DataVal, Inc.

TO: Debbie Leibensberger, Mactec E & C, Inc. July 14, 2003

FROM: Donna Breaux, DataVal, Inc. DB 7/14/03 Mactec Project No. 55596 00124

QUALITY CONTROL SUMMARY REPORT FOR THE OUC TP AREA OF FORMER FORT ORD, CA

LABORATORY: Severn Trent Laboratories, Los Angeles, CA

SAMPLING DATES: May 21 through 23, 2003, and June 9 and 10, 2003

Data validation of Level III and Level IV laboratory data packages was performed according to the project-specific guidelines. These guidelines were outlined in the *Draft Final Basewide Chemical Data Quality Management Plan* (CDQMP), *Former Fort Ord, California* dated July 22, 1997 (HLA, 1997); and the U. S. Environmental Protection Agency Contract Laboratory Program National Functional Guidelines for Organic Data Review, October, 1999.

The data were reviewed for holding times, blanks, GC/MS tunes, initial calibrations, continuing calibration verification (CCV) standards, surrogate recoveries, internal standards, laboratory control samples (LCS), matrix spikes (MS), matrix spike duplicates (MSD), compound identification and quantitation, and field duplicate samples.

The attached Table 1 summarizes the site samples, laboratory sample IDs, sampling dates, analysis methods and sample types. This table also designates which samples/analyses received full (Level IV) data validation.

The following paragraphs highlight the essential findings of the data validation effort:

I. **Volatile Organic Compounds by GC/MS (TO-15)**

Overall, the data are usable as reported with any added qualifiers. Qualifications were required for the reasons noted in Section F.

A. Holding Times

Technical holding time criteria were met for all project samples.

B. Blanks

Target analytes were not observed in any laboratory method blanks associated with the project samples. Trip blank 0324BOBW091A was non-detect for all target VOCs.

C. GC/MS Tunes

All QC criteria were met for the GC/MS tunes associated with the project samples.

D. Initial Calibration
Initial calibration criteria were met for all calibration standards associated with the project samples.

E. Continuing Calibration
Continuing calibration criteria were met for all continuing calibration verification standards associated with the project samples.

F. Internal Standards
Internal standard areas and retention times met method acceptance criteria for all project samples, with the following exceptions:

1. The internal standard area counts were greater than the +40% method acceptance criteria for 1,4-difluorobenzene and chlorobenzene-d5 in project sample CTP-SG-36-50 (E3E280151-003) at +46% and +70%, respectively. The compounds associated with internal standard 1,4-difluorobenzene were non-detect, and qualification was not required. Tetrachloroethene in the sample was qualified as estimated with a high bias (J+) due to failing internal standard chlorobenzene-d5.
2. The internal standard area counts were greater than the +40% method acceptance criteria for chlorobenzene-d5 in project sample CTP-SG-39-06 (E3E280151-009) at +49%. Tetrachloroethene in the sample was qualified as estimated with a high bias (J+) due to this failing internal standard.

The laboratory took appropriate corrective action and re-analyzed both samples to verify the original results. The re-analyses showed similar results to the original, indicating sample matrix was the cause for the high recoveries. See Table 2 of this report for a summary of qualifications due to internal standard area count failure.

G. Surrogate Recoveries
Project samples received in summa canisters were not spiked with surrogates prior to analysis. This was appropriate procedure for the sampling method.

H. Laboratory Control Samples
All QC criteria were met for the laboratory control samples associated with the project samples.

I. Matrix Spike/Matrix Spike Duplicate
Analysis of matrix spikes and matrix spike duplicates is not appropriate for gas matrix samples. Accuracy and precision of the analytical method were demonstrated by the analysis of laboratory control samples and field duplicate samples.

J. Compound Identification and Quantitation

No problems were observed with compound identification and quantitation. The results for all VOCs in the Level IV validated samples were re-calculated and verified to be correctly reported by the laboratory.

K. Field Duplicate Samples

Sample CTP-SG-42-51 (E3E230214-017) was a field duplicate of sample CTP-SG-42-50 (E3E230214-016); sample CTP-SG-33-07 (E3E230214-024) was a field duplicate of sample CTP-SG-33-06 (E3E230214-023); sample CTP-SG-36-51 (E3E280151-004) was a field duplicate of sample CTP-SG-36-50 (E3E280151-003); and sample 0324BOBW088D (E3F120166-007) was a field duplicate of sample 0324BOBW087F (E3F120166-006). The detected results met the 50% relative percent difference project acceptance limit for all field duplicate pairs.

SUMMARY

The attached Table 1 summarizes the site samples, laboratory sample IDs, sampling dates, analysis methods and sample types. The samples that received full (Level IV) data validation are designated in **bold** typeface in this table. The attached Table 2 summarizes the data qualifications required for all project samples included in the data packages.

USABILITY

The quality control criteria were reviewed, and other than those discussed above, all criteria were met and the data are considered acceptable. Estimated sample results (J/UJ) are usable only for limited purposes. Based upon the full and cursory validation, all other results are considered valid and usable for all purposes. In general, the absence of rejected data and the small number of qualifiers added to the data indicate high usability.

VALIDATION QUALIFIERS IDENTIFICATION

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October, 1999.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Table 1
Sample Summary
OUC TP Area
Former Fort Ord, CA
May-June 2003 Sampling Event

Project Sample ID	Laboratory ID	Sampling Date	Analysis/Method	Laboratory	Sample Type
CTP-SG-41-30	E3E230214-001	21-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-41-55	E3E230214-002	21-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-41-70	E3E230214-003	21-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-41-00	E3E230214-004	21-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-43-06	E3E230214-005	21-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-43-30	E3E230214-006	21-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-43-50	E3E230214-007	21-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-43-75	E3E230214-008	21-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-34-06	E3E230214-009	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-34-30	E3E230214-010	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-34-50	E3E230214-011	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-34-70	E3E230214-012	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-34-00	E3E230214-013	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-42-06	E3E230214-014	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-42-30	E3E230214-015	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-42-50	E3E230214-016	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas (1)
CTP-SG-42-51	E3E230214-017	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	FD (1)
CTP-SG-42-70	E3E230214-018	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-40-06	E3E230214-019	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-40-30	E3E230214-020	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-40-50	E3E230214-021	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-40-65	E3E230214-022	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
CTP-SG-33-06	E3E230214-023	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas (2)
CTP-SG-33-07	E3E230214-024	22-May-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	FD (2)
CTP-SG-36-06	**E3E280151-001**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**Soil Gas**
CTP-SG-36-30	**E3E280151-002**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**Soil Gas**
CTP-SG-36-50	**E3E280151-003**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**Soil Gas (3)**
CTP-SG-36-51	**E3E280151-004**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**FD (3)**
CTP-SG-36-75	**E3E280151-005**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**Soil Gas**

Table 1
Sample Summary
OUC TP Area
Former Fort Ord, CA
May-June 2003 Sampling Event

Project Sample ID	Laboratory ID	Sampling Date	Analysis/Method	Laboratory	Sample Type
CTP-SG-46-00	**E3E280151-006**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**Soil Gas**
CTP-SG-46-06	**E3E280151-007**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**Soil Gas**
CTP-SG-47-06	**E3E280151-008**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**Soil Gas**
CTP-SG-39-06	**E3E280151-009**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**Soil Gas**
CTP-SG-38-06	**E3E280151-010**	**23-May-03**	**Volatile Organic Compounds (TO-15)**	**Severn Trent - Los Angeles**	**Soil Gas**
0324BOBW082F	E3F120166-001	9-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
0324BOBW083F	E3F120166-002	10-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
0324BOBW084F	E3F120166-003	10-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
0324BOBW085F	E3F120166-004	10-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
0324BOBW086F	E3F120166-005	10-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
0324BOBW087F	E3F120166-006	10-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas (4)
0324BOBW088D	E3F120166-007	10-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	FD (4)
0324BOBW089F	E3F120166-008	10-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
0324BOBW090F	E3F120166-009	10-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	Soil Gas
0324BOBW091A	E3F120166-010	10-Jun-03	Volatile Organic Compounds (TO-15)	Severn Trent - Los Angeles	TB

BOLD: Bold typeface indicates samples/analyses that received full (Level IV) data validation
FD: Field duplicate of previous numbered sample, (1), (2), etc.
TB: Trip blank

Table 2
Summary of Qualified Data
OUC TP Area
Former Fort Ord, CA
May-June 2003 Sampling Event

Sample ID	Lab ID	Analysis Method	Compound	CAS No.	Detected Qualifier	Non-detected Qualifier	Reason
CTP-SG-36-50	E3E280151-003	TO-15	Tetrachloroethene	127-18-4	J+		Internal standard area count > UCL
CTP-SG-39-06	E3E280151-009	TO-15	Tetrachloroethene	127-18-4	J+		Internal standard area count > UCL

DataVal, Inc.
Data Validation Worksheet
Gas Chromatography/Mass Spectrometry

Project Name: Fort Ord OU CTP
Project Number: 55596 00124
Report Number: See Below
Validation Level: See Below
Analysis: Volatile Organic Compounds
Method Number: TO-15
Laboratory Name: Severn Trent Laboratories, Inc.
Number and Type of Samples: See Below

Performed by/Date: EJN 7/1/03

Reviewed by/Date: DJB 7/14/03

SDG No.	Date Sampled	#Samples/Matrix	Validation Level
E3E230214	21-, 22-May-03	24/Air (SUMA)	III
E3E280151	23-May-03	10/Air (SUMA)	IV
E3F120166	09-, 10-Jun-03	10/Air (SUMA)	III

ITEMS CHECKED - LEVEL III
Sample Receiving
Case Narrative
Holding Times
Instrument Run Logs
Initial Instrument Calibration
Continuing Instrument Calibration
Blank Analysis
Surrogates
Laboratory Control Sample
Matrix Spike/Matrix Spike Duplicate
Field Duplicate
Reporting Limits

ITEMS CHECKED - LEVEL IV
Sample Receiving
Case Narrative
Holding Times
Instrument Run Logs
Initial Instrument Calibration
Continuing Instrument Calibration
Blank Analysis
Surrogates
Laboratory Control Sample
Matrix Spike/Matrix Spike Duplicate
Field Duplicate
Reporting Limits
Internal Standards
Raw Data
Calculations
Extraction Log

Qualified Data? NO____ YES__X__, see page__18____

DataVal, Inc.
77 Dominican Drive
San Rafael, CA 94901
(415)459-3124

SAMPLE RECEIVING

	YES	NO	N/A
All COC forms relinquished and received with signature/date?	X		
Reported sample IDs match those listed on COC?	X		
Reported analyses/methods match those listed COC?	X		
Cooler Receipt form present?		X	
Cooler Receipt form filled in completely and signed?			X
Temperature recorded from:			X
Recorded temperature between 2C and 6C?			X
Bubbles present in VOAs?			X

List of Anomalies

AIR SAMPLES WERE RECEIVED IN SUMA CANNISTERS.

ELECTRONIC DATA DELIVERABLES

	YES	NO	N/A
Are EDDs included with the data package?	X		
Does client require EDD check against hardcopy?	X		
Were all EDDs verified against hardcopy results?	X		
Did all EDD results match reported results?	X		
Were anomalies noted?			X
Was the project office/lab notified?			X

Comments

CASE NARRATIVE

	YES	NO	N/A
Case Narrative present in data package?	X		
Are anomalies noted?	X		

List of Anomalies

SDG E3E280151: Internal standards 1,4-difluorobenzene and chlorobenzene-d5 in sample CTP-SG-36-50 (E3E280151-003) and chlorobenzene-d5 in sample CTP-SG-39-06 (E3E280151-009) were above the acceptance limits. The samples were re-analyzed and it was confirmed that the nonconformance was caused by sample matrix interference.

SDG E3E230214: No anomalies noted.
SDG E3F120166: No anomalies noted.

HOLDING TIMES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received	Preservation & Temp	Extraction Date	Analysis Date	DBE	DBA	Batch
SDG E3E230214										
CTP-SG-41-30	E3E230214-001	Air	21-May-03	23-May-03	N/A	N/A	30-May-03	N/A	9	3150346
CTP-SG-41-55	E3E230214-002	Air	21-May-03	23-May-03	N/A	N/A	30-May-03	N/A	9	3150346
CTP-SG-41-70	E3E230214-003	Air	21-May-03	23-May-03	N/A	N/A	30-May-03	N/A	9	3150346
CTP-SG-41-00	E3E230214-004	Air	21-May-03	23-May-03	N/A	N/A	28-May-03	N/A	7	3150345
CTP-SG-43-06	E3E230214-005	Air	21-May-03	23-May-03	N/A	N/A	30-May-03	N/A	9	3150346
CTP-SG-43-30	E3E230214-006	Air	21-May-03	23-May-03	N/A	N/A	30-May-03	N/A	9	3150346
CTP-SG-43-50	E3E230214-007	Air	21-May-03	23-May-03	N/A	N/A	30-May-03	N/A	9	3150346
CTP-SG-43-75	E3E230214-008	Air	21-May-03	23-May-03	N/A	N/A	30-May-03	N/A	9	3150346
CTP-SG-34-06	E3E230214-009	Air	22-May-03	23-May-03	N/A	N/A	28-May-03	N/A	6	3150345
CTP-SG-34-30	E3E230214-010	Air	22-May-03	23-May-03	N/A	N/A	30-May-03	N/A	8	3150346
CTP-SG-34-50	E3E230214-011	Air	22-May-03	23-May-03	N/A	N/A	30-May-03	N/A	8	3150510
CTP-SG-34-70	E3E230214-012	Air	22-May-03	23-May-03	N/A	N/A	30-May-03	N/A	8	3150510
CTP-SG-34-00	E3E230214-013	Air	22-May-03	23-May-03	N/A	N/A	29-May-03	N/A	7	3150345
CTP-SG-42-06	E3E230214-014	Air	22-May-03	23-May-03	N/A	N/A	29-May-03	N/A	7	3150346
CTP-SG-42-30	E3E230214-015	Air	22-May-03	23-May-03	N/A	N/A	29-May-03	N/A	7	3150346
CTP-SG-42-50 (FD1)	E3E230214-016	Air	22-May-03	23-May-03	N/A	N/A	29-May-03	N/A	7	3150346
CTP-SG-42-51 (FD1)	E3E230214-017	Air	22-May-03	23-May-03	N/A	N/A	29-May-03	N/A	7	3150346
CTP-SG-42-70	E3E230214-018	Air	22-May-03	23-May-03	N/A	N/A	29-May-03	N/A	7	3150346
CTP-SG-40-06	E3E230214-019	Air	22-May-03	23-May-03	N/A	N/A	30-May-03	N/A	8	3150346
CTP-SG-40-30	E3E230214-020	Air	22-May-03	23-May-03	N/A	N/A	30-May-03	N/A	8	3150346
CTP-SG-40-50	E3E230214-021	Air	22-May-03	23-May-03	N/A	N/A	30-May-03	N/A	8	3150346
CTP-SG-40-65	E3E230214-022	Air	22-May-03	23-May-03	N/A	N/A	30-May-03	N/A	8	3150346
CTP-SG-33-06 (FD2)	E3E230214-023	Air	22-May-03	23-May-03	N/A	N/A	30-May-03	N/A	8	3150346
CTP-SG-33-07 (FD2)	E3E230214-024	Air	22-May-03	23-May-03	N/A	N/A	30-May-03	N/A	8	3150346
SDG E3E280151										
CTP-SG-36-06	E3E280151-001	Air	23-May-03	27-May-03	N/A	N/A	3-Jun-03	N/A	11	3155335
CTP-SG-36-30	E3E280151-002	Air	23-May-03	27-May-03	N/A	N/A	4-Jun-03	N/A	12	3155335
CTP-SG-36-50 (FD3)	E3E280151-003	Air	23-May-03	27-May-03	N/A	N/A	4-Jun-03	N/A	12	3155449
CTP-SG-36-51 (FD3)	E3E280151-004	Air	23-May-03	27-May-03	N/A	N/A	4-Jun-03	N/A	12	3155449
CTP-SG-36-75	E3E280151-005	Air	23-May-03	27-May-03	N/A	N/A	4-Jun-03	N/A	12	3155449
CTP-SG-46-00	E3E280151-006	Air	23-May-03	27-May-03	N/A	N/A	4-Jun-03	N/A	12	3155335
CTP-SG-46-06	E3E280151-007	Air	23-May-03	27-May-03	N/A	N/A	4-Jun-03	N/A	12	3155335
CTP-SG-47-06	E3E280151-008	Air	23-May-03	27-May-03	N/A	N/A	4-Jun-03	N/A	12	3155449
CTP-SG-39-06	E3E280151-009	Air	23-May-03	27-May-03	N/A	N/A	5-Jun-03	N/A	13	3155449
CTP-SG-38-06	E3E280151-010	Air	23-May-03	27-May-03	N/A	N/A	9-Jun-03	N/A	17	3161380
SDG E3F120166										
0324BOBW082F	E3F120166-001	Air	9-Jun-03	11-Jun-03	N/A	N/A	13-Jun-03	N/A	4	3167513
0324BOBW083F	E3F120166-002	Air	10-Jun-03	11-Jun-03	N/A	N/A	13-Jun-03	N/A	3	3167513
0324BOBW084F	E3F120166-003	Air	10-Jun-03	11-Jun-03	N/A	N/A	13-Jun-03	N/A	3	3167513
0324BOBW085F	E3F120166-004	Air	10-Jun-03	11-Jun-03	N/A	N/A	13-Jun-03	N/A	3	3167513
0324BOBW086F	E3F120166-005	Air	10-Jun-03	11-Jun-03	N/A	N/A	13-Jun-03	N/A	3	3167513
0324BOBW087F (FD4)	E3F120166-006	Air	10-Jun-03	11-Jun-03	N/A	N/A	14-Jun-03	N/A	4	3167513
0324BOBW088D (FD4)	E3F120166-007	Air	10-Jun-03	11-Jun-03	N/A	N/A	14-Jun-03	N/A	4	3167513
0324BOBW089F	E3F120166-008	Air	10-Jun-03	11-Jun-03	N/A	N/A	14-Jun-03	N/A	4	3167513
0324BOBW090F	E3F120166-009	Air	10-Jun-03	11-Jun-03	N/A	N/A	14-Jun-03	N/A	4	3167513
0324BOBW091A (TB)	E3F120166-010	Air	10-Jun-03	11-Jun-03	N/A	N/A	13-Jun-03	N/A	3	3167513

DBE = Days before extraction (extraction date - collection date)
DBA = Days before analysis (analysis date - extraction date)

ACCEPTANCE CRITERIA:

DBE - AIR	N/A
DBA - AIR	*

Recommended Actions

No action required

AIR SAMPLES WERE RECEIVED IN SUMA CANNISTERS.
WHERE ANALYSES WERE PERFORMED ON VARIOUS DAYS, THE LAST DATE OF ANALYSIS IS ENTERED ABOVE.
* METHOD TO-15 STATES THAT VOCs CAN BE RECOVERED FROM CANISTERS NEAR THEIR ORIGINAL CONCENTRATIONS AFTER STORAGE TIMES OF UP TO THIRTY DAYS.

SURROGATE RECOVERIES

	YES	NO	N/A
Form Present?			X
All samples listed?			X
Results agree with raw data?			X
Did laboratory spike project required surrogate(s)?			X

ACCEPTANCE CRITERIA:	PROJECT LIMITS
LIST SURROGATES SPIKED:	

LIST ALL RECOVERIES OUTSIDE PROJECT LIMITS

Sample ID	Surrogate	Original % Recovery	Re-run/Re-ext'd % Recovery	Sample DF	Comments

Recommended Actions

No action required
***If sample DF > or = 5X, no qualification is required.**
SURROGATE ANALYSIS IS NOT REQUIRED BY METHOD TO-15.

	YES	NO	N/A
Did laboratory perform appropriate corrective action?			

DataVal, Inc.
77 Dominican Drive
San Rafael, CA 94901
(415)459-3124

METHOD BLANK ANALYSES

	YES	NO	N/A
Performed for each matrix?	X		
Performed for each GCMS system?	X		
Performed for each extraction/**analysis** batch?	X		
Form Present?	X		

LIST CONTAMINANTS DETECTED IN METHOD BLANKS

Blank ID	GCMS ID	Matrix	Compound	Concen-tration	Units	5X (or 10X)	Comments
							None

Recommended Actions

No action required
Methylene chloride, acetone, and 2-butanone are considered common volatile laboratory contaminants.
Phthalates are considered common semi-volatile laboratory contaminants.
Describe project corrective action:

	YES	NO	N/A
Did laboratory perform appropriate corrective action?			X

LIST ALL METHOD BLANKS AND THEIR ASSOCIATED SAMPLES

Blank ID	Matrix	ASSOCIATED SAMPLES
M3E300000-345	Air	E3E230214-004, -009, -013
M3E300000-346	Air	E3E230214-001 thru -003, -005 thru -008, -010, -014 thru -024
M3E300000-510	Air	E3E230214-011, -012
M3F040000-335	Air	E3E280151-001, -002, -006, -007
M3F040000-449	Air	E3E280151-003 thru -005, -008, -009
M3F100000-380	Air	E3E280151-010
M3F160000-513	Air	E3F120166-001 thru -010

TRIP BLANK ANALYSES

	YES	NO	N/A
Trip Blank analyzed?	X		
Form Present?	X		

FIELD BLANK ANALYSES

	YES	NO	N/A
Field Blank analyzed?		X	
Form Present?			X

EQUIPMENT BLANK ANALYSES

	YES	NO	N/A
Equipment/Rinse Blank analyzed?		X	
Form Present?			X

LIST CONTAMINANTS DETECTED IN TRIP, FIELD, AND EQUIPMENT BLANKS

Blank ID	GCMS ID	Matrix	Compound	Concen-tration	Units	5X (or 10X)	Comments
0324BOBW091A (TB)							**None**

Recommended Actions

No action required

LABORATORY CONTROL SAMPLES (LCS/LCSD)

	YES	NO
Form Present?	X	
%R and RPD within limits?	X	
Spike list match project required list?		X

% RECOVERY AND RPD CALCULATION CHECK

Analysis Date	Spike Compound	Spike Conc	LCS Result	LCSD Results	LCS %R	LCSD %R	RPD	Agree?	Batch
28-May-03	TCE	10	10.8	11.2	108.00%	112.00%	3.64%	YES	M3E300000-345
29-May-03	TCE	10	9.54	9.23	95.40%	92.30%	3.30%	YES	M3E300000-346
30-May-03	TCE	10	8.5	9.44	85.00%	94.40%	10.48%	YES	M3E300000-510
3-Jun-03	TCE	11.9	14.2	13.8	119.33%	115.97%	2.86%	YES	M3F040000-335
4-Jun-03	TCE	10	11.6	10.9	116.00%	109.00%	6.22%	YES	M3F040000-449
9-Jun-03	TCE	10	11.5	11.8	115.00%	118.00%	2.58%	YES	M3F100000-380
13-Jun-03	TCE	11.9	13	13.7	109.24%	115.13%	5.24%	YES	M3F160000-513

ACCEPTANCE CRITERIA:

PROJECT LIMITS - %R	75-130%
PROJECT LIMITS - RPD	20%

LIST ALL RECOVERIES OUTSIDE PROJECT LIMITS

LCS ID	Spike Compound	% Recovery	RPD	Comments
				None

MATRIX SPIKE/MATRIX SPIKE DUPLICATE ANALYSIS (MS/MSD)

	YES	NO
Form Present?	N/A	
%R and RPD within limits?	N/A	
Spike list match project required list?	N/A	

Recommended Actions

No action required
LCS ACTION: NONE.
LABORATORY SPIKED WITH TCE AND 4 OTHER NON-PROJECT COMPOUNDS.
LABORATORY CONTROL LIMITS WERE USED FOR EVALUATION HEREIN.
MS/MSD NOT PERFORMED FOR THE SAMPLES EVALUATED HEREIN.

	YES	NO	N/A
Did laboratory perform appropriate corrective action?			X

FIELD DUPLICATES

	YES	NO
Are original/field duplicate pairs identifiable?	X	
%RPD within project acceptance limits?	X	

RPD CALCULATION CHECK

IF sample result is ND, enter "0". RPD is automatically calculated

Original Sample #	Matrix	Compound	Orig. Results	Duplicate Sample #	Dup. Results	RPD	< CRDL?
CTP-SG-42-50	Air	Chloroform	ND< 0.38	CTP-SG-42-51	0.35	**NC**	**YES/NO**
CTP-SG-42-50	Air	Trichloroethene	ND< 0.38	CTP-SG-42-51	ND< 0.20	NC	YES
CTP-SG-42-50	Air	Tetrachlorethene	ND< 0.38	CTP-SG-42-51	0.41	**NC**	**YES/NO**
CTP-SG-42-50	Air	Carbon tetrachloride	0.58	CTP-SG-42-51	0.76	-26.87%	NO
CTP-SG-33-06	Air	Chloroform	11	CTP-SG-33-07	13	-16.67%	NO
CTP-SG-33-06	Air	Trichloroethene	ND< 1.9	CTP-SG-33-07	ND< 1.8	NC	YES
CTP-SG-33-06	Air	Tetrachlorethene	ND< 1.9	CTP-SG-33-07	ND< 1.8	NC	YES
CTP-SG-33-06	Air	Carbon tetrachloride	5.2	CTP-SG-33-07	6.1	-15.93%	NO
CTP-SG-36-50	Air	Chloroform	2.9	CTP-SG-36-51	2.9	0.00%	NO
CTP-SG-36-50	Air	Trichloroethene	ND< 0.40	CTP-SG-36-51	ND< 0.80	NC	YES
CTP-SG-36-50	Air	Tetrachlorethene	5.5	CTP-SG-36-51	7.5	-30.77%	NO
CTP-SG-36-50	Air	Carbon tetrachloride	21	CTP-SG-36-51	22	-4.65%	NO
0324BOBW087F	Air	Chloroform	0.64	0324BOBW088D	0.52	20.69%	NO
0324BOBW087F	Air	Trichloroethene	ND< 0.20	0324BOBW088D	ND< 0.20	NC	YES
0324BOBW087F	Air	Tetrachlorethene	ND< 0.20	0324BOBW088D	ND< 0.20	NC	YES
0324BOBW087F	Air	Carbon tetrachloride	ND< 0.20	0324BOBW088D	ND< 0.20	NC	YES

ACCEPTANCE CRITERIA: PROJECT LIMITS 50%

LIST ALL RPD OUTSIDE PROJECT LIMITS (DO NOT INCLUDE VALUES < CRDL)

Sample ID	Compound	RPD	Comments
CTP-SG-42-50	Chloroform	NC	**+/- CRDL; no qual**
CTP-SG-42-50	Tetrachlorethene	NC	**+/- CRDL; no qual**

Recommended Actions

No action required.

FIELD DUPLICATE PAIRS FD1, FD2, AND FD3 WERE NOT LISTED AS SUCH ON THE COC; HOWEVER, THE SAMPLE TIMES INDICATE THEY MAY BE FIELD DUPLICATE PAIRS.

REPORTING LIMITS

Are the project-specified reporting limits (RL) met for all project samples?	YES	NO
	*	

If NO, then list:

Compound	Samples Affected	Lab RL	Project RL	Comments
All	E3E280151-002, -003, E3E230214-001, -007, -008			**~2X Dilution**
All	E3E280151-004, -005			**~4X Dilution**
All except Carbon tetrach	E3E230214-008			**~2X Dilution**
Carbon tetrachloride	E3E230214-008			**~9X Dilution**
All	E3E230214-016, -018, -020, -021, -022			**~2X Dilution****
All	E3E230214-023, -024			**~10X Dilution****
*** METHOD TO-15 NOT LISTED IN CDQMP**				

**** RL elevated due to matrix interference**

ANALYTE LIST

Does the reported target analyte list match the project required list?	YES	NO
	*	

If NO, then list extra or missing compounds:

Compound	Missing?	Extra?	Comments
*** METHOD TO-15 NOT LISTED IN CDQMP**			

MDL STUDY

	YES	NO	N/A
MDL study present in the package?		X	
Performed within 1 year of sample analysis?			X
MDLs support laboratory reporting limits?			X

Comments

TENTATIVELY IDENTIFIED COMPOUNDS

	YES	NO
All appropriate peaks searched and reported?	N/A	
Any TICs found in both samples and blanks?	N/A	
Reasonable identifications reported?	N/A	
Any TCL compounds reported as TICs?	N/A	

Recommended Actions

No action required
Artifacts, unknowns, and siloxanes are not included in above.

	YES	NO	N/A
Did laboratory perform appropriate corrective action?			

SYSTEM PERFORMANCE

	YES	NO
Were standard and sample chromatograms provided for all positive results?	X	
Chromatograms free of abrupt baseline shift?	X	
Chromatograms free of high background?	X	
Chromatograms free of baseline rise?	X	
Chromatograms free of extraneous peaks?	X	
Peak resolution good?	X	
Peaks free of tailing?	X	

Recommended Actions

No action required

	YES	NO	N/A
Did laboratory perform appropriate corrective action?			X

GC/MS INSTRUMENT TUNE

	YES	NO
Performed for all initial calibrations?	X	
Performed for all continuing calibrations and samples?	X	
* **Performed every 24 hours?**	X	
BFB/DFTPP criteria within method limits?	X	
Concentration of **BFB**/DFTPP injected:	Not noted	

LIST ALL **BFB**/DFTPP INJECTIONS

Date	GC/MS ID	Injection time	Ratio Check (Level IV only)	Transcript Errors (L IV)	Comments
15-Apr-03	GCMS-C	0725			ICAL
28-May-03	GCMS-C	0816			E3E230214-004, -009, -013
29-May-03	GCMS-C	1214			E3E230214-001 thru -003, -005 thru -008, -010, -014 thru -024
28-May-03	GCMS-E	1532			ICAL
30-May-03	GCMS-E	1236			E3E230214-011, -012
3-Jun-03	GCMS-C	0724			**E3E280151-001, -002, -006, -007**
4-Jun-03	GCMS-C	0908			**E3E280151-003 thru -005, -008, -009**
9-Jun-03	GCMS-C	1005			**E3E280151-010**
13-Jun-03	GCMS-C	0915			E3F120166-001 thru -010

LIST ALL **BFB**/DFTPP OUTSIDE CRITERIA (LEVEL IV ONLY)

Date	GC/MS ID	Injection time	Ion Abund Outside Criteria	Comments
				None

Recommended Actions

No action required

*** TUNE FREQUENCY REQUIRED BY METHOD TO-15 IS EVERY 24 HOURS.**

	YES	NO	N/A
Did laboratory perform appropriate corrective action?			X

GC/MS INSTRUMENT TUNE - BFB

ICAL TUNE:

Date:	**15-Apr-03**
Injection Time:	**725**
Instrument ID:	**GCMS-C**

	Enter raw Abund here	Calc Automatic
50=	71352	17.8%
75=	184320	46.1%
95=	399872	
96=	26640	6.7%
173=	0	0.0%
174=	298368	74.6%
175=	21536	7.2%
176=	284992	95.5%
177=	19048	6.7%

SAMPLE TUNE:

Date:	**3-Jun-03**
Injection Time:	**0724**
Instrument ID:	**GCMS-C**

	Enter raw Abund here	Calc Automatic
50=	96392	18.8%
75=	243648	47.6%
95=	511872	
96=	33872	6.6%
173=	0	0.0%
174=	419328	81.9%
175=	30440	7.3%
176=	406976	97.1%
177=	27328	6.7%

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

INITIAL CALIBRATION

	YES	NO
Performed before sample analysis?	X	
Calibration for each matrix?	X	
Calibration for each instrument?	X	
Raw data agree with forms?	X	
Any mean RRFs below project limits?		X
Do the SPCCs meet the method requirement for minimum mean RRF?	X	
Is the lowest ICAL standard at or below the DL for each analyte?	X	
Do the CCCs meet the method requirement for maximum RSD?	X	

ACCEPTANCE CRITERIA: Mean RRF 0.05

LIST ALL MEAN RRF THAT DO NOT MEET ACCEPTANCE CRITERIA:

Date	GC/MS ID	Compound	Mean RRF	Comments
				None

Recommended Actions

No action required.
VOC method compliance: the minimum mean response factors for the **volatile SPCCs** are 0.10 for Chloromethane, 1,1-Dichloroethane, and Bromoform; and 0.30 for Chlorobenzene and 1,1,2,2-Tetrachloroethane.

Did laboratory perform appropriate corrective action?	YES	NO	N/A
			X

ACCEPTANCE CRITERIA:

%RSD	30
CORR COEF (r)	0.995

LIST ALL %RSD AND CORRELATION COEFFICIENTS THAT DO NOT MEET ACCEPTANCE CRITERIA:

Calibration Date	GCMS ID	Matrix	Compound	Corr Coefficient or % RSD	Comments
					None

Recommended Actions

No action required
VOC method compliance: the lowest ICAL standard must be at or below the detection limit for each analyte. The **volatile CCCs** must meet a maximum RSD of 30%. The volatile CCC compounds are: 1,1-Dichloroethene, Chloroform, 1,2-Dichloropropane, Toluene, Ethylbenzene, and Vinyl chloride. Method 8260: a curve must be constructed for all analytes with RSD > 15%.

Did laboratory perform appropriate corrective action?	YES	NO	N/A
			X

LIST ALL ICAL AND ASSOCIATED SAMPLES

Calibration Date	GCMS ID	Matrix	ASSOCIATED SAMPLES
15-Apr-03	GCMS-C	Air	E3E230214-001 thru -010, -013 thru -024, **E3E280151-001 thru -010**, E3F120166-001 thru -010
28-May-03	GCMS-E	Air	E3E230214-011, -012

INITIAL CALIBRATION

RRF $(A_x * I_s / A_{is} * STD)$

Ax = Area of compound
Is = Amount (in ppbv) of internal standard
Ais= Area of associated internal standard
STD = Amount (in ppbv) of compound

Date: 14-Jan-03
Instrument ID: GCMS-C
Compound: Carbon tetrachloride

RF1

A_x=	4140	RRF
I_s=	4	0.92389061
A_{is}=	89621	
STD=	0.2	

RF2

A_x=	7967	RRF
I_s=	4	0.94459528
A_{is}=	84343	
STD=	0.4	

RF3

A_x=	24552	RRF
I_s=	4	0.97123855
A_{is}=	80893	
STD=	1.25	

RF4

A_x=	102375	RRF
I_s=	4	1.0342868
A_{is}=	79185	
STD=	5	

RF5

A_x=	202960	RRF
I_s=	4	1.06206175
A_{is}=	76440	
STD=	10	

RF6

A_x=	1159960	RRF
I_s=	4	1.20030526
A_{is}=	77311	
STD=	50	

AVG. CF	**1.02272971**
SD	**0.10172428**
%RSD=	**9.94635061**

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

	YES	NO
AMOUNTS INJECTED CONSISTENT THROUGHOUT ANALYTICAL SEQUENCE?	*	

*** THE VOLUME PURGED DIFFERED FROM ONE STANDARD TO THE NEXT, BUT THE CAL VOLUMES AND STANDARD VOLUMES WERE THE SAME WITHIN A RUN, AND CANCEL EACH OTHER OUT.**
FOR THE ICAL CALCULATION THE INTERNAL STANDARD AMOUNT AND STANDARD AMOUNTS ARE ENTERED IN PPBV UNITS, AND IT IS NOT NECESSARY TO ENTER THE AMOUNT PURGED.

CONTINUING CALIBRATION

	YES	NO
Performed before sample analysis?	X	
Performed for each day of analysis?	X	
Performed for each instrument?	X	
Raw data agree with forms? (Level IV only)	X	
Any Daily RRFs below project limits?		X
Do the SPCCs meet the method requirement for minimum RRF?	X	
Is the CCV standard at the midpoint of the ICAL for each analyte?	X	
Do the CCCs meet the method requirement for maximum %D?	X	

ACCEPTANCE CRITERIA: RRF 0.05

LIST ALL DAILY RRF THAT DO NOT MEET ACCEPTANCE CRITERIA:

Calibration Date	Time	GCMS ID	Compound	RRF	Comments
					None

Recommended Actions

No action required.
VOC method compliance: the minimum mean response factors for the **volatile SPCCs** are 0.10 for Chloromethane, 1,1-Dichloroethane, and Bromoform; and 0.30 for Chlorobenzene and 1,1,2,2-Tetrachloroethane.

	YES	NO	N/A
Did laboratory perform appropriate corrective action?			X

ACCEPTANCE CRITERIA: %D 25

LIST ALL %D THAT DO NOT MEET ACCEPTANCE CRITERIA:

Calibration Date	Time	GCMS ID	Matrix	Compound	%D	CCV Out Low	CCV Out High	Comments
								None

Recommended Actions

VOC method compliance: the CCV concentration for each analyte must be at the midpoint of the ICAL. The **volatile CCCs** must meet a maximum %D of 20. The volatile CCC compounds are: 1,1-Dichloroethene, Chloroform, 1,2-Dichloropropane, Toluene, Ethylbenzene, and Vinyl chloride.
THE CCV FOR SAMPLES E3E230214-011 AND -012 IS MISSING FROM THE DATA PACKAGE.

SAMPLE E3E230214-009 IS LISTED AS CTP-SG-34-03 ON THE RUN LOG AND INTERNAL STANDARD AREA SUMMARY SHEET. THE CORRECT CLIENT ID FOR THAT SAMPLE IS CTP-SG-34-06.

	YES	NO	N/A
Did laboratory perform appropriate corrective action?			X

LIST ALL PRECEEDING CCS AND ASSOCIATED SAMPLES

Calibration Date	Time	GCMS ID	Matrix	ASSOCIATED SAMPLES
28-May-03	0923	GCMS-C	Air	E3E230214-004, -009, -013
29-May-03	1424	GCMS-C	Air	E3E230214-001 thru -003, -005 thru -008, -010, -014 thru -024
30-May-03	1332	GCMS-E	Air	E3E230214-011, -012
3-Jun-03	**1133**	**GCMS-C**	**Air**	**E3E280151-001, -002, -006, -007**
4-Jun-03	**1056**	**GCMS-C**	**Air**	**E3E280151-003 thru -005, -008, -009**
9-Jun-03	**1155**	**GCMS-C**	**Air**	**E3E280151-010**
13-Jun-03	1022	GCMS-C	Air	E3F120166-001 thru -010

CONTINUING CALIBRATION - AVERAGE RESPONSE FACTOR

RRF **(A_x*I_s/A_{is}*STD)**

A_x = Area of compound
Is = Amount (in ppbv) of internal standard
Ais= Area of associated internal standard
STD = Amount (in ppbv) of compound

Date:			**3-Jun-03**
Time:			**1133**
Instrument ID:			**GCMS-C**
Compound:			**Chloroform**
RF-CCC			
A_x=	189062		
I_s=	4	1.436232077	
A_{is}=	52655		
STD=	10		
	avg RRF		**1.37301**
	%D		**4.60%**

Date:			**4-Jun-03**
Time:			**1056**
Instrument ID:			**GCMS-C**
Compound:			**Trichloroethene**
RF-CCC			
A_x=	106502		
I_s=	4	0.400315736	
A_{is}=	106418		
STD=	10		
	avg RRF		**0.35083**
	%D		**14.11%**

Date:			**9-Jun-03**
Time:			**1155**
Instrument ID:			**GCMS-C**
Compound:			**Tetrachloroethene**
RF-CCC			
A_x=	106700		
I_s=	4	0.555259221	
A_{is}=	76865		
STD=	10		
	avg RRF		**0.46708**
	%D		**18.88%**

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

	YES	NO
AMOUNTS INJECTED CONSISTENT THROUGHOUT ANALYTICAL SEQUENCE?	X	

INTERNAL STANDARDS

	YES	NO	N/A
Form Present?	X		
All samples listed?	X		
Results agree with raw data? (Level IV only)	X		
Did laboratory spike project required internal standards?	X		
Are sample IS retention times within 30 seconds of daily ccal?	X		

ACCEPTANCE CRITERIA:

				Area CCAL	-40%	+40%
LIST INTERNAL STANDARDS SPIKED:					0	0
Calibration Date	Time	GCMS ID	Bromochloromethane	52655	31593	73717
			1,4-Difluorobenzene	109209	65525.4	152892.6
3-Jun-03	1133	GCMS-C	Chlorobenzene-d5	88400	53040	123760

ACCEPTANCE CRITERIA:

				Area CCAL	-40%	+40%
LIST INTERNAL STANDARDS SPIKED:					0	0
Calibration Date	Time	GCMS ID	Bromochloromethane	50072	30043.2	70100.8
			1,4-Difluorobenzene	106418	63850.8	148985.2
4-Jun-03	1056	GCMS-C	Chlorobenzene-d5	84468	50680.8	118255.2

ACCEPTANCE CRITERIA:

				Area CCAL	-40%	+40%
LIST INTERNAL STANDARDS SPIKED:					0	0
Calibration Date	Time	GCMS ID	Bromochloromethane	48681	29208.6	68153.4
			1,4-Difluorobenzene	101656	60993.6	142318.4
9-Jun-03	1155	GCMS-C	Chlorobenzene-d5	76865	46119	107611

LIST ALL AREAS OUTSIDE PROJECT LIMITS

Sample ID	Internal Standard	Internal Standard Area	IS Out Low	IS Out High	Comments
E3E280151-003	1,4-Difluorobenzene	157955		X	**Assoc. cmpd ND; no qual**
	Chlorobenzene-d5	153777		X	**J+ 011**
E3E280151-009	Chlorobenzene-d5	129399		X	**J+ 011**

Recommended Actions

QUALIFY TETRACHLOROETHENE J+ 011 FOR SAMPLES E3E280151-003, -009.

	YES	NO	N/A
Did laboratory perform appropriate corrective action?			X

LIST ALL PRECEEDING INTERNAL STANDARDS AND ASSOCIATED SAMPLES

Calibration Date	Time	GCMS ID	Matrix	ASSOCIATED SAMPLES
28-May-03	0923	GCMS-C	Air	E3E230214-004, -009, -013
29-May-03	1424	GCMS-C	Air	E3E230214-001 thru -003, -005 thru -008, -010, -014 thru -024
30-May-03	1332	GCMS-E	Air	E3E230214-011, -012
3-Jun-03	1133	GCMS-C	Air	**E3E280151-001, -002, -006, -007**
4-Jun-03	1056	GCMS-C	Air	**E3E280151-003 thru -005, -008, -009**
9-Jun-03	1155	GCMS-C	Air	**E3E280151-010**
13-Jun-03	1022	GCMS-C	Air	E3F120166-001 thru -010

SAMPLE CALCULATION WORKSHEET

ppbv=Ax*Is*Vc*DF*Pf/Ais*RRF*Pi*Vs

Sample ID: **CTP-SG-36-06**
Lab ID: **E3E280151-001**

Compound: Chloroform

Ax=	7570	**0.40818738**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.1		Final pressure
Ais=	53930		Area of internal standard
RRF=	1.37301		RRF (average from curve)
Pi=	12		Initial pressure
Vs=	503		Volume of sample, in mL

Compound: Carbon tetrachloride

Ax=	15448	**1.1182751**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.1		Final pressure
Ais=	53930		Area of internal standard
RRF=	1.02273		RRF (average from curve)
Pi=	12		Initial pressure
Vs=	503		Volume of sample, in mL

Compound: Tetrachloroethene

Ax=	13267	**0.94931115**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.1		Final pressure
Ais=	119465		Area of internal standard
RRF=	0.46708		RRF (average from curve)
Pi=	12		Initial pressure
Vs=	503		Volume of sample, in mL

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

	YES	NO
SPECTRAL MATCH OKAY?	X	

DILUTION FACTORS ARE TAKEN INTO ACCOUNT WITH SAMPLE SIZE.

SAMPLE CALCULATION WORKSHEET

ppbv=Ax*Is*Vc*DF*Pf/Ais*RRF*Pi*Vs

Sample ID: **CTP-SG-36-30**
Lab ID: **E3E280151-002**

Compound: Chloroform

Ax=	27045	**3.031943**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.6		Final pressure
Ais=	51933		Area of internal standard
RRF=	1.37301		RRF (average from curve)
Pi=	13.8		Initial pressure
Vs=	223		Volume of sample, in mL

Compound: Carbon tetrachloride

Ax=	48021	**7.22733109**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.6		Final pressure
Ais=	51933		Area of internal standard
RRF=	1.02273		RRF (average from curve)
Pi=	13.8		Initial pressure
Vs=	223		Volume of sample, in mL

Compound: Tetrachloroethene

Ax=	22977	**3.35574227**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.6		Final pressure
Ais=	117183		Area of internal standard
RRF=	0.46708		RRF (average from curve)
Pi=	13.8		Initial pressure
Vs=	223		Volume of sample, in mL

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

	YES	NO
SPECTRAL MATCH OKAY?	X	

DILUTION FACTORS ARE TAKEN INTO ACCOUNT WITH SAMPLE SIZE.

SAMPLE CALCULATION WORKSHEET

ppbv=Ax*Is*Vc*DF*Pf/Ais*RRF*Pi*Vs

Sample ID: **CTP-SG-36-50 (FD3)**
Lab ID: **E3E280151-003**

Compound: Chloroform

Ax=	32876	**2.89610338**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24		Final pressure
Ais=	66147		Area of internal standard
RRF=	1.37301		RRF (average from curve)
Pi=	10.6		Initial pressure
Vs=	283		Volume of sample, in mL

Compound: Carbon tetrachloride

Ax=	180549	**21.3522124**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24		Final pressure
Ais=	66147		Area of internal standard
RRF=	1.02273		RRF (average from curve)
Pi=	10.6		Initial pressure
Vs=	283		Volume of sample, in mL

Compound: Tetrachloroethene

Ax=	49748	**5.54130316**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24		Final pressure
Ais=	153777		Area of internal standard
RRF=	0.46708		RRF (average from curve)
Pi=	10.6		Initial pressure
Vs=	283		Volume of sample, in mL

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

	YES	NO
SPECTRAL MATCH OKAY?	X	

DILUTION FACTORS ARE TAKEN INTO ACCOUNT WITH SAMPLE SIZE.

SAMPLE CALCULATION WORKSHEET

ppbv=Ax*Is*Vc*DF*Pf/Ais*RRF*Pi*Vs

Sample ID: **CTP-SG-36-51 (FD3)**
Lab ID: **E3E280151-004**

Compound: Chloroform

Ax=	12693	**2.93547285**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.1		Final pressure
Ais=	50197		Area of internal standard
RRF=	1.37301		RRF (average from curve)
Pi=	11.2		Initial pressure
Vs=	135		Volume of sample, in mL

Compound: Carbon tetrachloride

Ax=	69783	**21.6658698**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.1		Final pressure
Ais=	50197		Area of internal standard
RRF=	1.02273		RRF (average from curve)
Pi=	11.2		Initial pressure
Vs=	135		Volume of sample, in mL

Compound: Tetrachloroethene

Ax=	24506	**7.51960033**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.1		Final pressure
Ais=	111212		Area of internal standard
RRF=	0.46708		RRF (average from curve)
Pi=	11.2		Initial pressure
Vs=	135		Volume of sample, in mL

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

	YES	NO
SPECTRAL MATCH OKAY?	X	

DILUTION FACTORS ARE TAKEN INTO ACCOUNT WITH SAMPLE SIZE.

SAMPLE CALCULATION WORKSHEET

ppbv=Ax*Is*Vc*DF*Pf/Ais*RRF*Pi*Vs

Sample ID: CTP-SG-36-75 (E3E280151-005)

Compound: Chloroform

Ax=	14199	**2.7339838**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.2		Final pressure
Ais=	60302		Area of internal standard
RRF=	1.37301		RRF (average from curve)
Pi=	13.2		Initial pressure
Vs=	115		Volume of sample, in mL

Compound: Carbon tetrachloride

Ax=	213326	**55.1435438**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.2		Final pressure
Ais=	60302		Area of internal standard
RRF=	1.02273		RRF (average from curve)
Pi=	13.2		Initial pressure
Vs=	115		Volume of sample, in mL

Compound: Trichloroethene

Ax=	4998	**1.6332997**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vt=	250		Cal volume (mL)
Df=	1		Dilution factor
GPC=	24.2		Final pressure
Ais=	139052		Area of internal standard
RRF=	0.35083		RRF (average from curve)
Vi=	13.2		Initial pressure
Ws=	115		Volume of sample, in mL

Compound: Tetrachloroethene

Ax=	21649	**6.92938135**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.2		Final pressure
Ais=	106634		Area of internal standard
RRF=	0.46708		RRF (average from curve)
Pi=	13.2		Initial pressure
Vs=	115		Volume of sample, in mL

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	
SPECTRAL MATCH OKAY?	X	

DILUTION FACTORS ARE TAKEN INTO ACCOUNT WITH SAMPLE SIZE.

SAMPLE CALCULATION WORKSHEET

ppbv=Ax*Is*Vc*DF*Pf/Ais*RRF*Pi*Vs

Sample ID: **CTP-SG-46-06**
Lab ID: **E3E280151-007**

Compound: Tetrachloroethene

Ax=	3467	**0.24918089**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	23.7		Final pressure
Ais=	118945		Area of internal standard
RRF=	0.46708		RRF (average from curve)
Pi=	11.8		Initial pressure
Vs=	503		Volume of sample, in mL

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

	YES	NO
SPECTRAL MATCH OKAY?	X	

DILUTION FACTORS ARE TAKEN INTO ACCOUNT WITH SAMPLE SIZE.

SAMPLE CALCULATION WORKSHEET

ppbv=Ax*Is*Vc*DF*Pf/Ais*RRF*Pi*Vs

Sample ID: **CTP-SG-47-06**
Lab ID: **E3E280151-008**
Compound: **Chloroform**

Ax=	7119	**0.40026311**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	24.6		Final pressure
Ais=	51765		Area of internal standard
RRF=	1.37301		RRF (average from curve)
Pi=	10.8		Initial pressure
Vs=	570		Volume of sample, in mL

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	
SPECTRAL MATCH OKAY?	X	

DILUTION FACTORS ARE TAKEN INTO ACCOUNT WITH SAMPLE SIZE.

SAMPLE CALCULATION WORKSHEET

ppbv=Ax*Is*Vc*DF*Pf/Ais*RRF*Pi*Vs

Sample ID: **CTP-SG-39-06**
Lab ID: **E3E280151-009**

Compound: Chloroform

Ax=	14541	**0.78971253**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	23.6		Final pressure
Ais=	53621		Area of internal standard
RRF=	1.37301		RRF (average from curve)
Pi=	11.9		Initial pressure
Vs=	496		Volume of sample, in mL

Compound: Carbon tetrachloride

Ax=	15744	**1.147896**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	23.6		Final pressure
Ais=	53621		Area of internal standard
RRF=	1.02273		RRF (average from curve)
Pi=	11.9		Initial pressure
Vs=	496		Volume of sample, in mL

Compound: Tetrachloroethene

Ax=	3651	**0.24153107**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	23.6		Final pressure
Ais=	129399		Area of internal standard
RRF=	0.46708		RRF (average from curve)
Pi=	11.9		Initial pressure
Vs=	496		Volume of sample, in mL

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

	YES	NO
SPECTRAL MATCH OKAY?	X	

DILUTION FACTORS ARE TAKEN INTO ACCOUNT WITH SAMPLE SIZE.

SAMPLE CALCULATION WORKSHEET

ppbv=Ax*Is*Vc*DF*Pf/Ais*RRF*Pi*Vs

Sample ID: **CTP-SG-38-06**
Lab ID: **E3E280151-010**
Compound: Chloroform

Ax=	4841	**0.31325558**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	23.6		Final pressure
Ais=	44957		Area of internal standard
RRF=	1.37301		RRF (average from curve)
Pi=	11.7		Initial pressure
Vs=	505		Volume of sample, in mL

Compound: Carbon tetrachloride

Ax=	31748	**2.75799082**	Area cmpd in sample
Is=	4		Amt internal standard, in ppbv
Vc=	250		Cal volume (mL)
Df=	1		Dilution factor
Pf	23.6		Final pressure
Ais=	44957		Area of internal standard
RRF=	1.02273		RRF (average from curve)
Pi=	11.7		Initial pressure
Vs=	505		Volume of sample, in mL

	YES	NO
CALCULATED VALUES MATCH REPORTED VALUES?	X	

	YES	NO
SPECTRAL MATCH OKAY?	X	

DILUTION FACTORS ARE TAKEN INTO ACCOUNT WITH SAMPLE SIZE.

IDENTIFICATION AND QUANTITATION

For Level IV calculate the results of all detects for project samples, and check RT.
To check results, use the worksheet labeled "calculation"

List all samples requiring qualification here:

Sample ID	Lab ID	Compound	Result	Lab Qualifier	Calc Check	Spectra Match?	RT meets Method Criteria	Qualifier	Reason Code
SDG E3E280151									
CTP-SG-36-50 (FD1)	E3E280151-003	Tetrachloroethene	5.5					J+	011
CTP-SG-39-06	E3E280151-009	Tetrachloroethene	0.24					J+	011
SDG E3E230214									
							NO QUALIFICATION		
SDG E3F120166									
							NO QUALIFICATION		

LEVEL IV SAMPLES: All reported results were re-calculated and verified to be correct as reported.
Spectra and analyte retention times were verified for all level IV samples.

DataVal Reason Codes

001 Exceeded holding time.
002 Blank contamination.
003 Associated initial calibration showed elevated %RSD for compound.
004 Correlation coefficient < 0.995.
005 Average relative response factor < 0.05.
006 Associated continuing calibration showed elevated %D for compound.
007 Relative response factor < 0.05.
008 Surrogate recovery was outside limits.
009 Laboratory control sample recovery exceeded acceptance criteria.
010 Matrix spike recovery exceeded acceptance criteria.
011 The area of the internal standard exceeded acceptance criteria.
012 Retention time exceeded criteria for this compound.
013 Mass spectrum did not match the reference spectrum.
014 Tentatively identified compound (TIC).
015 Value exceeded the linear range of the instrument and was not re-analyzed.
016 Compounds/components co-elute.
017 Results reported below the quantitation limit.
018 Laboratory duplicate relative percent differences (RPD) outside acceptance criteria.
019 Field duplicate RPD outside acceptance criteria.
020 Percent difference between columns exceeded 25%.
021 Laboratory control sample RPD outside acceptance criteria.
022 Matrix spike sample RPD outside acceptance criteria.
023 Serial dilution percent difference outside acceptance criteria.
024 Retention time exceeded established window.
025 ICP Interference Check Sample had percent recoveries outside the 80%-120% criteria.
100 Other.

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

MACTEC
5341 Old Redwood Highway, Suite 300
Pentaluma, CA 94954
ATTN: Ms. Debbie Leibensberger

December 4, 2003

SUBJECT: Fort Ord OU CT Bio Pilot Study, Data Validation

Dear Ms. Leibensberger

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on November 25, 2003. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 11183:

SDG #	Fraction
168620, P311018	Volatiles, Carbon Tetrachloride, Bromide

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

- USACE Environmental Data Quality Management Program Specifications, USACE District, Version 1.08
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994

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

Sincerely,

Stacey A. Swenson
Operations Manager/Senior Chemist

Auth#MEC07030377 **LDC #11183 (MACTEC Engineering & Consulting Services-Novato / Fort Ord OU CT Bio Pilot Study)** Project#55596 00131

LDC	SDG#	DATE REC'D	DATE DUE	VOA (8260B)		CCL_4 (8260B)		Bromide (300.0)																															
Matrix:	Water/Soil			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	W	S
A	168620	11-25-03	12-11-03	-	-	4	0	-	-																														
B	P311018	11-25-03	12-11-03	29	0	-	-	5	0																														
Total	TH			29	0	4	0	5	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

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs