PARSONS ENGINEERING SCIENCE, INC.

8000 Centre Park Drive, Suite 200 • Austin, Texas 78754 • (512) 719-6000 • Fax: (512) 719-6099

June 16, 1995

Office of Air Quality, Permitting Division
New Source Review Program
Texas Natural Resource Conservation Commission
P. O. Box 13087 (MC 162)
Austin, TX 78711-3087

RECEIVED
JUN 21 1995
PERMITS PROGRAM

Re: TNRCC Permit Application
Camp Stanley, Bexar County

Dear Permitting Division:

On behalf of Camp Stanley, I am submitting a cover letter for the TNRCC Permit Application and Standard Exemption Registrations which were submitted by Camp Stanley earlier this month. Camp Stanley is an ammunitions storage facility. The Permit Application pertains to emissions from cold solvent cleaning of military weapons and solvent recovery operations; the Standard Exemption Registrations apply to two coatings spray booths. The activities proposed in this permit application produce volatile organic compound (VOC) emissions totaling 1 tpy. Appendix A of the application summarizes a preliminary modeling analysis which demonstrates that the Effects Screening Levels (ESLs) are not exceeded; this analysis complies with current TNRCC modeling guidance.

If you have questions, please call me at (512) 719-6000.

Sincerely,

Glynis H. Fowler
Senior Air Quality Scientist

Enclosures

cc: Mr. Richard Garcia, TNRCC, Region 13, San Antonio
Mr. Brian Murphy, Camp Stanley, Boerne

DEPT OF ARMY-CAMP STORAGE FACILITY
RECORD# 36549 PERMIT# 29466
JUNE 15, 1995

PROJECT OVERVIEW:

Camp storage facility, Dept of army, is a weapons storage facility located in Beorne, Texas. CSF is requesting a permit and standard exemptions authorizing weapons cleaning and spray painting operations. Weapons are dip cleaned in vats containing the solvents. Spraying operations are carried out in two booths located in two different buildings (# 27 and # 200) in their facility. Total VOC emissions are less than 4 TPY and PM emissions are less than 0.013 TPY

BACT:

1. No add on controls as the emissions are low

2. Good operating practices

Please assign & notify me. No confidential info. included.

Raj

NOTE TO APPLICANT: Please mark an "X" the column labeled "Applicant use" to cate that the information has been provided. You may also use the column labeled "Comments & Discussion" to .urther explain your action.

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
NEW SOURCE REVIEW PROGRAM - CORE SECTION
AIR QUALITY PERMIT APPLICATION
ADMINISTRATIVE COMPLETENESS (CORE) CHECKLIST

TNRCC

TNRCC use only

COMPANY DePP PROJ No.: 29460 PROJ TYPE: CRUW CORE ENGR: SKRL RECORD No.: 36549
REGION 13 COUNTY Bexar Tech. Contact: Phone:
DATE RECD by CORE: 6-9 Comments DATE ADMIN COMP:
DATE RECD by TECH. ENGR: Comments TECH. ENGR: TECHNICAL SECT.: COAT

<------ TNRCC use only ------>

PI-1 REF	REQUIRED INFORMATION	Applicant use		DATE ADMN COMPLETE	NOT COMPLETE	NOTHING SUBMITTED	COMMENTS & DISCUSSION
	CONFIDENTIAL Information?(1)			J6-13			[ ]YES [X]NO
	CONFIDENTIAL pages marked?			N/A			[ ]YES [X]NO
	CORE Checklist attached		*	✓			[X]YES [ ]NO
	NOV related notification			✓			[ ]YES [X]NO
	Net number of new jobs created			✓			
	Name of elected State Senator			✓			
	Name of elected State Repr.			✓			
I.	Type of Application		*	✓			[X]PERMIT [ ]AMENDMENT
	A. Permittee Name, Tax ID & Addr.			✓			
	Technical Contact (addr.phone)			✓			
	B. Owner Name, Tax ID & Address			✓			
	C. Product/Business & SIC Code		*	✓			9711
II.	A. Plant/Site Name			✓			
	B. Address of Facility			✓			
	C. Nearest City, County and Zip		*	✓			
	D. Latitude and Longitude			✓			
	E. TNRCC Air Quality Acct. No.		*	✓			
III.	A. Name of Facility			✓			
	B. Facility Type			✓			[X]PERMANENT [ ]PORTABLE
	C. Operating Schedule			✓			Con't
	D. Start Dates		*	✓ Qusn ac			CONST DATE OPER DATE
IV.	A. New Permit Unit - grass roots			✓			New grass roots facility at this location.
	B. New Permit Unit - nonpermitted			N/A			Modification of exist. non-permitted facility.
	C. Amendment - permitted facility			N/A			[ ]Present Permit No.
	D. Change in Location			N/A			[ ]Present Permit No.
V.	A. Compliance History - Exempt			N/A			[ ]YES [X]NO
	B. Comp. Hist. - site => 5 yr old			✓			[X]YES [ ]NO
	C. Comp. Hist. - new site			N/A			[ ]YES [X]NO
	D. Comp. Hist. - site < 5 yr old			N/A			[ ]YES [X]NO
VI.	A. Area Map			✓			
	School within 3,000 feet?			✓			[ ]YES [X]NO
	B. Plot Plan			✓			
	C. Table 1(a) & Emission Calc.			✓			
	D. BACT Analysis			✓			
	E. Franchise Tax Certificate		*	N/A			[✓]N/A [ ]Certificate good thru __/__/__
	F. Permit Fee Required?						[X]YES [ ]NO 450.00
	Fee Certification & Table 30			✓			
	G. Actual emissions past 2 yr			✓			[ ]YES [X]NO
	H. Stand. exempt. or grandfather unit rolled into permit?			✓			[ ]YES [X]NO
	Information on units provided?			✓			[ ]YES [X]NO
VII.	A. Process Flow Diagram			✓			
	B. Process Description			✓			
	C. Material Balance			✓			
VIII.	116.111(1) TNRCC Rules & Regs			✓			
	116.111(2) Emissions Measurement						
	116.111(3) BACT Analysis						
	116.111(4) NSPS						
	116.111(5) NESHAPS						
	116.111(6) Facility Performance						
	116.111(7) Nonattainment review						MAJOR SOURCE/MODIFICATION? [ ]YES [X]NO
	116.111(8) PSD review						MAJOR SOURCE/MODIFICATION? [ ]YES [X]NO
	116.111(9) Impacts/Modeling			✓			
X.	Copy to EPA Region 6 office		*	N/A			[ ]YES [✓]N/A
	Copy to TNRCC Regional Office		*	✓			[✓]YES City -
	Copy to Local Program(s)		*	N/A			[ ]YES [X]N/A
	Application sealed by Prof.Engr.?			N/A			[ ]YES [X]N/A
	Authorizing Signature/Date			✓			

* *These items will not result in the application being considered administratively deficient; however, they MUST be submitted prior to final action or approval of the application.*

(1) *CONFIDENTIAL information MUST be clearly marked on each page and separated from non-confidential information. The application must include a non-confidential version describing the confidential information for the public file. To be considered confidential, each page must be marked "CONFIDENTIAL" at the time of submittal.*

ICANT: Please mark an "X" in olumn labeled "Applicant use" to indicate that the information has been provided. You may also use abeled "Comments & Discuss to further explain your action.

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
NEW SOURCE REVIEW PROGRAM - CORE SECTION
AIR QUALITY PERMIT APPLICATION
ADMINISTRATIVE COMPLETENESS (CORE) CHECKLIST

Version 10/28/93

TNRCC use only

COMPANY_____ PROJ No.:_____ PROJ TYPE:_____ CORE ENGR:_____ RECORD No.:_____
REGION____ COUNTY_____ Tech. Contact:_____ Phone:_____
DATE RECD by CORE:_____ Comments _____ DATE ADMIN COMP:_____
DATE RECD by TECH. ENGR:_____ Comments_____ TECH. ENGR:_____ TECHNICAL SECT.:____

<----- TNRCC use only ------->

PI-1 REF Required Information	Applicant Use		DATE ADMN COMPLETE	NOT COMPLETE	NOTHING SUBMITTED	COMMENTS & DISCUSSION
CONFIDENTIAL Information?(1)	N/A					[ ]YES [X]NO
CONFIDENTIAL pages marked?	N/A					[ ]YES [ ]NO
CORE Checklist attached	X	*				[X]YES [ ]NO
NOV related notification	N/A					[ ]YES [X]NO
Net number of new jobs created	X					
Name of elected State Senator	X					
Name of elected State Repr.	X					
I. Type of Application	X	*				[X]PERMIT [ ]AMENDMENT
A. Permittee Name, Tax ID & Addr.	X					
Technical Contact (addr,phone)	X					
Owner Name, Tax ID & Address	X					
C. Product/Business & SIC Code	X	*				
II.A. Plant/Site Name	X					
B. Address of Facility	X					
C. Nearest City, County and Zip	X	*				
D. Latitude and Longitude	X					
TNRCC Air Quality Acct. No.	N/A	*				not yet assigned
.. Name of Facility	X					
B. Facility Type	X					[ ]PERMANENT [ ]PORTABLE
C. Operating Schedule	X					
D. Start Dates	X	*				CONST DATE >5 years ago OPER DATE >5 years a
IV.A. New Permit Unit - grass roots	X					New grass roots facility at this location.
B. New Permit Unit-nonpermitted	N/A					Modification of exist. non-permitted facility.
C. Amendment-permitted facility	N/A					[ ]Present Permit No.
D. Change in Location	N/A					[ ]Present Permit No.
V. A. Compliance History - Exempt	N/A					[X]YES [ ]NO
B. Comp. Hist.-site => 5 yr old	X					[ ]YES [ ]NO
C. Comp. Hist.- new site	N/A					[ ]YES [X]NO
D. Comp. Hist.- site < 5 yr old	N/A					[ ]YES [X]NO
VI.A. Area Map	X					
School within 3,000 feet?	X					[ ]YES [X]NO
B. Plot Plan	X					
D. BACT Analysis	X					
E. Franchise Tax Certificate	X	*				[X]N/A [ ]Cert. good thru __/__/__
F. Permit Fee Required?	X					[X]YES [ ]NO
Fee Certification & Table 30	X					
VII. A. Process Flow Diagram	X					
B. Process Description	X					
C. Material Balance	X					
VIII.116.111(1) TNRCC Rules & Regs	X					
116.111(2) Emissions Measurement	X					
116.111(3) BACT Analysis	X					
116.111(4) NSPS	X					
116.111(5) NESHAPS	X					
116.111(6) Facility Performance	X					
116.111(7) Nonattainment review	X					MAJOR SOURCE/MODIFICATION? [ ]YES [X]NO
116.111(8) PSD review	X					MAJOR SOURCE/MODIFICATION? [ ]YES [X]NO
116.111(9) Impacts/Modeling	X					
Copy to EPA Region 6 office	X	*				[X]YES [ ]N/A
Copy to TNRCC Regional Office	X	*				[X]YES City - San Antonio
Copy to Local Program(s)	X	*				[ ]YES [X]N/A
XI. Application sealed by Prof.Engr.?	X					[ ]YES [X]N/A
XII. Authorizing Signature/Date	X					

* *These items will not result in the application being considered administratively deficient; however, they MUST be submitted prior to final action or approval of the application.*

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Texas Natural Resource Conservation Commission

DEP_USR_RPT 11:37:25.16 Deposit User Report 9-JUN-1995 Page 1

Deposit Voucher #: 401439 Date: 9-JUN-1995

Division: APF Air Permit Fees

Receipt #	Remitter	Pymt Type	Check Number	Id Number	Payment Made For	Payment Description	Amount
9529368	ENGINEERING-SCIENCE INC SXR	CK	8469		NEW/ARMY-CAMP STANLEY 29466/36549	AIR PERMIT FEES	450.00
9529379	BAYER CORP	CK	1041		NEW/CI-0016-S	AIR PERMIT FEES	55,000.00
						Division Total	55,450.00

Texas Natural Resource Conservation Commission
Air Quality Permit Application
and
Standard Exemption Registrations

29466

Department of the Army
Camp Stanley Storage Activity
Boerne, Texas

May 1995

This report has been printed on recycled paper.

ATTACHMENT V

COMPLIANCE HISTORY

COMPLIANCE HISTORY

Camp Stanley Storage Activity (CSSA) is an existing site which was constructed more than five years ago. As such, the TNRCC is responsible for compiling the compliance history per V.B. on the Form PI-1.

ATTACHMENT VI.A

AREA MAP

ATTACHMENT VI.B

PLOT PLANS

PLOT PLANS

Two plot plans are included in this application in the attached sleeve. Attachment VI.B-1 is a plot plan of the entire installation showing all boundaries. Attachment VI.B-2 shows a more-detailed view of the facility industrial area. All stationary emissions sources are indicated on this attachment, including exempt sources as well as those proposed for permitting. Attachment VI.B-3, following the map sleeve, presents the UTM coordinates and heights of buildings located in the vicinity of the permitted sources. For each building, the UTM coordinates shown represent the locations of the four corners of the building.

Table VI.B-1. UTM Coordinates and Dimensions for Various Facility Buildings

Building Number	Building Corner	North UTM (M)	East UTM (M)	Building Height (ft)	Building Height (m)
4	NE	3284408.54133	536525.05881	12	3.66
4	NW	3284409.41551	536515.55016	12	3.66
4	SE	3284368.50057	536521.37765	12	3.66
4	SW	3284369.37474	536511.86899	12	3.66
5	NE	3284445.85803	536526.39481	12	3.66
5	NW	3284446.60421	536518.27839	12	3.66
5	SE	3284438.83971	536525.74957	12	3.66
5	SW	3284439.58589	536517.63319	12	3.66
27	NE	3284428.44484	536524.04790	20	6.10
27	NW	3284429.27202	536515.05060	20	6.10
27	SE	3284416.66090	536522.96452	20	6.10
27	SW	3284417.48808	536513.96722	20	6.10
79	NE	3283696.73811	535768.33420	12	3.66
79	NW	3283696.60753	535760.86697	12	3.66
79	SE	3283694.13526	535768.37973	12	3.66
79	SW	3283694.00468	535760.91249	12	3.66
89	NE	3283410.22942	535756.25190	12	3.66
89	NW	3283410.06138	535746.64236	12	3.66
89	SE	3283402.87292	535756.38056	12	3.66
89	SW	3283402.70487	535746.77102	12	3.66
90	NE	3283596.52581	535769.04730	17	5.18
90	NW	3283596.09974	535744.68569	17	5.18
90	SE	3283438.17804	535771.81666	17	5.18
90	SW	3283437.75198	535747.45505	17	5.18
91	NE	3283410.63610	535827.75404	17	5.18
91	NW	3283410.23861	535805.02571	17	5.18
91	SE	3283227.69298	535830.95375	17	5.18
91	SW	3283227.29547	535808.22521	17	5.18
92	NE	3283411.11940	535866.62460	17	5.18
92	NW	3283410.73303	535844.53128	17	5.18
92	SE	3283227.66682	535869.83303	17	5.18
92	SW	3283227.28041	535847.73971	17	5.18
93	NE	3283212.01672	535829.57683	17	5.18
93	NW	3283211.62119	535806.96128	17	5.18
93	SE	3283027.07190	535832.81132	17	5.18
93	SW	3283026.67637	535810.19576	17	5.18
94	NE	3283212.14621	535868.51841	17	5.18
94	NW	3283211.76326	535846.62124	17	5.18
94	SE	3283027.47639	535871.74812	17	5.18
94	SW	3283027.09344	535849.85094	17	5.18
96	NE	3283011.22992	535869.95682	17	5.18
96	NW	3283010.85198	535848.34529	17	5.18
96	SE	3282826.55580	535873.18656	17	5.18
96	SW	3282826.17786	535851.57502	17	5.18
98	NE	3283778.27125	535826.09001	12	3.66
98	NW	3293780.77057	535819.33262	12	3.66
98	SE	3283708.88890	535800.42770	12	3.66
98	SW	3283711.38825	535793.67034	12	3.66

Table VI.B-1. UTM Coordinates and Dimensions for Various Facility Buildings

Building Number	Building Corner	North UTM (M)	East UTM (M)	Building Height (ft)	Building Height (m)
200	NE	3286586.82408	536668.42981	20	6.10
200	NW	3286586.34967	536641.31003	20	6.10
200	SE	3286575.78713	536668.61187	20	6.10
200	SW	3286575.31303	536641.50309	20	6.10
201	NE	3286563.59796	536662.31175	12	3.66
201	NW	3286563.33203	536647.10909	12	3.66
201	SE	3286555.18440	536662.45894	12	3.66
201	SW	3286554.91845	536647.25628	12	3.66
90-1	NE	3283582.64031	535788.21677	12	3.66
90-1	NW	3283582.38299	535773.50296	12	3.66
90-1	SE	3283568.28866	535788.46777	12	3.66
90-1	SW	3283568.03131	535773.75396	12	3.66
90-2	NE	3283556.64741	535788.77776	12	3.66
90-2	NW	3283556.39376	535774.27394	12	3.66
90-2	SE	3283542.00689	535789.03380	12	3.66
90-2	SW	3283541.75324	535774.52998	12	3.66

ATTACHMENT VI.C

EMISSIONS DATA
AND STACK PARAMETERS

EMISSION CALCULATIONS

Cleaning Vats - Building 90 (EPNs 1,2,3 and 4)

Emissions from the four solvent vats, the volatile corrosion inhibitor (VCI) vat and the fingerprint remover vat in Building 90 are calculated using solvent processing data for each vat, including the amount of material put into each vat (input) and the amount of spent solvent removed from each vat (output) over the course of a year. The difference of the input material and output material is material lost. All of the material lost is assumed to be lost through evaporation of material from the surface of the tanks and from cleaned parts. Table VI.C-1 presents a summary of emissions from the vats in Building 90.

Table VI.C-1 Summary of Emissions From Cleaning Vats in Building 90

Emission Point	Name of Vat	Fresh Material In (Input) (gal/yr)	Spent Material Removed (Output) (gal/yr)	Material Lost[a] (gal/yr)	Specific Gravity	Annual VOC Emissions (ton/yr)	Hourly VOC Emissions (lbs/hr)
EPN 1	VCI Vat	155	100	55	1.080	0.25	0.41
	Solvent Vat 1	200	150	50	0.811	0.17	0.28
EPN 2	Solvent Vat 2	30	20	10	0.811	0.03	0.06
	Solvent Vat 3	150	100	50	0.811	0.17	0.28
EPN 3	Solvent Vat 4	150	100	50	0.811	0.17	0.28
EPN 4	Fingerprint Remover Vat	155	105	50	0.780	0.17	0.27

Annual Emissions. Annual VOC emissions for the vats are calculated by multiplying the annual amount of each material lost by the density of the material according to Equation 1:

$$VOC_A = (M_L)(sg)(\rho_W)(C) \qquad (1)$$

where,

VOC_A = Annual VOC emissions, tons per year
M_L = Annual amount of material lost, gallons per year
sg = Specific gravity of the product, unitless
ρ_W = Density of water, pounds per gallon
C = Pounds to tons conversion, 1 ton/2000 pounds

The following demonstrates a sample calculation of annual VOC emissions for the VCI vat:

$$VOC_A = 55 \text{ gal. lost/year} \times 1.080 \times 8.3346 \text{ lbs/gal} \times 1 \text{ ton/2000 lbs}$$

$$VOC_A = 0.2475 \text{ ton/year}$$

PERMIT NO. _____ PERMIT TYPE: CONSTRUCTION [X] AMENDMENT [ ] REVISION [ ] RENEWAL [ ]

ACCOUNT ID NO. _____

TABLE 1(a)
EMISSION SOURCES

DATE 04/10/95

eview of applications and issuance of permits will be expedited by supplying all necessary Information requested on this Table.

AIR CONTAMINANT DATA						EMISSION POINT DISCHARGE PARAMETERS									
EMISSION POINT [1]		CHEMICAL COMPOSITION OF TOTAL STREAM		AIR CONTAMINANT EMISSION RATE		UTM COORDINATES OF EMISSION PT. [6]			SOURCE HEIGHT ABOVE GROUND [ft.]	SOURCE HEIGHT ABOVE STRUCT. [ft.]	STACK SOURCES (7) EXIT DATA			FUGITIVE SOURCES (8)	
NUMBER	NAME	COMPONENT OR AIR CONTAMINANT NAME [2]	CONC. (%v) [3]	#/HR [4]	.TONS/ YR [5]	ZONE	EAST [meters]	NORTH [meters]			DIA. [ft.]	VEL. [fps]	TEMP. [°F]	LENGTH [ft.]	WIDTH [ft.]
EPN 1	BLDG. 90 VCI VAT	VOC (100% ISO-PROPYL ALCOHOL)	<0.001	0.4126	0.2476	14	535745.6181 8	3283542.781 99	11.50	--	L=0.8 3 W=0.83	9.12	AMB		
	BLDG. 90 SOLVENT VAT 1	VOC (100% MINERAL SPIRITS)	<0.001	0.2816	0.1690	14	535745.6181 8	3283542.781 99	11.50	--	L=0.8 3 W=0.83	9.12	AMB		
		TOTAL VOC	<0.001	0.6942	0.4166	14	535745.6181 8	3283542.781 99	11.50	--	L=0.8 3 W=0.83	9.12	AMB		
EPN 2	BLDG. 90 SOLVENT VATS	VOC (100% MINERAL SPIRITS)	<0.001	0.3380	0.2028	14	535746.1590 2	3283511.857 66	8.46	--	L=0.8 3 W=0.83	9.12	AMB		
EPN 3	BLDG. 90 SOLVENT VAT 4	VOC (100% MINERAL SPIRITS)	<0.001	0.2816	0.1690	14	535763.6863 3	3283502.259 32	17.21	1.0	L=1.8 3 W=2.08	18.4 1	AMB		
EPN 4	BLDG. 90 FINGERPRINT REMOVER	VOC (100% STODDARD SOLVENT)	<0.001	0.2709	0.1625	14	535745.7478 2	3283535.369 29	17.29	1.08	1.33	21.4 9	AMB		
EPN 5	BLDG. 90 SOLVENT RECOVERY UNIT	VOC (100% MINERAL SPIRITS)		0.1031	0.0618	14	535775.8478 0	3283580.174 55	GRND. LEVEL					10	5
		13562													

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL 1200 feet.
TACB STANDARD CONDITIONS ARE 68°F AND 14.7 PSIA [RULE 131.01.00.001(55)]

Hourly emissions. An hourly material loss rate for each vat is not available. A volumetric difference (loss) in large capacity, non-heated vats. As such, an hourly maximum material loss rate is estimated using the annual maximum material loss rate and an absolute minimum duty schedule for each vat is difficult to detect, due to typically small hourly loss rates. The minimum duty schedule for each vat is 1,200 hours of operation per year (5 hours per day, 5 days per week, and 48 weeks per year). As an example, this minimum duty schedule delivers an hourly material loss rate of 0.0458 gallons per hour for the VCI vat. This estimate is considered to be conservative since the maximum duty schedule for each vat is 1,920 hours, which results in an average hourly loss rate of for the VCI vat of 0.0286 gallons per hour. Hourly VOC emissions are calculated using Equation 2.

$$VOC_H = (M_L)(1/ds)(sg)(\rho_W) \qquad (2)$$

where,

VOC_H = Hourly VOC emissions, pounds per hour
M_L = Annual amount of material lost, gallons per year
ds = Conservative duty schedule of vat, 1,200 hours per year for each vat
sg = Specific gravity of the product, unitless
ρ_W = Density of water, pounds per gallon

The following demonstrates the calculation of hourly VOC emissions for the VCI vat:

$$VOC_H = 55 \text{ gal. lost/year} \times 1 \text{ year/1200 hours} \times 1.080 \times 8.3346 \text{ lbs/gal}$$

$$VOC_H = 0.41 \text{ lb/hr}$$

Speciated Hourly Emissions. Speciated hourly emissions are calculated based on the constituents of each material released. In the case of the VCI vat, discussions with the manufacturer revealed that the only volatile material in the VCI solution is isopropyl alcohol. Thus all VOC emissions are assumed to be isopropyl alcohol. For Solvent Vats 1,2,3, and 4, the solvent used is 100 percent mineral spirits, and all VOC emissions are assumed to be mineral spirits. Likewise, the material used is in the fingerprint remover vat is 100 percent Stoddard solvent, and all VOC emissions are assumed to be Stoddard solvent.

Solvent Recovery Unit - Building 90-1 (EPN 5)

The solvent recovery unit in Building 90-1 is a simple distillation unit used to recover spent solvent from Solvent Vats 1, 2, 3, 4. The solvent in each of these vats is identical (mineral spirits). The solvent recovery process consists of pumping spent solvent from a 55-gallon drum into a simple distillation unit. The distillation unit employs evaporation to separate the pure solvent from sludge and other impurities, followed by condensation to recover the pure solvent. The pure solvent is collected in a clean, empty 55-gallon drum. Emissions of VOC from the solvent recovery unit are estimated using emission factors from EPA's AP-42, Table 4.7-1. Emission factors represent amount of VOC released per ton of solvent processed for each release

point (i.e., tank vents, condenser vents, etc.). Points for release of VOC include the vent on the spent solvent drum, the condenser vent on the distillation unit, the vent on the recovered solvent drum, and any spillage or leaks (fugitives) which may occur at any point in the process. Table VI.C-2 presents emission factors for the solvent recovery unit.

Table VI.C-2 Emission Factors for the Solvent Recovery Unit in Building 90-1

Source	Location	Emission Factor (lb VOC/ton Solvent)
Storage Tank Vent	Spent Solvent Drum	0.02
Fugitive Emissions	Spent Solvent Drum	0.92
Condenser Vent	Distillation Unit	3.30
Fugitive Emissions	Distillation Unit	0.92
Storage Tank Vent	Recovered Solvent Drum	0.02
Fugitive Emissions	Recovered Solvent Drum	0.92
	Total Emission Factor:	**6.10**

Hourly Emissions. Equation 3 demonstrates the calculation of hourly VOC from the solvent recovery unit.

$$VOC_H = (M_L)(sg)(\rho_W)(C)(EF) \quad (3)$$

where,

VOC_H = Hourly VOC emissions, pounds per hour
M_L = Hourly amount of solvent recovered, gallons per hour
sg = Specific gravity of the solvent, unitless
ρ_W = Density of water, pounds per gallon
C = Pounds to tons conversion, 1 ton/2000 pounds
EF = Total emission factor for the unit, pounds VOC/ton solvent recovered

The maximum hourly flow rate for the unit is 5 gallons of solvent per hour. The specific gravity of the solvent is 0.811. The following calculation presents the hourly VOC emissions from the solvent recovery unit:

$$VOC_H = 5 \text{ gal solvent/hour} \times 0.811 \times 8.3346 \text{ lbs/gal} \times 1 \text{ ton/2000 lbs } 6.1 \text{ lbs/ton solvent}$$

$$VOC_H = 0.10 \text{ lb/hr}$$

Annual Emissions. Annual VOC emissions from the solvent recovery unit are calculated using methods identical to those for hourly emissions. The unit is assumed to operate a maximum of 1200 hours per year (5 hours per day, 5 days per week, and 48 weeks per year) at the maximum solvent flow rates of 5 gallons per hour. This provides a maximum annual recovery of 6,000 gallons per year. Using Equation 3 with 6,000 gallons per year for ML yields an annual VOC emission rate of 123.70 pounds, or 0.06 tons per year. This estimate is considered to be

conservative since the current predicted demand for recovered solvent is only about 400 gallons per year.

Speciated Hourly Emissions. The recovered solvent is 100 percent mineral spirits. Thus all hourly VOC emissions from the solvent recovery unit are mineral spirits emissions.

ATTACHMENT VI.D

BEST AVAILABLE CONTROL TECHNOLOGY

BEST AVAILABLE CONTROL TECHNOLOGY

The total emissions proposed in this permit application are less than 4.00 tons/yr VOC and less than 0.013 tons/yr PM. The following sections demonstrate that Best Available Control Technology (BACT) is applied to each source of emissions.

Solvent Vats, Volatile Corrosion Inhibitor Vat, Fingerprint Remover Vat and Solvent Recovery Unit

VOC emissions from the Building 90 area arise from the four solvent vats, volatile corrosion inhibitor vat, fingerprint remover vat, and solvent recovery unit (Building 90-1) and are controlled by proper operating and maintenance procedures. Emissions are minimized by the use of enclosed equipment and processes. All vats are equipped with one-handed operational covers which remain closed when not in use. Parts are dried on internal drainage racks before removal. Solvent spray operations are only conducted at EPN 2 (Solvent Vat 2) and use a solid fluid stream which will operate at 10 psig or less, as necessary, to prevent splashing. The following operating procedures are followed for each source:

(1) Solvents and waste solvents are stored in covered containers.

(2) Vat covers are closed whenever parts are not being handled in the vats.

(3) Parts are drained for at least 15 seconds or until dripping ceases prior to removal.

(4) Porous or absorbent materials are not degreased.

(5) Precautions are taken to minimize spillage during solvent transfer operations.

No additional control is required for BACT.

ATTACHMENT VI.E

CERTIFICATE OF GOOD STANDING

CERTIFICATE OF GOOD STANDING

As this application is for a federal facility, a Certificate of Good Standing is not required.

ATTACHMENT VI.F

PERMIT FEE

TABLE 30

CERTIFICATION OF ESTIMATED CAPITAL CO ND PERMIT APPLICATION FEE

Regulation VI, Rule 116.141

Include estimated cost of the equipment and services that would normally be capitalized according to standard and generally accepted corporate financing and accounting procedures.

	Estimated Capital Cost
DIRECT COSTS	
Process and control equipment not previously owned by the applicant and permitted in Texas	$_____
Auxiliary equipment, including exhaust hoods, ducting, fans, pumps, piping, conveyors, stacks, storage tanks, waste disposal facilities, and air pollution control equipment specifically needed to meet permit and regulation requirements	_____
Freight charges	_____
Site preparation (including demolition), construction of fences, outdoor lighting, road and parking areas	_____
Installation (including foundations), erection of supporting structures, enclosures or weather protection, insulation and painting, utilities and connections, process integration and process control equipment	_____
Auxiliary buildings, including materials storage, employee facilities, and changes to existing structures	_____
Ambient air monitoring network	_____
INDIRECT COSTS	
Final engineering design and supervision and administrative overhead	_____
Construction expense (including construction liaison), securing local building permits, insurance, temporary construction acilities and construction clean-up	_____
Contractor's fee and overhead	_____

TOTAL ESTIMATED CAPITAL COST = $ N/A *

* Permit fee for Federal Facility is $450.00

I certify that the total estimated capital cost of the project as defined in Texas Natural Resource Conservation Commission Rule 116.141 is equal to or less than the above figure.

Signed by: _____

Title: LTC Dean C. Schmelling, Post Commander

Company: Department of the Army, Camp Stanley

Date: 5/31/95

Estimated Capital Cost	Permit Application Fee	PSD Application Fee
Less than $300,000	$450 (minimum fee)	$1,500 (minimum fee)
$300,000 to $50,000,000	0.15% of capital cost	- - - - -
$300,000 to $15,000,000	- - - - -	0.5% of capital cost
Greater than $50,000,000	$75,000 (maximum fee)	- - - - -
Greater than $15,000,000	- - - - -	$75,000 (maximum fee

PERMIT APPLICATION FEE (from table above) = $ $450.00

Rev. 09/30/93

RECEIVED
JUN 07 1995
REVENUES SECTION

TEXAS COMMERCE BANK
NATIONAL ASSOCIATION
AUSTIN OFFICE
P.O. BOX 550 - 7TH AND LAVACA
AUSTIN, TEXAS 78789

Texas Commerce Bank

ENGINEERING-SCIENCE, INC.
PH. 512-719-6000
8000 CENTRE PARK DR., SUITE 200
AUSTIN, TX 78754

8469

5/24 19 95

32-115/1110

PAY TO THE ORDER OF TNRCC $ 450.00

Four hundred fifty and no/100 * * * * DOLLARS

THIS CHECK IS DELIVERED FOR PAYMENT ON THE FOLLOWING ACCOUNTS

ENGINEERING-SCIENCE, INC.

N. Christine Bonn Long

⑈008469⑈ ⑆111001150⑆ ⑈0991255297 6⑈

ATTACHMENT VII.A

PROCESS FLOW DIAGRAM

PROCESS FLOW DIAGRAMS

Figures VII.A-1 through VII.A-9 present the process flow diagrams for the sources considered in this application.

Figure VII.A-1. Process Flow Diagram for Solvent Vat 1 - Building 90

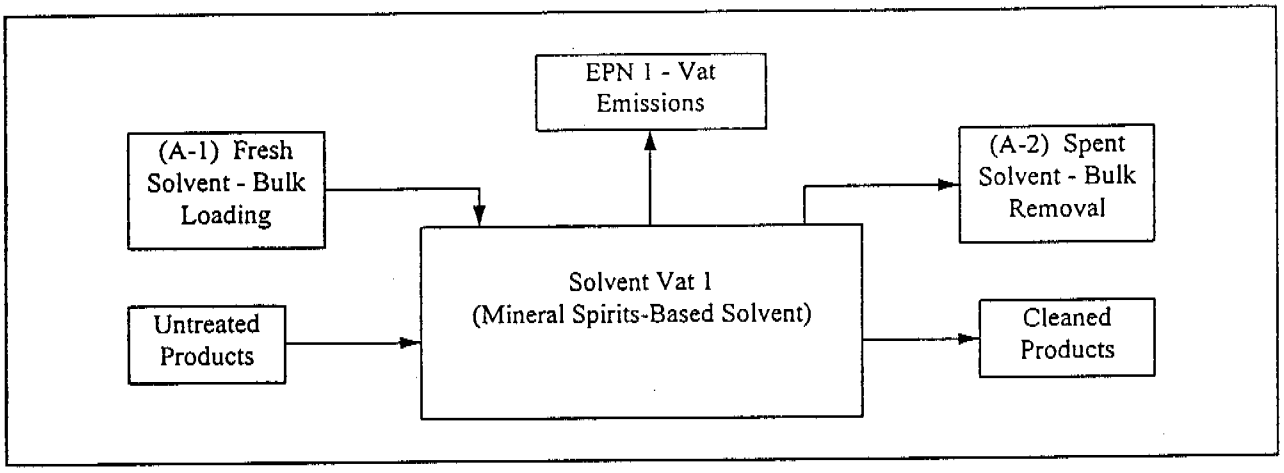


Figure VII.A-2. Process Flow Diagram for Volatile Corrosion Inhibitor Vat - Building 90

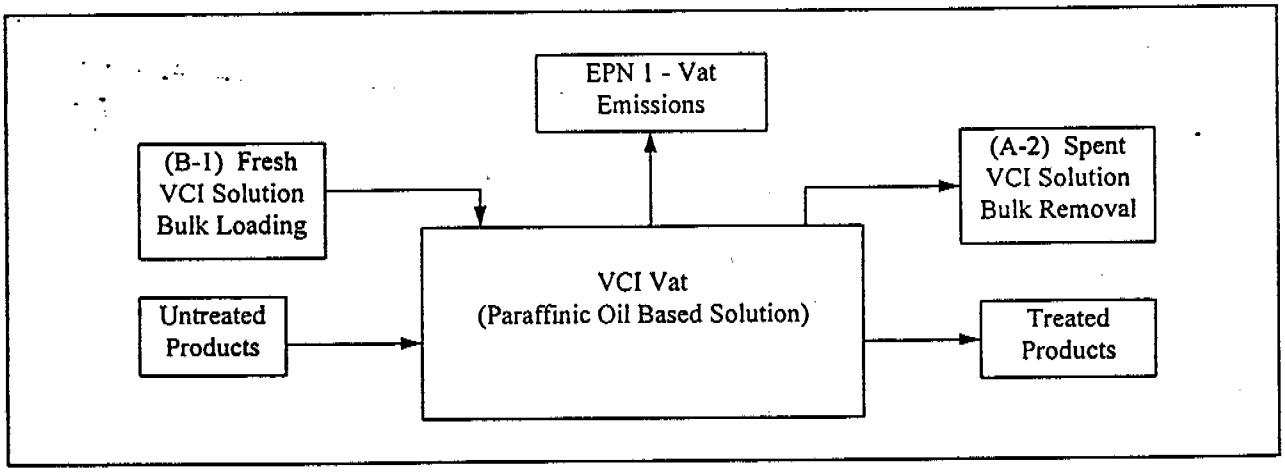


Figure VII.A-3. Process Flow Diagram for Solvent Vat 2 - Building 90

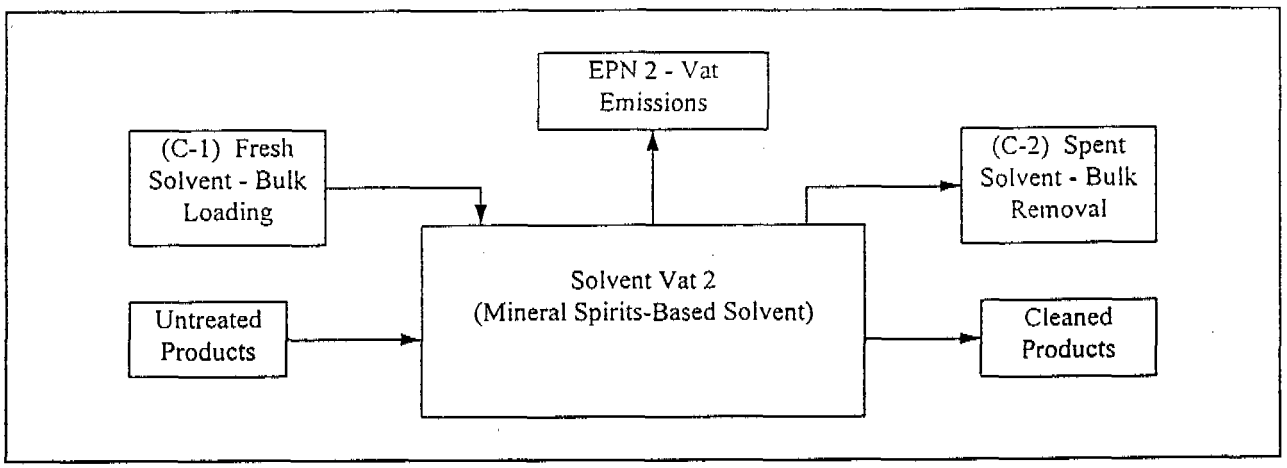


Figure VII.A-4. Process Flow Diagram for Solvent Vat 3 - Building 90

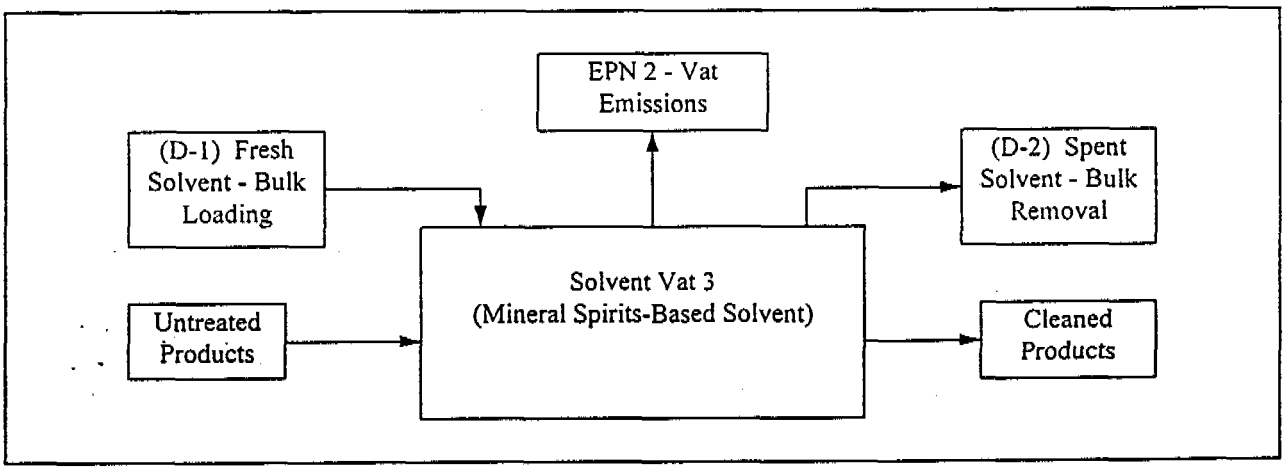


Figure VII.A-5. Process Flow Diagram for Solvent Vat 4 - Building 90

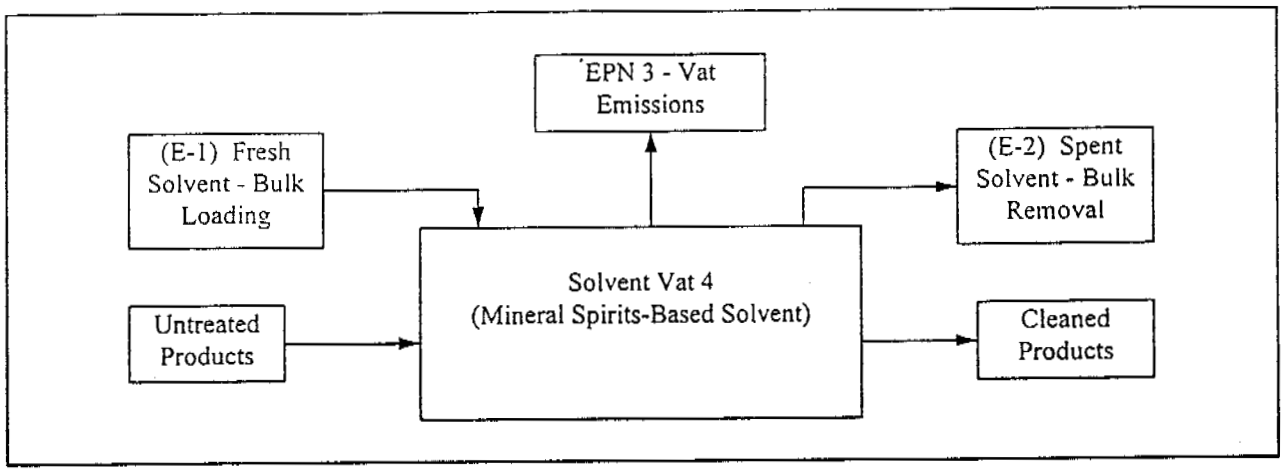


Figure VII.A-6. Process Flow Diagram for Fingerprint Remover Vat - Building 90

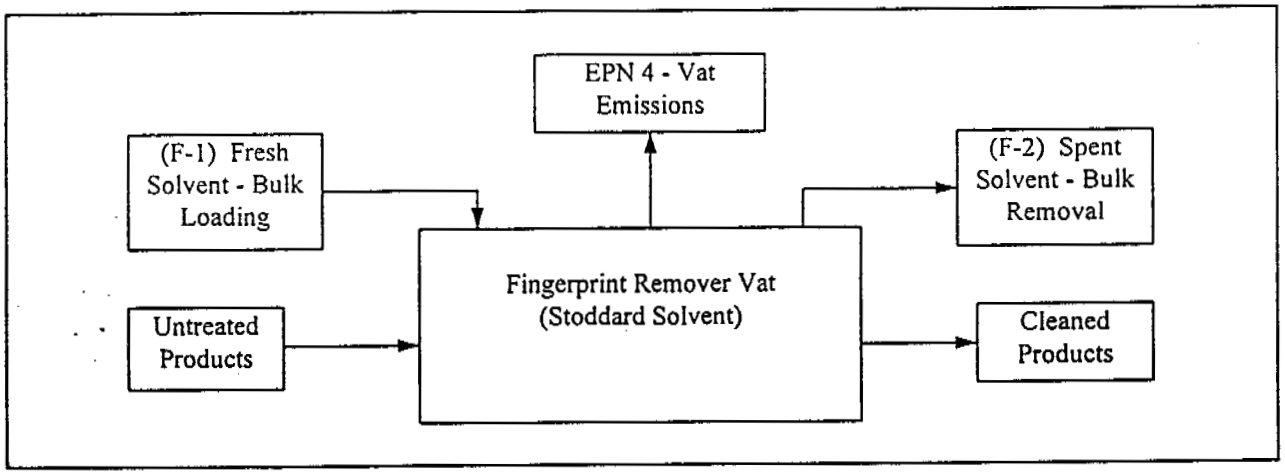
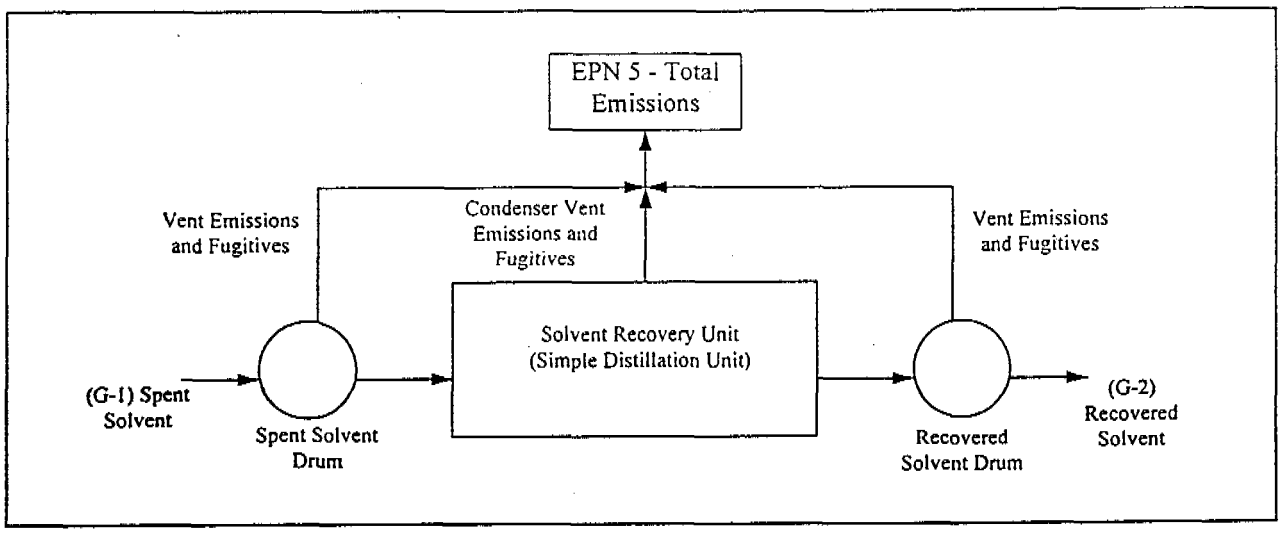


Figure VII.A-7. Process Flow Diagram for Solvent Recovery Unit - Building 90-1



ATTACHMENT VII.B

PROCESS DESCRIPTION

PROCESS DESCRIPTION

EPN 1 - Solvent Vat 1 and Volatile Corrosion Inhibitor Vat

Solvent Vat 1

Solvent Vat 1 is a cold-cleaning (non-heated) dip tank in Building 90 that utilizes a mineral spirits-based solvent to clean individual parts of military weapons. The vat has a maximum solvent capacity of 225 gallons, and is equipped with a one-handed cover that remains closed when the vat is not in use. Dirty weapons parts are submerged into the solvent and allowed to soak. The solvent in the tank is lightly agitated to ensure thorough cleaning of parts. Cleaned parts are removed from the solvent and placed in an internal drainage rack (inside the vat) where they are allowed to dry until solvent dripping has ceased. When parts are thoroughly dry, they are removed from the drainage rack. Emissions from this process occur due to evaporation of solvent from the solvent surface in the vat and from parts as they dry in the rack. All emissions are vented through EPN 1.

Volatile Corrosion Inhibitor Vat

The Volatile Corrosion Inhibitor (VCI) Vat, is a cold-cleaning (non-heated) dip tank in Building 90 that utilizes a solution comprised primarily of non-volatile paraffinic oil and isopropyl alcohol for treating individual parts of military weapons to protect them from corrosion. The vat has a maximum capacity of 225 gallons, and is equipped with a one-handed cover that remains closed when the vat is not in use. Weapons parts are submerged into the VCI solution and allowed to soak. The solution in the tank is lightly agitated to ensure thorough coating of parts. Cleaned parts are removed from the solution and placed in an internal drainage rack (inside the vat) where they are allowed to dry until dripping has ceased. When parts are thoroughly dry, they are removed from the drainage rack. Emissions from this process occur due to evaporation of solution from the solution surface in the vat and from parts as they dry in the rack. All emissions are vented through EPN 1.

EPN 2 - Solvent Vat 2 and Solvent Vat 3

Solvent Vat 2

Solvent Vat 2 is a cold-cleaning (non-heated) dip tank in Building 90 that utilizes a mineral spirits-based solvent to clean individual parts of military weapons. The vat has a maximum solvent capacity of 35 gallons, and is equipped with a one-handed cover that remains closed when the vat is not in use. Dirty weapons parts are submerged into the solvent and allowed to soak. A solid-stream spray hose is used to provide additional cleaning. Cleaned parts are removed from the solvent and placed in an internal drainage rack (inside the vat) where they are allowed to dry until solvent dripping has ceased. When parts are thoroughly dry, they are removed from the drainage rack. Emissions from this process occur due to evaporation of

solvent from the solvent surface in the vat and from parts as they dry in the rack. All emissions are vented through EPN 2.

Solvent Vat 3

Solvent Vat 3 is a cold-cleaning (non-heated) dip tank in Building 90 that utilizes a mineral spirits-based solvent to clean individual parts of military weapons. It is identical to Solvent Vat 1 in both physical and operational characteristics. The vat has a maximum solvent capacity of 225 gallons, and is equipped with a one-handed cover that remains closed when the vat is not in use. Dirty weapons parts are submerged into the solvent and allowed to soak. The solvent in the tank is lightly agitated to ensure thorough cleaning of parts. Cleaned parts are removed from the solvent and placed in an internal drainage rack (inside the vat) where they are allowed to dry until solvent dripping has ceased. When parts are thoroughly dry, they are removed from the drainage rack. Emissions from this process occur due to evaporation of solvent from the solvent surface in the vat and from parts as they dry in the rack. All emissions are vented through EPN 2.

EPN 3 - Solvent Vat 4

Solvent Vat 4 is a cold-cleaning (non-heated) dip tank in Building 90 that utilizes a mineral spirits-based solvent to clean individual parts of military weapons. It is identical to Solvent Vats 1 and 3 in both physical and operational characteristics. The vat has a maximum solvent capacity of 225 gallons, and is equipped with a one-handed cover that remains closed when the vat is not in use. Dirty weapons parts are submerged into the solvent and allowed to soak. The solvent in the tank is lightly agitated to ensure thorough cleaning of parts. Cleaned parts are removed from the solvent and placed in an internal drainage rack (inside the vat) where they are allowed to dry until solvent dripping has ceased. When parts are thoroughly dry, they are removed from the drainage rack. Emissions from this process occur due to evaporation of solvent from the solvent surface in the vat and from parts as they dry in the rack. All emissions are vented through EPN 3.

EPN 4 - Fingerprint Remover Vat

The Fingerprint Remover Vat is a cold-cleaning (non-heated) dip tank in Building 90 that utilizes Stoddard solvent to remove fingerprints from individual parts of military weapons. The vat has a maximum solvent capacity of 225 gallons, and is equipped with a one-handed cover that remains closed when the vat is not in use. Dirty weapons parts are submerged into the solvent and allowed to soak. The solvent in the tank is lightly agitated to ensure thorough cleaning of parts. Cleaned parts are removed from the solvent and placed in an internal drainage rack (inside the vat) where they are allowed to dry until solvent dripping has ceased. When parts are thoroughly dry, they are removed from the drainage rack. Emissions from this process occur due to evaporation of solvent from the solvent surface in the vat and from parts as they dry in the rack. All emissions are vented through EPN 4.

EPN 5 - Solvent Recovery Unit

The solvent recovery unit in Building 90-1 is used to recover spent solvent (mineral spirits) from Solvent Vats 1, 2, 3, and 4. Spent solvent is collected from each vat in a 55-gallon drum. Solvent is pumped from the 55-gallon drum to a distillation unit. The distillation unit employs the standard distillation processes of evaporation and condensation within the unit to separate the pure solvent from sludge and other impurities. Cold water is used to aid in condensation. Reclaimed solvent is collected in a clean, empty 55-gallon drum. Emissions from the process can occur as point emissions from the vent on the spent solvent drum, the distillation unit condenser vent, and the vent on the reclaimed solvent drum, and as fugitive emissions from spillage, loading, and leaks. All emissions from the process are vented through EPN 5.

ATTACHMENT VII.C

MATERIAL BALANCE

TABLE 2
MATERIAL BALANCE

This material balance table is used to quantify possible emissions of air contaminants and special emphasis should be placed on potential air contaminants, for example, If feed contains sulfur, show distribution to all products. Please relate each material (or ıp of materials) listed to its respective location in the process flow diagram by assigning point numbers (taken from the fl ram) to each material.

LIST EVERY MATERIAL INVOLVED IN EACH OF THE FOLLOWING GROUPS A. Solvent Vat 1 B. VCI Vat C. Solvent Vat 2 D. Solvent Vat 3 E. Solvent Vat 4 F. Fingerprint Remover Vat	Point No. from Flow Diagram	Process Rate (lbs/hr or SCFM) standard conditions: 70°F 14.7 PSIA. Check appropriate column at right for each process.	Measure ment	Estima-tion	Calcu-lation
1. Raw Materials -					
A. Mineral Spirits Solvent	(A-1)	1.13	X		
B. VCI Solution	(B-1)	1.16	X		
C. Mineral Spirits Solvent	(C-1)	0.17	X		
D. Mineral Spirits Solvent	(D-1)	0.84	X		
E. Mineral Spirits Solvent	(E-1)	0.84	X		
F. Fingerprint Remover Solvent (Stoddard Solvent)	(F-1)	0.84	X		
2. Fuels - Input					
3. Products & By-Products - Output					
Solid Wastes - Output					
5. Liquid Wastes - Output					
A. Spent Mineral Spirits Solvent	(A-2)	0.84		X	
B. Spent VCI Solution	(B-2)	0.75		X	
C. Spent Mineral Spirits Solvent	(C-2)	0.11		X	
D. Spent Mineral Spirits Solvent	(D-2)	0.56		X	
E. Spent Mineral Spirits Solvent	(E-2)	0.56		X	
F. Spent Fingerprint Remover Solvent (Stoddard Solvent)	(F-2)	0.57		X	
6. Airborne Waste (Solid) - Output					
7. Airborne Wastes (Gaseous) - Output					
A. Mineral Spirits Solvent VOC	EPN 1	0.29			X
B. VCI Solution VOC	EPN 1	0.41			X
C. Mineral Spirits Solvent VOC	EPN 2	0.06			X
D. Mineral Spirits Solvent VOC	EPN 2	0.28			X
E. Mineral Spirits Solvent VOC	EPN 3	0.28			X
F. Fingerprint Remover Solvent VOC	EPN 4	0.27			X

ATTACHMENT VIII

GENERAL APPLICATION REQUIREMENTS

GENERAL APPLICATION REQUIREMENTS

Rule 116.111(1) Protection of Public Health and Welfare - As outlined below, the emissions from CSSA will comply with all air quality rules and regulations and with the intent of the Texas Clean Air Act, including protection of the health and physical property of the people.

General Rules - The facility will be operated in accordance with the General Rules relating to circumvention, nuisance, traffic hazard, notification requirements for major upset, notification requirements for maintenance, sampling, sampling ports, emissions inventory requirements, sampling procedures and terminology, compliance with Environmental Protection Agency Standards, the National Primary and Secondary Air Quality Standards, inspection fees, emissions fees, and all other applicable General Rules.

Impact on Schools - CSSA is located more than one mile from the nearest school. Upon request of the Executive Director, air dispersion modeling will be submitted as part of this application showing that operation of the facility will not result in any short-term or long-term side effects or nuisance odors upon any individual attending the school.

Regulation I (Visible Emissions and Particulate Matter)

§111.101 through §111.107 (Outdoor Burning) - Do not apply. Outdoor burning is only conducted at the facility during fire training. Any future outdoor burning which is not specifically excepted in Regulation I will comply with the general requirements for outdoor burning, and will be authorized by the proper authorities.

§111.111 through §111.113 (Visible Emissions) - The operation of the affected source(s) may result in occasional visible emissions, but not in excess of the opacity limits specified in 30 TAC 111.111(a)(1).

§111.121 through §111.129 (Incineration) - Do not apply. The facility does not burn domestic, commercial, or industrial solid waste as defined in §101.1, medical waste, or hazardous waste as fuel for energy recovery.

§111.131 through §111.139 (Abrasive Blasting of Water Storage Tanks Performed by Portable Operations) - Do not apply.

§111.141 through §111.149 (Materials Handling, Construction, Roads, Streets, Alleys, and Parking Lots) - Do not apply. The facility is located in Bexar County which is not listed as an affected area.

§111.151 through §111.155 (Emissions Limits on Nonagricultural Processes)

§111.151 (Allowable Emissions Limits) - The TSP/PM_{10} emission rates will not exceed the allowable emission rates presented in Table 1 in §111.151.

§111.153 (Emissions Limits on Steam Generators) - Does not apply. There are no steam generators with a heat input greater than 2500 MM Btu/hr or any solid fossil fuel-fired steam generators at the facility.

§111.155 (Ground Level Concentrations) - The facility will not cause or contribute significant TSP/PM_{10} emissions to cause exceedances of any applicable TSP net ground level concentrations.

§111.171 through §111.175 (Emissions Limits on Agricultural Processes) - Do not apply. There are no agricultural processes at the facility.

§111.181 through §111.183 (Exemptions for Portable or Transient Operations) - Do not apply. There are no portable or transient operations such as rock crushers, hot mix asphaltic concrete facilities, etc., used at the facility.

Regulation II (Sulfur Compounds)

§112.1 through §112.21 (Control of Sulfur Dioxide)

§112.3 through §112.4 (Net Ground Level Concentrations) - The facility is not expected to cause or contribute to a condition that exceeds the applicable net ground-level concentration limit.

§112.5 through §112.8 (Allowable Emission Rates) - Do not apply. The facility is not a sulfuric acid plant, sulfur recovery plant, or nonferrous smelter; it is not a steam generator.

§112.9 through §112.13 (Allowable Emission Rates) - There are no liquid fuel-fired steam generators, furnaces, or heaters at CSSA, other than the four standby generators which are exempted by Standard Exemption No. 5.

§112.14 (Allowable Emission Rates - Nonferrous Smelter Processes) - Does not apply. The facility is not a nonferrous smelter.

§112.15 through §112.18 (Temporary Fuel Shortage Plan) - CSSA will comply with all applicable filing, operating, notification, and reporting requirements in case of a temporary fuel shortage.

§112.19 through §112.21 (Area Control Plan) - CSSA does not intend to apply for an area control plan at this time.

§112.31 through §112.34 (Control of Hydrogen Sulfide) - Do not apply. The facility is not expected to emit H_2S.

§112.41 through §112.47 (Control of Sulfuric Acid) - Do not apply. The facility is not expected to emit sulfuric acid.

§112.51 through §112.59 (Control of Total Reduced Sulfur) - Do not apply. CSSA is not a kraft pulp mill.

Regulation III (Toxic Materials) - Does not apply. Inorganic fluoride compounds, beryllium, and lead emissions are not expected from the facility, and the facility is not located in either Dallas or El Paso Counties.

Regulation IV (Motor Vehicles)

§114.1 (Air Pollution Control Systems) - All vehicles leased or owned by the Department of the Army and operated at CSSA that are required to be equipped with a pollution control system or device are maintained to keep control devices in good operating condition; required pollution control systems and control devices are used at all times that the motor vehicle or engine is operated. No required pollution control system or device will be removed or made inoperable except when such removal is for the purpose of installing another such system or device which is equally effective in reducing emissions from the vehicle.

§114.3 (Inspection Requirements) - No vehicle owned by the facility is operated unless it complies with air pollution control related requirements included in the annual vehicle safety inspection requirements administered by the Texas Department of Public Safety. The inspection is validated by an inspection certificate affixed to the vehicle windshield.

§114.4 (Exhaust Gas Analyzers) - Does not apply. The facility is not a manufacturer or authorized distributor of vehicle testing equipment.

§114.5 (Exclusions and Exceptions) - Does not apply. There are no exempted vehicles in operation at CSSA.

§114.11 (Alternative Fuels) - Does not apply. The facility is not in business as a transit authority.

§114.13 (Oxygenated Fuels) - Does not apply. The facility is not located in El Paso County.

§114.21 (Employee Trip Reduction) - Does not apply. The facility is located in Bexar County which is not an affected county.

§114.23 (Transportation Control Measures) - Does not apply. The facility is not located in an area that has a listed Metropolitan Planning Organization (MPO) and is not part of an MPO.

§114.25 (Memorandum of Understanding with the Texas Department of Transportation) - Does not apply to this facility.

Regulation V (Volatile Organic Compounds)

§115.112 through §115.119 (Storage of Volatile Organic Compounds) - Per §115.112(c), VOC storage vessels at CSSA have fixed roofs. These fixed roof tanks meet the specifications in Table I(b) of §115.112. No crude oil or condensate is stored at the facility. The inspection, testing, monitoring, and recordkeeping requirements as well as the compliance schedule do not apply as the plant is not located in an affected county. No exemptions are sought at this time.

§115.121 through §115.129 (Vent Gas Control) - Per §115.127(c)(2)(A), the vent gas streams from the cold cleaning vats, solvent recovery unit, and paint booths are exempt from §115.121(c)(1) requirements; the vent gas streams contain emissions of specified classes of VOC and have a combined weight of VOC less than 100 lb in any continuous 24-hr period.

§115.131 through §115.139 (Water Separation) - Do not apply. There is not an affected water separation facility associated with this proposal.

§115.140 through §115.149 (Industrial Wastewater) - Do not apply. The plant is not located in an affected county.

§115.152 through §115.159 (Municipal Solid Waste Landfills) - Do not apply. There is not an affected municipal solid waste landfill source associated with this proposal.

§115.211 through §115.219 (Loading and Unloading of Volatile Organic Compounds) - Do not apply. There is not an affected loading or unloading facility associated with this proposal.

§115.221 through §115.229 (Filling of Gasoline Storage Vessels (Stage I) for Motor Vehicle Fuel Dispensing Facilities) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.234 through §115.239 (Control of Volatile Organic Compound Leaks from Transport Vehicles) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.241 through §115.249 (Control of Vehicle Refueling Emissions (Stage II) at Motor Vehicle Fuel Dispensing Facilities) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.252 through §115.259 (Control of Reid Vapor Pressure of Gasoline) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.311 through §115.319 (Process Unit Turnaround and Vacuum-Producing Systems in Petroleum Refineries) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.322 through §115.329 (Fugitive Emission Control in Petroleum Refineries) - Do not apply. CSSA is not a petroleum refinery.

§115.332 through §115.339 (Fugitive Emission Control in Synthetic Organic Chemical, Polymer, Resin, and Methyl Tert-Butyl Ether Manufacturing Processes) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.342 through §115.349 (Fugitive Emission Control in Natural Gas/Gasoline Processing Operations) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.352 through §115.359 (Fugitive Emission Control in Petroleum Refining and Petrochemical Processes) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.412 through §115.419 (Degreasing and Clean-Up Processes) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.421 through §115.429 (Surface Coating Processes) - Do not apply. CSSA is located in Bexar County which is not an affected area.

§115.432 through §115.439 (Graphic Arts (Printing) by Rotogravure and Flexographic Processes) - Do not apply. There is not an affected rotogravure or flexographic process associated with this proposal.

§115.442 through §115.449 (Offset Lithographic Printing) - Do not apply. There is not an affected offset lithographic printing facility associated with this proposal.

§115.512 through §115.519 (Cutback Asphalt) - Do not apply. There is not a source of cutback asphalt associated with this proposal.

§115.521 through §115.529 (Perchloroethylene Dry Cleaning Systems) - Do not apply. There is not an affected perchloroethylene dry cleaning facility associated with this proposal.

§115.531 through §115.539 (Pharmaceutical Manufacturing Facilities) - Do not apply. There is not an affected pharmaceutical manufacturing facility associated with this proposal.

§115.541 through §115.549 (Degassing or Cleaning of Stationary, Marine, and Transport Vessels) - Do not apply. There is not an affected degassing or cleaning facility associated with this proposal.

§115.552 through §115.559 (Petroleum Dry Cleaning Systems) - Do not apply. There is not an affected petroleum dry cleaning system with this proposal.

§115.600 through §115.619 (Consumer Products) - Do not apply. The facility does not sell, supply, offer for sale, distribute, or manufacture consumer products as defined in 31 TAC 115.600.

§115.621 through §115.625 (Utility Engines) - Do not apply. There is not a utility engine leased, sold, or offered for sale by CSSA.

§115.901 and §115.910 through §115.916 (Alternate Means of Control) - Do not apply. No insignificant emissions or alternate means of control are proposed.

§115.920 and §115.923 (Early Reductions) - Do not apply. An extension of the compliance dates is not requested.

§115.930 through §115.940 (Compliance and Control Plan Requirements) - Do not apply. There are no applicable compliance dates or control plan requirements.

§115.950 (Standard Construction Permits for Volatile Organic Compounds (VOC) Control Projects) - Does not apply. A standard permit is not requested.

Regulation VII (Nitrogen Oxides) - Regulation VII is not applicable because CSSA is located in Bexar County, which is not an affected county. Additionally there are no sources of combustion, no acid manufacturing, and no gas-fired steam generation at the facility.

Regulation VIII (Air Pollution Episodes) - The operators of CSSA Storage Activity will implement all reasonably available emission reduction methods in the event of a Level I air pollution episode and will reduce or curtail operations in the event of a Level II episode. An emission reduction plan is not required since the facility is located in Bexar County.

Regulation IX (Carbon Monoxide) - Does not apply. There are no sources of CO emissions at CSSA which arise from catalyst regeneration vent gas stream, basic oxygen furnaces, fluid-cooking units, iron cupolas, or blast furnaces.

Regulation X (Hazardous or Solid Waste Management Facilities)

Subchapter A. (Facility Permit Requirements) - Does not apply. Subchapter A of 30 TAC Chapter 120 applies to all hazardous waste or solid waste management facilities which are required to obtain a permit by the TNRCC pursuant to the Solid Waste Proposal Act. Texas Civil Statutes, Article 4477-7, §4(e)(4)(A)(i), except as provided in subsection (c)-(e) of §120.3. CSSA is a small quantity generator of hazardous waste which does not operate hazardous waste management units that require a TNRCC permit pursuant to the Solid Waste Disposal Act. CSSA is undergoing closure of an openburn detonation area which was an unpermitted treatment facility for hazardous waste.

Subchapter B. (Pollution Prevention Requirement: Source Reduction and Waste Minimization) - Subchapter B of 30 TAC 120 applies to facilities which are required to develop a source reduction and waste minimization plan pursuant to the Waste Reduction Policy Act of 1991, Senate Bill 1099. CSSA is required to comply with Subchapter B of 30 TAC 120 because the facility is a generator of hazardous waste and is also subject to the Superfund Amendments and Reauthorization Act of 1986, §313, Title III. CSSA is currently preparing a Source Reduction and Waste Minimization Plan for submittal to the TNRCC. In the event CSSA becomes subject to the requirement to have a Source Reduction and Waste Minimization Plan (i.e., CSSA becomes a large quantity generator) a plan shall be available within 90 days of such designation as required by §120.109(6).

Regulation XI (Municipal Solid Waste Facilities) - Does not apply. CSSA is not a municipal solid waste facility.

Regulation XII - Federal Operating Permits - CSSA is not a listed source subject to the interim federal operating permit program in §122.130(b). Because the CSSA is not a major source, a federal operating permit application will not be required.

Rule 116.111(2) Measurement of Emissions - Measuring the emissions of significant air contaminants will be conducted as required by the Executive Director.

Rule 116.111(3) Best Available Control Technology (BACT) - CSSA utilizes BACT as shown in the enclosed Attachment VI.D.

Rule 116.111(4) Federal New Source Performance Standards (NSPS) - there are no NSPS applicable to the sources at CSSA.

Rule 116.111(5) National Emission Standards for Hazardous Air Pollutants (NESHAPS) - Does not apply. No process streams containing 10% or more of a NESHAPS-regulated pollutant are associated with CSSA.

Rule 116.111(6) Performance Demonstration - CSSA will achieve the performance specified in this application and will submit additional performance data as may be required by the Executive Director.

Rule 116.111(7) Nonattainment Review - This provision is not applicable since the CSSA is not located in an area designated as Nonattainment.

Rule 116.111(8) Prevention of Significant Deterioration (PSD) Review - As defined by 40 CFR 52.21, PSD review does not apply since CSSA will not be undergoing a major modification.

Rule 116.111(9) Air Dispersion Modeling - Computerized air dispersion modeling will be submitted according to agency guidelines upon the request of the TNRCC. TNRCC-established modeling protocols appropriate for the circumstances will be followed for any modeling submitted.

APPENDIX A

PRELIMINARY MODELING ANALYSIS

STODDARD SOLVENT
ISCST2
OUTPUT FILE PRINTOUT

FORM PI-1

#2

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44 R1387

MATERIAL SAFETY DATA SHEET

VCI

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME: THE CROMWELL PAPER COMPANY	EMERGENCY TELEPHONE NO.: (312) 523-0337
ADDRESS (Number, Street, City, State, and ZIP Code): 4801 S. WHIPPLE ST. CHICAGO, ILLINOIS 60632	
CHEMICAL NAME AND SYNONYMS:	TRADE NAME AND SYNONYMS: TERRO PAK "B" VCI SOLUTION
CHEMICAL FAMILY: ORGANIC SALTS OF AMINE, PARAFFINIC OIL	FORMULA:

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
AMINE SALTS	5.38	N.D.
ISOPROPYL ALCOHOL	4.61	400 PPM
NO INGREDIENT IS A KNOWN CARCINOGEN AS DEFINED BY 29 CFR 1910.1200		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N.D.	SPECIFIC GRAVITY (H_2O=1)	N.D.
VAPOR PRESSURE (mm Hg.)	N.D.	PERCENT, VOLATILE BY VOLUME (%)	15.0%
VAPOR DENSITY (AIR=1)	N.D.	EVAPORATION RATE (_____=1)	
SOLUBILITY IN WATER	5.5%		
APPEARANCE AND ODOR	OIL BASE VCI - AMINE ODOR		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	100° F.	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA				
SPECIAL FIRE FIGHTING PROCEDURES	FOAM, WATER SPRAY, CARBON DIOXIDE, DRY CHEMICAL			
UNUSUAL FIRE AND EXPLOSION HAZARDS	EMITS TOXIC GASES WHEN BURNING			

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE

MAY IRRITATE SKIN AND EYES. INHALATION OF VAPORS MAY IRRITATE UPPER RESPIRATORY TRACT

EMERGENCY AND FIRST AID PROCEDURES

FLUSH WITH LARGE QUANTITIES OF WATER.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

ABSORB OR SCRAPE UP

WASTE DISPOSAL METHOD

IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*

VENTILATION	LOCAL EXHAUST		SPECIAL
	MECHANICAL *(General)*	ACCEPTABLE	OTHER

PROTECTIVE GLOVES	RUBBER	EYE PROTECTION	CHEMICAL GOGGLES

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

STORE IN COOL DRY AREA - LOW FLASH POINT MATERIAL.

OTHER PRECAUTIONS

GPO 934-180

Form OSHA-20
Rev. May 72

MATERIAL SAFETY DATA SHEET

SAFETY-KLEEN CORP.
777 Big Timber Rd.
Elgin, IL 60123 #'s 3, 5, 6 + 7

safety-kleen corp.

IDENTITY (As Used on Label and List)	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.
Safety-Kleen 140 Solvent	

Section I Part #6616

Manufacturer's Name: Safety-Kleen Corp.	Emergency Telephone Number: 312/697-8460
Address (Number, Street, City, State, and ZIP Code): 777 Big Timber Road	Telephone Number for Information: 312/697-8460
Elgin, Illinois 60123	Date Prepared: September 12, 1986, Revised 5/26/87
	Signature of Preparer (optional)

Section II—Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Mineral Spirits C.A.S. Reg. No. 8032-32-4	500 ppm	100 ppm	-	99.9+
Dye proprietary	Unknown	Unknown	-	0.003
Anti-Static Agent mixture	Unknown	Unknown	100 est.	1 ppm

Section III—Physical/Chemical Characteristics

Boiling Point	360-400°F	Specific Gravity ($H_2O = 1$)	0.770-0.811
Vapor Pressure (mm Hg.) @ 68°F	0.5	Melting Point	N/A
Vapor Density (AIR = 1)	5.48	Evaporation Rate (Toluene = 1)	0.02

Solubility in Water
Negligible.

Appearance and Odor
Clear green liquid with characteristic hydrocarbon odor.

Section IV—Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
140°F TCC		1.0	7.0

Extinguishing Media
CO_2, foam, dry chemical, water (mist only)

Special Fire Fighting Procedures
None.

Unusual Fire and Explosion Hazards
None.

Section V—Reactivity Data

Stability			Conditions to Avoid
	Unstable		
	Stable	X	Heat, sparks, flame and fire.

Incompatability (Materials to Avoid)
Strong oxidizing agents.

Hazardous Decomposition or Byproducts
Normally none; however, incomplete burning may yield carbon monoxide.

Hazardous Polymerization			Conditions to Avoid
	May Occur		
	Will Not Occur	X	

Section VI—Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	yes	yes	yes

Health Hazards (Acute and Chronic)
Skin - Can cause drying of skin. Eyes - Severe irritant. Inhalation - Excessive inhalation causes headache, dizziness and nausea. Ingestion - Harmful or fatal if swallowed.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	No	No	No

Not a known or suspected carcinogen.

Signs and Symptoms of Exposure
Drying of skin, eye irritation, headache, dizziness, nausea.

Medical Conditions Generally Aggravated by Exposure Unknown.

Emergency and First Aid Procedures
Skin - Wash with soap and water. Eyes - Irrigate with water. Inhalation - Remove to fre air source and call a physician. Ingestion - DO NOT INDUCE VOMITING. Call a physician.

Section VII—Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled
Catch and collect for recovery as soon as possible. Avoid exposure to sparks, fire, flame, hot surfaces.

Waste Disposal Method
Dispose of in accordance with company, local, state and federal regulations.

Precautions to Be Taken in Handling and Storing
Combustible. Keep away from heat, sparks, flame. Use with adequate ventilation. Avoid long and repeated contact with skin: If clothes are inadvertently saturated with solvent - DO NOT SMOKE - Keep away from ignition sources. Keep out of reach of children.

Section VIII—Control Measures

Respiratory Protection (Specify Type)
Self-contained breathing apparatus for concentrations above TLV limits.

Ventilation	Local Exhaust	Special
	Normal room ventilation.	None.
	Mechanical (General)	Other
	None.	None.

Protective Gloves	Eye Protection
In case of prolonged use, wear rubber gloves.	Yes - Eyeglasses, safety glasses.

Other Protective Clothing or Equipment
N/A

Work/Hygienic Practices
Do not smoke while using this solvent.

TABLE 7(b)

HORIZONTAL FIXED ROOF STORAGE TANK SUMMARY

I. Tank Identification (one form for each tank).
1. Applicant's Name: Department of the Army, Camp Stanley
2. Location (indicate on plot plan and provide coordinates): _____
3. Tank No. 1 4. Emission Point No. _____
5. Status: New tank [X] Altered tank [ ] Relocation [ ] Change of Service [ ]
Previous permit or exemption number _____

II. Tank Physical Characteristics
1. Dimensions
a. Shell Length : 6 ft. b. Diameter : 4 ft.
c. Nominal Capacity or Working Volume : 500 gallons
d. Turnovers per year: 3 (Use zero (0) for constant-level tanks).
e. Net Throughput : 1500 gallons/year
f. Maximum Filling Rate: _____ gallons/hour
g. Is the tank underground? Yes [ ] No [X]

2. Paint Characteristics
a. Shell Color/Shade : White/White [X] Aluminum/Specular [ ]
Aluminum/Diffuse [ ] Gray/Light [ ] Gray/Medium [ ]
Red/Primer [ ] Other [ ] (Describe _____)
b. Shell Condition : Good [X] Poor [ ]

3. Breather Vent Settings

Valve Type	Number	Pressure Setting (psig)	Vacuum Setting (psig)	Discharging To: (Specify "atmosphere" or name abatement device)
Combination vent valve				
Pressure vent valve			*******	
Vacuum vent valve		*******		**********
Open vent		*******	*******	

III. Liquid Properties of Stored M rial

1. Chemical Category: Orga..c Liquids [ ] Petroleum Distillates [X]
   Crude Oils [ ]
2. Single or Multi-Component Liquid

   Single [ ] Complete Section III.3
   Multiple [X] Complete Section III.4

3. Single Component Information
   a. Chemical Name: _____
   b. CAS Number: _____
   c. Average Liquid Surface Temperature: _____ °F.
   d. Vapor Pressure at Average Liquid Surface Temperature: _____ psia
   e. Liquid Molecular Weight: _____

4. Multiple Component Information
   a. Mixture Name: Distillate Fuel Oil No. 2
   b. Average Liquid Surface Temperature: 70.72 °F.
   c. Minimum Liquid Surface Temperature: 65.01 °F.
   d. Maximum Liquid Surface Temperature: 76.43 °F.
   e. Vapor Pressure at Average Liquid Surface Temperature: 0.0092 psia
   f. Vapor Pressure at Minimum Liquid Surface Temperature: 0.0076 psia
   e. Vapor Pressure at Maximum Liquid Surface Temperature: 0.0110 psia
   f. Liquid Molecular Weight: 130.00
   g. Vapor Molecular Weight: 130.00
   h. Chemical Components Information

Chemical Name	CAS Number	Percent of Total Liquid Weight	Percent of Total Vapor Weight	Molecular Weight
Distillate Fuel Oil No. 2		100%	100%	130.00

NOT APPLICABLE

JUN 2 1995

TABLE 7(b)

HORIZONTAL FIXED ROOF STORAGE TANK SUMMARY

I. Tank Identification (one form for each tank).
1. Applicant's Name: Department of the Army, Camp Stanley
2. Location (indicate on plot plan and provide coordinates): _____
3. Tank No. 2 4. Emission Point No. _____
5. Status: New tank [X] Altered tank [ ] Relocation [ ] Change of Service [ ]
Previous permit or exemption number _____

II. Tank Physical Characteristics
1. Dimensions
a. Shell Length : 12 ft. b. Diameter : 4 ft.
c. Nominal Capacity or Working Volume : 1000 gallons
d. Turnovers per year: 2.6 (Use zero (0) for constant-level tanks).
e. Net Throughput : 2600 gallons/year
f. Maximum Filling Rate: _____ gallons/hour
g. Is the tank underground? Yes [ ] No [X]

2. Paint Characteristics
a. Shell Color/Shade : White/White [X] Aluminum/Specular [ ]
Aluminum/Diffuse [ ] Gray/Light [ ] Gray/Medium [ ]
Red/Primer [ ] Other [ ] (Describe _____)
b. Shell Condition : Good [X] Poor [ ]

3. Breather Vent Settings

Valve Type	Number	Pressure Setting (psig)	Vacuum Setting (psig)	Discharging To: (Specify "atmosphere" or name abatement device)
Combination vent valve				
Pressure vent valve			*******	
Vacuum vent valve		*******		**********
Open vent		*******	*******	

III. Liquid Properties of Stored Ma ıl

1. Chemical Category: Organic Liquids [ ] Petroleum Distillates [X]
   Crude Oils [ ]
2. Single or Multi-Component Liquid

   Single [ ] Complete Section III.3
   Multiple [X] Complete Section III.4

3. Single Component Information
   a. Chemical Name: _____
   b. CAS Number: _____
   c. Average Liquid Surface Temperature: _____ °F.
   d. Vapor Pressure at Average Liquid Surface Temperature: _____ psia
   e. Liquid Molecular Weight: _____

4. Multiple Component Information
   a. Mixture Name: Distillate Fuel Oil No. 2
   b. Average Liquid Surface Temperature: 70.72 °F.
   c. Minimum Liquid Surface Temperature: 65.01 °F.
   d. Maximum Liquid Surface Temperature: 76.43 °F.
   e. Vapor Pressure at Average Liquid Surface Temperature: 0.0092 psia
   f. Vapor Pressure at Minimum Liquid Surface Temperature: 0.0076 psia
   e. Vapor Pressure at Maximum Liquid Surface Temperature: 0.0110 psia
   f. Liquid Molecular Weight: 130.00
   g. Vapor Molecular Weight: 130.00
   h. Chemical Components Information

Chemical Name	CAS Number	Percent of Total Liquid Weight	Percent of Total Vapor Weight	Molecular Weight
Distillate Fuel Oil No 2		100 %	100 %	130.00

NOT APPLICABLE

1995

TABLE 7(b)

HORIZONTAL FIXED ROOF STORAGE TANK SUMMARY

I. Tank Identification (one form for each tank).
1. Applicant's Name: Department of the Army, Camp Stanley
2. Location (indicate on plot plan and provide coordinates): _____
3. Tank No. 3 4. Emission Point No. _____
5. Status: New tank [X] Altered tank [ ] Relocation [ ] Change of Service [ ]
Previous permit or exemption number _____

II. Tank Physical Characteristics
1. Dimensions
a. Shell Length : 12 ft. b. Diameter : 4 ft.
c. Nominal Capacity or Working Volume : 1000 gallons
d. Turnovers per year: 3 (Use zero (0) for constant-level tanks).
e. Net Throughput : 3000 gallons/year
f. Maximum Filling Rate: _____ gallons/hour
g. Is the tank underground? Yes [ ] No [X]

2. Paint Characteristics
a. Shell Color/Shade : White/White [X] Aluminum/Specular [ ]
Aluminum/Diffuse [ ] Gray/Light [ ] Gray/Medium [ ]
Red/Primer [ ] Other [ ] (Describe _____)
b. Shell Condition : Good [X] Poor [ ]

3. Breather Vent Settings

Valve Type	Number	Pressure Setting (psig)	Vacuum Setting (psig)	Discharging To: (Specify "atmosphere" or name abatement device)
Combination vent valve				
Pressure vent valve			*******	
Vacuum vent valve		*******		**********
Open vent		*******	*******	

III. Liquid Properties of Stored Ma l

1. Chemical Category: Organic Liquids [ ] Petroleum Distillates [X]
   Crude Oils [ ]
2. Single or Multi-Component Liquid

   Single [ ] Complete Section III.3
   Multiple [X] Complete Section III.4

3. Single Component Information
   a. Chemical Name: _____
   b. CAS Number: _____
   c. Average Liquid Surface Temperature: _____ °F.
   d. Vapor Pressure at Average Liquid Surface Temperature: _____ psia
   e. Liquid Molecular Weight: _____

4. Multiple Component Information
   a. Mixture Name: Distillate Fuel Oil No. 2
   b. Average Liquid Surface Temperature: 70.72 °F.
   c. Minimum Liquid Surface Temperature: 65.01 °F.
   d. Maximum Liquid Surface Temperature: 76.43 °F.
   e. Vapor Pressure at Average Liquid Surface Temperature: 0.0092 psia
   f. Vapor Pressure at Minimum Liquid Surface Temperature: 0.0076 psia
   e. Vapor Pressure at Maximum Liquid Surface Temperature: 0.0110 psia
   f. Liquid Molecular Weight: 130.00
   g. Vapor Molecular Weight: 130.00
   h. Chemical Components Information

Chemical Name	CAS Number	Percent of Total Liquid Weight	Percent of Total Vapor Weight	Molecular Weight
Distillate Fuel Oil No 2		100%	100%	130.00

NOT APPLICABLE

JUN 2 3 1995

TABLE 7(b)

HORIZONTAL FIXED ROOF STORAGE TANK SUMMARY

I. Tank Identification (one form for each tank).
1. Applicant's Name: Department of the Army, Camp Stanley
2. Location (indicate on plot plan and provide coordinates): _____
3. Tank No. 4 4. Emission Point No. _____
5. Status: New tank [X] Altered tank [ ] Relocation [ ] Change of Service [ ]
Previous permit or exemption number _____

II. Tank Physical Characteristics
1. Dimensions
a. Shell Length : 12 ft. b. Diameter : 5 ft.
c. Nominal Capacity or Working Volume : 2000 gallons
d. Turnovers per year: 2 (Use zero (0) for constant-level tanks).
e. Net Throughput : 4000 gallons/year
f. Maximum Filling Rate: _____ gallons/hour
g. Is the tank underground? Yes [ ] No [X]

2. Paint Characteristics
a. Shell Color/Shade : White/White [X] Aluminum/Specular [ ]
Aluminum/Diffuse [ ] Gray/Light [ ] Gray/Medium [ ]
Red/Primer [ ] Other [ ] (Describe _____)
b. Shell Condition : Good [X] Poor [ ]

3. Breather Vent Settings

Valve Type	Number	Pressure Setting (psig)	Vacuum Setting (psig)	Discharging To: (Specify "atmosphere" or name abatement device)
Combination vent valve				
Pressure vent valve			*******	
Vacuum vent valve		*******		**********
Open vent		*******	*******	

JUL 2 1995

III. Liquid Properties of Stored Ma l

1. Chemical Category: Organic Liquids [ ] Petroleum Distillates [X]
   Crude Oils [ ]
2. Single or Multi-Component Liquid

   Single [ ] Complete Section III.3
   Multiple [X] Complete Section III.4

3. Single Component Information
   a. Chemical Name: _____
   b. CAS Number: _____
   c. Average Liquid Surface Temperature: _____ °F.
   d. Vapor Pressure at Average Liquid Surface Temperature: _____ psia
   e. Liquid Molecular Weight: _____

4. Multiple Component Information
   a. Mixture Name: Distillate Fuel Oil No. 2
   b. Average Liquid Surface Temperature: 70.72 °F.
   c. Minimum Liquid Surface Temperature: 65.01 °F.
   d. Maximum Liquid Surface Temperature: 76.43 °F.
   e. Vapor Pressure at Average Liquid Surface Temperature: 0.0092 psia
   f. Vapor Pressure at Minimum Liquid Surface Temperature: 0.0076 psia
   e. Vapor Pressure at Maximum Liquid Surface Temperature: 0.0110 psia
   f. Liquid Molecular Weight: 130.00
   g. Vapor Molecular Weight: 130.00
   h. Chemical Components Information

Chemical Name	CAS Number	Percent of Total Liquid Weight	Percent of Total Vapor Weight	Molecular Weight
Distillate Fuel Oil No 2		100%	100%	130.00

NOT APPLICABLE

1995

TABLE 7(b)

HORIZONTAL FIXED ROOF STORAGE TANK SUMMARY

I. Tank Identification (one form for each tank).
1. Applicant's Name: Department of the Army, Camp Stanley
2. Location (indicate on plot plan and provide coordinates): _____
3. Tank No. 5 4. Emission Point No. _____
5. Status: New tank [X] Altered tank [ ] Relocation [ ] Change of Service [ ]
Previous permit or exemption number _____

II. Tank Physical Characteristics
1. Dimensions
a. Shell Length : 27 ft. b. Diameter : 8 ft.
c. Nominal Capacity or Working Volume : 10,000 gallons
d. Turnovers per year: 2.5 (Use zero (0) for constant-level tanks).
e. Net Throughput : 25,000 gallons/year
f. Maximum Filling Rate: _____ gallons/hour
g. Is the tank underground? Yes [ ] No [X]

2. Paint Characteristics
a. Shell Color/Shade : White/White [X] Aluminum/Specular [ ]
Aluminum/Diffuse [ ] Gray/Light [ ] Gray/Medium [ ]
Red/Primer [ ] Other [ ] (Describe _____)
b. Shell Condition : Good [X] Poor [ ]

3. Breather Vent Settings

Valve Type	Number	Pressure Setting (psig)	Vacuum Setting (psig)	Discharging To: (Specify "atmosphere" o name abatement device)
Combination vent valve				
Pressure vent valve			*******	
Vacuum vent valve		*******		**********
Open vent		*******	*******	

Liquid Properties of Stored [ ]rial

1. Chemical Category: Organic Liquids [ ] Petroleum Distillates [X]
   Crude Oils [ ]
2. Single or Multi-Component Liquid

   Single [ ] Complete Section III.3
   Multiple [X] Complete Section III.4

3. Single Component Information
   a. Chemical Name: _____
   b. CAS Number: _____
   c. Average Liquid Surface Temperature: _____ °F.
   d. Vapor Pressure at Average Liquid Surface Temperature: _____ psia
   e. Liquid Molecular Weight: _____

4. Multiple Component Information
   a. Mixture Name: Gasoline (RVP 10)
   b. Average Liquid Surface Temperature: 70.72 °F.
   c. Minimum Liquid Surface Temperature: 65.01 °F.
   d. Maximum Liquid Surface Temperature: 76.43 °F.
   e. Vapor Pressure at Average Liquid Surface Temperature: 6.2744 psia
   f. Vapor Pressure at Minimum Liquid Surface Temperature: 5.6244 psia
   e. Vapor Pressure at Maximum Liquid Surface Temperature: 6.9832 psia
   f. Liquid Molecular Weight: 66.00
   g. Vapor Molecular Weight: 66.00
   h. Chemical Components Information

Chemical Name	CAS Number	Percent of Total Liquid Weight	Percent of Total Vapor Weight	Molecular Weight
Gasoline (RVP 10)		100%	100 %	66.00

NOT APPLICABLE

Tank 7

DOT Safety Data Sheet — PHTHA: STODDARD SOLVENT (Fingerprint Remover)

NSS

Common Synonyms	Watery liquid	Colorless	Kerosene-like odor
Petroleum Naphtha Dry-cleaner Naphtha Solvent Naphtha	Floats on water		

Stop or exchange if possible. Turn people away.
Cool tank compartment.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Combustible.
Extinguish with foam, dry chemical or carbon dioxide.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID

LIQUID
Irritating to skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

Effect of low concentrations on aquatic life is unknown.
Floating to shoreline.
May be dangerous if it enters water intakes.

Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. RESPONSE TO DISCHARGE

(Blue Response Methods Handbook)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABEL

2.1 Category: None
2.2 Class: Not pertinent

3. CHEMICAL DESIGNATIONS

3.1 CG Compatibility Class: Miscellaneous Hydrocarbon Mixtures
3.2 Formula: Not applicable
3.3 IMO/UN Designation: 3.3/1268
3.4 DOT ID No.: 1268
3.5 CAS Registry No.: Data not available

4. OBSERVABLE CHARACTERISTICS

4.1 Physical State (as shipped): Liquid
4.2 Color: Colorless
4.3 Odor: Like gasoline

5. HEALTH HAZARDS

5.1 Personal Protective Equipment: Goggles or face shield (as for gasoline)
5.2 Symptoms Following Exposure: High concentration of vapors may cause intoxication. If liquid is swallowed, it may get into lungs by aspiration, not very irritating to skin or eyes.
5.3 Treatment of Exposure: INHALATION: remove patient from exposure, treat symptoms. INGESTION: do NOT induce vomiting! Call a doctor. EYES: flush with water for 15 min. SKIN: wipe off and wash with soap and water.
5.4 Threshold Limit Value: 200 ppm
5.5 Short Term Inhalation Limits: 500 ppm for 30 min
5.6 Toxicity by Ingestion: Grade 2, LD_{50} = 0.5 to 5 g/kg
5.7 Late Toxicity: None
5.8 Vapor (Gas) Irritant Characteristics: Vapors are nonirritating to the eyes and throat
5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
5.10 Odor Threshold: Data not available
5.11 IDLH Value: 10000 ppm

6. FIRE HAZARDS

6.1 Flash Point: 110°F C.C.
6.2 Flammable Limits in Air: 0.9%–6.0%
6.3 Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide
6.4 Fire Extinguishing Agents Not to be Used: Not pertinent
6.5 Special Hazards of Combustion Products: Not pertinent
6.6 Behavior in Fire: Not pertinent
6.7 Ignition Temperature: 540°F (est.)
6.8 Electrical Hazard: Class I, Group D
6.9 Burning Rate: 4 mm/min
6.10 Autoignition Flame Temperature: Data not available
6.11 Stoichiometric Air to Fuel Ratio: Data not available
6.12 Flame Temperature: Data not available

7. CHEMICAL REACTIVITY

7.1 Reactivity With Water: No reaction
7.2 Reactivity with Common Materials: No reaction
7.3 Stability During Transport: Stable
7.4 Neutralizing Agents for Acids and Caustics: Not pertinent
7.5 Polymerization: Not pertinent
7.6 Inhibitor of Polymerization: Not pertinent
7.7 Water Ratio (Reactant to Product): Data not available
7.8 Reactivity Group: 33

8. WATER POLLUTION

8.1 Aquatic Toxicity: Data not available
8.2 Waterfowl Toxicity: Data not available
8.3 Biological Oxygen Demand (BOD): Data not available
8.4 Food Chain Concentration Potential: None

9. SHIPPING INFORMATION

9.1 Grades of Purity: Data not available
9.2 Storage Temperature: Ambient
9.3 Inert Atmosphere: No requirement
9.4 Venting: Open (flame arrester)

10. HAZARD ASSESSMENT CODE

(Blue Hazard Assessment Handbook)

A-T-U

11. HAZARD CLASSIFICATIONS

11.1 Code of Federal Regulations: Combustible liquid
11.2 NAS Hazard Rating for Bulk Water Transportation: Not listed
11.3 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

12. PHYSICAL AND CHEMICAL PROPERTIES

12.1 Physical State at 15°C and 1 atm: Liquid
12.2 Molecular Weight: Not pertinent
12.3 Boiling Point at 1 atm: 320–380°F = 160–199°C = 433–472°K
12.4 Freezing Point: Not pertinent
12.5 Critical Temperature: Not pertinent
12.6 Critical Pressure: Not pertinent
12.7 Specific Gravity: 0.78 at 20°C (liquid)
12.8 Liquid Surface Tension: 19–23 dynes/cm = 0.019–0.023 N/m at 20°C
12.9 Liquid Water Interfacial Tension: 39–51 dynes/cm = 0.039–0.051 N/m at 20°C
12.10 Vapor (Gas) Specific Gravity: Data not available
12.11 Ratio of Specific Heats of Vapor (Gas) (est.): 1.030
12.12 Latent Heat of Vaporization: 120–150 Btu/lb = 71–81 cal/g = 3.0–3.4 X 10^5 J/kg
12.13 Heat of Combustion (est.): −18,200 Btu/lb = −10,100 cal/g = −424 X 10^5 J/kg
12.14 Heat of Decomposition: Not pertinent
12.15 Heat of Solution: Not pertinent
12.16 Heat of Polymerization: Not pertinent
12.25 Heat of Fusion: Data not available
12.26 Limiting Value: Data not available
12.27 Reid Vapor Pressure: 0.1 psia

NOTES

JUNE 1985

NSS

NAPHTHA: STODDARD SOLVENT

12.17 SATURATED LIQUID DENSITY		12.18 LIQUID HEAT CAPACITY		12.19 LIQUID THERMAL CONDUCTIVITY		12.20 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot (estimate)	Temperature (degrees F)	British thermal unit per pound-F (estimate)	Temperature (degrees F)	British thermal unit-inch per hour-square foot-F (estimate)	Temperature (degrees F)	Centipoise (estimate)
50	48.690	50	.478	50	1.040	50	9.343
52	48.690	52	.478	52	1.040	52	8.841
54	48.690	54	.478	54	1.040	54	8.370
56	48.690	56	.478	56	1.040	56	7.927
58	48.690	58	.478	58	1.040	58	7.511
60	48.690	60	.478	60	1.040	60	7.119
62	48.690	62	.478	62	1.040	62	6.751
64	48.690	64	.478	64	1.040	64	6.404
66	48.690	66	.478	66	1.040	66	6.078
68	48.690	68	.478	68	1.040	68	5.770
70	48.690	70	.478	70	1.040	70	5.481
72	48.690	72	.478	72	1.040	72	5.207
74	48.690	74	.478	74	1.040	74	4.950
76	48.690	76	.478	76	1.040	76	4.707
78	48.690	78	.478	78	1.040	78	4.477
80	48.690	80	.478	80	1.040	80	4.260
82	48.690	82	.478	82	1.040	82	4.056
84	48.690	84	.478	84	1.040	84	3.862
86	48.690	86	.478	86	1.040	86	3.679
88	48.690	88	.478	88	1.040	88	3.506
90	48.690	90	.478	90	1.040	90	3.342
92	48.690	92	.478	92	1.040	92	3.187
94	48.690	94	.478	94	1.040	94	3.040
96	48.690	96	.478	96	1.040	96	2.901
98	48.690	98	.478	98	1.040	98	2.770
100	48.690	100	.478	100	1.040	100	2.645

12.21 SOLUBILITY IN WATER		12.22 SATURATED VAPOR PRESSURE		12.23 SATURATED VAPOR DENSITY		12.24 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch (estimate)	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I	90	.094		N		D
	N	100	.124		O		A
	S	110	.163		T		T
	O	120	.211				A
	L	130	.272		P		
	U	140	.347		E		N
	B	150	.440		R		O
	L	160	.553		T		T
	E	170	.691		I		
		180	.856		N		A
		190	1.054		E		V
		200	1.290		N		A
		210	1.569		T		I
		220	1.897				L
		230	2.281				A
		240	2.728				B
		250	3.247				L
		260	3.846				E
		270	4.535				
		280	5.323				
		290	6.221				
		300	7.241				
		310	8.394				
		320	9.695				
		330	11.160				
		340	12.790				

ISOPROPYL ALCOHOL
ISCST2
OUTPUT FILE PRINTOUT

```
*** ISCST2 - VERSION 93109 ***    ***  CSSA Isopropyl Alcohol Emissions                    ***      05/22/95
                                  ***                                                       ***      12:53:07
                                                                                                     PAGE   1

*** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
          1. Final Plume Rise.
          2. Stack-tip Downwash.
          3. Buoyancy-induced Dispersion.
          4. Use Calms Processing Routine.
          5. Not Use Missing Data Processing Routine.
          6. Default Wind Profile Exponents.
          7. Default Vertical Potential Temperature Gradients.
          8. "Upper Bound" Values for Supersquat Buildings.
          9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:   1-HR
    and Calculates PERIOD Averages

**This Run Includes:    1 Source(s);      1 Source Group(s); and   1165 Receptor(s)

**The Model Assumes A Pollutant Type of:  IPA

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
        Model Outputs Tables of PERIOD Averages by Receptor
        Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
        Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)
        Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;    Decay Coef. =   0.0000     ;    Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Input Runstream File: cssaipa.inp                          ;  **Output Print File: cssaipa.out
**Detailed Error/Message File:   ERRORS.OUT
```

*** ISCST2 - VERSION 93109 *** *** CSSA Isopropyl Alcohol Emissions *** 05/22/95
*** *** 12:53:07
PAGE 2

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
EPN1	0	0.52138E-01	535745.6	3283542.8	0.0	3.51	293.00	2.78	0.29	YES	

```
*** ISCST2 - VERSION 93109 ***    ***  CSSA Isopropyl Alcohol Emissions                    ***        05/22/95
                                  ***                                                       ***        12:53:07
                                                                                                       PAGE   3

*** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT


                                 *** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID                                                SOURCE IDs


ALL       EPN1     ,
```

*** ISCST2 - VERSION 93109 *** *** CSSA Isopropyl Alcohol Emissions *** 05/22/95
*** *** 12:53:07
PAGE 4

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EPN1

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	5.2,	54.1,	0	2	5.2,	79.5,	0	3	5.2,	102.5,	0	4	5.2,	122.3,	0	5	5.2,	138.4,	0	6	5.2,	150.3,	0
7	5.2,	157.7,	0	8	5.2,	160.2,	0	9	5.2,	158.8,	0	10	5.2,	160.1,	0	11	5.2,	156.6,	0	12	5.2,	148.3,	0
13	5.2,	135.5,	0	14	5.2,	118.6,	0	15	5.2,	98.1,	0	16	5.2,	74.6,	0	17	5.2,	48.8,	0	18	5.2,	27.1,	0
19	5.2,	54.1,	0	20	5.2,	79.5,	0	21	5.2,	102.5,	0	22	5.2,	122.3,	0	23	5.2,	138.4,	0	24	5.2,	150.3,	0
25	5.2,	157.7,	0	26	5.2,	160.2,	0	27	5.2,	158.8,	0	28	5.2,	160.1,	0	29	5.2,	156.6,	0	30	5.2,	148.3,	0
31	5.2,	135.5,	0	32	5.2,	118.6,	0	33	5.2,	98.1,	0	34	5.2,	74.6,	0	35	5.2,	48.8,	0	36	5.2,	27.1,	0

```
*** ISCST2 - VERSION 93109 ***    ***  CSSA Isopropyl Alcohol Emissions                    ***        05/22/95
                                  ***                                                       ***        12:53:07
                                                                                                       PAGE  51
*** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT

                                        *** THE SUMMARY OF MAXIMUM PERIOD ( 8760 HRS) RESULTS ***

                                     ** CONC OF IPA      IN MICROGRAMS/M**3                          **

                                                                                                  NETWORK
GROUP ID                      AVERAGE CONC              RECEPTOR  (XR, YR, ZELEV, ZFLAG)   OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL       1ST HIGHEST VALUE IS       1.56257 AT (  535600.00,  3283700.00,      0.00,      0.00)  DC
          2ND HIGHEST VALUE IS       1.22670 AT (  535600.00,  3283800.00,      0.00,      0.00)  DC
          3RD HIGHEST VALUE IS       1.21256 AT (  535600.00,  3283500.00,      0.00,      0.00)  DC
          4TH HIGHEST VALUE IS       1.05905 AT (  535600.00,  3283400.00,      0.00,      0.00)  DC
          5TH HIGHEST VALUE IS       1.03216 AT (  535600.00,  3283600.00,      0.00,      0.00)  DC
          6TH HIGHEST VALUE IS       0.96832 AT (  535600.00,  3283300.00,      0.00,      0.00)  DC

*** RECEPTOR TYPES:  GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR
                     BD = BOUNDARY
```

12

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF IPA IN MICROGRAMS/M**3 **

GROUP ID			AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH	1ST HIGH VALUE IS	174.36232	ON 88051223:	AT (535600.00, 3283700.00, 0.00, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

3

```
 *** ISCST2 - VERSION 93109 ***    ***  CSSA Isopropyl Alcohol Emissions                    ***        05/22/95
                                   ***                                                       ***        12:53:07
                                                                                                        PAGE  53

 *** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT


*** Message Summary For ISC2 Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of          865 Informational Message(s)

A Total of          865 Calm Hours Identified


  ******** FATAL ERROR MESSAGES ********
             ***  NONE  ***


  ********   WARNING MESSAGES   ********
             ***  NONE  ***


  ************************************
  *** ISCST2 Finishes Successfully ***
  ************************************
```

MINERAL SPIRITS
ISCST2
OUTPUT FILE PRINTOUT

```
 *** ISCST2 - VERSION 93109 ***    *** CSSA Mineral Spirit Emissions                          ***     05/22/95
                                   ***                                                        ***     12:58:06
                                                                                                      PAGE   1
 *** MODELING OPTIONS USED:  CONC   RURAL  FLAT        DFAULT

                                   ***     MODEL SETUP OPTIONS SUMMARY      ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.
           8. "Upper Bound" Values for Supersquat Buildings.
           9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:   1-HR
    and Calculates PERIOD Averages

**This Run Includes:     4 Source(s);      1 Source Group(s); and   1165 Receptor(s)

**The Model Assumes A Pollutant Type of:  MINSPIRT

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;    Decay Coef. =   0.0000     ;    Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Input Runstream File: cssams.inp                             ;  **Output Print File: cssams.out
**Detailed Error/Message File:   ERRORS.OUT
```

*** ISCST2 - VERSION 93109 *** *** CSSA Mineral Spirit Emissions *** *** 05/22/95
*** 12:58:06
PAGE 2

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
EPN1	0	0.35584E-01	535745.6	3283542.8	0.0	3.51	293.00	2.78	0.29	YES	
EPN2	0	0.42711E-01	535746.2	3283511.8	0.0	2.58	293.00	2.78	0.29	YES	
EPN3	0	0.35584E-01	535763.7	3283502.3	0.0	5.25	293.00	5.61	0.67	YES	

*** ISCST2 - VERSION 93109 *** *** CSSA Mineral Spirit Emissions *** *** 05/22/95 *** 12:58:06 PAGE 3

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF AREA (METERS)	EMISSION RATE SCALAR VARY BY
EPN5	0	0.28047E-02	535775.9	3283580.0	0.0	0.00	4.65	

Why this be modeled as a pt. source?
The emissions are leaving through drains etc.

8

```
*** ISCST2 - VERSION 93109 ***    *** CSSA Mineral Spirit Emissions                    ***      05/22/95
                                  ***                                                  ***      12:58:06
                                                                                               PAGE   4

*** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT


                                  *** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID                                                SOURCE IDs


ALL       EPN1     , EPN2     , EPN3     , EPN5     ,
```

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*** ISCST2 - VERSION 93109 *** *** CSSA Mineral Spirit Emissions *** *** 05/22/95
*** *** 12:58:06
PAGE 5

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EPN1

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	5.2,	54.1,	0	2	5.2,	79.5,	0	3	5.2,	102.5,	0	4	5.2,	122.3,	0	5	5.2,	138.4,	0	6	5.2,	150.3,	0
7	5.2,	157.7,	0	8	5.2,	160.2,	0	9	5.2,	158.8,	0	10	5.2,	160.1,	0	11	5.2,	156.6,	0	12	5.2,	148.3,	0
13	5.2,	135.5,	0	14	5.2,	118.6,	0	15	5.2,	98.1,	0	16	5.2,	74.6,	0	17	5.2,	48.8,	0	18	5.2,	27.1,	0
19	5.2,	54.1,	0	20	5.2,	79.5,	0	21	5.2,	102.5,	0	22	5.2,	122.3,	0	23	5.2,	138.4,	0	24	5.2,	150.3,	0
25	5.2,	157.7,	0	26	5.2,	160.2,	0	27	5.2,	158.8,	0	28	5.2,	160.1,	0	29	5.2,	156.6,	0	30	5.2,	148.3,	0
31	5.2,	135.5,	0	32	5.2,	118.6,	0	33	5.2,	98.1,	0	34	5.2,	74.6,	0	35	5.2,	48.8,	0	36	5.2,	27.1,	0

SOURCE ID: EPN2

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	5.2,	54.1,	0	2	5.2,	79.5,	0	3	5.2,	102.5,	0	4	5.2,	122.3,	0	5	5.2,	138.4,	0	6	5.2,	150.3,	0
7	5.2,	157.7,	0	8	5.2,	160.2,	0	9	5.2,	158.8,	0	10	5.2,	160.1,	0	11	5.2,	156.6,	0	12	5.2,	148.3,	0
13	5.2,	135.5,	0	14	5.2,	118.6,	0	15	5.2,	98.1,	0	16	5.2,	74.6,	0	17	5.2,	48.8,	0	18	5.2,	27.1,	0
19	5.2,	54.1,	0	20	5.2,	79.5,	0	21	5.2,	102.5,	0	22	5.2,	122.3,	0	23	5.2,	138.4,	0	24	5.2,	150.3,	0
25	5.2,	157.7,	0	26	5.2,	160.2,	0	27	5.2,	158.8,	0	28	5.2,	160.1,	0	29	5.2,	156.6,	0	30	5.2,	148.3,	0
31	5.2,	135.5,	0	32	5.2,	118.6,	0	33	5.2,	98.1,	0	34	5.2,	74.6,	0	35	5.2,	48.8,	0	36	5.2,	27.1,	0

SOURCE ID: EPN3

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	5.2,	54.1,	0	2	5.2,	79.5,	0	3	5.2,	102.5,	0	4	5.2,	122.3,	0	5	5.2,	138.4,	0	6	5.2,	150.3,	0
7	5.2,	157.7,	0	8	5.2,	160.2,	0	9	5.2,	158.8,	0	10	5.2,	160.1,	0	11	5.2,	156.6,	0	12	5.2,	148.3,	0
13	5.2,	135.5,	0	14	5.2,	118.6,	0	15	5.2,	98.1,	0	16	5.2,	74.6,	0	17	5.2,	48.8,	0	18	5.2,	27.1,	0
19	5.2,	54.1,	0	20	5.2,	79.5,	0	21	5.2,	102.5,	0	22	5.2,	122.3,	0	23	5.2,	138.4,	0	24	5.2,	150.3,	0
25	5.2,	157.7,	0	26	5.2,	160.2,	0	27	5.2,	158.8,	0	28	5.2,	160.1,	0	29	5.2,	156.6,	0	30	5.2,	148.3,	0
31	5.2,	135.5,	0	32	5.2,	118.6,	0	33	5.2,	98.1,	0	34	5.2,	74.6,	0	35	5.2,	48.8,	0	36	5.2,	27.1,	0

```
*** ISCST2 - VERSION 93109 ***    *** CSSA Mineral Spirit Emissions                    ***      05/22/95
                                  ***                                                  ***      12:58:06
                                                                                               PAGE  52

*** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT

                                  *** THE SUMMARY OF MAXIMUM PERIOD ( 8760 HRS) RESULTS ***

                                     ** CONC OF MINSPIRT IN MICROGRAMS/M**3                    **

                                                                                          NETWORK
GROUP ID                      AVERAGE CONC              RECEPTOR  (XR, YR, ZELEV, ZFLAG)   OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      1ST HIGHEST VALUE IS      4.48979 AT (  535600.00,  3283700.00,      0.00,      0.00)  DC
         2ND HIGHEST VALUE IS      4.14749 AT (  535600.00,  3283800.00,      0.00,      0.00)  DC
         3RD HIGHEST VALUE IS      3.97828 AT (  535600.00,  3283500.00,      0.00,      0.00)  DC
         4TH HIGHEST VALUE IS      3.78864 AT (  535600.00,  3283600.00,      0.00,      0.00)  DC
         5TH HIGHEST VALUE IS      3.62144 AT (  535600.00,  3283400.00,      0.00,      0.00)  DC
         6TH HIGHEST VALUE IS      3.28049 AT (  535600.00,  3283300.00,      0.00,      0.00)  DC

 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
                      BD = BOUNDARY
```

*** ISCST2 - VERSION 93109 *** *** CSSA Mineral Spirit Emissions *** 05/22/95
*** *** 12:58:06
PAGE 53

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF MINSPIRT IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	980.23560	ON 88031307:	AT (535500.00, 3283200.00, 0.00, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

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```
 *** ISCST2 - VERSION 93109 ***    *** CSSA Mineral Spirit Emissions                    ***        05/22/95
                                   ***                                                  ***        12:58:06
                                                                                                   PAGE  54

 *** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT


*** Message Summary For ISC2 Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of          865 Informational Message(s)

A Total of          865 Calm Hours Identified


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** ISCST2 Finishes Successfully ***
   ************************************
```

23

STODDARD SOLVENT
ISCST2
OUTPUT FILE PRINTOUT

```
 *** ISCST2 - VERSION 93109 ***    *** CSSA Stoddard Solvent Emissions                          ***        05/22/95
                                   ***                                                          ***        13:14:22
                                                                                                           PAGE   1

 *** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT

                                         ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
          1. Final Plume Rise.
          2. Stack-tip Downwash.
          3. Buoyancy-induced Dispersion.
          4. Use Calms Processing Routine.
          5. Not Use Missing Data Processing Routine.
          6. Default Wind Profile Exponents.
          7. Default Vertical Potential Temperature Gradients.
          8. "Upper Bound" Values for Supersquat Buildings.
          9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:   1-HR
    and Calculates PERIOD Averages

**This Run Includes:    1 Source(s);      1 Source Group(s); and   1165 Receptor(s)

**The Model Assumes A Pollutant Type of:  STODDARD

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
        Model Outputs Tables of PERIOD Averages by Receptor
        Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
        Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)
        Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;    Decay Coef. =   0.0000     ;    Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Input Runstream File: cssass.inp                          ;  **Output Print File: cssass.out
**Detailed Error/Message File:   ERRORS.OUT
```

*** ISCST2 - VERSION 93109 *** *** CSSA Stoddard Solvent Emissions *** *** 05/22/95 *** 13:14:22 PAGE 2

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
EPN4	0	0.34232E-01	535745.8	3283535.3	0.0	5.27	293.00	6.55	0.41	YES	

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```
*** ISCST2 - VERSION 93109 ***    *** CSSA Stoddard Solvent Emissions                    ***      05/22/95
                                  ***                                                    ***      13:14:22
                                                                                                  PAGE   3

*** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT


                                 *** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID                                                SOURCE IDs


ALL       EPN4     ,
```

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*** ISCST2 - VERSION 93109 *** *** CSSA Stoddard Solvent Emissions *** *** 05/22/95 *** 13:14:22 PAGE 4

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EPN4

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	5.2,	54.1,	0	2	5.2,	79.5,	0	3	5.2,	102.5,	0	4	5.2,	122.3,	0	5	5.2,	138.4,	0	6	5.2,	150.3,	0
7	5.2,	157.7,	0	8	5.2,	160.2,	0	9	5.2,	158.8,	0	10	5.2,	160.1,	0	11	5.2,	156.6,	0	12	5.2,	148.3,	0
13	5.2,	135.5,	0	14	5.2,	118.6,	0	15	5.2,	98.1,	0	16	5.2,	74.6,	0	17	5.2,	48.8,	0	18	5.2,	27.1,	0
19	5.2,	54.1,	0	20	5.2,	79.5,	0	21	5.2,	102.5,	0	22	5.2,	122.3,	0	23	5.2,	138.4,	0	24	5.2,	150.3,	0
25	5.2,	157.7,	0	26	5.2,	160.2,	0	27	5.2,	158.8,	0	28	5.2,	160.1,	0	29	5.2,	156.6,	0	30	5.2,	148.3,	0
31	5.2,	135.5,	0	32	5.2,	118.6,	0	33	5.2,	98.1,	0	34	5.2,	74.6,	0	35	5.2,	48.8,	0	36	5.2,	27.1,	0

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```
*** ISCST2 - VERSION 93109 ***    *** CSSA Stoddard Solvent Emissions                    ***        05/22/95
                                  ***                                                    ***        13:14:22
                                                                                                    PAGE  51

*** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT

                                   *** THE SUMMARY OF MAXIMUM PERIOD ( 8760 HRS) RESULTS ***

                                 ** CONC OF STODDARD IN MICROGRAMS/M**3                        **

                                                                                          NETWORK
GROUP ID                     AVERAGE CONC              RECEPTOR  (XR, YR, ZELEV, ZFLAG)   OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL       1ST HIGHEST VALUE IS      0.97138 AT (  535600.00,  3283700.00,      0.00,      0.00)  DC
          2ND HIGHEST VALUE IS      0.76969 AT (  535600.00,  3283800.00,      0.00,      0.00)  DC
          3RD HIGHEST VALUE IS      0.67537 AT (  535600.00,  3283500.00,      0.00,      0.00)  DC
          4TH HIGHEST VALUE IS      0.65002 AT (  535600.00,  3283600.00,      0.00,      0.00)  DC
          5TH HIGHEST VALUE IS      0.61021 AT (  535600.00,  3283400.00,      0.00,      0.00)  DC
          6TH HIGHEST VALUE IS      0.55869 AT (  535600.00,  3283900.00,      0.00,      0.00)  DC

*** RECEPTOR TYPES:  GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR
                     BD = BOUNDARY
```

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*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF STODDARD IN MICROGRAMS/M**3 **

```
                                                  DATE                                                    NETWORK
GROUP ID                          AVERAGE CONC  (YYMMDDHH)        RECEPTOR  (XR, YR, ZELEV, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL     HIGH  1ST HIGH VALUE IS      83.78704  ON 88080105: AT (  535600.00,  3283500.00,      0.00,      0.00)  DC
```

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

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```
 *** ISCST2 - VERSION 93109 ***    *** CSSA Stoddard Solvent Emissions                    ***        05/22/95
                                   ***                                                    ***        13:14:22
                                                                                                     PAGE  53

 *** MODELING OPTIONS USED:  CONC   RURAL  FLAT          DFAULT


*** Message Summary For ISC2 Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of          865 Informational Message(s)

A Total of          865 Calm Hours Identified


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** ISCST2 Finishes Successfully ***
   ************************************
```

31

BUILDING PROFILE INPUT PROGRAM
OUTPUT FILE PRINTOUT

BPIP (Dated: 95086)

DATE : 4/30/95
TIME : 12:19:38
CSSA BPIP Input File Part 1 - 8 Buildings, 9 Emission Sources.

==========
BPIP PROCESSING INFORMATION:
==========

The ST flag has been set for processing for an ISCST2 run.

Inputs entered in METERS will be converted to meters using a conversion factor of 1.0000. Output will be in meters.

The UTMP variable is set to UTMY. The input is assumed to be in UTM coordinates. BPIP will move the UTM origin to the first pair of UTM coordinates read. The UTM coordinates of the new origin will be subtracted from all the other UTM coordinates entered to form this new local coordinate system.

Plant north is set to .00 degrees with respect to True North.

CSSA BPIP Input File Part 1 - 8 Buildings, 9 Emission Sources.

PRELIMINARY* GEP STACK HEIGHT RESULTS TABLE
(Output Units: meters)

Stack Name	Stack Height	Stack-Building Base Elevation Differences	GEP** EQN1	Preliminary* GEP Stack Height Value
EPN1	3.51	.00	12.95	65.00
EPN2	2.58	.00	12.95	65.00
EPN3	5.25	.00	12.95	65.00
EPN4	5.27	.00	12.95	65.00
EPN5	.00	.00	12.95	65.00
EPN6	9.14	N/A	.00	65.00
FUG1	.00	N/A	.00	65.00
EPN7	9.14	N/A	.00	65.00
FUG2	.00	N/A	.00	65.00

* Results are based on Determinants 1 & 2 on pages 1 & 2 of the GEP Technical Support Document. Determinant 3 may be investigated for additional stack height credit. Final values result after Determinant 3 has been taken into consideration.
** Results were derived from Equation 1 on page 6 of GEP Technical Support Document. Values have been adjusted for any stack-building base elevation differences.

Note: Criteria for determining stack heights for modeling emission limitations for a source can be found in Table 3.1 of the GEP Technical Support Document.

BPIP (Dated: 95086)

DATE : 4/30/95
TIME : 12:19:38

CSSA BPIP Input File Part 1 - 8 Buildings, 9 Emission Sources.

BPIP output is in meters

SO BUILDHGT EPN1	5.18	5.18	5.18	5.18	5.18	5.18	
SO BUILDHGT EPN1	5.18	5.18	5.18	5.18	5.18	5.18	
SO BUILDHGT EPN1	5.18	5.18	5.18	5.18	5.18	5.18	
SO BUILDHGT EPN1	5.18	5.18	5.18	5.18	5.18	5.18	
SO BUILDHGT EPN1	5.18	5.18	5.18	5.18	5.18	5.18	33
SO BUILDHGT EPN1	5.18	5.18	5.18	5.18	5.18	5.18	

SO	BUILDWID	EPN1	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN1	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN1	135.51	118.60	98.09	74.59	48.83	27.13
SO	BUILDWID	EPN1	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN1	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN1	135.51	118.60	98.09	74.59	48.83	27.13
SO	BUILDHGT	EPN2	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN2	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN2	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN2	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN2	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN2	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDWID	EPN2	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN2	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN2	135.51	118.60	98.09	74.59	48.83	27.13
SO	BUILDWID	EPN2	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN2	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN2	135.51	118.60	98.09	74.59	48.83	27.13
SO	BUILDHGT	EPN3	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN3	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN3	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN3	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN3	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN3	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDWID	EPN3	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN3	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN3	135.51	118.60	98.09	74.59	48.83	27.13
SO	BUILDWID	EPN3	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN3	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN3	135.51	118.60	98.09	74.59	48.83	27.13
SO	BUILDHGT	EPN4	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN4	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN4	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN4	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN4	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN4	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDWID	EPN4	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN4	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN4	135.51	118.60	98.09	74.59	48.83	27.13
SO	BUILDWID	EPN4	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN4	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN4	135.51	118.60	98.09	74.59	48.83	27.13
SO	BUILDHGT	EPN5	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN5	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN5	5.18	5.18	5.18	5.18	3.66	3.66
SO	BUILDHGT	EPN5	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN5	5.18	5.18	5.18	5.18	5.18	5.18
SO	BUILDHGT	EPN5	5.18	5.18	5.18	5.18	3.66	3.66
SO	BUILDWID	EPN5	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN5	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN5	135.51	118.60	98.09	74.59	16.78	14.96
SO	BUILDWID	EPN5	54.14	79.51	102.46	122.29	138.41	150.33
SO	BUILDWID	EPN5	157.68	160.23	158.77	160.11	156.58	148.30
SO	BUILDWID	EPN5	135.51	118.60	98.09	74.59	16.78	14.96
SO	BUILDHGT	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN6	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN6	.00	.00	.00	.00	.00	.00

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SO	BUILDHGT	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG1	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN7	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	FUG2	.00	.00	.00	.00	.00	.00

BPIP (Dated: 95086)

DATE : 4/30/95
TIME : 12:19:52
CSSA BPIP Input File Part 2 - 8 Buildings, 9 Emission Sources.

==========
BPIP PROCESSING INFORMATION:
==========

The ST flag has been set for processing for an ISCST2 run.

Inputs entered in METERS will be converted to meters using a conversion factor of 1.0000. Output will be in meters.

The UTMP variable is set to UTMY. The input is assumed to be in UTM coordinates. BPIP will move the UTM origin to the first pair of UTM coordinates read. The UTM coordinates of the new origin will be subtracted from all the other UTM coordinates entered to form this new local coordinate system.

Plant north is set to .00 degrees with respect to True North.

CSSA BPIP Input File Part 2 - 8 Buildings, 9 Emission Sources.

PRELIMINARY* GEP STACK HEIGHT RESULTS TABLE
(Output Units: meters)

Stack Name	Stack Height	Stack-Building Base Elevation Differences	GEP** EQN1	Preliminary* GEP Stack Height Value
EPN1	3.51	N/A	.00	65.00
EPN2	2.58	N/A	.00	65.00
EPN3	5.25	N/A	.00	65.00
EPN4	5.27	N/A	.00	65.00
EPN5	.00	N/A	.00	65.00
EPN6	9.14	.00	15.25	65.00
FUG1	.00	.00	15.25	65.00
EPN7	9.14	.00	15.25	65.00
FUG2	.00	.00	15.25	65.00

* Results are based on Determinants 1 & 2 on pages 1 & 2 of the GEP Technical Support Document. Determinant 3 may be investigated for additional stack height credit. Final values result after Determinant 3 has been taken into consideration.
** Results were derived from Equation 1 on page 6 of GEP Technical Support Document. Values have been adjusted for any stack-building base elevation differences.

Note: Criteria for determining stack heights for modeling emission limitations for a source can be found in Table 3.1 of the GEP Technical Support Document.

BPIP (Dated: 95086)

DATE : 4/30/95
TIME : 12:19:52

CSSA BPIP Input File Part 2 - 8 Buildings, 9 Emission Sources.

BPIP output is in meters

SO BUILDHGT	EPN1	.00	.00	.00	.00	.00	.00
SO BUILDHGT	EPN1	.00	.00	.00	.00	.00	.00
SO BUILDHGT	EPN1	.00	.00	.00	.00	.00	.00
SO BUILDHGT	EPN1	.00	.00	.00	.00	.00	.00
SO BUILDHGT	EPN1	.00	.00	.00	.00	.00	.00
SO BUILDHGT	EPN1	.00	.00	.00	.00	.00	.00

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SO	BUILDWID	EPN1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN1	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN1	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN2	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN3	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN4	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDWID	EPN5	.00	.00	.00	.00	.00	.00
SO	BUILDHGT	EPN6	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN6	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN6	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN6	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN6	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN6	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDWID	EPN6	28.72	29.27	28.93	27.70	25.64	22.80
SO	BUILDWID	EPN6	19.26	15.14	11.51	16.01	20.03	23.43
SO	BUILDWID	EPN6	26.13	28.03	29.07	29.24	28.52	27.30
SO	BUILDWID	EPN6	28.72	29.27	28.93	27.70	25.64	22.80
SO	BUILDWID	EPN6	19.26	15.14	11.51	16.01	20.03	23.43
SO	BUILDWID	EPN6	26.13	28.03	29.07	29.24	28.52	27.30

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SO	BUILDHGT	FUG1	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG1	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG1	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG1	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG1	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG1	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDWID	FUG1	28.72	29.27	28.93	27.70	25.64	22.80
SO	BUILDWID	FUG1	19.26	15.14	11.51	16.01	20.03	23.43
SO	BUILDWID	FUG1	26.13	28.03	29.07	29.24	28.52	27.30
SO	BUILDWID	FUG1	28.72	29.27	28.93	27.70	25.64	22.80
SO	BUILDWID	FUG1	19.26	15.14	11.51	16.01	20.03	23.43
SO	BUILDWID	FUG1	26.13	28.03	29.07	29.24	28.52	27.30
SO	BUILDHGT	EPN7	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN7	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN7	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN7	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN7	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	EPN7	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDWID	EPN7	9.98	11.75	13.16	14.17	14.75	14.88
SO	BUILDWID	EPN7	14.56	13.79	12.61	12.54	13.74	14.53
SO	BUILDWID	EPN7	14.87	14.77	14.21	13.22	11.83	10.08
SO	BUILDWID	EPN7	9.98	11.75	13.16	14.17	14.75	14.88
SO	BUILDWID	EPN7	14.56	13.79	12.61	12.54	13.74	14.53
SO	BUILDWID	EPN7	14.87	14.77	14.21	13.22	11.83	10.08
SO	BUILDHGT	FUG2	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG2	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG2	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG2	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG2	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDHGT	FUG2	6.10	6.10	6.10	6.10	6.10	6.10
SO	BUILDWID	FUG2	9.98	11.75	13.16	14.17	14.75	14.88
SO	BUILDWID	FUG2	14.56	13.79	12.61	12.54	13.74	14.53
SO	BUILDWID	FUG2	14.87	14.77	14.21	13.22	11.83	10.08
SO	BUILDWID	FUG2	9.98	11.75	13.16	14.17	14.75	14.88
SO	BUILDWID	FUG2	14.56	13.79	12.61	12.54	13.74	14.53
SO	BUILDWID	FUG2	14.87	14.77	14.21	13.22	11.83	10.08