GEOFON PROJECT # 04-4304-480 JPL 1
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF111401T2
GC SHIMADZU 14A
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	BLANK	SVW30-VPA-01	SVW30-VPB-02	SVW30-VPC-03	SVW30-VPD-04	SVW30-VPE-05	SVW30-VPE-06 DUP
DATE	11/14/01	11/14/01	11/14/01	11/14/01	11/14/01	11/14/01	11/14/01
ANALYSIS TIME	06:17	06:49	07:12	07:34	07:56	08:38	09:01
SAMPLING DEPTH (feet)	--	17	30	40	50	65	65
VOLUME WITHDRAWN (cc)	--	128	180	220	260	320	440
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	81%	100%	95%	99%	103%	93%	104%
4 BROMOFLUORO BENZENE	83%	102%	96%	100%	104%	95%	105%

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 (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

12/28/01

GEOFON PROJECT # 04-4304-480 JPL 1
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF111401T2
GC SHIMADZU 14A
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	SVW31-VPA-07	SVW31-VPB-08	SVW31-VPD-09	SVW31-VPE-10	SVW12-VPC-11	SVW12-VPC-12 DUP	SVW12-VPD-13
DATE	11/14/01	11/14/01	11/14/01	11/14/01	11/14/01	11/14/01	11/14/01
ANALYSIS TIME	09:25	09:47	10:10	10:33	11:33	11:57	12:20
SAMPLING DEPTH (feet)	20	35	55	65	60	60	76
VOLUME WITHDRAWN (cc)	140	220	280	320	300	360	364
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	102%	92%	101%	100%	97%	102%	102%
4 BROMOFLUORO BENZENE	106%	95%	104%	103%	101%	104%	104%

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 (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

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JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF111401T2
GC SHIMADZU 14A
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	BLANK	SVW5-VPB-14	SVW1-VPB-15	SVW1-VPC-16	SVW2-VPA-17	SVW2-VPA-18 DUP	SVW2-VPC-19
DATE	11/15/01	11/15/01	11/15/01	11/15/01	11/15/01	11/15/01	11/15/01
ANALYSIS TIME	07:12	07:34	07:57	08:20	08:42	09:05	09:29
SAMPLING DEPTH (feet)	--	9	21	33	10	10	37
VOLUME WITHDRAWN (cc)	--	96	144	192	100	160	208
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	91%	100%	97%	98%	101%	97%	102%
4 BROMOFLUORO BENZENE	94%	104%	99%	99%	104%	99%	104%

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 (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/28/01

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PASADENA, CA

HP Labs Project #GF111401T2
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VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	SVW3-VPC-20	SVW3-VPD-21	SVW4-VPB-22	SVW4-VPD-23	SVW4-VPD-24 DUP	SVW7-VPA-25	SVW7-VPB-26
DATE	11/15/01	11/15/01	11/15/01	11/15/01	11/15/01	11/15/01	11/15/01
ANALYSIS TIME	09:52	10:17	10:39	11:33	11:56	12:20	12:48
SAMPLING DEPTH (feet)	40	47	20	56	56	20	35
VOLUME WITHDRAWN (cc)	220	248	140	284	344	140	200
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	16	4.6	2.8	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	103%	107%	98%	98%	107%	98%	101%
4 BROMOFLUORO BENZENE	106%	110%	102%	101%	111%	99%	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 (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

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SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW11-VPA-27	SVW11-VPE-28	SVW32-VPH-29	SVW32-VPH-30 DUP	SVW14-VPA-31	SVW14-VPB-32
DATE	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01
ANALYSIS TIME	06:45	07:07	07:30	07:52	08:15	08:37	09:00
SAMPLING DEPTH (feet)	--	20	96	155	155	5	10
VOLUME WITHDRAWN (cc)	--	140	444	680	740	80	100
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	3.6	3.1	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	4.1	3.8	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	78%	90%	95%	95%	99%	99%	93%
4 BROMOFLUORO BENZENE	80%	93%	98%	100%	102%	103%	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 (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

12/18/01

GEOFON PROJECT # 04-4304-480 JPL 1
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

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SOIL VAPOR DATA IN UG/L-VAPOR

	SVW17-VPC-33	SVW9-VPA-34	SVW9-VPB-35	SVW9-VPB-36 DUP	SVW9-VPC-37	SVW9-VPD-38	SVW9-VPE-39
DATE	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01	11/19/01
ANALYSIS TIME	09:29	09:57	10:20	10:42	11:28	11:51	12:17
SAMPLING DEPTH (feet)	36	20	35	35	50	70	87
VOLUME WITHDRAWN (cc)	204	140	200	260	260	340	408
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	2.6*	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	2.9	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	1.2	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	2.5	3.1	2.6	3.1	2.5	2.5
BENZENE	67	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	1.7	nd	nd	nd	nd	nd	nd
TOLUENE	3.8	nd	nd	nd	nd	nd	nd
m&p-XYLENES	5.5	nd	nd	nd	nd	nd	nd
o-XYLENE	2.3	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	108%	96%	98%	101%	89%	94%	96%
4 BROMOFLUORO BENZENE	98%	99%	102%	106%	93%	98%	100%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
* THIS COMPOUND HAS HISTORICALLY BEEN REPORTED AS CARBON TETRACHLORIDE: IF IT IS THE VALUE WOULD BE 2.2 ug/L

ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

12/28/01

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SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW33-VPD-40	SVW33-VPE-41	SVW33-VPE-42 DUP	SVW33-VPF-43	SVW36-VPB-44	SVW36-VPC-45
DATE	11/20/01	11/20/01	11/20/01	11/20/01	11/20/01	11/20/01	11/20/01
ANALYSIS TIME	06:12	06:40	07:03	07:26	07:48	08:12	08:39
SAMPLING DEPTH (feet)	--	85	105	105	120	35	55
VOLUME WITHDRAWN (cc)	--	400	480	540	540	200	280
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	3.4	8.1	5.8	6.9	2.0	11
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	1.9	1.9	1.7	1.2	nd	2.1
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	6.9
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	2.0	11
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	1.0	1.7	1.2	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	83%	95%	95%	91%	90%	99%	96%
4 BROMOFLUORO BENZENE	87%	99%	98%	95%	94%	102%	100%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

12/28/01

GEOFON PROJECT # 04-4304-480 JPL 1
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF111401T2
GC SHIMADZU 14A
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	SVW8-VPC-46	SVW8-VPD-47	SVW8-VPD-48 DUP	SVW8-VPE-49	SVW10-VPB-50	SVW10-VPD-51
DATE	11/20/01	11/20/01	11/20/01	11/20/01	11/20/01	11/20/01
ANALYSIS TIME	09:03	09:26	09:50	10:12	11:24	11:49
SAMPLING DEPTH (feet)	50	70	70	90	35	69
VOLUME WITHDRAWN (cc)	260	340	400	420	200	336
VOLUME INJECTED	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	1.3	nd
BENZENE	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd
SURROGATES						
1,4 DIFLUORO BENZENE	92%	94%	91%	99%	90%	99%
4 BROMOFLUORO BENZENE	96%	98%	95%	104%	96%	104%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

12/28/01

GEOFON PROJECT # 04-4304-480 JPL 1
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF111401T2
GC SHIMADZU 14A
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW37-VPJ-52	SVW34-VPH-53	SVW34-VPH-54 DUP	SVW15-VPB-55	SVW15-VPC-56	SVW15-VPD-57
DATE	11/21/01	11/21/01	11/21/01	11/21/01	11/21/01	11/21/01	11/21/01
ANALYSIS TIME	06:33	06:55	07:18	07:40	08:03	08:25	08:49
SAMPLING DEPTH (feet)	--	185	118	118	40	60	75
VOLUME WITHDRAWN (cc)	--	800	532	592	220	300	360
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	1.5	1.7	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	93%	95%	98%	95%	98%	98%	99%
4 BROMOFLUORO BENZENE	98%	101%	103%	100%	102%	103%	103%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

9/18/2001

GEOFON PROJECT # 04-4304-480 JPL 1
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF111401T2
GC SHIMADZU 14A
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	SVW15-VPE-58	SVW6-VPB-59	SVW6-VPB-60 DUP	SVW6-VPC-61	SVW6-VPD-62	SVW6-VPE-63
DATE	11/21/01	11/21/01	11/21/01	11/21/01	11/21/01	11/21/01
ANALYSIS TIME	09:13	09:35	09:58	10:21	11:09	11:32
SAMPLING DEPTH (feet)	90	40	40	60	77	96
VOLUME WITHDRAWN (cc)	420	220	280	300	368	444
VOLUME INJECTED	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd
SURROGATES						
1,4 DIFLUORO BENZENE	102%	98%	97%	95%	97%	100%
4 BROMOFLUORO BENZENE	105%	104%	101%	100%	103%	106%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1667)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

12/28/01

LDC #: 7610A23 **VALIDATION COMPLETENESS WORKSHEET** Date: 12-19-01

SDG #: GF111401T2 X EPA Level III __NFESC Level C Page: 1 of 2

Laboratory: HP Labs Reviewer: Z. Pan

2nd Reviewer: [illegible]

METHOD: GC Volatile Halogenated/Aromatic Hydrocarbons modified (EPA SW 846 Method 8010 & 8020)

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: 11-14-01 To 11-21-01
IIa.	Initial calibration	~~ASW~~	%RSD ≤ 20%
IIb.	Calibration verification	A	%D ≤ ~~25%~~ 15%
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	Not required
IVc.	Laboratory control samples	~~S~~A	LCS ~~S~~
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	ND
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	D_1 = 5, 6 ; D_2 = 11, 12 ; D_3 = 17, 18 ;
X.	Field blanks	N	D_4 = 23, 24 ; D_5 = 29, 30 ; D_6 = 35, 36

D_7 = 41, 42 ; D_8 = 47, 4

D_9 = 53, 54 ; D_{10} = 59, 6

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: All Air

1	SVW30-VPA-01	11 D_2	SVW12-VPC-11	21	SVW3-VPD-21	31	SVW14-VPA-31
2	SVW30-VPB-02	12 D_2	SVW12-VPC-12DUP	22	SVW4-VPB-22	32	SVW14-VPB-32
3	SVW30-VPC-03	13	SVW12-VPD-13	23 D_4	SVW4-VPD-23	33	SVW17-VPC-33
4	SVW30-VPD-04	14	SVW5-VPB-14	24 D_4	SVW4-VPD-~~0~~24DUP	34	SVW9-VPA-34
5 D_1	SVW30-VPE-05	15	SVW1-VPB-15	25	SVW7-VPA-25	35 D_6	SVW9-VPB-35
6 D_1	SVW30-VPE-06DUP	16	SVW1-VPC-16	26	SVW7-VPB-26	36 D_6	SVW9-VPB-36DUP
7	SVW31-VPA-07	17 D_3	SVW2-VPA-17	27	SVW11-VPA-27	37	SVW9-VPC-37
8	SVW31-VPB-08	18 D_3	SVW2-VPA-18DUP	28	SVW11-VPE-28	38	SVW9-VPD-38
9	SVW31-VPD-09	19	SVW2-VPC-19	29 D_5	SVW32-VPH-29	39	SVW9-VPE-39
10	SVW31-VPE-10	20	SVW3-VPC-20	30 D_5	SVW32-VPH-30DUP	40	SVW33-VPD-40

N

Notes: # 24 is SVW 4 -VPD-24 DUP

except the following compounds within %RSD ≤ 30% and %D ≤ 25%:

① Trichlorofluoromethane (Freon 11)
② Dichlorodifluoromethane (Freon 12)
③ Trichlorotrifluoromethane (Freon 113)
④ Chloroethane
⑤ Vinyl chloride

LDC #: 7610A23 **VALIDATION COMPLETENESS WORKSHEET** Date: 10-19-01

SDG #: GF111401T2 X EPA Level III ___NFESC Level C Page: 2 of 2

Laboratory: HP Labs Reviewer: Z. Pan

2nd Reviewer: F

METHOD: GC Volatile Halogenated/Aromatic Hydrocarbons (EPA SW 846 Method 8010 & 8020)

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:
IIa.	Initial calibration		
IIb.	Calibration verification		
III.	Blanks		
IVa.	Surrogate recovery		
IVb.	Matrix spike/Matrix spike duplicates		
IVc.	Laboratory control samples		see page 1.
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data		
IX.	Field duplicates		~~D_1~~
X.	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:

41 D7	SVW33-VPE-41	51	SVW10-VPD-51	61	SVW6-VPC-61	71	
42 D7	SVW33-VPE-42DUP	52	SVW37-VPJ-52	62	SVW6-VPD-62	72	
43	SVW33-VPF-43	53 D9	SVW34-VPH-53	63	SVW6-VPE-63	73	
44	SVW36-VPB-44	54 D9	SVW34-VPH-54DUP	64	BLK (11/14)	74	
45	SVW36-VPC-45	55	SVW15-VPB-55	65	BLK (11/15)	75	
46	SVW8-VPC-46	56	SVW15-VPC-56	66	BLK (11/19)	76	
47 D8	SVW8-VPD-47	57	SVW15-VPD-57	67	BLK (11/20)	77	
48 D8	SVWVPD-48DUP	58	SVW15-VPE-58	68	BLK (11/21)	78	
49	SVW8-VPE-49	59 D10	SVW6-VPB-59	69		79	
50	SVW10-VPB-50	60 D10	SVW6-VPB-60DUP	70		80	

Notes:

LDC #: 7610A23
SDG #: GF111401T2

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: Z. Pan
2nd reviewer:

METHOD: GC Volatiles (EPA SW 846 Method 8010/8020)

(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?

(No Limit, No qual)

Compound	Concentration (ug/L - Vapor)		RPD
	# 23	24	
Trichloroethene	4.6	2.8	49 %

Compound	Concentration (ug/L - Vapor)		RPD
	# 29	30	
Carbon tetrachloride	3.6	3.1	15 %
1,2- Trichlorotrifluoroethane (FR113)	4.1	3.8	8 %

Compound	Concentration (ug/L - Vapor		RPD
	# 35	36	
1,1,2- Trichlorotrifluoroethane (FR113)	3.1	2.6	18 %

Compound	Concentration (ug/L - Vapor		RPD
	# 41	42	
Carbon tetrachloride	8.1	5.8	33 %
1,1- Dichloroethene	1.9	1.7	11 %
1,1,2- Trichlorotrifluoroethane (FR113)	1.7	1.2	34 %

LDC #: 7610A23
SDG #: GF11140! T2

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: Z. Pan
2nd reviewer: [illegible]

METHOD: GC Volatiles (EPA SW 846 Method 8010/8020)

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?

(No Limit, No qual)

Compound	Concentration (ug/L - Vapor)		RPD
	# 53	54	
Carbon tetrachloride	1.5	1.7	13 %

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD