APPENDIX A:

SOIL VAPOR DATA VALIDATION REPORTS

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Battelle
3990 Old Town Avenue, Suite B104
San Diego, CA 92110
ATTN: Mr. David Conner

March 2, 2005

SUBJECT: NASA JPL, Data Validation

Dear Mr. Conner,

Enclosed is the final validation report for the fraction listed below. This SDG was received on February 17, 2005. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 13161:

SDG #	**Fraction**
GF020305-L6	Volatiles

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

V:\LOGIN\Battelle\JPL\13161COV.wpd

Attachment 1

PO 190288

LDC #13161 (Battelle-San Diego / NASA JPL)

LDC	SDG#	DATE REC'D	DATE DUE	VOA (8260B)																																			
Matrix:	Air/Soil			A	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	GF020305-L6	02/17/05	03/11/05	14	0																																		
Total	B			14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

Shaded cells indicate Level IV validation (all other cells are Level III validation).

13161ST.wpd

NASA JPL
Data Validation Reports
LDC# 13161

Volatiles

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: February 5, 2005

LDC Report Date: March 1, 2005

Matrix: Soil Vapor

Parameters: Volatiles

Validation Level: EPA Level III

Laboratory: H & P Mobile GeoChemistry

Sample Delivery Group (SDG): GF020305-L6

Sample Identification

SVW39-VPI-001
SVW37-VPJ-002
SVW2-VPA-003
SVW4-VPB-004
SVW17-VPB-005
SVW10-VPB-006
SVW33-VPD-007
SVW33-VPE-008
SVW33-VPF-009
SVW33-VPF-010Dup
SVW32-VPH-011
SVW36-VPB-012
SVW36-VPC-013
SVW36-VPC-014Dup

Introduction

This data review covers 14 soil vapor samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs) .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for this SDG.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples SVW33-VPF-009 and SVW33-VPF-010Dup and samples SVW36-VPC-013 and SVW36-VPC-014Dup were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	SVW33-VPF-009	SVW33-VPF-010Dup	
Carbon tetrachloride	2.2	2.4	9
1,1-Dichloroethene	1.2	1.3	8

XVII. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatiles - Data Qualification Summary - SDG GF020305-L6

No Sample Data Qualified in this SDG

NASA JPL
Volatiles - Laboratory Blank Data Qualification Summary - SDG GF020305-L6

No Sample Data Qualified in this SDG

GEOFON PROJECT # 04-12812-JPL
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF020305-L6
PRELIMINARY DATA
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW39-VPI-001	SVW37-VPJ-002	SVW2-VPA-003	SVW4-VPB-004	SVW17-VPB-005	SVW10-VPB-006	SVW33-VPD-007	SVW33-VPE-008	SVW33-VPF-009	SVW33-VPF-010 Dup	SVW32-VPH-011	SVW36-VPB-012	SVW36-VPC-013	SVW36-VPC-014 Dup
DATE	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05	02/03/05
ANALYSIS TIME	6:55	7:26	7:50	8:13	8:36	8:59	9:22	9:44	10:07	10:30	10:53	11:56	12:20	12:43	13:05
SAMPLING DEPTH (feet)	--	130	185	10	20	24	35	85	105	120	120	155	35	55	55
VOLUME WITHDRAWN (cc)	--	580	800	100	140	156	200	400	480	540	600	680	200	280	340
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	2.2	2.4	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.2	1.3	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	19	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	3.2	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)															
DIBROMODIFLUOROMETHANE	90%	93%	89%	91%	91%	94%	92%	94%	94%	94%	95%	90%	93%	92%	91%
1,2-DICHLOROETHANE-d4	89%	92%	89%	94%	89%	93%	93%	98%	91%	93%	96%	88%	95%	95%	94%
4 BROMOFLUORO BENZENE	90%	90%	90%	87%	90%	90%	89%	92%	89%	88%	89%	92%	89%	88%	94%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

3/1/05

LDC #: 13161A1

SDG #: GF020305-L6

Laboratory: H&P Mobile Geochemistry

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 2/28/05

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 2/03/05
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	A	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Not required
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	Not reviewed
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D_1 = 9, 10 D_2 = 13, 14
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil Vapor

1	SVW39-VPI-001	11	SVW32-VPH-011	21		31	
2	SVW37-VPJ-002	12	SVW36-VPB-012	22		32	
3	SVW2-VPA-003	13	SVW36-VPC-013	23		33	
4	SVW4-VPB-004	14	SVW36-VPC-014Dup	24		34	
5	SVW17-VPB-005	15	MB 02/03/05	25		35	
6	SVW10-VPB-006	16		26		36	
7	SVW33-VPD-007	17		27		37	
8	SVW33-VPE-008	18		28		38	
9	SVW33-VPF-009	19		29		39	
10	SVW33-VPF-010Dup	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 13161A1
SDG #: GF020305-L6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG
2nd reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	9	10	
O	2.2	2.4	9
H	1.2	1.3	8

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Battelle
3990 Old Town Avenue, Suite B104
San Diego, CA 92110
ATTN: Mr. David Conner

May 31, 2005

SUBJECT: NASA JPL, Data Validation

Dear Mr. Conner,

Enclosed is the final validation report for the fraction listed below. This SDG was received on May 16, 2005. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 13494:

SDG #	**Fraction**
GF041905-L6	Volatiles

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

V:\LOGIN\Battelle\JPL\13494COV.wpd

Attachment 1

PO 190288

LDC #13494 (Battelle-San Diego / NASA JPL)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)																																	
Matrix:	Air/Soil			A	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	GF041905-L6	05/16/05	06/06/05	52	0																																
Total	B/LR			52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52

Shaded cells indicate Level IV validation (all other cells are Level III validation).

13494ST.wpd

NASA JPL
Data Validation Reports
LDC# 13494

Volatiles

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: April 19 through April 22, 2005

LDC Report Date: May 27, 2005

Matrix: Air

Parameters: Volatiles

Validation Level: EPA Level III

Laboratory: H & P Mobile GeoChemistry

Sample Delivery Group (SDG): GF041905-L6

Sample Identification

SVW9-VPA-001
SVW9-VPB-002
SVW9-VPC-003
SVW9-VPD-004
SVW9-VPE-005
SVW10-VPB-006
SVW17-VPB-007
SVW26-VPF-008
SVW26-VPG-009
SVW26-VPG-010Dup
SVW26-VPH-011
SVW2-VPA-012
SVW4-VPB-013
SVW27-VPA-014
SVW27-VPB-015
SVW27-VPC-016
SVW27-VPD-017
SVW27-VPE-018
SVW27-VPF-019
SVW27-VPF-020Dup
SVW27-VPG-021
SVW27-VPI-022
SVW27-VPJ-023
SVW32-VPA-024
SVW33-VPD-025
SVW33-VPE-026
SVW33-VPF-027
SVW36-VPA-028
SVW36-VPB-029
SVW36-VPC-030
SVW36-VPC-031Dup
SVW36-VPD-032
SVW36-VPE-033
SVW38-VPD-034
SVW38-VPF-035
SVW38-VPJ-036
SVW35-VPB-037
SVW35-VPE-038
SVW39-VPA-039
SVW39-VPC-040
SVW39-VPC-041Dup
SVW39-VPE-042
SVW39-VPF-043
SVW39-VPG-044
SVW39-VPI-045
SVW37-VPB-046
SVW37-VPD-047
SVW37-VPE-048
SVW37-VPH-049
SVW37-VPH-050Dup
SVW37-VPI-051
SVW37-VPJ-052

Introduction

This data review covers 52 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

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The following are definitions of the data qualifiers:

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N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/20/05	Dichlorodifluoromethane	41.1	SVW27-VPA-014 SVW27-VPB-015 SVW27-VPC-016 SVW27-VPD-017 SVW27-VPE-018 SVW27-VPF-019 SVW27-VPF-020Dup SVW27-VPG-021 SVW27-VPI-022 SVW27-VPJ-023 SVW32-VPA-024 SVW33-VPD-025 SVW33-VPE-026 SVW33-VPF-027 Ambient Blk 4/20/05	J (all detects) UJ (all non-detects)	A
4/21/05	Dichlorodifluoromethane	71.1	SVW36-VPA-028 SVW36-VPB-029 SVW36-VPC-030 SVW36-VPC-031Dup SVW36-VPD-032 SVW36-VPE-033 SVW38-VPD-034 SVW38-VPF-035 SVW38-VPJ-036 SVW35-VPB-037 SVW35-VPE-038 Ambient Blk 4/21/05	J (all detects) UJ (all non-detects)	A
4/22/05	Dichlorodifluoromethane	86.1	SVW39-VPA-039 SVW39-VPC-040 SVW39-VPC-041Dup SVW39-VPE-042 SVW39-VPF-043 SVW39-VPG-044 SVW39-VPI-045 SVW37-VPB-046 SVW37-VPD-047 SVW37-VPE-048 SVW37-VPH-049 SVW37-VPH-050Dup SVW37-VPI-051 SVW37-VPJ-052 Ambient Blk 4/22/05	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Raw data were not reviewed for this SDG.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples SVW26-VPG-009 and SVW26-VPG-010Dup, samples SVW27-VPF-019and SVW27-VPF-020Dup, samples SVW36-VPC-030 and SVW36-VPC-031Dup, samples SVW39-VPC-040 and SVW39-VPC-041Dup, and samples SVW37-VPH-049and SVW37-VPH-050Dup were identified as field duplicates. No volatiles were detected in any of the samples.

XVII. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatiles - Data Qualification Summary - SDG GF041905-L6

SDG	Sample	Compound	Flag	A or P	Reason
GF041905-L6	SVW27-VPA-014 SVW27-VPB-015 SVW27-VPC-016 SVW27-VPD-017 SVW27-VPE-018 SVW27-VPF-019 SVW27-VPF-020Dup SVW27-VPG-021 SVW27-VPI-022 SVW27-VPJ-023 SVW32-VPA-024 SVW33-VPD-025 SVW33-VPE-026 SVW33-VPF-027 SVW36-VPA-028 SVW36-VPB-029 SVW36-VPC-030 SVW36-VPC-031Dup SVW36-VPD-032 SVW36-VPE-033 SVW38-VPD-034 SVW38-VPF-035 SVW38-VPJ-036 SVW35-VPB-037 SVW35-VPE-038 SVW39-VPA-039 SVW39-VPC-040 SVW39-VPC-041Dup SVW39-VPE-042 SVW39-VPF-043 SVW39-VPG-044 SVW39-VPI-045 SVW37-VPB-046 SVW37-VPD-047 SVW37-VPE-048 SVW37-VPH-049 SVW37-VPH-050Dup SVW37-VPI-051 SVW37-VPJ-052	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

NASA JPL
Volatiles - Laboratory Blank Data Qualification Summary - SDG GF041905-L6

No Sample Data Qualified in this SDG

H&P Mobile Geochemistry

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF041905-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW9-VPA-001	SVW9-VPB-002	SVW9-VPC-003	SVW9-VPD-004	SVW9-VPE-005	SVW10-VPB-006	SVW17-VPB-007	SVW26-VPF-008	SVW26-VPG-009	SVW26-VPG-010 Dup	SVW26-VPH-011	SVW2-VPA-012	SVW4-VPB-013
DATE	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05	04/19/05
ANALYSIS TIME	7:09	7:56	8:19	8:41	9:25	9:47	10:08	10:32	10:54	11:15	11:36	12:41	13:03	13:27
SAMPLING DEPTH (feet)	--	20	35	50	70	87	35	24	115	140	140	160	10	20
VOLUME WITHDRAWN (cc)	--	140	200	260	340	408	200	156	520	620	680	700	100	140
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	18
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	9.1	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)														
DIBROMODIFLUOROMETHANE	93%	91%	91%	93%	92%	94%	95%	95%	94%	92%	93%	93%	91%	93%
1,2-DICHLOROETHANE-d4	93%	89%	89%	91%	92%	96%	97%	95%	92%	95%	95%	92%	95%	93%
4 BROMOFLUORO BENZENE	97%	97%	95%	93%	94%	93%	92%	94%	95%	96%	94%	93%	93%	93%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

5/11/05

H&P Mobile Geochemistry

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF041905-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW27-VPA-014	SVW27-VPB-015	SVW27-VPC-016	SVW27-VPD-017	SVW27-VPE-018	SVW27-VPF-019	SVW27-VPF-020 Dup	SVW27-VPG-021	SVW27-VPI-022	SVW27-VPJ-023	SVW32-VPA-024	SVW33-VPD-025	SVW33-VPE-026	SVW33-VPF-027
DATE	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05	04/20/05
ANALYSIS TIME	7:22	7:52	8:14	8:36	8:58	9:21	9:45	10:07	10:28	10:50	11:13	12:17	12:39	13:01	13:23
SAMPLING DEPTH (feet)	--	20	35	60	85	100	120	120	140	180	205	155	85	105	120
VOLUME WITHDRAWN (cc)	--	140	200	300	400	460	540	600	620	780	880	680	400	480	540
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	92	81	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd ~~ND~~	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)															
DIBROMODIFLUOROMETHANE	91%	91%	93%	92%	93%	94%	94%	92%	93%	93%	93%	93%	95%	93%	94%
1,2-DICHLOROETHANE-d4	93%	89%	96%	93%	95%	95%	97%	97%	94%	95%	92%	98%	98%	99%	94%
4 BROMOFLUORO BENZENE	95%	95%	95%	91%	98%	97%	93%	94%	98%	95%	96%	100%	92%	97%	93%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

5/27/05

H&P Mobile Geochemistry

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project#GF041905-L3

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW36-VPA-028	SVW36-VPB-029	SVW36-VPC-030	SVW36-VPC-031 Dup	SVW36-VPD-032	SVW36-VPE-033	SVW38-VPD-034	SVW38-VPF-035	SVW38-VPJ-036	SVW35-VPB-037	SVW35-VPE-038
DATE	04/21/05	04/21/05	04/21/05	04/21/05	04/21/05	04/21/05	04/21/05	04/21/05	04/21/05	04/21/05	04/21/05	04/21/05
ANALYSIS TIME	7:52	8:14	8:41	9:03	9:25	9:48	10:09	10:31	10:52	11:13	11:35	12:43
SAMPLING DEPTH (feet)	--	20	35	55	55	75	92	80	110	170	35	80
VOLUME WITHDRAWN (cc)	--	140	200	280	340	360	446	380	500	740	200	380
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)												
DIBROMODIFLUOROMETHANE	95%	96%	95%	94%	96%	96%	94%	92%	93%	96%	95%	96%
1,2-DICHLOROETHANE-d4	97%	98%	99%	97%	103%	102%	101%	100%	98%	98%	101%	103%
4 BROMOFLUORO BENZENE	96%	95%	94%	94%	95%	96%	99%	93%	95%	94%	99%	97%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

5/27/05

H&P Mobile Geochemistry

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF041905-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW39-VPA-039	SVW39-VPC-040	SVW39-VPC-041 Dup	SVW39-VPE-042	SVW39-VPF-043	SVW39-VPG-044	SVW39-VPI-045	SVW37-VPB-046	SVW37-VPD-047	SVW37-VPE-048	SVW37-VPH-049	SVW37-VPH-050 Dup	SVW37-VPI-051	SVW37-VPJ-052
DATE	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05	04/22/05
ANALYSIS TIME	6:27	6:54	7:17	7:38	8:01	8:23	8:45	9:08	9:29	9:51	10:14	11:19	11:40	12:03	12:25
SAMPLING DEPTH (feet)	--	20	50	50	85	100	110	130	40	80	100	155	155	170	185
VOLUME WITHDRAWN (cc)	--	140	260	320	400	460	500	580	240	480	460	680	740	740	800
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	3.7	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	3.3	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)															
DIBROMODIFLUOROMETHANE	96%	97%	96%	95%	97%	93%	97%	97%	99%	95%	97%	95%	99%	96%	99%
1,2-DICHLOROETHANE-d4	103%	104%	104%	103%	104%	102%	103%	103%	104%	101%	103%	97%	105%	106%	104%
4 BROMOFLUORO BENZENE	95%	95%	95%	99%	99%	95%	98%	96%	93%	97%	96%	96%	96%	94%	95%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

5/27/05

LDC #: 13494A1

SDG #: GF041905-L6

Laboratory: H&P Mobile Geochemistry

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 5/26/05

Page: 1 of 2

Reviewer: JYG

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/19 - 22/05
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	SW	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Not required
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	Not reviewed
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D_1 = 9, 10 D_2 = 19, 20 D_3 = 30, 31 D_4 = 40, 41 D_5 = 49, 50
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; D = Duplicate; R = Rinsate; FB = Field blank; TB = Trip blank; EB = Equipment blank

Validated Samples: Air

1	SVW9-VPA-001	11	SVW26-VPH-011	21	SVW27-VPG-021	31	SVW36-VPC-031Dup D_3
2	SVW9-VPB-002	12	SVW2-VPA-012	22	SVW27-VPI-022	32	SVW36-VPD-032
3	SVW9-VPC-003	13	SVW4-VPB-013	23	SVW27-VPJ-023	33	SVW36-VPE-033
4	SVW9-VPD-004	14	SVW27-VPA-014	24	SVW32-VPA-024	34	SVW38-VPD-034
5	SVW9-VPE-005	15	SVW27-VPB-015	25	SVW33-VPD-025	35	SVW38-VPF-035
6	SVW10-VPB-006	16	SVW27-VPC-016	26	SVW33-VPE-026	36	SVW38-VPJ-036
7	SVW17-VPB-007	17	SVW27-VPD-017	27	SVW33-VPF-027	37	SVW35-VPB-037
8	SVW26-VPF-008	18	SVW27-VPE-018	28	SVW36-VPA-028	38	SVW35-VPE-038
9	SVW26-VPG-009 D_1	19	SVW27-VPF-019 D_2	29	SVW36-VPB-029	39	SVW39-VPA-039
10	SVW26-VPG-010Dup D_1	20	SVW27-VPF-020Dup D_2	30	SVW36-VPC-030 D_3	40	SVW39-VPC-040 D_4

LDC #: 13494A1

SDG #: GF041905-L6

Laboratory: H&P Mobile Geochemistry

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 5/26/05

Page: 2 of 2

Reviewer: JG

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times		Sampling dates:
II.	GC/MS Instrument performance check		
III.	Initial calibration		
IV.	Continuing calibration		
V.	Blanks		
VI.	Surrogate spikes		
VII.	Matrix spike/Matrix spike duplicates		
VIII.	Laboratory control samples		
IX.	Regional Quality Assurance and Quality Control	N	see page 1
X.	Internal standards		
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data		
XVI.	Field duplicates		
XVII.	Field blanks		

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

41	SVW39-VPC-041Dup D4	51	SVW37-VPI-051	61		71	
42	SVW39-VPE-042	52	SVW37-VPJ-052	62		72	
43	SVW39-VPF-043	53	Ambient Blk 4/19/05	63		73	
44	SVW39-VPG-044	54	Ambient Blk 4/20/05	64		74	
45	SVW39-VPI-045	55	Ambient Blk 4/21/05	65		75	
46	SVW37-VPB-046	56	Ambient Blk 4/22/05	66		76	
47	SVW37-VPD-047	57		67		77	
48	SVW37-VPE-048	58		68		78	
49	SVW37-VPH-049 D5	59		69		79	
50	SVW37-VPH-050Dup D5	60		70		80	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL.
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM.
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 13494A1
SDG #: GF041905-L6

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	4/20/05	042005FM.6A	JJ	41.1		14-27, Ambient Blk 4/20/05	J/UJ/A
	4/21/05	042105FM.6A	JJ	71.1		28-38, Ambient Blk 4/21/05	
	4/22/05	042205FM.6A	JJ	86.1		39-52, Ambient Blk 4/22/05	↓

CONCAL.1S

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Battelle
505 King Avenue, Room 10-1-170
Columbus, OH 43201
ATTN: Ms. Betsy Cutie

February 27, 2006

SUBJECT: NASA JPL, Data Validation

Dear Ms. Cutie,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on February 13, 2006. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 14639:

SDG #	**Fraction**
GF041905-L6, GF101705-L6	Volatiles

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

Attachment 1

PO 190288

LDC #14639 (Battelle-San Diego / NASA JPL)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)																																	
Matrix:	Air/Water/Soil			A	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	GF041905-L6	02/13/06	03/07/06	15	0																																
B	GF101705-L6	02/13/06	03/07/06	106	0																																
Total	B/LR			121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121

Shaded cells indicate Level IV validation (all other cells are Level III validation).

14639ST.wpd

NASA JPL
Data Validation Reports
LDC# 14639

Volatiles

LDC

LDC Report# 14639A1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: July 12, 2005

LDC Report Date: February 25, 2006

Matrix: Air

Parameters: Volatiles

Validation Level: EPA Level III

Laboratory: H & P Mobile Geochemistry

Sample Delivery Group (SDG): GF041905-L6

Sample Identification

SVW5-VPB-001
SVW4-VPB-002
SVW3-VPB-003
SVW3-VPC-004
SVW39-VPF-005
SVW39-VPI-006
SVW25-VPI-007
SVW25-VPI-008Dup
SVW33-VPE-009
SVW33-VPG-010
SVW27-VPI-011
SVW32-VPI-012
SVW32-VPJ-013
SVW17-VPB-014
SVW17-VPB-015Dup

Introduction

This data review covers 15 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required for air samples.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples SVW25-VPI-007 and SVW25-VPI-008Dup and samples SVW17-VPB-014 and SVW17-VPB-015Dup were identified as field duplicates. No volatiles were detected in any of the samples.

XVII. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatiles - Data Qualification Summary - SDG GF041905-L6

No Sample Data Qualified in this SDG

NASA JPL
Volatiles - Laboratory Blank Data Qualification Summary - SDG GF041905-L6

No Sample Data Qualified in this SDG

MOBILE GEOCHEMISTRY

H&P

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF071205-L6
PRELIMINARY DATA
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW5-VPB-001	SVW4-VPB-002	SVW3-VPB-003	SVW3-VPC-004	SVW39-VPF-005	SVW39-VPI-006	SVW25-VPI-007	SVW25-VPI-008 Dup	SVW33-VPE-009	SVW33-VPG-010	SVW27-VPI-011	SVW32-VPI-012	SVW32-VPJ-013	SVW17-VPB-014	SVW17-VPB-015 Dup
DATE	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05	07/12/05
ANALYSIS TIME	7:19	7:41	8:02	8:23	8:45	9:06	9:27	9:48	10:10	10:31	10:53	11:58	12:19	12:41	13:06	13:28
SAMPLING DEPTH (feet)	--	9	20	29	40	100	130	180	18	105	140	180	180	195	24	24
VOLUME WITHDRAWN (cc)	--	96	140	176	220	460	580	780	840	480	620	780	780	840	150	210
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	1.3	1.3	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	11	nd	nd	2.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	2.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)																
DIBROMODIFLUOROMETHANE	108%	108%	107%	111%	112%	108%	108%	111%	113%	112%	112%	108%	111%	107%	108%	111%
TOLUENE-D8	101%	100%	100%	102%	103%	102%	102%	102%	105%	104%	102%	103%	103%	103%	105%	104%
4 BROMOFLUORO BENZENE	100%	109%	100%	101%	100%	103%	103%	96%	99%	102%	97%	100%	105%	100%	102%	103%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

2/27/06

1-800-834-9888

LDC #: 14639A1

VALIDATION COMPLETENESS WORKSHEET

Date: 2/22/06

SDG #: GF041905-L6

Level III

Page: 1 of 1

Laboratory: H&P Mobile Geochemistry

Reviewer: JVL

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/12/05
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	A	ccv/icv ≤25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Not req'd.
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	Not reviewed
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D_1 = 7, 8 D_2 = 14, 15
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Air

1	SVW5-VPB-001	11	SVW27-VPI-011	21		31	
2	SVW4-VPB-002	12	SVW32-VPI-012	22		32	
3	SVW3-VPB-003	13	SVW32-VPJ-013	23		33	
4	SVW3-VPC-004	14	SVW17-VPB-014 D_2	24		34	
5	SVW39-VPF-005	15	SVW17-VPB-015Dup D_2	25		35	
6	SVW39-VPI-006	16	Ambient Blank	26		36	
7	SVW25-VPI-007 D_1	17		27		37	
8	SVW25-VPI-008Dup D_1	18		28		38	
9	SVW33-VPE-009	19		29		39	
10	SVW33-VPG-010	20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: October 17 through October 26, 2005

LDC Report Date: February 25, 2006

Matrix: Air

Parameters: Volatiles

Validation Level: EPA Level III

Laboratory: H & P Mobile Geochemistry

Sample Delivery Group (SDG): GF101705-L6

Sample Identification

SVW31-VPA-001	SVW32-VPB-028	SVW33-VPA-055	SVW37-VPD-082
SVW31-VPB-002	SVW32-VPI-029	SVW33-VPB-056	SVW37-VPE-083
SVW31-VPC-003	SVW32-VPJ-030	SVW33-VPC-057	SVW37-VPG-084
SVW31-VPD-004	SVW27-VPA-031	SVW33-VPD-058	SVW37-VPH-085
SVW31-VPE-005	SVW27-VPA-032Dup	SVW33-VPE-059	SVW37-VPI-086
SVW30-VPA-006	SVW27-VPB-033	SVW33-VPF-060	SVW37-VPJ-087
SVW30-VPB-007	SVW27-VPC-034	SVW33-VPG-061	SVW19A-VPC-088
SVW30-VPC-008	SVW27-VPD-035	SVW33-VPJ-062	SVW19A-VPC-089Dup
SVW30-VPD-009	SVW27-VPF-036	SVW36-VPA-063	SVW38-VPA-090
SVW30-VPD-010Dup	SVW27-VPG-037	SVW36-VPA-064Dup	SVW38-VPD-091
SVW30-VPE-011	SVW27-VPI-038	SVW36-VPB-065	SVW38-VPF-092
SVW12-VPB-012	SVW27-VPJ-039	SVW36-VPC-066	SVW38-VPJ-093
SVW12-VPC-013	SVW11-VPB-040	SVW36-VPD-067	SVW34-VPD-094
SVW5-VPB-014	SVW9-VPA-041	SVW36-VPE-068	SVW34-VPE-095
SVW6-VPD-015	SVW9-VPB-042	SVW28-VPA-069	SVW34-VPF-096
SVW6-VPE-016	SVW9-VPB-043Dup	SVW28-VPC-070	SVW15-VPB-097
SVW3-VPB-017	SVW9-VPC-044	SVW28-VPD-071	SVW15-VPB-098Dup
SVW3-VPC-018	SVW9-VPD-045	SVW28-VPE-072	SVW15-VPC-099
SVW7-VPA-019	SVW9-VPE-046	SVW25-VPA-073	SVW15-VPD-100
SVW7-VPB-020	SVW10-VPB-047	SVW25-VPB-074	SVW15-VPE-101
SVW7-VPB-021Dup	SVW10-VPD-048	SVW25-VPB-075Dup	SVW39-VPA-102
SVW4-VPB-022	SVW8-VPC-049	SVW25-VPD-076	SVW39-VPE-103
SVW2-VPA-023	SVW8-VPD-050	SVW35-VPA-077	SVW39-VPF-104
SVW1-VPA-024	SVW8-VPE-051	SVW35-VPB-078	SVW39-VPG-105
SVW1-VPB-025	SVW14-VPA-052	SVW35-VPE-079	SVW39-VPI-106
SVW1-VPC-026	SVW14-VPB-053	SVW35-VPJ-080	
SVW32-VPA-027	SVW14-VPB-054Dup	SVW37-VPB-081	

Introduction

This data review covers 106 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required for air samples.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

Samples SVW30-VPD-009 and SVW30-VPD-010Dup, samples SVW7-VPB-020 and SVW7-VPB-021Dup, samples SVW27-VPA-031 and SVW27-VPA-032Dup, samples SVW9-VPB-042 and SVW9-VPB-043Dup, samples SVW14-VPB-053 and SVW14-VPB-054Dup, samples SVW36-VPA-063 and SVW36-VPA-064Dup, samples SVW25-VPB-074 and SVW25-VPB-075Dup, samples SVW19A-VPC-088 and SVW19A-VPC-089Dup, and samples SVW15-VPB-097 and SVW15-VPB-098Dup were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L-vapor)		RPD
	SVW27-VPA-031	SVW27-VPA-032Dup	
Chloroform	43	45	5

XVII. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatiles - Data Qualification Summary - SDG GF101705-L6

No Sample Data Qualified in this SDG

NASA JPL
Volatiles - Laboratory Blank Data Qualification Summary - SDG GF101705-L6

No Sample Data Qualified in this SDG

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF101705-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW31-VPA-001	SVW31-VPB-002	SVW31-VPC-003	SVW31-VPD-004	SVW31-VPE-005	SVW30-VPA-006	SVW30-VPB-007	SVW30-VPC-008	SVW30-VPD-009	SVW30-VPD-010 Dup	SVW30-VPE-011	SVW12-VPB-012	SVW12-VPC-013
DATE	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05	10/17/05
ANALYSIS TIME	7:29	7:54	8:16	8:44	9:07	9:30	9:53	10:17	10:40	11:03	11:25	12:32	12:55	13:18
SAMPLING DEPTH (feet)	--	20	35	45	55	65	17	30	40	50	50	65	40	60
VOLUME WITHDRAWN (cc)	--	140	200	240	280	320	128	180	220	260	320	320	220	300
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)														
DIBROMODIFLUOROMETHANE	100%	98%	97%	98%	99%	99%	96%	104%	101%	106%	106%	98%	103%	104%
TOLUENE-D8	95%	95%	94%	98%	96%	94%	94%	97%	95%	96%	95%	95%	95%	95%
4 BROMOFLUORO BENZENE	99%	99%	99%	97%	96%	95%	95%	94%	96%	94%	94%	95%	96%	94%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

2/07/06

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF101705-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW5-VPB-014	SVW6-VPD-015	SVW6-VPE-016	SVW3-VPB-017	SVW3-VPC-018	SVW7-VPA-019	SVW7-VPB-020	SVW7-VPB-021 Dup	SVW4-VPB-022	SVW2-VPA-023	SVW1-VPA-024	SVW1-VPB-025	SVW1-VPC-026
DATE	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05	10/18/05
ANALYSIS TIME	7:20	7:43	8:05	8:28	8:50	9:12	9:37	10:00	10:22	10:45	11:09	12:24	12:47	13:09
SAMPLING DEPTH (feet)	--	9	77	96	29	40	20	35	35	20	10	10	21	33
VOLUME WITHDRAWN (cc)	--	96	368	444	176	220	140	200	260	140	100	100	144	192
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	1.0	1.4	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE -	nd	nd	nd	nd	nd	nd	nd	nd	nd	9.5	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)														
DIBROMODIFLUOROMETHANE	103%	100%	99%	101%	99%	104%	104%	103%	102%	103%	103%	101%	103%	103%
TOLUENE-D8	95%	94%	95%	93%	93%	95%	95%	96%	94%	95%	95%	96%	95%	95%
4 BROMOFLUORO BENZENE	96%	94%	99%	95%	95%	93%	96%	97%	95%	94%	93%	97%	94%	95%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/7/06

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SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW32-VPA-027	SVW32-VPB-028	SVW32-VPI-029	SVW32-VPJ-030	SVW27-VPA-031	SVW27-VPA-032 Dup	SVW27-VPB-033	SVW27-VPC-034	SVW27-VPD-035	SVW27-VPF-036	SVW27-VPG-037	SVW27-VPI-038	SVW27-VPJ-039
DATE	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05	10/19/05
ANALYSIS TIME	7:22	7:49	8:12	8:34	8:56	9:18	9:41	10:04	10:26	10:49	11:11	12:18	12:42	13:05
SAMPLING DEPTH (feet)	--	25	40	180	195	20	20	35	60	85	120	140	180	205
VOLUME WITHDRAWN (cc)	--	160	220	780	840	140	200	200	300	400	540	620	780	880
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.3	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	43	45	59	4.0	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)														
DIBROMODIFLUOROMETHANE	105%	103%	104%	103%	102%	104%	106%	106%	107%	102%	106%	102%	103%	108%
TOLUENE-D8	97%	94%	99%	97%	94%	94%	95%	95%	96%	93%	94%	96%	95%	98%
4 BROMOFLUORO BENZENE	97%	96%	93%	94%	94%	96%	93%	95%	95%	99%	96%	96%	94%	95%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

7/27/06

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF101705-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW11-VPB-040	SVW9-VPA-041	SVW9-VPB-042	SVW9-VPB-043 Dup	SVW9-VPC-044	SVW9-VPD-045	SVW9-VPE-046	SVW10-VPB-047	SVW10-VPD-048	SVW8-VPC-049	SVW8-VPD-050	SVW8-VPE-051	SVW14-VPA-052	SVW14-VPB-053	SVW14-VPB-054 Dup
DATE	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05	10/20/05
ANALYSIS TIME	7:33	8:02	8:25	8:47	9:09	9:31	9:55	10:18	10:42	11:04	11:36	12:45	13:07	13:29	13:52	14:13
SAMPLING DEPTH (feet)	--	40	20	35	35	50	70	87	35	69	50	70	90	5	10	10
VOLUME WITHDRAWN (cc)	--	220	140	200	260	260	340	408	200	336	260	340	420	80	100	160
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	2.2	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)																
DIBROMODIFLUOROMETHANE	104%	105%	103%	105%	105%	106%	107%	103%	105%	105%	107%	103%	107%	104%	98%	104%
TOLUENE-D8	96%	93%	94%	95%	95%	98%	97%	94%	96%	95%	94%	95%	93%	97%	93%	98%
4 BROMOFLUORO BENZENE	97%	96%	97%	95%	94%	94%	95%	91%	97%	94%	95%	99%	98%	95%	97%	99%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

10/27/06

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF101705-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW33-VPA-055	SVW33-VPB-056	SVW33-VPC-057	SVW33-VPD-058	SVW33-VPE-059	SVW33-VPF-060	SVW33-VPG-061	SVW33-VPJ-062	SVW36-VPA-063	SVW36-VPA-064 Dup	SVW36-VPB-065	SVW36-VPC-066	SVW36-VPD-067	SVW36-VPE-068
DATE	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05	10/21/05
ANALYSIS TIME	6:42	7:03	7:25	7:48	8:11	8:34	8:55	9:16	9:38	10:01	10:25	11:27	11:50	12:12	12:35
SAMPLING DEPTH (feet)	--	20	40	60	85	105	120	140	200	20	20	35	55	75	92
VOLUME WITHDRAWN (cc)	--	140	220	300	400	480	540	620	860	140	200	200	280	360	428
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)															
DIBROMODIFLUOROMETHANE	104%	105%	104%	103%	104%	102%	105%	103%	106%	103%	104%	107%	104%	107%	106%
TOLUENE-D8	95%	95%	96%	95%	95%	95%	95%	94%	96%	94%	95%	95%	95%	95%	95%
4 BROMOFLUORO BENZENE	92%	97%	96%	96%	92%	98%	94%	93%	94%	93%	93%	97%	95%	92%	92%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/7/06

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF101705-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW28-VPA-069	SVW28-VPC-070	SVW28-VPD-071	SVW28-VPE-072	SVW25-VPA-073	SVW25-VPB-074	SVW25-VPB-075 Dup	SVW25-VPD-076	SVW35-VPA-077	SVW35-VPB-078	SVW35-VPE-079	SVW35-VPJ-080
DATE	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05
ANALYSIS TIME	7:19	7:42	8:05	8:29	8:52	9:30	9:53	10:16	10:38	11:08	11:37	12:43	13:09
SAMPLING DEPTH (feet)	--	20	65	80	105	20	40	40	85	20	35	80	155
VOLUME WITHDRAWN (cc)	--	140	86	380	480	140	220	280	400	140	200	380	680
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)													
DIBROMODIFLUOROMETHANE	106%	105%	108%	109%	105%	107%	105%	108%	107%	106%	105%	105%	106%
TOLUENE-D8	95%	95%	94%	97%	95%	94%	97%	95%	95%	95%	95%	94%	97%
4 BROMOFLUORO BENZENE	93%	99%	96%	94%	96%	96%	93%	94%	93%	96%	95%	94%	96%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/7/06

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF101705-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW37-VPB-081	SVW37-VPD-082	SVW37-VPE-083	SVW37-VPG-084	SVW37-VPH-085	SVW37-VPI-086	SVW37-VPJ-087	SVW19A-VPC-088	SVW19A-VPC-089 Dup	SVW38-VPA-090	SVW38-VPD-091	SVW38-VPF-092	SVW38-VPJ-093	SVW34-VPD-094	SVW34-VPE-095	SVW34-VPF-096
DATE	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05	10/25/05
ANALYSIS TIME	6:48	7:13	7:35	7:58	8:20	8:42	9:04	9:26	9:50	10:12	10:41	11:50	12:12	12:34	12:56	13:19	13:42
SAMPLING DEPTH (feet)	--	40	80	100	140	155	170	185	60	60	85	80	110	170	65	80	95
VOLUME WITHDRAWN (cc)	--	220	380	460	620	680	740	800	300	360	160	380	500	740	320	380	440
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)																	
DIBROMODIFLUOROMETHANE	105%	108%	106%	114%	108%	105%	105%	108%	107%	109%	106%	105%	106%	105%	109%	107%	104%
TOLUENE-D8	94%	95%	95%	98%	96%	94%	95%	97%	94%	95%	93%	92%	94%	93%	96%	94%	96%
4 BROMOFLUORO BENZENE	94%	94%	94%	95%	93%	90%	95%	93%	95%	94%	92%	97%	92%	94%	96%	97%	89%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/7/06

GEOFON PROJECT # 4-73803-JPL-Pasadena
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Project #GF101705-L6

INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW15-VPB-097	SVW15-VPB-098 Dup	SVW15-VPC-099	SVW15-VPD-100	SVW15-VPE-101	SVW39-VPA-102	SVW39-VPE-103	SVW39-VPF-104	SVW39-VPG-105	SVW39-VPI-106
DATE	10/26/05	10/26/05	10/26/05	10/26/05	10/26/05	10/26/05	10/26/05	10/26/05	10/26/05	10/26/05	10/26/05
ANALYSIS TIME	7:10	7:33	7:55	8:18	8:41	9:03	9:26	9:48	10:09	10:32	10:55
SAMPLING DEPTH (feet)	--	40	40	60	75	90	20	85	100	110	130
VOLUME WITHDRAWN (cc)	--	220	280	300	360	420	140	400	460	500	580
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	1.9	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)											
DIBROMODIFLUOROMETHANE	105%	106%	111%	107%	108%	111%	108%	108%	107%	104%	108%
TOLUENE-D8	94%	94%	95%	97%	97%	97%	95%	97%	96%	96%	94%
4 BROMOFLUORO BENZENE	93%	95%	98%	93%	94%	93%	96%	96%	95%	92%	96%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/07/06

LDC #: 14639B1

SDG #: GF101705-L6

Laboratory: H&P Mobile Geochemistry

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 2/22/06

Page: 1 of 3

Reviewer: JVC

2nd Reviewer: 9

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/17 - 26/05
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	A	ccv/icv ≤25 %
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Not required
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	Not reviewed
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D1 = 9,10* D2 = 20,21* D3 = 31,32 D4 = 42,43* D5 = 53,54* D6 = 63,64
XVII.	Field blanks	N	D7 = 74,75* D8 = 88,89 D9 = 97,98

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; *ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Air

1	SVW31-VPA-001	11	SVW30-VPE-011	21	SVW7-VPB-021Dup D1	31	SVW27-VPA-031 D3
2	SVW31-VPB-002	12	SVW12-VPB-012	22	SVW4-VPB-022	32	SVW27-VPA-032Dup D3
3	SVW31-VPC-003	13	SVW12-VPC-013	23	SVW2-VPA-023	33	SVW27-VPB-033
4	SVW31-VPD-004	14	SVW5-VPB-014	24	SVW1-VPA-024	34	SVW27-VPC-034
5	SVW31-VPE-005	15	SVW6-VPD-015	25	SVW1-VPB-025	35	SVW27-VPD-035
6	SVW30-VPA-006	16	SVW6-VPE-016	26	SVW1-VPC-026	36	SVW27-VPF-036
7	SVW30-VPB-007	17	SVW3-VPB-017	27	SVW32-VPA-027	37	SVW27-VPG-037
8	SVW30-VPC-008	18	SVW3-VPC-018	28	SVW32-VPB-028	38	SVW27-VPI-038
9	SVW30-VPD-009 D1	19	SVW7-VPA-019	29	SVW32-VPI-029	39	SVW27-VPJ-039
10	SVW30-VPD-010Dup D1	20	SVW7-VPB-020 D1	30	SVW32-VPJ-030	40	SVW11-VPB-040

LDC #: 14639B1

SDG #: GF101705-L6

Laboratory: H&P Mobile Geochemistry

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 2/22/06

Page: 2 of 3

Reviewer: JVG

2nd Reviewer: [signature]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times		Sampling dates:
II.	GC/MS Instrument performance check		
III.	Initial calibration		
IV.	Continuing calibration		
V.	Blanks		
VI.	Surrogate spikes		
VII.	Matrix spike/Matrix spike duplicates		
VIII.	Laboratory control samples		
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards		
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data		
XVI.	Field duplicates		
XVII.	Field blanks		

please see page 1

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Air

41 4	SVW9-VPA-041	51 4	SVW8-VPE-051	61 5	SVW33-VPG-061	71 6	SVW28-VPD-071
42 4	SVW9-VPB-042 D4	52 4	SVW14-VPA-052	62 5	SVW33-VPJ-062	72 6	SVW28-VPE-072
43 4	SVW9-VPB-043Dup D4	53 4	SVW14-VPB-053 D5	63 5	SVW36-VPA-063 D6	73 6	SVW25-VPA-073
44 4	SVW9-VPC-044	54 4	SVW14-VPB-054Dup D5	64 5	SVW36-VPA-064Dup D6	74 6	SVW25-VPB-074 D7
45 4	SVW9-VPD-045	55 5	SVW33-VPA-055	65 5	SVW36-VPB-065	75 6	SVW25-VPB-075Dup D7
46 4	SVW9-VPE-046	56 5	SVW33-VPB-056	66 5	SVW36-VPC-066	76 6	SVW25-VPD-076
47 4	SVW10-VPB-047	57 5	SVW33-VPC-057	67 5	SVW36-VPD-067	77 6	SVW35-VPA-077
48 4	SVW10-VPD-048	58 5	SVW33-VPD-058	68 5	SVW36-VPE-068	78 6	SVW35-VPB-078
49 4	SVW8-VPC-049	59 5	SVW33-VPE-059	69 6	SVW28-VPA-069	79 6	SVW35-VPE-079
50 4	SVW8-VPD-050	60 5	SVW33-VPF-060	70 6	SVW28-VPC-070	80 6	SVW35-VPJ-080

LDC #: 14639B1

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 7/22/06

SDG #: GF101705-L6

Page: 3 of 3

Laboratory: H&P Mobile Geochemistry

Reviewer: JVC

2nd Reviewer: Q

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times		Sampling dates:
II.	GC/MS Instrument performance check		
III.	Initial calibration		
IV.	Continuing calibration		
V.	Blanks		See
VI.	Surrogate spikes		
VII.	Matrix spike/Matrix spike duplicates		
VIII.	Laboratory control samples		Please
IX.	Regional Quality Assurance and Quality Control	N	page
X.	Internal standards		
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data		
XVI.	Field duplicates		
XVII.	Field blanks		

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Air

81 7	SVW37-VPB-081	91 7	SVW38-VPD-091	101 8	SVW15-VPE-101	111 1	Ambient Blank 10/17/05
82 7	SVW37-VPD-082	92 7	SVW38-VPF-092	102 8	SVW39-VPA-102	112 2	10/18/05
83 7	SVW37-VPE-083	93 7	SVW38-VPJ-093	103 8	SVW39-VPE-103	113 3	10/19/05
84 7	SVW37-VPG-084	94 7	SVW34-VPD-094	104 8	SVW39-VPF-104	114 4	10/20/05
85 7	SVW37-VPH-085	95 7	SVW34-VPE-095	105 8	SVW39-VPG-105	115 5	10/21/05
86 7	SVW37-VPI-086	96 7	SVW34-VPF-096	106 8	SVW39-VPI-106	116 6	10/24/05
87 7	SVW37-VPJ-087	97 8	SVW15-VPB-097 D4	107		117 7	10/25/05
88 7	SVW19A-VPC-088 D8	98 8	SVW15-VPB-098Dup D4	108		118 8	10/26/05
89 7	SVW19A-VPC-089Dup D8	99 8	SVW15-VPC-099	109		119	
90 7	SVW38-VPA-090	100 8	SVW15-VPD-100	110		120	

LDC #: 14639B1
SDG #: GF101705-L6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: SVL
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L - vapor)		RPD
	31	32	
K	43	45	5

K = chloroform

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD