APPENDIX B

B-1 RESULTS OF SOIL VAPOR ANALYSES

B-2 CHAIN-OF-CUSTODY FORMS

B-3 DAILY OPENING, CLOSING, AND CONTINUING CALIBRATION VERIFICATION REPORTS

APPENDIX B-1

RESULTS OF SOIL VAPOR ANALYSES

May 21, 2002

Mr. Leo Williamson
Geofon
22632 Golden Springs Drive
Suite 270
Diamond Bar, CA 91765

SUBJECT: DATA REPORT – JET PROPULSION LAB – 4800 OAK GROVE DRIVE – PASADENA, CA - GEOFON PROJECT #04-4304-480 JPL 1

HP Labs Project # GF051402T2

Mr. Williamson:

Please find enclosed a data report for the above referenced location. Soil vapor samples were analyzed on-site in DOHS certified mobile laboratory (CERT #1667).

Project Summary

Soil vapor from 12 points was analyzed for:

- volatile halogenated hydrocarbons by EPA Method 8010
- volatile aromatic hydrocarbons (BTEX) by Modified EPA Method 8020
- 1 extra LCS

The samples were received on-site in appropriate containers with appropriate labels, seals, and chain-of-custody documentation.

Project Narrative

The results for all analyses and required QA/QC analyses are summarized in the enclosed tables. All calibrations, blanks, surrogates, and spike recoveries fulfill quality control criteria.

HP Labs appreciates the opportunity to provide analytical services to Geofon on this project. If you have any questions relating to this data or report, please do not hesitate to contact us.

Sincerely,

Tamara Davis

Ms. Tamara Davis
Lab Director

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

HP Labs Project #GF051402T2
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-01	SVW36-VPB-02	SVW36-VPC-03	SVW33-VPD-04	SVW33-VPE-05	SVW33-VPE-06 DUP	SVW33-VPF-07	SVW4-VPB-08	SVW4-VPD-09	SVW17-VPC-10	SVW32-VPH-11	SVW32-VPH-12 DUP
DATE	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02
ANALYSIS TIME	06:54	07:23	07:46	08:09	08:32	08:54	09:18	09:42	10:04	10:27	10:51	11:42	12:06
SAMPLING DEPTH (feet)	--	185	35	55	85	105	105	120	20	56	36	155	155
VOLUME WITHDRAWN (cc)	--	800	200	280	400	480	540	540	140	284	204	680	740
VOLUME INJECTED	1	1	1	1	1	1	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	1.5	nd	1.5	7.4	3.8	2.9	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	2.0	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	1.7	1.1	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	2.4	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	1.5	2.2	nd	nd	nd	nd	nd	11	nd	1.1	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	1.3	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	57	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	1.5	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	3.1	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	4.6	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.9	nd	nd
SURROGATES													
1,4 DIFLUORO BENZENE	96%	101%	101%	99%	101%	101%	101%	100%	101%	103%	105%	96%	102%
4 BROMOFLUORO BENZENE	99%	102%	103%	101%	103%	103%	104%	103%	104%	106%	100%	101%	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

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

HP Labs Project #GF051402T2
GC SHIMADZU 14A
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
AREA COUNTS

SAMPLE NAME	AMBIENT BLANK	AMBIENT BLANK	SVW37-VPJ-01	SVW37-VPJ-01	SVW36-VPB-02	SVW36-VPB-02	SVW36-VPC-03	SVW36-VPC-03	SVW33-VPD-04	SVW33-VPD-04
DATE	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02
ANALYSIS TIME	6:54	6:54	7:23	7:23	7:46	7:46	8:09	8:09	8:32	8:32
SAMPLING DEPTH (feet)	--	--	185	185	35	35	55	55	85	85
VOLUME WITHDRAWN (cc)	--	--	800	800	200	200	280	280	400	400
VOLUME INJECTED	1	1	1	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1
	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA
CARBON TETRACHLORIDE	nd	nd	nd	nd	7.6	65.2	nd	nd	7.6	67.4
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	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
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	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
1,1,2,2-TETRACHLORO ETHANE	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
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	9.0	1.9	9.0	2.6	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	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
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES										
1,4 DIFLUORO BENZENE	8.6	15.8	8.6	16.5	8.6	16.5	8.6	16.2	8.6	16.5
4 BROMOFLUORO BENZENE	17.8	34.8	17.8	36.0	17.8	36.2	17.8	35.6	17.8	36.2

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

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

HP Labs Project #GF051402T2
GC SHIMADZU 14A
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
AREA COUNTS

SAMPLE NAME	SVW33-VPE-05	SVW33-VPE-05	SVW33-VPE-06 DUP	SVW33-VPE-06 DUP	SVW33-VPF-07	SVW33-VPF-07	SVW4-VPB-08	SVW4-VPB-08
DATE	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02
ANALYSIS TIME	8:54	8:54	9:18	9:18	9:42	9:42	10:04	10:04
SAMPLING DEPTH (feet)	105	105	105	105	120	120	20	20
VOLUME WITHDRAWN (cc)	480	480	540	540	540	540	140	140
VOLUME INJECTED	1	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1	1
	RT	AREA	RT	AREA	RT	AREA	RT	AREA
CARBON TETRACHLORIDE	7.7	330	7.6	172	7.6	130	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	4.1	1.4	4.1	0.91	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	9.1	12.8
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	4.2	29.6	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES								
1,4 DIFLUORO BENZENE	8.6	16.6	8.6	16.5	8.6	16.4	8.6	16.5
4 BROMOFLUORO BENZENE	17.8	36.4	17.8	36.7	17.8	36.1	17.8	36.7

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

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

HP Labs Project #GF051402T2
GC SHIMADZU 14A
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR
AREA COUNTS

SAMPLE NAME	SVW4-VPD-09	SVW4-VPD-09	SVW17-VPC-10	SVW17-VPC-10	SVW32-VPH-11	SVW32-VPH-11	SVW32-VPH-12 DUP	SVW32-VPH-12 DUP
DATE	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02
ANALYSIS TIME	10:27	10:27	10:51	10:51	11:42	11:42	12:06	12:06
SAMPLING DEPTH (feet)	56	56	36	36	155	155	155	155
VOLUME WITHDRAWN (cc)	284	284	204	204	680	680	740	740
VOLUME INJECTED	1	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1	1
	RT	AREA	RT	AREA	RT	AREA	RT	AREA
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	8.0	79.9	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	12.9	2.4	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	9.1	1.3	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	7.9	128	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	15.1	2.7	nd	nd	nd	nd
TOLUENE	nd	nd	11.7	6.3	nd	nd	nd	nd
m&p-XYLENES	nd	nd	15.5	9.9	nd	nd	nd	nd
o-XYLENE	nd	nd	16.3	3.4	nd	nd	nd	nd
SURROGATES								
1,4 DIFLUORO BENZENE	8.6	16.9	8.6	17.3	8.6	15.8	8.6	16.8
4 BROMOFLUORO BENZENE	17.8	37.2	17.8	35.2	17.9	35.4	17.9	36.3

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