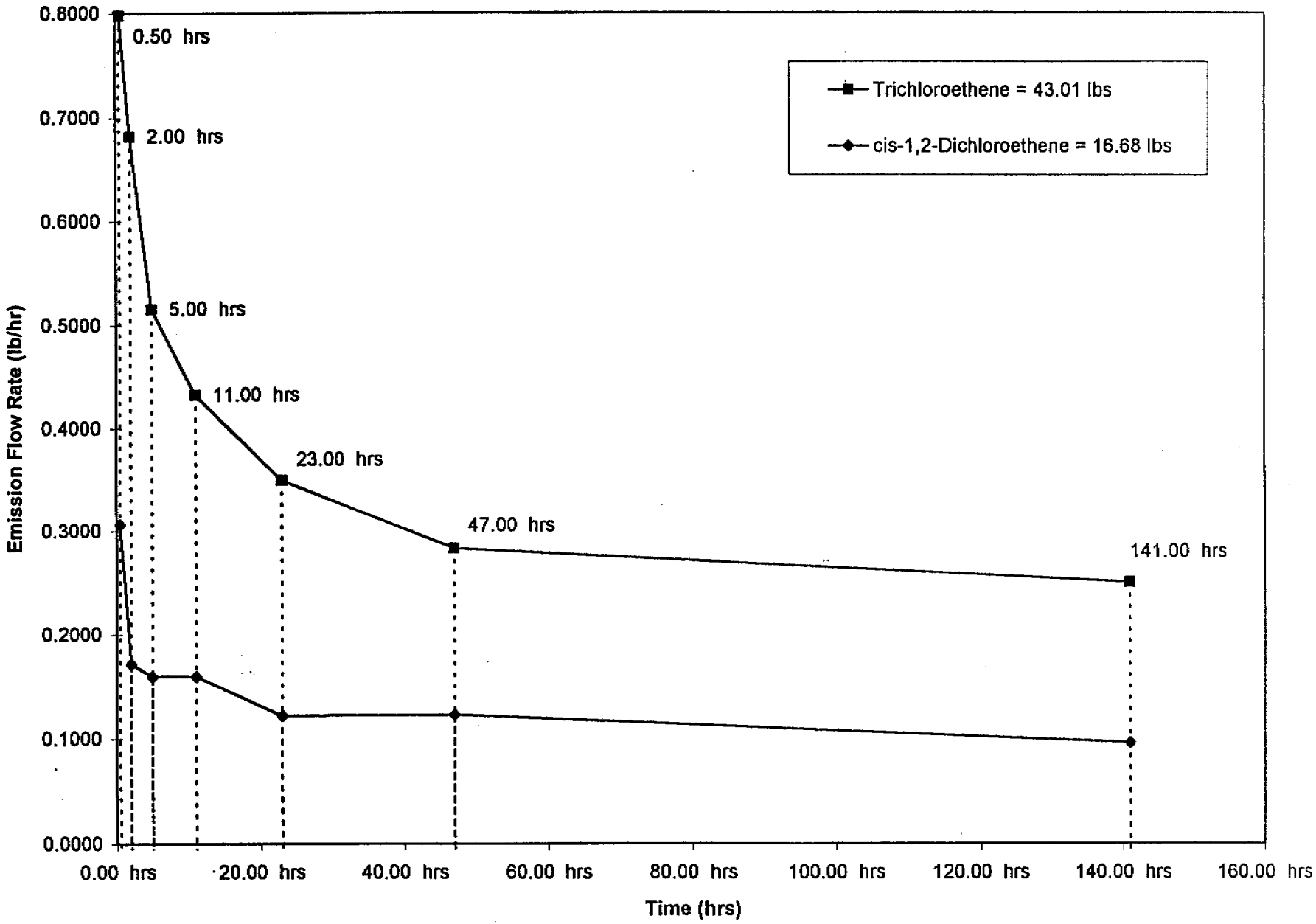
Notes: ppbv - Parts per billion volume
U - Compound not detected at detection limit

Soil Gas Emissions

Samples were collected for VOC analysis from a sampling port located on the exhaust of the blower to estimate the rate and volume of VOC removal and to assess the quantity of contaminants that may be discharged to the atmosphere during normal operation of a full-scale SVE system. To quantify the mass removal rate during the pilot test, eight exhaust air samples were collected at the blower outlet for laboratory VOC analysis. Emission samples from the operating system were collected at thirty minutes after initiating air injection, after 2 hours of operation, 5 hours, 11 hours, 23 hours, 47 hours, 95 hours, and 140 hours. VOC measurements from the exhaust port were coupled with air flow rate measurements to estimate the cumulative mass of VOC removal taking place over time. Periodic monitoring with a hydrocarbon meter was also conducted at the vapor outlet port to evaluate emissions.

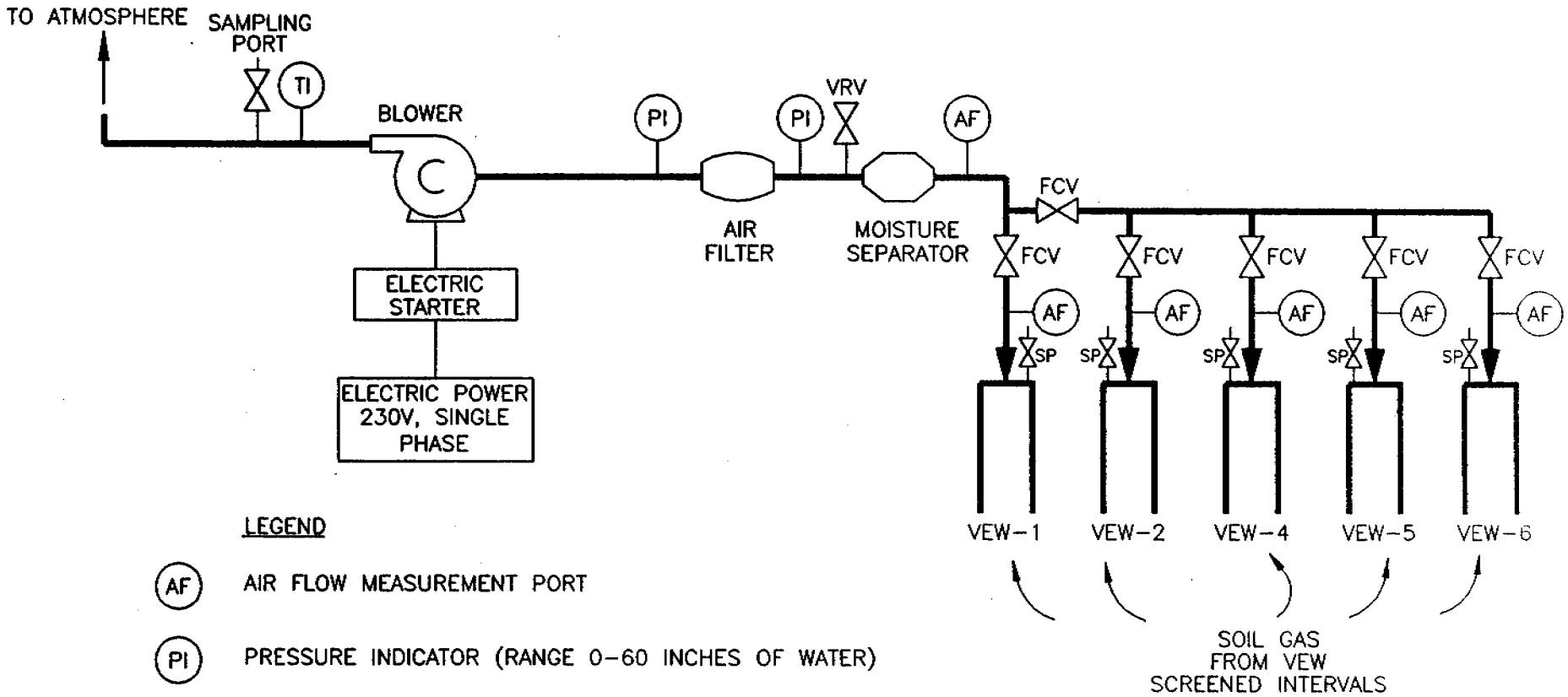
Vapor emission samples were collected by attaching the Summa^{R} canister directly to a sample port located on the exhaust pipe with flexible tubing and opening the canister valve. The vacuum inside the canister pulls the sample from the exhaust stream directly into the canister. For direct reading instruments, the instrument probes were attached directly to a sample port on the exhaust pipe. Target analytes included TCE, PCE, and DCE, and were measured by EPA Method TO-14. Figure 3 charts SVE system calculated air contaminant emission rate vs. time resulting from the SVE pilot testing operations.

Figure 3
CSSA SWMU B-3 SVE Air Contaminant Emission Rates



SWMUB3.XLS
5/30/96

PROCESS FLOW DIAGRAMS



LEGEND

AF	AIR FLOW MEASUREMENT PORT
PI	PRESSURE INDICATOR (RANGE 0-60 INCHES OF WATER)
TI	TEMPERATURE INDICATOR
FCV	FLOW CONTROL VALVE AIR FILTER SOLBERG F-30P-200
PRV	VACUUM RELIEF VALVE
BLOWER	2.5 hp GAST REGENAIR R5 SERIES MODEL R5325A-2
	SAMPLING PORT
	MOISTURE SEPARATOR (30 gal.)

FIGURE 3.8-2

INSTRUMENTATION DIAGRAM FOR INSTALLED SVE BLOWER SYSTEM SWMU B-3

MAY 1996

CAMP STANLEY STORAGE ACTIVITY

DETLCSSA.DWG 5/29/96

EMISSIONS DATA

Soil Vapor Extraction (SVE) System

Standard Exemption 118 (c) Emission Calculations

The speciated chlorinated hydrocarbon emission rates and calculated emission limits derived from Standard Exemption No. 118(c) are presented in the table below. Also shown is the equation for calculating the emission rate.

In order to compare a conservative scenario with the emission limits established in the applicable Standard Exemption, the maximum 30 minute soil gas concentrations will be used in the calculations. During an SVE operation, the soil gas concentrations typically start at a maximum concentration and decrease asymptotically to steady state conditions. Therefore, the soil gas concentrations presented in the emission calculations are the maximum concentrations of chemical compounds in the SVE vent 30 minutes after the pilot system was turned on (Figure 3). In addition, emission rates were calculated using the maximum flow rate of 80 standard cubic feet per minute (SCFM).

Chemical constituent emission limits (E) for Standard Exemption 118(c) are calculated by using the equation E = L/K, where L is the value as listed in table 118A and K is the value from standard exemption list 118(c). As specified in standard exemption 118, no VOC emissions may exceed 6 lb/hr. However, a calculated maximum emission rate is provided as referenced by the standard exemption 118 checklist.

Calculated VS. Exempted Emission Rates

Chemical compound	Soil gas conc. (ppmv)	Air displacement (SCFM)	Molecular weight (lb/lb-mole)	Calculated emission rate (lb/hr)	Calculated emission rate (tons/yr)	L (mg/M^3)	E - Exempted emission rate (lb/hr)
TCE	480	80	131.4	0.79	3.5	135	16.875
DCE	250	80	97.0	0.31	1.34	79	9.8750
Vinyl chloride	16	80	62.5	0.01	0.06	2	0.25

Emission Rate Equation

Chlorinated hydrocarbon emission rate (lb/hr) = (contaminant concentration) x (contaminants molecular weight in lb/lb-mole) x (air pump rate in cubic feet per minute) x (1.581×10^{-7} lb-mole-min./ft^3-ppmv-hr). For calculation of yearly emission rates, it was assumed that the SVE system will operate 24 hours a day, 7 days a week, 52 weeks per year at the 30 minute soil gas concentrations.

Conclusion

The calculated emission rates are compared with E, the emission limit rate expressed in Standard Exemption 118. As seen in the table above, the soil vapor extraction test system satisfies the requirements of Standard Exemption No. 118(c).

STANDARD EXEMPTION
APPLICABLE CHECKLISTS

30 TAC CHAPTER 116, SECTION 116.211
PERMIT EXEMPTIONS - APPLICABILITY CHECKLIST

This checklist is designed to help you confirm that you meet the general rule for using standard exemptions. Whether or not you use this checklist, your claim must be shown to meet all appropriate general requirements, as well as those in each standard exemption (STDX) you are claiming.

1. Description of overall activities at this location: See Introduction

2. Are there any numbered air permits under the same account number? [x] YES [ ] NO
   If yes, do any permit conditions prohibit or restrict the use of standard exemptions (§116.211[a][6])? [ ] YES [x] NO
   (1) If yes, which permit numbers:_____
   (2) If yes, standard exemptions may not be used or their use must meet the restrictions of the permit. A new permit or permit amendment may be required.

3. Emissions check for this STDX claim (§116.211(a)(1)) (see Note 1)

Calculated Tons Per Year		
CO: 0	NO_x: 0	SO_x: 0
PM: 0	VOC: 4.9	Other: 0

Note 1: List all emissions for this project (include point and equipment fugitive emissions from new or modified facilities as well as increases upstream and downstream that result from this project.)

Are SO_x, PM, VOC, and other emissions shown above each less than 25 TPY?
[x] YES [ ] NO

Are the NO_x and CO emissions shown above each less than 250 TPY? [x] YES [ ] NO

If the answer to either question is "NO," a standard exemption cannot be claimed.

4. Site exemption emissions check (§116.211[a][3]):
   Are total SO_x, PM, VOC and other emissions claimed under standard exemption at the site each less than 25 TPY? [x] YES [ ] NO

   Are total NO_x and CO emissions claimed under standard exemption at the site each less than 250 TPY? [x] YES [ ] NO

If either question is answered "NO," determine if one facility at the property has had public notification and comment as required in Subchapter B or D of 30 TAC 116 or the applicable procedures of Chapter 116 in effect at the time of registration. If public notice has occurred, what permit or STDX required this action? _____

If public notice has not occurred, a permit may be required for the proposed facility.

5. Nonattainment Check (§116.211[a][2]):
   Is the facility located in a nonattainment county/area (see listing below)? No
   If "NO," skip to paragraph 6.
   If "YES," which county/area?_____

Show the actual increases (defined as new allowables minus old actuals - see Nonattainment New Source Review Manual) in emissions, without regard for any decreases, which result from this standard exemption claim for the following pollutants: NO_x:_____ VOC:_____ CO:_____ PM10:___

Is the site an existing major source? (See §116.012) [ ] YES [ ] NO
Is the modification major? (See §116.012, Table I) [ ] YES [ ] NO

You may be required to provide documentation of nonattainment new source review applicability. If you have determined these requirements apply at your site for this exemption claim, enclose the necessary netting documentation (See Nonattainment New Source Review Manual).

6. Prevention of Significant Deterioration (PSD) Check (§116.211[b]):
An overall emissions rate of 100 (for a named source) or 250 tons per year or more on-site, or a significant modification for any single air contaminant for which a NAAQS has been issued may indicate a need for PSD review under 40 CFR 52. If you have determined that the netting requirements of 40 CFR 52 are triggered by this exemption claim, enclose the necessary documentation.

7. If any EPA New Source Performance Standards (NSPS) or National Emissions Standards for Hazardous Air Pollutants (NESHAPS) are applicable for the facility covered by the exemption(s) claimed (§116.211[a][5]), list them here: NA

8. §116.211(c) states "No person shall circumvent by artificial limitations the requirements of §116.110 of this title (covering permitting)." Circumvention by artificial limitations may include:

   (a) dividing a complete project into separate segments to circumvent §116.211(a)(1) limits;
   (b) claiming feed or production rates below the physical capacity of the project's equipment in order to begin constructing facilities before a permit or permit amendment is approved for full scale operations.

Ensure that any exemption claim is free of circumvention by means of artificial limits such as these.

9. If all §116.211 requirements are met, we suggest use of the appropriate standard exemption worksheet(s) or checklist(s).

NONATTAINMENT AREAS

FOR OZONE (VOC OR NOx) Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Montgomery, Orange, Tarrant, and Waller Counties for VOC and NO_x as precursors to ozone; and, Victoria County for VOC only.

FOR LEAD: Section of Collin County

FOR PARTICULATE MATTER (PM 10): El Paso County

FOR CARBON MONOXIDE: Section of El Paso County

Standard Exemption 68
Checklist

Contaminated Water and Soil Remediation Equipment

REGISTRATION IS REQUIRED BEFORE CONSTRUCTION OF FACILITIES COVERED BY THIS STANDARD EXEMPTION MAY BEGIN

The following checklist is designed to help you confirm that you meet Standard Exemption 68 (STDX 68) requirements. Any "no" answers indicate that the claim of exemption may not meet all requirements for the use of Standard Exemption 68. If you do not meet all the requirements, you may alter the project design/operation in such a way that all the requirements of the exemption are met or obtain a construction permit.

YES	NO	NA	DESCRIPTION
x			Have you included a description of how this exemption claim meets the general rule for the use of standard exemptions (§116.211 checklist is available)?
x			Will the remediation be at the property where the contamination originally occurred or at a nearby property secondarily affected by the contamination?
		x	Is the total emissions rate of petroleum hydrocarbons (except benzene) less than or equal to one (1) pound per hour? Attach calculations and supporting data such as soil/water contaminant concentrations.
		x	Do benzene emissions meet the emissions limits of STDX 118(c)? Attach calculations, contaminant concentrations, and a scaled map showing the emission(s) point(s) and nearby off-property receptors.
x			Do chemical emissions other than those from petroleum hydrocarbons meet the requirements of STDX 118(b) and (c)? Attach calculations, contaminant concentrations, and a scaled map showing the emission(s) point(s).
x			Will the handling, processing, and conditioning of contaminated and remediated soil be free of visible emissions (except for moisture)?
		x	If you use abatement equipment to meet the exemption's emissions limits, does it completely satisfy one of the conditions stated in STDX 68(e)(1)-(4)? Which one? __ Describe the abatement process in an attachment.

Revised 10/95

Standard Exemption 118
Checklist
Facilities and Modifications

A PI-7 WITH REQUIRED ATTACHMENTS MUST BE SUBMITTED WITHIN TEN DAYS OF INSTALLATION OR MODIFICATION OF FACILITIES UNDER THIS EXEMPTION

The following checklist has been designed to help you confirm that you meet Standard Exemption 118 (STDX 118) requirements. Any "no" answers indicate that the claim of exemption may not meet all the requirements for the use of Standard Exemption 118. If you do not meet all the requirements, you may alter the project design/operation in such a way that all requirements of the exemption are met or obtain a construction permit.

YES	NO	NA	DESCRIPTION
x			Have you included a description of how this exemption claim meets the general rule for the use of standard exemptions (§116.211 checklist is available)?
x			Have you reviewed all other exemptions to determine that none authorize the proposed construction or change had all requirements been met?
		x	If this claim is to qualify the use of other chemicals at a facility authorized by another exemption, are all the requirements of that specific exemption met? Have you included a description of how that exemption's requirements are met?
x			Is each emission source located at least 100 feet from any recreational area, residence, or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located? Attach a scaled map.
x			Do all the chemicals that will be part of new or changed emissions at the facility appear in Table 118A or in the 1985-86 version of the list of Threshold Limit Values (TLV) published by the American Conference of Governmental Industrial Hygienists? List the compounds and their L value from Table 118A or their TLV.
x			Are the calculated new or increased emissions, including fugitives, for each chemical less than or equal to 5 tons per year? Attach calculations.
x			Are the calculated new or increased emissions, including fugitives, for each chemical less than or equal to "E" pounds per hour as determined using the formula in STDX 118(c) or 6 pounds per hour, whichever is lower? Attach both the "E" and emissions calculations for each compound.
x			Have you attached to the PI-7 a complete description of the project?
			Are all the facilities, in which the compounds listed in STDX 118(e) are handled, located at least 300 feet from the nearest property line and 600 feet from the nearest

off-property receptor? Your attached scaled map should show the effected facilities, the nearest fence lines, and receptors.

__	__	x	Are the total on-property quantities of each compound listed in STDX 118(e) always less than or equal to 500 pounds? This requirement does not apply to permit authorizations.
__	__	x	Are all compounds listed in STDX 118(e) handled only in unheated containers operated in compliance with U.S. Department of Transportation Regulations (49 CFR 171 through 178)?
__	__	x	Are procedures and equipment in place to ensure that containers containing chemicals listed in STDX 118(e) never vent to, or are never opened directly to, the atmosphere? Attach descriptions as necessary.
__	__	x	For physical changes or modifications to existing facilities, does all air pollution abatement equipment remain unchanged (i.e. no change or addition is allowed)? (This requirement does not mean that new facilities may not have control equipment.)
x	__	__	Will all visible emissions, except uncombined water, have opacity less than or equal to 5 percent in any five-minute period?

COPY OF TNRCC MAY 10, 1996 LETTER

Barry R. McBee, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*
Dan Pearson, *Executive Director*

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Promoting Texas by Reducing and Preventing Pollution

May 10, 1996

Lieutenant Colonel Dean C. Schmelling
Post Commander
DEPARTMENT OF THE ARMY, CAMP STANLEY
25800 Ralph Fair Road
Boerne, Texas 78006

Re: Standard Exemption
Registration No. 32405
Soil Vapor Extraction System
Boerne, Bexar County
Account ID No. BG-0841-S

Dear Lieutenant Colonel Schmelling:

This is in response to your request to register the operation of a soil vapor extraction system under Standard Exemption at your facility in Bexar County. We have evaluated the information you have submitted in support of your request, and we find that a number of insufficiencies prevent us from determining whether you have met all the requirements of the standard exemption claimed in your registration request and/or of 30 TAC §116.211 (Regulation VI). Therefore, we cannot confirm your claim of this exemption at this time.

Insufficiencies are summarized below:

Please provide a to-scale site map that shows the emissions points and the distance to the nearest off-site receptor.

Please furnish the date of operation of the system. We note that the pilot test was conducted without prior registration. For future reference, we consider any emissions into the atmosphere from remediation projects, even pilot tests, as subject to provision (f) of Standard Exemption 68. Also for future reference, please note that, in no case, may emissions of trichloroethene and dichloroethene exceed six pounds per hour.

If you have any soil analyses, please discuss these as they may relate to the pilot test results.

Re: Standard Exemption
Registration No. 32405

Please submit any new information or modification proposals as a new standard exemption registration request. To expedite the process at that time, please include a copy of this letter. We remind you that Sections 382.0518(a) and 382.057 of the Texas Clean Air Act, Texas Health and Safety Code, Chapter 382, provide that you must obtain a construction permit or fully comply with a standard exemption before you begin work on the construction of a new facility or modify an existing facility that may emit air contaminants.

We appreciate your cooperation in this matter. If you have any questions concerning this exemption, please contact Mr. Terry Murphy of our Office of Air Quality, New Source Review Division at (512) 239-1587.

Sincerely,

Tammy Villarreal
Manager, Chemical Section
New Source Review Division
Texas Natural Resource Conservation Commission

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cc: Mr. James Menke, Air Program Manager, San Antonio

Record No. 42868