Pesticide Evaluation Standards Summary

ORIGINAL (Red)

Case No. 4248 Laboratory VERSAR

Contract No. 68-01-6756 Column DB-5

Date of Analysis 5-7-85 Instrument ID 1

EVALUATION CHECK FOR LINEARITY

LABORATORY ID				
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN				
ENDRIN				
4,4'-DDT				
DIBUTYL CHLORENDATE				

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN				
4,4'-DDT				
LABORATORY ID				
TIME OF ANALYSIS				

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
	P994	17041	0.15 ✓				

* ≤2% PACKED, ≤0.3% CAPILLARY

Pesticide Evaluation Standards Summary

Case No. 4248 Laboratory VersAR

Contract No. Column SP2250 / SP2401

Date of Analysis 5/9/85 Instrument ID 5B

EVALUATION CHECK FOR LINEARITY

LABORATORY ID	P997	P996	P995	
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	1650000	1700000	1950000	9.1 % ✓
ENDRIN	1157925	1121680	1150000	2 % ✓
4,4'-DDT	660950	702360	754500	7 % ✓
DIBUTYL CHLORENDATE	1224350	1188490	1225000	2 % ✓

all verified acceptable.

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	0 ✓	0 ✓	0 ✓	
4,4'-DDT	13 % ✓	10 % ✓	19 % ✓	
LABORATORY ID	P996	P996	P996	
TIME OF ANALYSIS	15:20	3:06	12:06	

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

000433

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
	P997	14:36	0	CA 104 MS		1:39	0.69
	P996	15:20	0.14	CA 104 MSD		2:23	0.72
	P995	16:05	0.10		P996	3:06	0.79
	P993	16:48	NA	CA 105		3:50	0.97
	P994	17:37	0	CA 106		4:34	0.90
	P953	18:20	0.10	CA 108		5:17	1.00
	P952	19:04	0.14	CA 109		6:01	1.07
	P954	19:48	0.17	CA 110		6:45	1.00
	P955	20:32	0.17		P993	7:28	NA
	P956	21:16	0.31	CA 177		8:12	0.90
	P957	21:59	0.41	CA 179		8:55	0.59
	P958	22:43	0.7	CA 181		9:53	-0.07
	P959	23:26	0.45	CA 183		10:38	0.10
RBT		0:11	0.59	CA 185		11:22	-0.14
CA 104		0:55	0.66		P996		-1.52%

* ≤2% PACKED ≤0.3% CAPILLARY

CASE No. 4248 LABORATORY VERSAR

CONTRACT No. 68-01-6756 GC COLUMN DB-5 GC INSTRUMENT ID 1

	DATE OF ANALYSIS 4-7,8-85					DATE OF ANALYSIS 5-8-85			
	TIME OF ANALYSIS 2008,2050					TIME OF ANALYSIS 0437			
	LAB ID P993,P994					LAB ID P994			
COMPOUND	RT	RETENTION TIME WINDOW			CALIBRATION FACTOR	CONF OR QUANT	RT	CALIBRATION FACTOR	CONF OR QUANT	PERCENT DIFF.**
alpha-BHC	3.94	3.93	TO	3.95	3108	CONF	3.94	3063	CONF	1.5
beta-BHC	4.33	4.32	TO	4.34	2896	CONF	4.32	2858	CONF	1.3
delta-BHC	4.90	4.89	TO	4.91	2504	CONF	4.90	2503	CONF	0.1
gamma-BHC	4.48	4.47	TO	4.49	3084	CONF	0.00	0	CONF	ERR
Heptachlor	6.19	6.18	TO	6.20	1991	CONF	6.19	2140	CONF	-7.5
Aldrin	7.36	7.35	TO	7.37	2997	CONF	0.00	0	CONF	ERR
Heptachlor Epoxide	8.98	8.97	TO	8.99	2675	CONF	0.00	0	CONF	ERR
Endosulfan I	10.92	10.91	TO	10.93	2680	CONF	0.00	0	CONF	ERR
Dieldrin	12.59	12.58	TO	12.60	1794	CONF	0.00	0	CONF	ERR
4,4'-DDE	12.43	12.42	TO	12.44	3242	CONF	12.43	3158	CONF	2.6
Endrin	14.24	14.23	TO	14.25	1802	CONF	14.24	1672	CONF	7.2
Endosulfan II	15.02	15.01	TO	15.03	2327	CONF	0.00	0	CONF	ERR
4,4'-DDD	15.96	15.95	TO	15.97	1618	CONF	15.95	1742	CONF	-7.6
Endrin Aldehyde	16.79	16.78	TO	16.80	1961	CONF	0.00	0	CONF	ERR
Endosulfan Sulfate	19.35	19.34	TO	19.36	1854	CONF	19.34	1912	CONF	-3.1
4,4'-DDT	20.00	19.98	TO	20.02	1477	CONF	0.00	0	CONF	ERR
Methoxychlor	27.05	27.02	TO	27.08	449	CONF	27.05	467	CONF	-3.9
Endrin Ketone	24.72	24.70	TO	24.74	2147	CONF	0.00	0	CONF	ERR
Tech. Chlordane	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
alpha-Chlordane	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
gamma-Chlordane	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Toxaphene	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1016	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1221	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1232	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1242	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1248	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1254	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1260	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR

CONF = CONFIRMATION ((20% DIFF)
QUANT = QUANTITATION ((15% DIFF)

all OK
RV.

FORM IX

666
5-13-85

ORIGINAL (Red)

CASE No. 4248 LABORATORY VERSAR

CONTRACT No. 68-01-6756 GC COLUMN DB-5 GC INSTRUMENT ID 1

	DATE OF ANALYSIS 4-7,8-85					DATE OF ANALYSIS 5-8-85			
	TIME OF ANALYSIS 2008,2050					TIME OF ANALYSIS 1704			
	LAB ID P993,P994					LAB ID P994			
COMPOUND	RT	RETENTION TIME WINDOW			CALIBRATION FACTOR	CONF OR QUANT	RT	CALIBRATION FACTOR	CONF OR QUANT	PERCENT DIFF.**
alpha-BHC	3.94	3.93	TO	3.95	3108	CONF	3.93	3144	CONF	-1.1
beta-BHC	4.33	4.32	TO	4.34	2896	CONF	4.32	2969	CONF	-2.5
delta-BHC	4.90	4.89	TO	4.91	2504	CONF	4.89	2600	CONF	-3.8
gamma-BHC	4.48	4.47	TO	4.49	3084	CONF	0.00	0	CONF	ERR
Heptachlor	6.19	6.18	TO	6.20	1991	CONF	6.18	2165	CONF	-8.7
Aldrin	7.36	7.35	TO	7.37	2997	CONF	0.00	0	CONF	ERR
Heptachlor Epoxide	8.98	8.97	TO	8.99	2675	CONF	0.00	0	CONF	ERR
Endosulfan I	10.92	10.91	TO	10.93	2680	CONF	0.00	0	CONF	ERR
Dieldrin	12.59	12.58	TO	12.60	1794	CONF	0.00	0	CONF	ERR
4,4'-DDE	12.43	12.42	TO	12.44	3242	CONF	12.41	3424	CONF	-5.6
Endrin	14.24	14.23	TO	14.25	1802	CONF	14.22	1981	CONF	-9.9
Endosulfan II	15.02	15.01	TO	15.03	2327	CONF	15.93	1932	CONF	17.0
4,4'-DDD	15.96	15.95	TO	15.97	1618	CONF	0.00	0	CONF	ERR
Endrin Aldehyde	16.79	16.78	TO	16.80	1961	CONF	0.00	0	CONF	ERR
Endosulfan Sulfate	19.35	19.34	TO	19.36	1854	CONF	19.31	1962	CONF	-5.8
4,4'-DDT	20.00	19.98	TO	20.02	1477	CONF	0.00	0	CONF	ERR
Methoxychlor	27.05	27.02	TO	27.08	449	CONF	27.02	495	CONF	-10.2
Endrin Ketone	24.72	24.70	TO	24.74	2147	CONF	0.00	0	CONF	ERR
Tech. Chlordane	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
alpha-Chlordane	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
gamma-Chlordane	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Toxaphene	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1016	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1221	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1232	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1242	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1248	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1254	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1260	0.00	0.00	TO	0.00	0	CONF	0.00	0	CONF	ERR

CONF = CONFIRMATION ((20% DIFF)
QUANT = QUANTITATION ((15% DIFF)

FORM IX

OK.

000441

666
5-13-85

CASE No. 4248 LABORATORY VERSAR

CONTRACT No. GC COLUMN SP2250/SP2401 GC INSTRUMENT ID 5B

	DATE OF ANALYSIS 5/9/85				DATE OF ANALYSIS 5/10/85			
	TIME OF ANALYSIS 16:48		17:37		TIME OF ANALYSIS 7:28			
	LAB ID P993		P994		LAB ID P993			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF OR QUANT	RT	CALIBRATION FACTOR	CONF OR QUANT	PERCENT DIFF.**
alpha-BHC	1.92	1.91 TO 1.93	3677315	CONF	0.00	0	CONF	ERR
beta-BHC	2.85	2.84 TO 2.86	670200	CONF	0.00	0	CONF	ERR
delta-BHC	3.34	3.33 TO 3.35	1975950	CONF	0.00	0	CONF	[1] ERR
gamma-BHC	2.46	2.45 TO 2.47	2255095	CONF	2.44	1734075	CONF	23.1
Heptachlor	3.05	3.04 TO 3.06	1553545	CONF	0.00	0	CONF	ERR
Aldrin	3.71	3.70 TO 3.72	1635415	CONF	3.68	1321955	CONF	19.2
Heptachlor Epoxide	5.69	5.68 TO 5.70	1407555	CONF	5.65	1149070	CONF	18.4
Endosulfan I	7.21	7.16 TO 7.26	1296810	CONF	7.16	1041570	CONF	19.7
Dieldrin	8.89	8.87 TO 8.91	1430420	CONF	8.83	1136365	CONF	[1] 20.6
4,4'-DDE	8.46	8.44 TO 8.48	1468675	CONF	0.00	0	CONF	ERR
Endrin	10.86	10.83 TO 10.89	1143640	CONF	0.00	0	CONF	ERR
Endosulfan II	13.31	13.28 TO 13.34	1291070	CONF	13.19	1005025	CONF	[1] 22.2
4,4'-DDD	13.20	13.16 TO 13.24	1175000	CONF	0.00	0	CONF	ERR
Endrin Aldehyde	17.62	17.56 TO 17.68	1030280	CONF	15.82	541925	CONF	[1] 47.4
Endosulfan Sulfate	21.47	21.40 TO 21.54	847475	CONF	0.00	0	CONF	ERR
4,4'-DDT	15.94	15.91 TO 15.97	685295	CONF	17.46	786915	CONF	-14.8
Methoxychlor	31.54	31.47 TO 31.61	847475	CONF	0.00	0	CONF	ERR
Endrin Ketone	29.31	29.26 TO 29.36	1236480	CONF	29.06	976765	CONF	[1] 21.0
Tech. Chlordane	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
alpha-Chlordane	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
gamma-Chlordane	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Toxaphene	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1016	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1221	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1232	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1242	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1248	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1254	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Arochlor-1260	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR

CONF = CONFIRMATION ((20% DIFF)
QUANT = QUANTITATION ((15% DIFF)

[1] Out of criteria however no positives. no effect.

FORM IX

000443

SAW 5/15/85

CASE No. 4248 LABORATORY VERSAR

CONTRACT No. GC COLUMN SP2250/SP2401 GC INSTRUMENT ID 5B

	DATE OF ANALYSIS 5/9/85			DATE OF ANALYSIS 5/10/85		
	TIME OF ANALYSIS 1648	17:37		TIME OF ANALYSIS 13:33		
	LAB ID P993	P994		LAB ID P993		

COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF OR QUANT	RT	CALIBRATION FACTOR	CONF OR QUANT	PERCENT DIFF. **
alpha-BHC	1.92	1.91 TO 1.93	3677315	CONF	0.00	0	CONF	ERR
beta-BHC	2.85	2.84 TO 2.86	670200	CONF	0.00	0	CONF	ERR
delta-BHC	3.34	3.33 TO 3.35	1975350	CONF	0.00	0	CONF	ERR
gamma-BHC	2.46	2.45 TO 2.47	2255095	CONF	2.56	1687615	CONF	25.2
Heptachlor	3.05	3.04 TO 3.06	1553545	CONF	0.00	0	CONF	ERR
Aldrin	3.71	3.70 TO 3.72	1635415	CONF	3.85	1264130	CONF	22.7
Heptachlor Epoxide	5.69	5.68 TO 5.70	1407555	CONF	5.93	1091350	CONF	22.5
Endosulfan I	7.21	7.16 TO 7.26	1296810	CONF	7.50	974015	CONF	24.[illegible]
Dieldrin	8.69	8.67 TO 8.91	1430420	CONF	9.24	1030700	CONF	27.9
4,4'-DDE	8.46	8.44 TO 8.48	1468675	CONF	0.00	0	CONF	ERR
Endrin	10.85	10.83 TO 10.89	1143640	CONF	0.00	0	CONF	ERR
Endosulfan II	13.31	13.28 TO 13.34	1291070	CONF	13.81	952295	CONF	26.2
4,4'-DDD	13.20	13.16 TO 13.24	1175000	CONF	0.00	0	CONF	ERR
Endrin Aldehyde	17.62	17.56 TO 17.68	1030280	CONF	18.28	952295	CONF	7.6
Endosulfan Sulfate	21.47	21.40 TO 21.54	847475	CONF	0.00	0	CONF	ERR
4,4'-DDT	15.94	15.91 TO 15.97	685295	CONF	16.56	429305	CONF	37.4
Methoxychlor	31.54	31.47 TO 31.61	847475	CONF	0.00	0	CONF	ERR
Endrin Ketone	29.31	29.26 TO 29.36	1236480	CONF	30.42	830615	CONF	32.8
Tech. Chlordane	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
alpha-Chlordane	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
gamma-Chlordane	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Toxaphene	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1016	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1221	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1232	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1242	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1248	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1254	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR
Aroclor-1260	0.00	0.00 TO 0.00	0	CONF	0.00	0	CONF	ERR

CONF = CONFIRMATION ((20% DIFF)
QUANT = QUANTITATION ((15% DIFF)

→ Out of criteria, however since no positives, no effect.

FORM IX

000444

SAW
5/15/85

PROJECT NAME: Levittown Dump
TDD NO: F3-8504-12

EPA SITE NO.: PA 282
REGION: FIT III

ORIGINAL (Red)

QUALITY ASSURANCE REVIEW OF ORGANIC ANALYSIS LAB DATA PACKAGE

Case No.: 4248
Contract No.: 68-01-6855
Contract Laboratory: IT Corp.
Applicable IFB No.: WA 83-A198
Reviewer: Rock J. Vitale
Review Date: 8/8/85

Applicable Sample No's.: CA107, CA176, CA178, CA180, CA182, CA184,

The organic analytical data for this case has been reviewed. The quality assurance evaluation is summarized in the following table:

Reviewer's Evaluation*	Fraction				
	VOLATILES	ACIDS	BASE/ NEUTRALS	PCB/ PEST.	TCDD
Acceptable					
Acceptable with exception(s)	✓#1	✓#2	✓#1, #2	✓#3	Not Analyzed
Questionable					
Unacceptable					

* Definitions of the evaluation score categories are listed on next page.

This evaluation was based upon an analysis of the review items indicated below:

- ● DATA COMPLETENESS
- ● BLANK ANALYSIS RESULTS
- ● SURROGATE SPIKE RESULTS
- ● MATRIX SPIKE RESULTS
- ● DUPLICATE ANALYSIS RESULTS
- ● EVALUATION OF CONFIRMATIONS
- ‡ ● QUANTITATIVE CALCULATIONS
- ● TARGET COMPOUND MATCHING QUALITY
- ● TENTATIVELY IDENTIFIED COMPOUNDS
- ● CHROMATOGRAPHIC SENSITIVITY CHECKS
- ● DFTPP AND BFB SPECTRUM TUNE RESULTS
- #4 ● STANDARDS
- ● CALIBRATION CHECK STANDARDS
- ● INTERNAL STANDARDS PERFORMANCE

Data review forms are attached for each of the review items indicated above.

‡ No errors noted, no form attached.

◒ Spot Check performed.

Comments: #1 Please see blank analysis documentation
#2 Please see initial & continuing calibrations
#3 Single peak pesticides not confirmed by GC/MS may be the result of chromatographic interferences
#4 Some minor non-compliances for pesticide criteria, however these do not effect data.

ORIGINAL (Red)

DATA EVALUATION SCORE CATEGORIES

ACCEPTABLE: Data is within established control limits, or the data which is outside established control limits does not affect the validity of the analytical results.

ACCEPTABLE WITH EXCEPTION(S): Data is not completely within established control limits. The deficiences are identified and specific data is still valid, given certain qualifications which are listed below.

QUESTIONABLE: Data is not within established control limits. The deficiences bring the validity of the entire data set into question. However, the data validity is neither proved nor disproved by the available information.

UNACCEPTABLE: Data is not within established control limits. The deficiences imply the results are not meaningful.

DATA COMPLETENESS	CONC./MATRIX	LO/AQ →						
FRACTION	TRAFFIC REPORT # CA	107	176	178	180	182	184	Prel
	LAB I.D. # 32882	B3	B4	B4	B6	B10	B9	
BNA :	RUN DATE/TIME	✓	✓	✓	✓	✓	✓	✓
	TARGET COMPOUND TAB.	✓	✓	✓	✓	✓	✓	✓
	TARGET COMPOUND D.L.	✓	✓	✓	✓	✓	✓	✓
	TENT. I.D. COMPOUND TAB.	✓	✓	✓	✓	✓	✓	✓
	SURROGATE RECOVERY	✓	✓	✓	✓	✓	✓	✓
	GC SCREEN TABULATION	✓	✓	✓	✓	✓	✓	✓
	GC/MS CHROMATOGRAMS	✓	✓	✓	✓	✓	✓	✓
	TARGET CMPD. QUAN. LIST	✓	✓	✓	✓	✓	✓	✓
	TARGET CMPD. SPECTRA	✓	✓	✓	✓	✓	✓	✓
	TENT. I.D. CMPD. Q.L.	✓	✓	✓	✓	✓	✓	✓
	TENT. CMPD. LIB. SRCH.	✓	✓	✓	✓	✓	✓	✓
	CHRO./SENS. CHECKS	✓	✓	✓	✓	✓	✓	✓
	BFB/DFTPP TUNE DATA	✓	✓	✓	✓	✓	✓	✓
	I.S AREAS CHARTS	✓	✓	✓	✓	✓	✓	✓
	I.S. REL. RESP. FORM	✓	✓	✓	✓	✓	✓	✓
	RF & AMTS.: CALIB. CHK.	✓	✓	✓	✓	✓	✓	✓
	RF & AMTS.: 3-PT CALIB.	✓	✓	✓	✓	✓	✓	✓
	Chromatograms: Calib. Chk.	✓	✓	✓	✓	✓	✓	✓
	Chromatograms: 3-Pt. Calib.	✓	✓	✓	✓	✓	✓	✓
	LINEARITY: 3-PT. CALIB	✓	✓	✓	✓	✓	✓	✓
	RF COMPARISON	✓	✓	✓	✓	✓	✓	✓
	SAMPLE/FIELD BLANK							
	METHOD/INSTR. BLANK							✓
	LAB DUPLICATE						✓	
	FIELD DUP/REP							
	MAT. SPK./M. STD.						✓	
PEST. :	PESTICIDE TABULATION	✓	✓	✓	✓	✓	✓	✓
	PEST. D.L. TABULATION	✓	✓	✓	✓	✓	✓	✓
	PESTICIDE CHRO.	✓	✓	✓	✓	✓	✓	✓
	PESTICIDE STD. CHRO.	✓	✓	✓	✓	✓	✓	✓
	PESTICIDE STD. I.D.	✓	✓	✓	✓	✓	✓	✓
	2nd COLUMN CONF.	✓	✓	✓	✓	✓	✓	✓
	GC/MS CONFIRMATION	NO	N/a	NO	NO	N/a	N/a	N/a
	PESTICIDE DUPLICATE						✓	
	PESTICIDE SPIKE						✓	
	PESTICIDE BLANK							✓
	STD SUMMARY	✓	✓	✓	✓	✓	✓	✓
	LINEARITY CHK.	✓	✓	✓	✓	✓	✓	✓
	DEGRAD. CHK.	✓	✓	✓	✓	✓	✓	✓
	DBC RT SHIFT	✓	✓	✓	✓	✓	✓	✓

DATA COMPLETENESS	CONC./MATRIX	w/sol →						Prep					
FRACTION	TRAFFIC REPORT # CA	107	176	178	180	182	184						
	LAB I.D. # 32882	H1	H2	H3	H4	H5	H6						
VOA :	RUN DATE/TIME	✓	✓	✓	✓	✓	✓	✓					
	TARGET COMPOUND TAB.	✓	✓	✓	✓	✓	✓	✓					
	TARGET COMPOUND D.L.	✓	✓	✓	✓	✓	✓	✓					
	TENT. I.D. COMPOUND TAB.	✓	✓	✓	✓	✓	✓	✓					
	SURROGATE RECOVERY	✓	✓	✓	✓	✓	✓	✓					
	GC SCREEN TABULATION	✓	✓	✓	✓	✓	✓	✓					
	GC/MS CHROMATOGRAMS	✓	✓	✓	✓	✓	✓	✓					
	TARGET CMPD. QUAN. LIST	✓	✓	✓	✓	✓	✓	✓					
	TARGET CMPD. SPECTRA	✓	✓	✓	✓	✓	✓	✓					
	TENT. I.D. CMPD. Q.L.	✓	✓	✓	✓	✓	✓	✓					
	TENT. CMPD. LIB. SRCH.	✓	✓	✓	✓	✓	✓	✓					
	CHRO./SENS. CHECKS	✓	✓	✓	✓	✓	✓	✓					
	BFB/DFTPP TUNE DATA	✓	✓	✓	✓	✓	✓	✓					
	I.S AREAS CHARTS	✓	✓	✓	✓	✓	✓	✓					
	I.S. REL. RESP. FORM	✓	✓	✓	✓	✓	✓	✓					
	RF & AMTS. : CALIB. CHK.	✓	✓	✓	✓	✓	✓	✓					
	RF & AMTS. : 3-PT CALIB.	✓	✓	✓	✓	✓	✓	✓					
	Chromatograms: Calib. Chk.	✓	✓	✓	✓	✓	✓	✓					
	Chromatograms: 3-Pt. Calib.	✓	✓	✓	✓	✓	✓	✓					
	LINEARITY : 3-PT. CALIB	✓	✓	✓	✓	✓	✓	✓					
	RF COMPARISON	✓	✓	✓	✓	✓	✓	✓					
	SAMPLE/FIELD BLANK												
	METHOD/INSTR. BLANK							✓					
	LAB DUPLICATE					✓							
	FIELD DUP/REP												
	MAT. SPK./M. STD.					✓							

COMMENTS :

KEY TO DATA COMPLETENESS FORM

Abbreviation Used on Form	Description of Checklist Item
Conc./Matrix	Concentration category submitted in analysis request (low, med, hi); and matrix (sol., aq.)
Fraction	Fill in acid, base/neutral, acid/base/neutral, or volatiles analysis
Run Date/Time	Instrument run date (to be used for correlating calibration)
Target Cmpd. Tab.	Tabulated results for target compounds
Target Cmpd. D.L.	Detection limits for target compounds (actual/level indicated by screen
Tent. I.D. Cmpd. Tab.	Tabulated results for tentatively identified compounds
Surr. Rec.	Surrogate recoveries results
GC Screen Tab.	Tabulated GC screen results indicating required level of followup
GC/MS Chromatograms	Chromatograms of GC/MS analysis runs
Target Cmpd. Quan. List	Target compounds quantitation list, showing areas, ret. times
Target Cmpd. Spectra	Enhanced and unenhanced spectra of target compound hits
Tent. I.D. Cmpd. Q.L.	Quantitation list for tentatively identified compounds
Tent. Cmpd. Lib. Srch.	Spectra and library match spectra of tentatively identified compounds
Chro./Sens. Checks	EICP's and R.R.F.'s for chromatographic sensitivity checks
BFB/DFTPP Tune Data	Spectra intensity lists, and criteria comparison forms for BFB, DFTPP
I.S. Areas Charts	Internal standards area control charts and description of remedial action
I.S. Rel. Resp. Form	Internal standards relative response listings for each sample run
RF and amts.: Calib. Chk.	Tabulated response factors and amount injected for all cmpds. in calibration check
RF and amts.: 3-Pt. Calib.	Tabulated response factors and amount injected for all cmpds. in 3-point calibration
Chromatograms: Calib. Chk.	Chromatograms for calibration check standard
Chromatograms: 3-Pt. Calib.	Chromatograms for 3-point multilevel calibration standards.
Linearity: 3-Pt. Calib.	Tabulated correlation coefficient or relative standard deviation for calibration
RF Comparison	Tabulated comparison of calibration Response Factor with check standard
Sample/Field Blank	Equipment rinse or reagent water blank shipped with samples from field
Method/Instr. Blank	Method or instrument blank which is prepared at lab
Lab Duplicate	Sample which was split by lab for duplicate analysis
Field Dup/Rep	Sample which was split or collected twice in the field
Mat. Spk./M. Std.	Matrix spike or method standard (blind, or done by lab)
Pest. Tab.	Tabulated results for pesticides
Pest. D.L. Tab.	Tabulated detection limits for pesticides
Pest. Chro.	Chromatograms for pesticide screening
2nd Col. Conf.	Confirmation of pesticide results by using a second GC column and temperature
GC/MS Conf.	Confirmation of pesticide results by GC/MS analysis
Pest. Dup., Spk. Blk.	Pesticide duplicate, spike, and blank
Pest. Std. Chro.	Chromatogram of pesticide standard
Pest. Std. I.D.	Pesticide standard identification form
TCDD	2,3,7,8-tetrachlorodibenzodioxin
TCDD Tab., D.L., EICP, Blk.	TCDD tabulated results, detection limits, extracted ion current profile, blank

KEY TO SYMBOLS USED IN DATA COMPLETENESS TABLE

Symbol	Meaning	Symbol	Meaning
✓	Data item present	I	Incomplete data item
NA	Data item not applicable or not required	NC	Data item not clearly explained (units of conc., etc)
P	Data item within established control limits	* or [number]	See footnote
F	Data item outside established control limits	XX/XX/XX XX:XX	Date/Time of run (calibration, etc.)
MS	Missing item		

BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS

FRACTION	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)
VOA	lab	low	sol	BLK 258 *	It Corp.	$meCl_2$ (24.5 ug/kg / 30) #1 ~~Acetone (21 ug/kg / 50) #1~~
VOA	lab	low	sol	BLK * 259	It Corp.	$meCl_2$ (38 ug/kg / 30) #1 ~~Acetone (2.7 ug/kg / 50) #2~~
BNA	lab	low	sol	32882 B1	It Corp.	Bis(2-ethylhexyl)phthalate (13.2 ug/kg / 20)
Pest	lab	low	sol	0036-25	It Corp.	N.D
				223-35		N.D
				22336		N.D
				0034-18		N.D
				581-27		N.D
				582-16		N.D.

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN THE SAMPLE ANALYTICAL DATA SUMMARY. TENTATIVELY IDENTIFIED COMPOUNDS IN BLANKS ARE LISTED ON A SEPARATE FOR

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM QUANTITATION LIST, DIAGNOSTICS, CHROMATOGRAM AND/OR SPECTRA.

* Other contaminants also present but those reported in tbls. are tabulated.

No field blank!!

Case #/SAS #: 4248
Level: LOW
Matrix: Soil
QC Report #: 6855-129

Laboratory: IT/Cerritos
Quality Control Report
Surrogate Recovery (%)

Contract #: 68-01-6855

SMO TR # (Sample #)	Volatile			Semi-volatile						Pesticide
	T-d8 50-160	BFB 50-160	DCE-d4 50-160	N-d5 20-140	2-Fb 20-140	Tp-d14 20-150	P-d5 20-140	2-FP 20-140	TBrP 10-140	DiBuCl** 20-150
CA107	100	92	97	56	54	56	52	62	49	110
CA176	100	93	98	56	52	42	57	66	49	95
CA178	98	92	102	29	32	28	26	41	27	112
CA180	101	99	107	51	51	46	58	65	47	102
CA182	99	98	105	48	55	38	61	63	54	105
CA182MS	103	95	109	NA	→				→	NA
CA182MSD	102	101	112	NA	→				→	NA
CA184	102	101	107	120	61	44	63	59	10	98
CA184MS	NA	→	→	63	56	45	67	74	58	100
CA184MSD	NA	→	→	61	63	43	61	78	53	110
MB Blank 258 LS	100	100	100	47	45	45	47	50	36	50
MB Blank 259 LS	100	100	100	NA	→				→	78
MB 0036-25 LS	NA	→	→	NA	→				→	78
MB 233-35 LS	NA	→	→	NA	→				→	55
MB 233-36 LS	NA	→	→	NA	→				→	92
HB 0034-18 LS	NA	→	→	NA	→				→	NS
HB 581-27 LS	NA	→	→	NA	→				→	NS
HB 582-16 LS	NA	→	→	NA	→				→	NS
Recovery Summary	Ø/8	Ø/8	Ø/8	Ø/8	Ø/8	Ø/8	Ø/8	Ø/8	Ø/8	Ø/8

All acceptable
RV.

Comments:

* Values outside QC Limits.
** Advisory Limits Only.
NA - Not Analyzed
NS - Not Spiked
NR - Not Reported
-- Analyzed under another QC Report

Volatiles: Ø out of 30 outside QC Limits
Semi-volatiles: Ø out of 54 outside QC Limits
Pesticides: Ø out of 13 outside QC Limits

Recovery Summary = #'s Outside QC Limits / Total #'s Reported
(Does not include Method Blanks)

Rev 12/84

Case #/SAS #: 4249
Level: LOW
Matrix: Soil
QC Report #: 6855-129

Laboratory: IT/Cerritos
Quality Control Report
Matrix Spike(MS and MSD)
% Recovery and RPD Summary

Contract #: 68-01-6955
Sample #: CA182
Units: ug/Kg

Fraction	Compound	Sample Weight: Sample 1.0206 ug Spiked	Conc. Sample	MS 1.0066 Conc. MS	% Rec. MS	MSD 0.9966 Conc. MSD	% Rec. MSD	RPD	QC Limits * RPD	QC Limits * Recovery
VOA SMO Sample # CA182	1,1-Dichloroethene	.255	30u	250	99	250	99	Ø	22	59-172
	Trichloroethene			220	87	220	87	Ø	24	62-137
	Chlorobenzene			260	103	260	103	Ø	21	60-133
	Toluene			280	111	280	111	Ø	21	59-139
	Benzene			290	115	290	115	Ø	21	66-142
	Toluene-d8		248	258	103	254	101	2		50-160
	4-Bromofluorobenzene		245	238	95	252	100	-5		50-160
	1,2-Dichloroethane-d4		262	273	109	281	112	-3		50-160

* Asterisked Values are outside QC Limits.
\# _____ Recoveries due to Dilution.
$ _____ Recoveries due to Matrix Effects.

$$RPD = \frac{|MS - MSD|}{\left(\frac{MS + MSD}{2}\right)} \times 100$$

NA - Not Analyzed
NR - (Spiked but) Not Reported
NS - Not Spiked

RPD: VOA's Ø out of 8 outside QC Limits

Recovery: VOA's Ø out of 16 outside QC Limits

Comments: all very good -N.

Summary of Unspiked HSL's

Fraction	Compound	Conc. Sample	Conc. MS	Conc. MSD	RPD
VOA	Methylene Chloride	81	150	140	7

Note: This section lists compounds on the HSL which were found in the Sample, MS, and/or MSD. It does not include Tentatively Identified compounds which may have been found in the Sample.

Rev 12/84

ORIGINAL (Red)

Case #/SAS #: 9248
Level: LOW
Matrix: Soil
QC Report #: 6855-129

Laboratory: Inverri
Quality Control Repo
Matrix Spike(MS and MSD)
% Recovery and RPD Summary

Contract #: 60-01-6055
Sample #: CA194
Units: ug/Kg

Fraction	Compound	Sample Weight: Sample 49.546 ug Spiked	Conc. Sample	MS 49.546 Conc. MS	% Rec. MS	MSD 49.546 Conc. MSD	% Rec. MSD	RPD	QC Limits * RPD	QC Limits * Recovery
B/N SMO Sample # CA194	1,2,4-Trichlorobenzene	101	200u	1500	74	1400	69	7	23	38-107
	Acenaphthene	107	200u	1100	51	1200	56	-9	19	31-137
	2,4-Dinitrotoluene	101	200u	1200	54	1300	64	-8	47	28- 89
	Di-n-butylphthalate	102	200u	2300	112	1900	93	19	47	29-135
	Pyrene	103	83J	1300	59	1600	73	21	36	35-142
	N-Nitroso-di-n-propylamine	101	200u	1200	59	1300	64	-8	38	41-126
	1,4-Dichlorobenzene	100	200u	1600	79	1600	79	0	27	28-104
	Nitrobenzene-d5	53.0	1270	664	62	648	61	2		20-140
	2-Fluorobiphenyl	51.5	627	575	55	644	62	-11		20-140
	p-Terphenyl-d14	51.6	451	463	45	443	43	4		20-150
Acid SMO Sample # CA194	Pentachlorophenol	208	1000u	2800	67	2700	64	4	47	17-109
	Phenol	207	200u	2900	72	2900	72	0	35	26- 90
	2-Chlorophenol	202	200u	3100	73	3000	71	3	50	25-102
	4-Chloro-3-methylphenol	211	200u	3000	72	3100	74	-3	33	26-103
	4-Nitrophenol	213	1000u	5900	138*	7900	185*	-29	50	11-114
	Phenol-d5	101	1350	1350	66	1240	61	8		20-140
	2-Fluorophenol	110	1610	1610	73	1700	77	-5		20-140
	2,4,6-Tribromophenol	102	1180	1180	57	1090	53	8		10-140

→ No effect

* Asterisked Values are outside QC Limits.
\# _____ Recoveries due to Dilution.
$ _____ Recoveries due to Matrix Effects.

$$RPD = \frac{|MS - MSD|}{\left(\frac{MS + MSD}{2}\right)} \times 100$$

NA - Not Analyzed
NR - (Spiked but) Not Reported
NS - Not Spiked

RPD: B/N's Ø out of 10 outside QC Limits
Acids Ø out of 8 outside QC Limits

Recovery: B/N's Ø out of 20 outside QC Limits
Acids 2 out of 16 outside QC Limits

Comments: OK - DV.

Rev 12/84

ORIGINAL

Case/SAS: 4-48
Level: Low
Matrix: Soil
QC Report #: 6855-129

Laboratory T/C Pitos
Quality Control Report
Matrix Spike(MS and MSD)
% Recovery and RPD Summary

Contract: 68-01-[illegible]
Sample #: CA134
Units: ug/Kg

Fraction	Compound	Sample Weight: Sample 50.01 ug Spiked	Conc. Sample	MS 50.01 Conc. MS	% Rec. MS	MSD 50.01 Conc. MSD	% Rec. MSD	RPD	QC Limits * RPD	QC Limits * Recovery
Pest.	Lindane (gamma-BHC)	0.200	2.0U	4.2	105	4.4	110	4.7	50	46-127
SMO	Heptachlor	0.205	2.0U	3.8	93	4.1	100	7.6	31	35-130
Sample #	Aldrin	0.204	2.0U	3.9	95	4.1	100	5.0	43	34-132
	Dieldrin	0.509	4.0U	10	100	11	110	9.5	38	31-134
CA134	Endrin	0.523	4.0U	10	100	11	110	9.5	45	42-139
	4,4'-DDT	0.504	4.0U	14	140*	15	150*	6.9	50	23-134
	Dibutyl chlorendate **	2.0	39	40	100	44	110	9.5		20-150

No effect

* Asterisked Values are outside QC Limits.
** Advisory Limits.
\# _____ Recoveries due to Dilution.
$ _____ Recoveries due to Matrix Effects.

$$RPD = \frac{|MS - MSD|}{\left(\frac{MS + MSD}{2}\right)} \times 100$$

NA - Not Analyzed
NR - (Spiked but) Not Reported
NS - Not Spiked

RPD: Pests 0 out of 7 outside QC Limits

Recovery: Pests 2 out of 14 outside QC Limits

Comments: OK - AV.

Summary of Unspiked HSL's

Fraction	Compound	Conc. Sample	Conc. MS	Conc. MSD	RPD
Pest.	None found	2.0U	2.0U	2.0U	0

Note: This section lists compounds on the HSL which were found in the Sample, MS, and/or MSD. It does not include Tentatively Identified compounds which may have been found in the Sample.

Rev 12/84

ORIGINAL

EVALUATION OF CONFIRMATIONS OF GC ANALYSES

SAMPLE NO.	COMPOUND	GC COLUMN # 1				GC COLUMN # 2				COMMENTS	TYPE OF CONFIRMATION (2 COL / GC/MS)	REVIEWER CONFIDENT
		COLUMN: SP2250/ CONDITIONS: 2401 DETECTOR: OTHER: DATA FROM COLUMN # 1: ☐ RET. OR ☐ REL. RET. TIMES IN:		RELATIVE PEAK AREA RATIOS		COLUMN: CONDITIONS: 3% OV-1 DETECTOR: OTHER: DATA FROM COLUMN # 2: ☐ RET. OR ☐ REL. RET. TIMES IN:		RELATIVE PEAK AREA RATIOS				
		Sample	Standard	Sample	Standard	Sample	Standard	Sample	Standard			
CA107	Chlordane	2.809	2.801	9.2	64	1.495	1.477	4	3	Very good Match to technical Chlordane	2C yes	yes
		3.077	3.082	1.2	75	1.873	1.870	64	5			
		4.410	4.397	8.8	57	2.822	2.830	7	34			
		4.897	4.866	7	14	3.237	3.194	9	43			
		5.862	5.838	39	38	3.834	3.803	8	35			
		6.536	6.511	184	254	4.504	4.524	52	37			
		7.179	7.155	188	213	5.671	5.652	75	125	quant verified		
						6.309	6.292	32	89			
						6.654	6.654	11	63			
CA180	Chlordane	2.819	2.801	10	64	1.487	1.477	9	3	Excellent Match		
		3.091	3.082	17	75	1.872	1.870	233	5			
		4.426	4.397	500	57	2.820	2.830	33	34			
		4.727	4.866	85	14	3.236	3.194	47	43	quant verified	2C	yes
		5.884	5.838	416	38	INT	3.803		35			
		6.554	6.511	246	254	4.562	4.524	91	37			
		7.191	7.155	300	213	5.668	5.652	422	125			
						6.283	6.292	170	89			
						6.682	6.654	56	63			

COMMENTS: INT - interfere with

Single peak pesticides not confirmed by GC/MS are suspect therefore are not evaluated.

ORIGINAL

TENTATIVELY IDENTIFIED COMPOUND SAMPLE RESULTS

ALL TENTATIVE IDENTIFICATIONS OF CONFIDENT MATCHING QUALITY, WHICH AREN'T SUSPECTED ARTIFACTS/CONTAMINANTS, ARE LISTED BELOW:

$-such as

SAMPLE #	FRACTION	SCAN #(S)	SPECTRUM MATCH INDICES TYPE	SCORE	TYPE	SCORE	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS
CA107	VOA						N.D		
	BNA	488					500 ug/kg	Unknown.	
		1261					200 ug/kg	Unknown.	
		1345					100 ug/kg	Unknown.	
		1513					200 ug/kg	Unknown.	
		1542	F-T	840			80 ug/kg	Hydrocarbon $ 2,4,6-trimethyl octane.	
		1766	F-T	920			200 ug/kg	Hydrocarbon >C_{12}	
		1100-2100					10,000 ug/kg	Total hydrocarbon.	
CA176	VOA						N.D.		
	BNA.	466	F.T	851			300 ug/kg	5,5-dimethyl 2(5H)-Furanone.	
		481					100 ug/kg	Unknown	
		1281					100 ug/kg	Unknown.	
		1601					80 ug/kg	Alkane.	
		1265	F-T	930			200 ug/kg	Alcohol $ 1,10-decanediol.	
		1776					100 ug/kg	Hydrocarbon.	
		1786					100 ug/kg	Hydrocarbon.	
		1925					100 ug/kg	Hydrocarbon.	
CA178	VOA						N.D		
	BNA	487	F-T	965			100 ug/kg	5,5-dimethyl-2(5H) Furanone.	
		1263					10 ug/kg	Alcohol $ (E)-6-Nonen-1-ol.	
		1754					100 ug/kg	Unknown.	
		1785					200 ug/kg	Unknown	
		1807					200 ug/kg	Unknown.	
		1924					100 ug/kg	Unknown.	
		1976					90 ug/kg	Unknown.	
CA180	VOA						N.D		
	BNA	463					100 ug/kg	5,5-dimethyl 2(5H)-Furanone	
		479					400 ug/kg	Unknown.	
		1304	F-T	849			200 ug/kg	2,4,6-trimethyl octane.	
		1308					300 ug/kg	Unknown PAH.	
		1320	F-T	859			200 ug/kg	4H-Cyclopenta[DEF]phenanthre	
		1327	F-T	946			200 ug/kg	2-methylphenanthrene or isom	
		1345					300 ug/kg	Unknown.	
		1356	F-T	930			300 ug/kg	9,10-anthracenedione or isom	
		1650	F-T	967			200 ug/kg	Carboxylic Acid	
		1932					200 ug/kg	Unknown.	
		1966					300 ug/kg	Unknown.	
		1000-2500					20,000 ug/kg	Total Hydrocarbon.	
CA182	VOA						N.D		
	BNA	422					200 ug/kg	Unknown.	
		442					200 ug/kg	Unknown	
		470	F-T	849			200 ug/kg	5,5-dimethyl-2(5H)-Furanone	
		530					300 ug/kg	Unknown.	
		1034	F-T	950			200 ug/kg	3A,3B,4,5,6,7-Hexahydro-3,7-1	
								-Cyclopenta[1,3]cyclopropa	
								benzene - very good match	

TENTATIVELY IDENTIFIED COMPOUND SAMPLE RESULTS

ORIGINAL (Red)

ALL TENTATIVE IDENTIFICATIONS OF CONFIDENT MATCHING QUALITY, WHICH AREN'T SUSPECTED ARTIFACTS/CONTAMINANTS, ARE LISTED BELOW:

SAMPLE #	FRACTION	SCAN #(S)	SPECTRUM MATCH INDICES TYPE	SCORE	TYPE	SCORE	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS
CA182	BNA	1040					200 ug/kg	Unknown	
(cont)		1052	Fit	781			100 ug/kg	1,2,4A,5,6,8A-Hexahydro-4,7-dimethyl-1-(1-methylethyl)-naphthalene - very good match.	
		1256					200 ug/kg	Unknown.	
		1264					400 ug/kg	Unknown.	
		1293					200 ug/kg	Unknown.	
		1333					300 ug/kg	Alcohol.	
		1339					200 ug/kg	Cyclohexane derivative.	
		1348	Fit	961			900 ug/kg	Hexadecanoic Acid.	
		1377					400 ug/kg	Unknown.	
		1456	Fit	967			400 ug/kg	1,4-dimethyl cyclooctane.	
		1465					200 ug/kg	Unknown	
		1616					600 ug/kg	Unknown Contains Sulfur & nitrogen	
		1748	Fit	968			400 ug/kg	A $C_{13}H_{28}$ hydrocarbon.	
		1795	Fit				200 ug/kg	Unknown.	
		1842	Fit	979			3,500 ug/kg	Hydrocarbon > C_{28}	
CA184	VOA						N.D.		
	BNA	466	Fit	852			200 ug/kg	5,5,dimethyl-2(5H) Furanone.	
		529					300 ug/kg	Unknown.	
		601	Fit	915			90 ug/kg	Alcohol.	
		1212					90 ug/kg	Unknown	
		1254	Fit	848			100 ug/kg	Pentadecanoic Acid	
		1263	Fit	914			200 ug/kg	Alcohol.	
		1291	Fit	890			900 ug/kg	Alcohol.	
		1331	Fit	957			200 ug/kg	Alcohol & nonanol.	
		1345	Fit	936			300 ug/kg	Hexadecanoic Acid.	
		1560	Fit	948			90 ug/kg	Alcohol & 10-undecen-1-ol.	
		1616					200 ug/kg	Unknown contain "O" & "N"	
		1747					90 ug/kg	Unknown.	
		1759	Fit	884			200 ug/kg	Ketone & 3-octen-2-one	
		1930					200 ug/kg	Unknown	
		1954	Fit	852			400 ug/kg	Cholesterol - (3.beta.)	

ORIGINAL (Red)

GC/MS TUNING AND MASS CALIBRATION
BROMOFLUOROBENZENE

CASE NUMBER: 4248 LABORATORY: IT/CERR CONTRACT: 68-01-6855
INST ID: OWA3 SENS DATE: 05/06/85 SENS TIME: 13:08:00
LAB ID: BFH232 CALI DATE: 05/06/85 ANALYST: KW #222
DATA RELEASE AUTHORIZED BY: C.L. Suhl

M/E	ION ABUNDANCE CRITERIA	SPEC # 92	
50	15 TO 40% OF MASS 95	33.89	
75	30 TO 60% OF MASS 95	53.84	
95	BASE PEAK, 100% RELATIVE ABUNDANCE	100.00	
96	5 TO 9% OF MASS 95	7.24	
173	LESS THAN 1% OF MASS 95	0.00	
174	GREATER THAN 50% OF MASS 95	71.79	
175	5 TO 9% OF MASS 174	6.14	(8.55) 1
176	BETWEEN 95% AND 101% OF MASS 174	71.12	(99.06) 1
177	5 TO 9% OF MASS 176	4.42	(6.22) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 174
2 - VALUE IN PARENTHESIS IS % OF MASS 176

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS.

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
50 UG/L VOA STD	VOH281	05/06/85	15:37:00	OWA3
20 UG/L VOA STD	VOH282	05/06/85	16:33:00	OWA3
150 UG/L VOA STD	VOH284	05/06/85	17:56:00	OWA3
100UG/L VOA STD	VOH285	05/06/85	18:39:00	OWA3
200UG/L VOA STD	VOH286	05/06/85	19:24:00	OWA3

Tune OK - QV.

ORIGINAL

GC/MS TUNING AND MASS CALIBRATION
BROMOFLUOROBENZENE

CASE NUMBER: 4248 LABORATORY: IT/CERR CONTRACT: 68-01-6855
INST ID: OWA3 SENS DATE: 05/06/85 SENS TIME: 21:00:00
LAB ID: BFH233 CALI DATE: 05/06/85 ANALYST: CL #222
DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA	SPEC # 55
50	15 TO 40% OF MASS 95	~~22.01~~ 38.0
75	30 TO 60% OF MASS 95	~~39.53~~ 60.0
95	BASE PEAK, 100% RELATIVE ABUNDANCE	~~100.00~~ 100
96	5 TO 9% OF MASS 95	6.63
173	LESS THAN 1% OF MASS 95	0.00
174	GREATER THAN 50% OF MASS 95	~~71.75~~ 72.0
175	5 TO 9% OF MASS 174	5.29 (7.35) 1
176	BETWEEN 95% AND 101% OF MASS 174	70.5 ~~70.51~~ (98.00) 1
177	5 TO 9% OF MASS 176	4.38 (6.22) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 174
2 - VALUE IN PARENTHESIS IS % OF MASS 176

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS.

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
50 UG/L VOA STD	VOH287	05/06/85	21:10:00	OWA3
LAB BLANK	BLANK258	05/06/85	22:20:00	OWA3
CA107	32882H1	05/06/85	23:36:00	OWA3
CA176	32882H2	05/07/85	0:14:00	OWA3
CA178	32882H3	05/07/85	0:51:00	OWA3

Tune OK - RV.

GC/MS TUNING AND MASS CALIBRATION
BROMOFLUOROBENZENE

ORIGINAL

CASE NUMBER:	424S	LABORATORY:	IT/CERR	CONTRACT:	68-01-6855
INST ID:	OWA3	SENS DATE:	05/07/85	SENS TIME:	6:59:00
LAB ID:	BFH234	CALI DATE:	05/06/85	ANALYST:	KW #222

DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA	SPEC # 123		
50	15 TO 40% OF MASS 95	38.3 ~~38.34~~		
75	30 TO 60% OF MASS 95	59.9 ~~59.87~~		
95	BASE PEAK, 100% RELATIVE ABUNDANCE	100 ~~100.00~~		
96	5 TO 9% OF MASS 95	6.54		
173	LESS THAN 1% OF MASS 95	0.00		
174	GREATER THAN 50% OF MASS 95	73.5 ~~73.50~~		
175	5 TO 9% OF MASS 174	5.33	(7.26)	1
176	BETWEEN 95% AND 101% OF MASS 174	71.0 ~~70.75~~	(96.53)	1
177	5 TO 9% OF MASS 176	4.54	(6.40)	2

1 - VALUE IN PARENTHESIS IS % OF MASS 174
2 - VALUE IN PARENTHESIS IS % OF MASS 176

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS.

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
50 UG/L VOA STD	VOH289	05/07/85	8:25:00	OWA3
LAB BLANK	BLANK259	05/07/85	9:31:00	OWA3
CA180	32882H4	05/07/85	10:13:00	OWA3
CA182	32882H5	05/07/85	10:51:00	OWA3
CA184	32882H6	05/07/85	11:26:00	OWA3
CA182MS	32882H7	05/07/85	12:06:00	OWA3
CA182MSD	32882H8	05/07/85	12:42:00	OWA3

Tune OK -PV.

GC/MS TUNING AND MASS CALIBRATION
DECAFLUOROTRIPHENYLPHOSPHINE

CASE NUMBER: 4248 LABORATORY: IT/CERR CONTRACT: 68-01-6855
INST ID: 4500 SENS DATE: 06/05/85 SENS TIME: 7:27:00
LAB ID: FSS208 CALI DATE: 06/05/85 ANALYST: JC #40
DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA	SPEC # 341	
51	30 TO 60% OF MASS 198	42.39	
68	LESS THAN 2% OF MASS 69	0.00	(0.00) 1
69	MASS 69 RELATIVE ABUNDANCE	22.57	
70	LESS THAN 2% OF MASS 69	0.00	(0.00) 1
127	40 TO 60% OF MASS 198	47.61	
197	LESS THAN 1% OF MASS 198	0.00	
198	BASE PEAK, 100% RELATIVE ABUNDANCE	100.00	
199	5 TO 9% OF MASS 198	6.74	
275	10 TO 30% OF MASS 198	23.06	
365	GREATER THAN 1% OF MASS 198	2.03	
441	LESS THAN MASS 443	6.81	
442	GREATER THAN 40% OF MASS 198	53.36	
443	17 TO 23% OF MASS 442	9.66	(18.11) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 69
2 - VALUE IN PARENTHESIS IS % OF MASS 442

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS.

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
50 UG/ML STD	BNA298	06/05/85	11:05:00	4500
20 UG/ML STD	BNA299	06/05/85	12:03:00	4500
160 UG/ML STD	BNA300	06/05/85	12:47:00	4500
120 UG/ML STD	BNA301	06/05/85	13:30:00	4500
80 UG/ML STD	BNA302	06/05/85	14:17:00	4500

Tune OK - PV.

GC/MS TUNING AND MASS CALIBRATION
DECAFLUOROTRIPHENYLPHOSPHINE

CASE NUMBER: 4248 LABORATORY: IT/CERR CONTRACT: 68-01-6855
INST ID: 4500 SENS DATE: 06/06/85 SENS TIME: 7:00:00
LAB ID: FSS210 CALI DATE: 06/05/85 ANALYST: JC #40
DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA	SPEC # 336
51	30 TO 60% OF MASS 198	38.2 ~~38.24~~ RD
68	LESS THAN 2% OF MASS 69	0.00 (0.00) 1
69	MASS 69 RELATIVE ABUNDANCE	20.8 ~~20.34~~ RD
70	LESS THAN 2% OF MASS 69	0.00 (0.00) 1
127	40 TO 60% OF MASS 198	44.3 ~~44.30~~ RD
197	LESS THAN 1% OF MASS 198	0.00
198	BASE PEAK, 100% RELATIVE ABUNDANCE	100 ~~100.00~~ RD
199	5 TO 9% OF MASS 198	6.80
275	10 TO 30% OF MASS 198	24.0 ~~23.98~~ RD
365	GREATER THAN 1% OF MASS 198	1.81
441	LESS THAN MASS 443	8.08
442	GREATER THAN 40% OF MASS 198	64.0 ~~64.03~~ RD
443	17 TO 23% OF MASS 442	12.1 ~~12.06~~ RD (18.84) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 69
2 - VALUE IN PARENTHESIS IS % OF MASS 442

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS.

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
50 UG/ML	BNA304	06/06/85	7:17:00	4500
CA107	32882B3	06/06/85	8:09:00	4500
CA178	32882B4	06/06/85	9:03:00	4500
CA176	32882B5	06/06/85	9:47:00	4500
CA180	32882B6	06/06/85	10:31:00	4500
CA184 MS	32882B7	06/06/85	11:17:00	4500
CA184 MSD	32882B8	06/06/85	12:02:00	4500
CA184	32882B9	06/06/85	12:52:00	4500
CA182	32882B10	06/06/85	13:35:00	4500

Tune OK - RV.

ORIGINAL (Red)

GC/MS TUNING AND MASS CALIBRATION
DECAFLUOROTRIPHENYLPHOSPHINE

CASE NUMBER: 4248 LABORATORY: IT/CERR CONTRACT: 68-01-6855
INST ID: 4500 SENS DATE: 06/05/85 SENS TIME: 15:54:00
LAB ID: FSS209 CALI DATE: 06/05/85 ANALYST: SN #40
DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA		SPEC # 330	
51	30 TO 60% OF MASS 198	39.6	~~39.60~~ BD	
68	LESS THAN 2% OF MASS 69		0.00	(0.00) 1
69	MASS 69 RELATIVE ABUNDANCE	21.7	~~21.72~~ BD	
70	LESS THAN 2% OF MASS 69		0.10	(0.49) 1
127	40 TO 60% OF MASS 198	43.9	~~43.93~~ BD	
197	LESS THAN 1% OF MASS 198		0.00	
198	BASE PEAK, 100% RELATIVE ABUNDANCE	100	~~100.00~~ BD	
199	5 TO 9% OF MASS 198		6.82	
275	10 TO 30% OF MASS 198	23.3	~~23.34~~ BD	
365	GREATER THAN 1% OF MASS 198		1.75	
441	LESS THAN MASS 443		7.12	
442	GREATER THAN 40% OF MASS 198	55.5	~~55.47~~ BD	
443	17 TO 23% OF MASS 442		10.09	(18.19) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 69
2 - VALUE IN PARENTHESIS IS % OF MASS 442

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS.

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
50 UG/ML STD	BNA303	06/05/85	16:16:00	4500
MB0501B1	32882B1	06/05/85	23:58:00	4500

Tune OK-DV.

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INITIAL CALIBRATION DATA - VOLATILE HSL COMPOUNDS

CASE NO: 4248
LABORATORY: IT/CERR
CONTRACT NO: 68-01-6855

INSTRUMENT ID: OWA3
CALIBRATION DATE: 05/06/85

LABORATORY ID:	VOH282	VOH281	VOH285	VOH284	VOH286		
COMPOUND	RF20	RF50	RF100	RF150	RF200	AVE RRF	%RSD
CHLOROMETHANE	2.660	1.920	1.676	1.401	0.960	1.723	37
BROMOMETHANE	2.567	2.399	2.428	2.424	2.141	2.392	6
VINYL CHLORIDE	2.577	2.558	2.634	2.826	2.596	2.638	4
CHLOROETHANE	1.755	1.632	1.707	1.782	1.633	1.702	4
METHYLENE CHLORIDE	3.160	2.824	2.562	2.677	2.556	2.756	9
ACETONE	0.452	0.388	0.303	0.346	0.314	0.361	17
CARBON DISULFIDE	5.600	6.163	6.266	6.900	6.806	6.347	8
1,1-DICHLOROETHYLENE	1.427	1.605	1.608	1.818	1.728	1.637	9
1,1-DICHLOROETHANE	4.525	4.293	4.853	4.926	5.362	4.792	9
TRANS-1,2-DICHLOROETHYLENE	4.167	4.215	4.497	4.805	4.833	4.503	7
CHLOROFORM	4.660	4.921	5.075	5.473	5.519	5.129	7
1,2-DICHLOROETHANE	5.232	5.676	5.686	6.249	6.323	5.833	8
2-BUTANONE	0.725	0.670	0.516	0.544	0.546	0.600	15
1,1,1-TRICHLOROETHANE	0.520	0.593	0.540	0.611	0.621	0.577	8
CARBON TETRACHLORIDE	0.410	0.520	0.493	0.554	0.565	0.508	12
VINYL ACETATE	1.247	1.368	1.475	1.726	1.798	1.523	15
BROMODICHLOROMETHANE	0.647	0.717	0.707	0.776	0.785	0.726	8
1,2-DICHLOROPROPANE	0.520	0.542	0.555	0.578	0.579	0.555	4
TRANS-1,3-DICHLOROPROPENE	0.470	0.539	0.559	0.594	0.605	0.553	10
TRICHLOROETHYLENE	0.365	0.406	0.391	0.424	0.400	0.397	5
DIBROMOCHLOROMETHANE	0.305	0.367	0.373	0.423	0.418	0.377	13
1,1,2-TRICHLOROETHANE	0.332	0.352	0.323	0.330	0.331	0.334	3
BENZENE	1.062	1.102	1.067	1.121	1.141	1.098	3
CIS-1,3-DICHLOROPROPENE	0.450	0.522	0.539	0.584	0.610	0.541	11
2-CHLOROETHYL VINYL ETHER	0.282	0.327	0.341	0.383	0.389	0.344	13
BROMOFORM	0.282	0.357	0.399	0.443	0.453	0.387	18
2-HEXANONE	0.750	1.216	1.122	1.274	1.365	1.145	21
4-METHYL-2-PENTANONE	1.182	1.323	1.263	1.444	1.529	1.348	10
TETRACHLOROETHYLENE	0.450	0.496	0.474	0.491	0.477	0.477	4
1,1,2,2-TETRACHLOROETHANE	0.435	0.498	0.513	0.580	0.589	0.523	12
TOLUENE	1.502	1.659	1.575	1.690	1.677	1.620	5
CHLOROBENZENE	1.090	1.204	1.156	1.235	1.241	1.185	5
ETHYLBENZENE	0.532	0.596	0.576	0.611	0.619	0.587	6
STYRENE	0.972	0.655	1.056	1.139	1.096	0.984	20
TOTAL XYLENES	1.607	1.795	1.599	1.859	1.916	1.755	8

RF - RELATIVE RESPONSE FACTOR
AVE RRF - AVERAGE RELATIVE RESPONSE FACTOR
%RSD - PERCENT RELATIVE STANDARD DEVIATION
* - CCC - CALIBRATION CHECK COMPOUNDS
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
MINIMUM AVE RRF FOR SPCC IS 0.300
MAXIMUM %RSD FOR CCC IS 30%

qcl OK.

LOQ - Effects Limit of Quantation Not detection limit.

CONTINUING CALIBRATION CHECK - VOLATILE HSL COMPOUNDS

CASE NO: 4248
LABORATORY ID: IT/CERR
CONTRACT NO: 68-01-6855
INSTRUMENT ID: OWA3
SENSITIVITY ID: BFH233

STANDARD DATE: 05/06/85
TIME: 21:10:00
STANDARD ID: VOH287
CALIBRATION DATE: 05/06/85

* MAXIMUM %D FOR CCC IS 25%
** MINIMUM AVE RRF FOR SPCC IS 0.300

COMPOUND	AVE RRF	RF50	%D	
CHLOROMETHANE	1.723	1.965	-13	**
BROMOMETHANE	2.392	2.506	-4	
VINYL CHLORIDE	2.638	2.482	6	*
CHLOROETHANE	1.702	1.738	-1	
METHYLENE CHLORIDE	2.756	2.918	-5	
ACETONE	0.361	0.320	11	
CARBON DISULFIDE	6.347	6.047	5	
1,1-DICHLOROETHYLENE	1.637	1.614	1	*
1,1-DICHLOROETHANE	4.792	4.715	2	**
TRANS-1,2-DICHLOROETHYLENE	4.503	4.353	3	
CHLOROFORM	5.129	5.088	1	*
1,2-DICHLOROETHANE	5.833	5.689	3	
2-BUTANONE	0.600	0.651	-7	
1,1,1-TRICHLOROETHANE	0.577	0.606	-4	
CARBON TETRACHLORIDE	0.508	0.520	-1	
VINYL ACETATE	1.523	1.470	4	
BROMODICHLOROMETHANE	0.726	0.745	-2	
1,2-DICHLOROPROPANE	0.555	0.583	-4	*
TRANS-1,3-DICHLOROPROPENE	0.553	0.575	-3	
TRICHLOROETHYLENE	0.397	0.419	-4	
DIBROMOCHLOROMETHANE	0.377	0.378	0	
1,1,2-TRICHLOROETHANE	0.334	0.354	-5	
BENZENE	1.098	1.128	-2	
CIS-1,3-DICHLOROPROPENE	0.541	0.529	2	
2-CHLOROETHYL VINYL ETHER	0.344	0.348	0	
BROMOFORM	0.387	0.374	3	**
2-HEXANONE	1.145	0.970	15	
4-METHYL-2-PENTANONE	1.348	1.274	6	
TETRACHLOROETHYLENE	0.477	0.491	-2	
1,1,2,2-TETRACHLOROETHANE	0.523	0.512	2	**
TOLUENE	1.620	1.625	0	*
CHLOROBENZENE	1.185	1.187	0	**
ETHYLBENZENE	0.587	0.579	1	*
STYRENE	0.984	1.000	-1	
TOTAL XYLENES	1.755	1.581	10	

AVERAGE %D FOR CCC IS: 0.8

All very good.

AVE RRF - AVERAGE RESPONSE FACTOR FROM INITIAL CALIBRATION
RF - RESPONSE FACTOR FROM DAILY CALIBRATION
%D - PERCENT DIFFERENCE
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
* - CCC - CALIBRATION CHECK COMPOUNDS

CONTINUING CALIBRATION CHECK - VOLATILE HSL COMPOUNDS

CASE NO: 4248
LABORATORY ID: IT/CERR
CONTRACT NO: 68-01-6855
INSTRUMENT ID: OWA3
SENSITIVITY ID: BFH234

STANDARD DATE: 05/07/85
TIME: 8:25:00
STANDARD ID: VOH289
CALIBRATION DATE: 05/06/85

* MAXIMUM %D FOR CCC IS 25%
** MINIMUM AVE RRF FOR SPCC IS 0.300

COMPOUND	AVE RRF	RF50	%D	
CHLOROMETHANE	1.723	1.423	17	**
BROMOMETHANE	2.392	2.163	10	
VINYL CHLORIDE	2.638	2.084	21	*
CHLOROETHANE	1.702	1.562	8	
METHYLENE CHLORIDE	2.756	2.606	5	
ACETONE	0.361	0.378	-4	
CARBON DISULFIDE	6.347	5.382	15	
1,1-DICHLOROETHYLENE	1.637	1.536	6	*
1,1-DICHLOROETHANE	4.792	4.502	6	**
TRANS-1,2-DICHLOROETHYLENE	4.503	4.158	8	
CHLOROFORM	5.129	4.980	3	*
1,2-DICHLOROETHANE	5.833	5.480	6	
2-BUTANONE	0.600	0.684	-13	
1,1,1-TRICHLOROETHANE	0.577	0.548	5	
CARBON TETRACHLORIDE	0.508	0.479	6	
VINYL ACETATE	1.523	1.511	1	
BROMODICHLOROMETHANE	0.726	0.709	2	
1,2-DICHLOROPROPANE	0.555	0.566	-1	*
TRANS-1,3-DICHLOROPROPENE	0.553	0.539	3	
TRICHLOROETHYLENE	0.397	0.413	-3	
DIBROMOCHLOROMETHANE	0.377	0.380	0	
1,1,2-TRICHLOROETHANE	0.334	0.357	-6	
BENZENE	1.098	1.104	0	
CIS-1,3-DICHLOROPROPENE	0.541	0.509	6	
2-CHLOROETHYL VINYL ETHER	0.344	0.364	-5	
BROMOFORM	0.387	0.398	-2	**
2-HEXANONE	1.145	1.153	0	
4-METHYL-2-PENTANONE	1.348	1.474	-8	
TETRACHLOROETHYLENE	0.477	0.490	-2	
1,1,2,2-TETRACHLOROETHANE	0.523	0.556	-5	**
TOLUENE	1.620	1.616	0	*
CHLOROBENZENE	1.185	1.168	1	**
ETHYLBENZENE	0.587	0.585	0	*
STYRENE	0.984	1.032	-4	
TOTAL XYLENES	1.755	1.591	9	

AVERAGE %D FOR CCC IS: 4.8

all very good.

AVE RRF - AVERAGE RESPONSE FACTOR FROM INITIAL CALIBRATION
RF - RESPONSE FACTOR FROM DAILY CALIBRATION
%D - PERCENT DIFFERENCE
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
* - CCC - CALIBRATION CHECK COMPOUNDS

INITIAL CALIBRATION DATA - SEMIVOLATILE HSL COMPOUNDS

ORIGINAL

CASE NO: 4248
LABORATORY: IT/CERR
CONTRACT NO: 68-01-6855

INSTRUMENT ID: 4500
CALIBRATION DATE: 06/05/85

LABORATORY ID:	BNA299	BNA298	BNA302	BNA301	BNA300		
COMPOUND	RF20	RF50	RF 80	RF120	RF160	AVE RRF	%RSD
N-NITROSO-DIMETHYLAMINE	0.877	0.905	0.910	1.113	1.064	0.974	11
PHENOL	2.235	2.227	2.326	2.287	2.129	2.241	3 *
ANILINE	0.140	0.357	0.716	0.520	1.955	0.737	97-
BIS (2-CHLOROETHYL) ETHER	2.072	2.436	2.644	2.239	2.932	2.465	14
2-CHLOROPHENOL	1.565	1.475	1.443	1.425	1.381	1.458	5
1,3-DICHLOROBENZENE	1.760	1.627	1.571	1.594	1.536	1.618	5
1,4-DICHLOROBENZENE	1.937	1.657	1.640	1.649	1.557	1.688	9 *
BENZYL ALCOHOL	1.072	1.565	1.244	1.645	1.364	1.378	17
1,2-DICHLOROBENZENE	1.745	1.632	1.551	1.467	1.430	1.565	8
2-METHYLPHENOL	3.630	3.563	3.674	3.165	3.165	3.439	7
BIS (2-CHLOROISOPROPYL) ETHER	0.562	0.528	0.535	0.560	0.546	0.546	3
4-METHYLPHENOL	2.060	1.649	1.980	2.060	2.233	1.996	11
N-NITROSO-DI-N-PROPYLAMINE	1.400	1.266	1.554	1.583	1.446	1.450	9 *
HEXACHLOROETHANE	0.620	0.560	0.550	0.595	0.570	0.579	5
NITROBENZENE	0.127	0.124	0.126	0.123	0.127	0.126	2
ISOPHORONE	0.595	0.554	0.579	0.560	0.589	0.575	3
2-NITROPHENOL	0.117	0.119	0.131	0.130	0.130	0.126	6 *
2,4-DIMETHYLPHENOL	0.215	0.220	0.238	0.230	0.230	0.226	4
BENZOIC ACID	0.000	0.242	0.259	0.267	0.246	0.254	5
BIS (2-CHLOROETHOXY) METHANE	0.312	0.317	0.311	0.309	0.315	0.313	1
2,4-DICHLOROPHENOL	0.165	0.161	0.170	0.177	0.179	0.170	5
1,2,4-TRICHLOROBENZENE	0.232	0.214	0.210	0.199	0.200	0.211	6
NAPHTHALENE	0.645	0.595	0.538	0.474	0.461	0.542	14
4-CHLOROANILINE	0.117	0.086	0.135	0.151	0.094	0.116	23
HEXACHLOROBUTADIENE	0.102	0.097	0.087	0.075	0.076	0.087	14 *
4-CHLORO-3-METHYLPHENOL	0.217	0.203	0.208	0.185	0.176	0.198	9 *
2-METHYLNAPHTHALENE	0.542	0.496	0.432	0.347	0.358	0.435	19
HEXACHLOROCYCLOPENTADIENE	0.055	0.222	0.185	0.204	0.201	0.173	39 *
2,4,6-TRICHLOROPHENOL	0.420	0.404	0.390	0.462	0.457	0.427	7 *
2,4,5-TRICHLOROPHENOL	0.000	0.592	0.653	0.599	0.603	0.612	5
2-CHLORONAPHTHALENE	1.382	1.268	1.244	1.219	1.183	1.259	6
2-NITROANILINE	0.000	0.714	0.801	0.684	0.861	0.765	11
DIMETHYLPHTHALATE	1.565	1.343	1.216	1.286	1.310	1.344	10
ACENAPHTHALENE	1.350	0.739	0.649	1.292	1.275	1.061	32

RF - RELATIVE RESPONSE FACTOR
AVE RRF - AVERAGE RELATIVE RESPONSE FACTOR
%RSD - PERCENT RELATIVE STANDARD DEVIATION
* - CCC - CALIBRATION CHECK COMPOUNDS
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
MINIMUM AVE RRF FOR SPCC IS 0.05
MAXIMUM %RSD FOR CCC IS 30%
+ - NOT DETECTABLE AT 20NG

LOQ - see page 1

INITIAL CALIBRATION DATA - SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO: 4248
LABORATORY: IT/CERR
CONTRACT NO: 68-01-6855

INSTRUMENT ID: 4500
CALIBRATION DATE: 06/05/85

LABORATORY ID:	BNA299	BNA298	BNA302	BNA301	BNA300		
COMPOUND	RF20	RF50	RF 80	RF120	RF160	AVE RRF	%RSD
3-NITROANILINE	0.000	0.113	0.155	0.344	0.274	0.221	48
ACENAPHTHENE	1.350	1.200	1.156	1.009	1.046	1.152	12 *
2,4-DINITROPHENOL	0.000	0.085	0.155	0.175	0.175	0.147	29 **
4-NITROPHENOL	0.000	0.156	0.201	0.219	0.262	0.209	21 **
DIBENZOFURAN	2.242	1.801	1.745	1.683	1.609	1.816	14
2,4-DINITROTOLUENE	0.255	0.262	0.247	0.335	0.233	0.266	15
2,6-DINITROTOLUENE	0.335	0.276	0.284	0.288	0.298	0.296	8
DIETHYLPHTHALATE	0.367	0.306	0.308	0.288	0.270	0.308	12
4-CHLOROPHENYLPHENYL ETHER	0.750	0.634	0.643	0.585	0.556	0.633	12
FLUORENE	1.125	1.080	1.066	0.945	0.944	1.032	8
4-NITROANILINE	0.000	0.282	0.121	0.199	0.138	0.185	39
4,6-DINITRO-O-CRESOL	0.000	0.134	0.180	0.175	0.139	0.157	15
N-NITROSODIPHENYLAMINE	0.197	0.148	0.181	0.175	0.140	0.168	14 *
4-BROMOPHENOXYBENZENE	0.310	0.263	0.281	0.274	0.260	0.278	7
HEXACHLOROBENZENE	0.295	0.264	0.273	0.238	0.247	0.263	8 *
PENTACHLOROPHENOL	0.000	0.108	0.119	0.172	0.155	0.138	22
PHENANTHRENE	1.662	1.463	1.587	1.210	1.324	1.449	13
ANTHRACENE	1.157	1.071	0.931	0.717	0.893	0.954	18
DI-N-BUTYLPHTHALATE	0.165	0.141	0.145	0.145	0.143	0.148	7
FLUORANTHENE	1.450	1.286	1.384	1.092	1.171	1.276	12 *
BENZIDINE	0.000	0.011	0.005	0.007	0.068	0.023	132
PYRENE	1.650	1.483	1.369	1.540	1.270	1.462	10
BUTYLBENZYLPHTHALATE	0.647	0.580	0.636	0.700	0.676	0.648	7
3,3'-DICHLOROBENZIDINE	0.052	0.098	0.142	0.103	0.160	0.111	38
BENZO (A) ANTHRACENE	0.072	1.191	1.182	1.411	1.304	1.032	53
BIS (2-ETHYLHEXYL) PHTHALATE	0.560	0.622	0.501	0.506	0.500	0.538	10
CHRYSENE	1.160	1.001	0.940	1.010	0.910	1.004	10
DI-N-OCTYLPHTHALATE	0.177	0.172	0.235	0.193	0.251	0.206	17 *
BENZO (B & K) FLUORANTHENE	1.395	0.588	1.225	1.129	1.048	1.077	28
BENZO (A) PYRENE	1.190	0.943	1.118	0.983	0.935	1.034	11 *
INDENO-1,2,3 (C,D) PYRENE	1.615	1.181	1.440	1.300	1.248	1.357	13
DIBENZO (A,H) ANTHRACENE	1.215	0.933	1.058	0.883	0.866	0.991	15
BENZO (G,H,I) PERYLENE	0.972	0.707	0.847	0.807	0.809	0.828	12

RF - RELATIVE RESPONSE FACTOR
AVE RRF - AVERAGE RELATIVE RESPONSE FACTOR
%RSD - PERCENT RELATIVE STANDARD DEVIATION
* - CCC - CALIBRATION CHECK COMPOUNDS
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
MINIMUM AVE RRF FOR SPCC IS 0.05
MAXIMUM %RSD FOR CCC IS 30%
+ - NOT DETECTABLE AT 20NG

[1] D.L benzidine unreliable.

[2] Benzo(a)anthracene CA180 estima

CONTINUING CALIBRATION CHECK - SEMIVOLATILE HSL COMPOUNDS
(PAGE 1)

ORIGINAL

CASE NO: 4248
LABORATORY ID: IT/CERR
CONTRACT NO: 68-01-6855
INSTRUMENT ID: 4500
SENSITIVITY ID: FSS209

STANDARD DATE: 06/05/85
TIME: 16:16:00
STANDARD ID: BNA303
CALIBRATION DATE: 06/05/85

* MAXIMUM %D FOR CCC IS 25%
** MINIMUM AVE RRF FOR SPCC IS 0.05

COMPOUND	AVE RRF	RF50	%D	
N-NITROSO-DIMETHYLAMINE	0.974	0.884	9	
PHENOL	2.241	2.089	7	*
ANILINE	0.737	0.514	30	
BIS (2-CHLOROETHYL) ETHER	2.465	2.710	-9	
2-CHLOROPHENOL	1.458	1.557	-6	
1,3-DICHLOROBENZENE	1.618	1.647	-1	
1,4-DICHLOROBENZENE	1.688	1.659	2	*
BENZYL ALCOHOL	1.378	1.735	-25	
1,2-DICHLOROBENZENE	1.565	1.593	-1	
2-METHYLPHENOL	3.439	4.005	-15	
BIS (2-CHLOROISOPROPYL) ETHER	0.546	0.518	5	
4-METHYLPHENOL	1.996	1.726	14	
N-NITROSO-DI-N-PROPYLAMINE	1.450	1.247	14	**
HEXACHLOROETHANE	0.579	0.639	-9	
NITROBENZENE	0.126	0.125	1	
ISOPHORONE	0.575	0.559	3	
2-NITROPHENOL	0.126	0.139	-9	*
2,4-DIMETHYLPHENOL	0.226	0.248	-9	
BENZOIC ACID	0.254	0.258	-1	
BIS (2-CHLOROETHOXY) METHANE	0.313	0.326	-3	
2,4-DICHLOROPHENOL	0.170	0.198	-15	*
1,2,4-TRICHLOROBENZENE	0.211	0.218	-2	
NAPHTHALENE	0.542	0.571	-4	
4-CHLOROANILINE	0.116	0.244	-109	-LOQ
HEXACHLOROBUTADIENE	0.087	0.093	-6	*
4-CHLORO-3-METHYLPHENOL	0.198	0.218	-9	*
2-METHYLNAPHTHALENE	0.435	0.457	-4	
HEXACHLOROCYCLOPENTADIENE	0.173	0.226	-30	**
2,4,6-TRICHLOROPHENOL	0.427	0.408	4	*
2,4,5-TRICHLOROPHENOL	0.612	0.647	-5	
2-CHLORONAPHTHALENE	1.259	1.252	1	
2-NITROANILINE	0.765	0.806	-4	
DIMETHYLPHTHALATE	1.344	1.347	0	
ACENAPHTHALENE	1.061	1.101	-3	

AVE RRF - AVERAGE RESPONSE FACTOR FROM INITIAL CALIBRATION
RF - RESPONSE FACTOR FROM DAILY CALIBRATION
%D - PERCENT DIFFERENCE
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
* - CCC - CALIBRATION CHECK COMPOUNDS

OK.

CONTINUING CALIBRATION CHECK - SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO: 4248.
LABORATORY ID: IT/CERR
CONTRACT NO: 68-01-6855
INSTRUMENT ID: 4500
SENSITIVITY ID: FSS209

STANDARD DATE: 06/05/85
TIME: 16:16:00
STANDARD ID: BNA303
CALIBRATION DATE: 06/05/85

* MAXIMUM %D FOR CCC IS 25%
** MINIMUM AVE RRF FOR SPCC IS 0.05

COMPOUND	AVE RRF	RF50	%D	
3-NITROANILINE	0.221	0.288	-29	
ACENAPHTHENE	1.152	1.216	-5	*
2,4-DINITROPHENOL	0.147	0.081	45	** -LOQ
4-NITROPHENOL	0.209	0.149	29	**
DIBENZOFURAN	1.816	1.855	-1	
2,4-DINITROTOLUENE	0.266	0.275	-2	
2,6-DINITROTOLUENE	0.296	0.345	-15	
DIETHYLPHTHALATE	0.308	0.305	1	
4-CHLOROPHENYLPHENYL ETHER	0.633	0.639	0	
FLUORENE	1.032	1.097	-5	
4-NITROANILINE	0.185	0.479	-158	-LOQ
4,6-DINITRO-O-CRESOL	0.157	0.144	8	
N-NITROSODIPHENYLAMINE	0.168	0.197	-16	*
4-BROMOPHENOXYBENZENE	0.278	0.273	2	
HEXACHLOROBENZENE	0.263	0.282	-6	
PENTACHLOROPHENOL	0.138	0.114	17	*
PHENANTHRENE	1.449	1.588	-9	
ANTHRACENE	0.954	1.051	-9	
DI-N-BUTYLPHTHALATE	0.148	0.140	5	
FLUORANTHENE	1.276	1.364	-6	*
BENZIDINE	0.023	0.011	52	— D.L unreliable
PYRENE	1.462	1.394	5	
BUTYLBENZYLPHTHALATE	0.648	0.581	10	
3,3'-DICHLOROBENZIDINE	0.111	0.206	-84	-LOQ
BENZO (A) ANTHRACENE	1.032	1.223	-17	
BIS (2-ETHYLHEXYL) PHTHALATE	0.538	0.431	20	
CHRYSENE	1.004	1.000	0	
DI-N-OCTYLPHTHALATE	0.206	0.157	24	*
BENZO (B & K) FLUORANTHENE	1.077	1.066	1	
BENZO (A) PYRENE	1.034	0.983	5	*
INDENO-1,2,3 (C,D) PYRENE	1.357	1.175	13	
DIBENZO (A,H) ANTHRACENE	0.991	0.941	5	
BENZO (G,H,I) PERYLENE	0.828	0.741	11	

AVERAGE %D FOR CCC IS: -0.5

AVE RRF - AVERAGE RESPONSE FACTOR FROM INITIAL CALIBRATION
RF - RESPONSE FACTOR FROM DAILY CALIBRATION
%D - PERCENT DIFFERENCE
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
* - CCC - CALIBRATION CHECK COMPOUNDS

CONTINUING CALIBRATION CHECK - SEMIVOLATILE HSL COMPOUNDS
(PAGE 1)

CASE NO: 4248
LABORATORY ID: IT/CERR
CONTRACT NO: 68-01-6855
INSTRUMENT ID: 4500
SENSITIVITY ID: FSS210

STANDARD DATE: 06/06/85
TIME: 7:17:00
STANDARD ID: BNA304
CALIBRATION DATE: 06/05/85

* MAXIMUM %D FOR CCC IS 25%
** MINIMUM AVE RRF FOR SPCC IS 0.05

COMPOUND	AVE RRF	RF50	%D	
N-NITROSO-DIMETHYLAMINE	0.974	0.938	4	
PHENOL	2.241	2.214	1	*
ANILINE	0.737	0.703	5	
BIS (2-CHLOROETHYL) ETHER	2.465	2.968	-19	
2-CHLOROPHENOL	1.458	1.455	0	
1,3-DICHLOROBENZENE	1.618	1.652	-1	
1,4-DICHLOROBENZENE	1.688	1.708	0	*
BENZYL ALCOHOL	1.378	1.149	17	
1,2-DICHLOROBENZENE	1.565	1.670	-6	
2-METHYLPHENOL	3.439	3.590	-3	
BIS (2-CHLOROISOPROPYL) ETHER	0.546	0.551	0	
4-METHYLPHENOL	1.996	1.174	41	CA 182 estimate.
N-NITROSO-DI-N-PROPYLAMINE	1.450	1.752	-20	**
HEXACHLOROETHANE	0.579	0.590	-1	
NITROBENZENE	0.126	0.127	0	
ISOPHORONE	0.575	0.582	0	
2-NITROPHENOL	0.126	0.130	-2	*
2,4-DIMETHYLPHENOL	0.226	0.250	-10	
BENZOIC ACID	0.254	0.233	8	
BIS (2-CHLOROETHOXY) METHANE	0.313	0.332	-5	
2,4-DICHLOROPHENOL	0.170	0.194	-13	*
1,2,4-TRICHLOROBENZENE	0.211	0.226	-6	
NAPHTHALENE	0.542	0.588	-7	
4-CHLOROANILINE	0.116	0.147	-26	-LOQ
HEXACHLOROBUTADIENE	0.087	0.099	-13	*
4-CHLORO-3-METHYLPHENOL	0.198	0.222	-11	*
2-METHYLNAPHTHALENE	0.435	0.456	-4	
HEXACHLOROCYCLOPENTADIENE	0.173	0.223	-28	** -LOQ
2,4,6-TRICHLOROPHENOL	0.427	0.403	6	*
2,4,5-TRICHLOROPHENOL	0.612	0.403	34	- LOQ
2-CHLORONAPHTHALENE	1.259	1.258	0	
2-NITROANILINE	0.765	0.712	7	
DIMETHYLPHTHALATE	1.344	1.169	13	
ACENAPHTHALENE	1.061	0.717	32	- CA107 & CA18D estimate 5.

AVE RRF - AVERAGE RESPONSE FACTOR FROM INITIAL CALIBRATION
RF - RESPONSE FACTOR FROM DAILY CALIBRATION
%D - PERCENT DIFFERENCE
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
* - CCC - CALIBRATION CHECK COMPOUNDS

ORIGINAL (Red)

CONTINUING CALIBRATION CHECK - SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO: 4248
LABORATORY ID: IT/CERR
CONTRACT NO: 68-01-6855
INSTRUMENT ID: 4500
SENSITIVITY ID: FSS210

STANDARD DATE: 06/06/85
TIME: 7:17:00
STANDARD ID: BNA304
CALIBRATION DATE: 06/05/85

* MAXIMUM %D FOR CCC IS 25%
** MINIMUM AVE RRF FOR SPCC IS 0.05

COMPOUND	AVE RRF	RF50	%D	
3-NITROANILINE	0.221	0.264	-18	
ACENAPHTHENE	1.152	1.217	-5	*
2,4-DINITROPHENOL	0.147	0.127	14	**
4-NITROPHENOL	0.209	0.113	46	** -LOQ
DIBENZOFURAN	1.816	1.955	-7	
2,4-DINITROTOLUENE	0.266	0.257	3	
2,6-DINITROTOLUENE	0.296	0.353	-18	
DIETHYLPHTHALATE	0.308	0.314	-1	
4-CHLOROPHENYLPHENYL ETHER	0.633	0.654	-2	
FLUORENE	1.032	1.009	2	
4-NITROANILINE	0.185	0.210	-12	
4,6-DINITRO-O-CRESOL	0.157	0.146	7	
N-NITROSODIPHENYLAMINE	0.168	0.187	-10	*
4-BROMOPHENOXYBENZENE	0.278	0.231	17	
HEXACHLOROBENZENE	0.263	0.216	18	
PENTACHLOROPHENOL	0.138	0.124	10	*
PHENANTHRENE	1.449	1.142	21	
ANTHRACENE	0.954	0.898	6	
DI-N-BUTYLPHTHALATE	0.148	0.122	18	
FLUORANTHENE	1.276	1.093	14	*
BENZIDINE	0.023	0.016	30	D.L unreliable
PYRENE	1.462	1.364	7	
BUTYLBENZYLPHTHALATE	0.648	0.622	4	
3,3'-DICHLOROBENZIDINE	0.111	0.139	-24	
BENZO (A) ANTHRACENE	1.032	1.249	-20	
BIS (2-ETHYLHEXYL) PHTHALATE	0.538	0.481	11	
CHRYSENE	1.004	1.003	0	
DI-N-OCTYLPHTHALATE	0.206	0.195	5	*
BENZO (B & K) FLUORANTHENE	1.077	1.046	3	
BENZO (A) PYRENE	1.034	0.965	7	*
INDENO-1,2,3 (C,D) PYRENE	1.357	1.106	19	
DIBENZO (A,H) ANTHRACENE	0.991	0.855	14	
BENZO (G,H,I) PERYLENE	0.828	0.602	27	

AVERAGE %D FOR CCC IS: -0.8

AVE RRF - AVERAGE RESPONSE FACTOR FROM INITIAL CALIBRATION
RF - RESPONSE FACTOR FROM DAILY CALIBRATION
%D - PERCENT DIFFERENCE
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
* - CCC - CALIBRATION CHECK COMPOUNDS

Pesticide Evaluation Standards Summary

Case No. 4248 Laboratory IT/Cerritos

Contract No. 68-01-6855 Column MP #313

Date of Analysis 5-3,4-85 Instrument ID 11B

EVALUATION CHECK FOR LINEARITY

Job Number: 32882

LABORATORY ID	229-1	229-2	—	
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	1671364	1611288	—	2.6*
ENDRIN	1225656	1196899	—	1.7*
4,4'-DDT	5706285	6222779.8	—	6.2*
DIBUTYL CHLORENDATE	1067088	1087248	—	1.3*

*only the first two evaluation standards are used in calculation

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	3.0%	3.0%	3.8%	
4,4'-DDT	3.2%	3.0%	4.0%	
LABORATORY ID	229-2	229-18	229-31	
TIME OF ANALYSIS	23:14	12:32	21:16	

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
CA107 Hg H_2SO_4	229-17	11:52	-.33				
CA176 Hg	229-19	13:10	-.46				
CA178 Hg	229-20	13:48	-.43				
CA178 (H_2SO_4) Hg	229-21	14:28	-.46				
CA180 Hg	229-22	15:06	-.62				
CA180 (H_2SO_4) Hg	229-23	15:46	-.62				
CA182 Hg	229-26	17:58	-1.2				
CA182 (H_2SO_4) Hg	229-27	18:39	-.92				
CA184 Hg	229-28	19:17	-.52				
CA184 (H_2SO_4) Hg	229-29	19:55	-.59				
CA184 MS Hg	229-30	20:35	-.72				
CA184 MSD Hg	229-32	21:53	-1.3				

all OK.

3054

* ≤2% PACKED, ≤0.3% CAPILLARY

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FORM VIII

Pesticide Evaluation Standards Summary

Case No. 4242 Laboratory IT/Cerritos

Contract No. 68-01-6855 Column 3% OV-1 #341

Date of Analysis 5-7 Instrument ID 12B

EVALUATION CHECK FOR LINEARITY

Job Number: 32882

LABORATORY ID	0034-1	0034-2	0034-3	
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	1522273	1556455	1593750	2.3 ✓
ENDRIN	1369797	1361797	1393630	1.2 ✓
4,4'-DDT	424793	496625	507701	9.4 ✓
DIBUTYL CHLORENDATE	1052304	1124288	1120008	3.7 ✓

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	3.0% ✓	3.0% ✓		
4,4'-DDT	7.0% ✓	6.0% ✓		
LABORATORY ID	0034-2	0034-20		
TIME OF ANALYSIS	14:54	10:47		

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
Hg MBOTD(PI(H2SO4))	0034-17	9:09	.10				
Hg CA107	0034-19	10:14	-.07				
CA107(H2SO4) Hg	0034-21	11:19	NF				
CA176 Hg	0034-22	11:53	-.04				
CA178 Hg	0034-23	12:26	-.11	all ok.			
CA178(H2SO4) Hg	0034-24	13:00	NF				
CA180 Hg	0034-25	13:42	-.22				
CA180(H2SO4) Hg	0034-26	15:21	-.19				
Hg Hexane Blank	0034-18	9:41	NS				

* ≤2% PACKED, ≤0.3% CAPILLARY NS - not spiked

FORM VIII

Pesticide Evaluation Standards Summary

Case No. 4248 Laboratory IT/Cerritos

Contract No. 68-01-6855 Column 3% OV-1 #341

Date of Analysis 5-8,9-85 Instrument ID 12B

EVALUATION CHECK FOR LINEARITY

Job Number: 32882

LABORATORY ID	0036-1	0036-2	0036-3	
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	1526515	1392121	1530833	5.0 ✓
ENDRIN	1442291	1319789	1422722	5.0 ✓
4,4'-DDT	604558	564517	1071536	8.9 ✓
DIBUTYL CHLORENDATE	1149344	1071536	1149280	4.0 ✓

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	3.0%	11%	19%	out of criteria
4,4'-DDT	4.0%	9.0%	2.2%	
LABORATORY ID	0036-1	0036-16	0036-20	
TIME OF ANALYSIS	20:51	11:12	13:25	

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
CA182 Hg	0036-17	11:44	-.22				
CA182(H2SO4) Hg	0036-18	12:18	-8.0	OK.			
CA184 Hg	0036-19	12:52	-.22				
CA184(H2SO4) Hg	0036-21	14:00	-.07				
CA184MS Hg	0036-22	14:32	-.18				
CA184MSD Hg	0036-23	15:06	-.26				
MB0501P1 Hg	0036-24	15:44	-.22				
MB0501P1 (H2)	0036-25	16:19	-.22				

* ≤2% PACKED, ≤0.3% CAPILLARY

Pesticide Evaluation Standards Summary

ORIGINAL (Red)

Case No. 4248 Laboratory IT/Cerritos

Contract No. 68-01-6355 Column MP#313

Date of Analysis 5-7-85 Instrument ID GC11B

EVALUATION CHECK FOR LINEARITY Job Number: 32882

LABORATORY ID	233-1	233-2	233-3	
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	1535000	1545000	1621000	3.0%
ENDRIN	1053000	1030000	1069000	1.9%
4,4'-DDT	499000	474000	490000	2.6%
DIBUTYL CHLORENDATE	1036000	992000	1036000	2.5%

DDT in CA107 not quantitated from this standard

≤20 OK ✓

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	6.5	7.1	8.0	
4,4'-DDT	14 *	18 *	20 *	* all of DDT breakdown product
LABORATORY ID	233-2	233-20	233-33	DDD no DDE
TIME OF ANALYSIS	12:10	22:54	8:01	

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
MB0501P1 Hg	233-35	9:07	-0.051				
MB0561P1 Hg	233-36	9:40	←				
CA107 Hg	233-37	10:12	-0.30				

1962

* ≤2% PACKED, ≤0.3% CAPILLARY

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FORM VIII

Pesticide Evaluation Standards Summary

Case No. 4248 Laboratory IT/Cerritos

Contract No. 68-01-6855 Column 3% OV1-#341

Date of Analysis 5-14/15-85 Instrument ID 8B

EVALUATION CHECK FOR LINEARITY Job Number: 32882

LABORATORY ID	581-1	581-2	581-3	
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	2553000	2731000	2627000	3.38
ENDRIN	1979000	2018000	1872000	3.87
4,4'-DDT	812000	838000	764000	4.66
DIBUTYL CHLORENDATE	2164000	2227000	2179000	1.51

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	≤1.7	≤3.2	Interferance from previous	
4,4'-DDT	≤0.71	≤3.3	run prevents quantitation	
LABORATORY ID	581-2	581-15	581-28	
TIME OF ANALYSIS	20:08	7:51	17:57	

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCEN DIFF. *
Hg Hexane Blank	581-27	16:53	NS				
CA107 Hg	581-29	18:32	-0.12				
CA178 Hg	581-31	19:38	-0.16	OK			
CA180 Hg	581-32	20:11	-0.040				

2474

* ≤2% PACKED, ≤0.3% CAPILLARY

41

FORM VIII

Pesticide Evaluation Standards Summary

ORIGINAL (Red)

Case No. 4248 Laboratory IT/Cerritos

Contract No. 68-01-6855 Column 3% OV-1 #339

Date of Analysis 5-16-75 Instrument ID GC 8B

EVALUATION CHECK FOR LINEARITY

Job Number: 32882

LABORATORY ID	582-1	582-2	582-3	
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	6060.6	6060.6	6439.4	3.5#
ENDRIN	2290.7	2467.0	2467.0	4.2#
4,4'-DDT	715.38	817.58	817.58	7.5#
DIBUTYL CHLORENDATE	560	640	640	7.5#

all calculations done by pk.h

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	1.9	2.0		
4,4'-DDT	2.2	2.5		
LABORATORY ID	582-2	582-21		
TIME OF ANALYSIS	23:44	13:22		

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
Ag	CA107 1/5	582-19	12:16	-0.20				
Hg	CA120 1/2	582-20	12:49	-0.28				
Hg	Hexane Blank	582-16	10:31	NS				

2536

* ≤2% PACKED, ≤0.3% CAPILLARY NS Not spiked

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FORM VIII

Case No. [illegible] Laboratory [illegible]/Cerritos
Contract No. [illegible] Column [illegible] Instrument ID [illegible]

Ad-A 1082

DATE OF ANALYSIS 5-4-85				DATE OF ANALYSIS 5-4-85			
TIME OF ANALYSIS 0:21				TIME OF ANALYSIS 16:42			
LABORATORY ID 229-4				LABORATORY ID 229-24			

COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	192	189-195	1887949	QUANT	192	1682249	Conf	11
beta-BHC	289	286-293	760906	QUANT	290	685181	Conf	10
delta-BHC	339	336-343	1400296	QUANT	340	1309833	QUANT	6.5
gamma-BHC								
Heptachlor								
Aldrin								
Heptachlor Epoxide	582	579-587	1600578	QUANT	584	1502249	QUANT	6.1
Endosulfan I								
Dieldrin								
4,4'-DDE	876	873-882	1546457	QUANT	879	1446599	QUANT	6.5
Endrin	1117	1114-1125	1245507	QUANT	1122	1299620	QUANT	-4.3
Endosulfan II	1369	1366-1377	153287	QUANT	1374	158905	QUANT	-3.7
4,4'-DDD								
Endrin Aldehyde	1812	1809-1822	1154459	QUANT	1819	1089996	QUANT	5.6
Endosulfan Sulfate								
4,4'-DDT								
Methoxychlor					3342	215308	QUANT	—
Endrin Ketone								
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

Qel OK ✓

* SEE EXHIBIT B, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

4/84

FORM IX

Case No. [illegible] Laboratory [illegible]
Contract No. [illegible] GC Column [illegible] GC Instrument ID "B" 32882

Ord A 2 of 2

	DATE OF ANALYSIS 5-4-85				DATE OF ANALYSIS 5-4-85			
	TIME OF ANALYSIS 16:42				TIME OF ANALYSIS 22:33			
	LABORATORY ID 229-24				LABORATORY ID 229-33			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	192	189-198	1682249	QUANT	195	1751310	QUANT	-4.1
beta-BHC	290	287-297	685181	↓	294	711575	↓	-3.8
delta-BHC	340	337-349	1309833	↓	346	1353204	↓	-3.3
gamma-BHC								
Heptachlor								
Aldrin								
Heptachlor Epoxide	584	581-596	1502249	QUANT	593	1493944	QUANT	0.55
Endosulfan I								
Dieldrin								
4,4'-DDE	879	876-895	1446599	QUANT	892	1429286	QUANT	1.2
Endrin	1122	1119-1144	1299620	↓	1138	1248686	↓	3.9
Endosulfan II	1374	1371-1397	158905	↓	1394	165140	↓	-3.9
4,4'-DDD								
Endrin Aldehyde	1819	1816-1846	1089996	QUANT	1843	1044923	QUANT	4.1
Endosulfan Sulfate								
4,4'-DDT								
Methoxychlor	3342	3339-3387	215308	QUANT	3384	222562	QUANT	-3.4
Endrin Ketone								
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

Del ok

* SEE EXHIBIT B, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

FORM IX

4/84

Case No. 4248 Laboratory

Contract No. 68-01-6855 GC Column MP 313 GC Instrument 5 88

Std. B 1 of 2

	DATE OF ANALYSIS 5-4-85				DATE OF ANALYSIS 5-4-85			
	TIME OF ANALYSIS 0:56				TIME OF ANALYSIS 17:21			
	LABORATORY ID 229-5				LABORATORY ID 229-25			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC	248	245-251	1369339	QUANT	249	1695868	Quant	9.3
Heptachlor	308	305-311	1365184	QUANT	310	1274368	QUANT	6.6
Aldrin	376	373-379	1866507	QUANT	378	1657440	Conf	11
Heptachlor Epoxide								
Endosulfan I	739	736-742	154228	QUANT	744	139510	QUANT	9.5
Dieldrin	913	910-916	1735478	QUANT	919	1595264	QUANT	8.1
4,4'-DDE								
Endrin								
Endosulfan II								
4,4'-DDD	1373	1370-1385	1307834	QUANT	1382	1344777	QUANT	-2.8
Endrin Aldehyde								
Endosulfan Sulfate	2224	2221-2227	1505576	QUANT	2236	1409986	QUANT	6.4
4,4'-DDT	1663	1660-1666	794125	QUANT	1674	841358	QUANT	-6.0
Methoxychlor								
Endrin Ketone	3040	3038-3044	1704484	QUANT	3058	1599413	QUANT	6.2
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

* SEE EXHIBIT B, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

4/84

Case No. 4245 Laboratory

Contract No. 68-01-6055 GC Column #3 GC Instrument 113 985

Ind-B 2 of 2

	DATE OF ANALYSIS 5-4-85				DATE OF ANALYSIS 5-4-85			
	TIME OF ANALYSIS 17:21				TIME OF ANALYSIS 23:13			
	LABORATORY ID 229-25				LABORATORY ID 229-34			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC	249	246-256	1695868		253	1801281		-6.2
Heptachlor	310	307-138	1274368		315	1357280		-6.5
Aldrin	378	375-387	1657440		384	1739600		-5.0
Heptachlor Epoxide								
Endosulfan I	744	741-758	139510		755	149223		-7.0
Dieldrin	919	916-936	1595264		933	1659736		-4.0
4,4'-DDE								
Endrin								
Endosulfan II								
4,4'-DDD	1382	1379-1405	1344777		1402	1401249		-4.2
Endrin Aldehyde								
Endosulfan Sulfate	2236	2233-2269	1409986		2266	1480118		-5.0
4,4'-DDT	1674	1671-1701	841358		1698	804020		4.4
Methoxychlor								
Endrin Ketone	3058	3055-3101	1599413		3098	1699320		-6.2
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

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* SEE EXHIBIT B, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

Case No. [illegible] Laboratory [illegible]

Contract No. [illegible] GC Column [illegible] Instrument ID [illegible] 31582

chd-A 1d2

	DATE OF ANALYSIS 5-7-85				DATE OF ANALYSIS 5-8-85			
	TIME OF ANALYSIS 15:58				TIME OF ANALYSIS 14:16			
	LABORATORY ID 0034-4				LABORATORY ID 0034-26			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	153	150-156	2031923	QUANT	153	1809840	Conf	11.
beta-BHC	165	162-168	785589	QUANT	165	713988	QUANT	9.1
delta-BHC	189	186-192	1658685	QUANT	189	1644685	QUANT	0.84
gamma-BHC								
Heptachlor								
Aldrin								
Heptachlor Epoxide	486	483-489	337.3#	QUANT	486	305.2#	QUANT	9.5
Endosulfan I								
Dieldrin								
4,4'-DDE	735	732-738	1629532	QUANT	735	1627592	QUANT	0.12
Endrin	811	808-814	1624069.2	QUANT	811	1521031.7	QUANT	6.3
Endosulfan II								
4,4'-DDD	931	928-934	1291667.4	QUANT	931	1130680.6	Conf	12
Endrin Aldehyde								
Endosulfan Sulfate								
4,4'-DDT								
Methoxychlor	1929	1926-1932	305673	QUANT	1931	379201	—	-24
Endrin Ketone								
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

out of criteria however No effect.

SEE EXHIBIT B, PART 7

calc by pk ht

** CONF. = CONFIRMATION (≤20% DIFFERENCE)
QUANT. = QUANTITATION (≤10% DIFFERENCE)

FORM IX

4/84

ORIGINAL (Red)

Case No. 2470 Laboratory [illegible]
Contract No. 68-01-6855 Column 5% OV-17 #341 Instrument ID 12B 32882

Chlordane

	DATE OF ANALYSIS 5-7-85				DATE OF ANALYSIS 5-8-85			
	TIME OF ANALYSIS 18:57				TIME OF ANALYSIS			
	LABORATORY ID 0034-7				LABORATORY ID 0034-29			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC								
Heptachlor								
Aldrin								
Heptachlor Epoxide								
Endosulfan I								
Dieldrin								
4,4'-DDE								
Endrin								
Endosulfan II								
4,4'-DDD								
Endrin Aldehyde								
Endosulfan Sulfate								
4,4'-DDT								
Methoxychlor								
Endrin Ketone								
Tech. Chlordane	666	662-670	13.33#	QUANT	666	12.22#	QUANT	8.3 ✓
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

SEE EXHIBIT B, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

* This RT is based on a reference peak

Calc. by pk ht

FORM IX

4/84

Case No. _____ Laboratory _____

Contract No. 01-55 GC Column 6 Instrument ID 4 3-082

chd-B

	DATE OF ANALYSIS 9-85				DATE OF ANALYSIS 5-9-85			
	TIME OF ANALYSIS 7:16				TIME OF ANALYSIS 17:57			
	LABORATORY ID 0036-5				LABORATORY ID 0036-28			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC	184	181-187	1644628	QUANT	184	1618884	QUANT	1.6
Heptachlor	311	307-314	1438726	↓	312	1363057	↓	5.3
Aldrin	392	389-395	1684933	↓	392	1635440	↓	2.9
Heptachlor Epoxide								
Endosulfan I	614	611-617	120436	QUANT	615	119525	QUANT	0.76
Dieldrin	726	723-729	1516201	↓	727	1483224	↓	2.2
4,4'-DDE								
Endrin								
Endosulfan II	832	829-835	41.41 #	QUANT	833	41.41 #	QUANT	0 #
4,4'-DDD								
Endrin Aldehyde								
Endosulfan Sulfate	1091	1088-1094	1092962	QUANT	1093	1027572	QUANT	6.2
4,4'-DDT	1256	1253-1259	55.14 #	↓	1259	52.63 #	↓	4.6
Methoxychlor								
Endrin Ketone	1411	1408-1414	1447600	QUANT	1413	1399649	QUANT	3.3
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

OK AV.

* SEE EXHIBIT B, PART 7

calc by pk ht

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

FORM IX

4/84

ORIGINAL (Red)

Case No. 24

Contract No. 68-01-6855

Laboratory: IT/Corvallis

Job Number: 32882

SAMPLE ID	PRIMARY COLUMN	PESTICIDE/ PCB	RT OF TENTATIVE ID	RT WINDOW OF APPROPRIATE STANDARD	CONFIRMATION COLUMN	RT ON CONFIRMATORY COLUMN	RT WINDOW OF APPROPRIATE STANDARD	GC/MS CONFIRMED (Y/N/<DL)
CA178	OV-1	DDE	710	706-713	MP	879	873-882	<DL
	OV-1	DDD	899	897-903	MP	1376	1370-1376	<DL
CA180	OV-1	DDE	712	706-713	MP	882	873-882	<DL
	OV-1	DDD	897	897-903	MP	1380	1370-1385	<DL
	OV-1	Chlordane	646#	662-670#	MP	655#	649-654#	<DL
CA107	OV-1	Chlordane	662#	662-670#	MP	654#	648-654#	<DL
	MP	DDE	609	603-612	OV-1	728	724-731	<DL
	OV-1	DDD	922	918-927	MP	931	924-933	<DL
	OV-1	DDT	1220	1215-1223	MP	1121	1113-1122	<DL

Y - GC/MS Confirmation Attempted and Successful; GC Quantitation Reported.

N - GC/MS Confirmation Attempted and Unsuccessful; GC/MS Detection Limit Reported.

<DL - Less than GC/MS Detection Limit. GC/MS Confirmation was not attempted; GC Quantitation Reported.

This RT is based on a reference peak

4/84

FORM X

PROJECT NAME: Levittown Dump
TDD NO: F3-8504-12

EPA SITE NO.: PA 282
REGION: FIT III

QUALITY ASSURANCE REVIEW OF ORGANIC ANALYSIS LAB DATA PACKAGE

Case No.: 4248/1644C
Contract No.: 68-01-7016
Contract Laboratory: RMA
Applicable IFB No.: WA84-A266
Reviewer: Rock J. Vitale
Review Date: 7/9/85

Applicable Sample No's.: CA188 up to and including CA201

The organic analytical data for this case has been reviewed. The quality assurance evaluation is summarized in the following table:

Reviewer's Evaluation*	Fraction				
	VOLATILES	ACIDS	BASE/ NEUTRALS	PCB/ PEST.	TCDD
Acceptable			✓	✓	
Acceptable with exception(s)	✓#1,#4	✓#2,#3			Not Analyzed
Questionable					
Unacceptable					

* Definitions of the evaluation score categories are listed on next page.

This evaluation was based upon an analysis of the review items indicated below:

- ● DATA COMPLETENESS
- ● BLANK ANALYSIS RESULTS
- ● SURROGATE SPIKE RESULTS
- ● MATRIX SPIKE RESULTS
- ● DUPLICATE ANALYSIS RESULTS
- ○ EVALUATION OF CONFIRMATIONS
- ‡ ● QUANTITATIVE CALCULATIONS
- ‡ ● TARGET COMPOUND MATCHING QUALITY
- ● TENTATIVELY IDENTIFIED COMPOUNDS
- ● CHROMATOGRAPHIC SENSITIVITY CHECKS
- ● DFTPP AND BFB SPECTRUM TUNE RESULTS
- ● STANDARDS
- #5 #6 ● CALIBRATION CHECK STANDARDS
- ⊖ INTERNAL STANDARDS PERFORMANCE N/R.

Data review forms are attached for each of the review items indicated above.

‡ No errors noted, no form attached.

⊖ Spot Check performed.

Comments: #1 Please see blank analysis documentation
#2 Please see surrogate spike recoveries
#3 Please see matrix spike recoveries
#4 Please see calculation data
#5 One CCC compound failed contractual criteria with no corrective action
#6 Some minor non-compliances for pesticide criteria however these do not effect sample data.

DATA EVALUATION SCORE CATEGORIES

ORIGINAL (Red)

ACCEPTABLE: Data is within established control limits, or the data which is outside established control limits does not affect the validity of the analytical results.

ACCEPTABLE WITH EXCEPTION(S): Data is not completely within established control limits. The deficiences are identified and specific data is still valid, given certain qualifications which are listed below.

QUESTIONABLE: Data is not within established control limits. The deficiences bring the validity of the entire data set into question. However, the data validity is neither proved nor disproved by the available information.

UNACCEPTABLE: Data is not within established control limits. The deficiences imply the results are not meaningful.

DATA COMPLETENESS	CONC./MATRIX	LO/AQ											
FRACTION	TRAFFIC REPORT # CA	188	189	190	191	A2	193	194	195	196	197	198	199
	LAB I.D. # 7112-	01	02	03	04	05	06	07	08	09	10	11	12
VOA :	RUN DATE/TIME	✓											✓
	TARGET COMPOUND TAB.	✓											✓
	TARGET COMPOUND D.L.	✓											✓
	TENT. I.D. COMPOUND TAB.	✓											✓
	SURROGATE RECOVERY	✓											✓
	GC SCREEN TABULATION	N/R											✓
	GC/MS CHROMATOGRAMS	✓											✓
	TARGET CMPD. QUAN. LIST	✓											✓
	TARGET CMPD. SPECTRA	✓											✓
	TENT. I.D. CMPD. Q.L.	✓											✓
	TENT. CMPD. LIB. SRCH.	✓											✓
	CHRO./SENS. CHECKS	✓											✓
	BFB/~~BFTPP~~ TUNE DATA	✓											✓
	I.S AREAS CHARTS	N/R											✓
	I.S. REL. RESP. FORM	N/R											✓
	RF & AMTS.: CALIB. CHK.	✓											✓
	RF & AMTS.: 3-PT CALIB.	✓											✓
	Chromatograms: Calib. Chk.	✓											✓
	Chromatograms: 3-Pt. Calib.	✓											✓
	LINEARITY: 3-PT. CALIB	✓											✓
	RF COMPARISON	✓											✓
	SAMPLE/FIELD BLANK												✓
	METHOD/INSTR. BLANK												
	LAB DUPLICATE	✓											
	FIELD DUP/REP												
	MAT. SPK./M. STD.	✓											

ORIGINAL (Red)

COMMENTS :

DATA COMPLETENESS	CONC./MATRIX	W/AQ											
FRACTION	TRAFFIC REPORT # CA-	200	201	Pref	Pref.								
	LAB I.D. # 7112	13	14.										
VOA :	RUN DATE/TIME	✓											
	TARGET COMPOUND TAB.	✓											
	TARGET COMPOUND D.L.	✓											
	TENT. I.D. COMPOUND TAB.	✓											
	SURROGATE RECOVERY	✓											
	GC SCREEN TABULATION	N/R											
	GC/MS CHROMATOGRAMS	✓											
	TARGET CMPD. QUAN. LIST	✓											
	TARGET CMPD. SPECTRA	✓											
	TENT. I.D. CMPD. Q.L.	✓											
	TENT. CMPD. LIB. SRCH.	✓											
	CHRO./SENS. CHECKS	✓											
	BFB/~~DFTPP~~ TUNE DATA	✓											
	I.S AREAS CHARTS	N/R											
	I.S. REL. RESP. FORM	N/R											
	RF & AMTS. : CALIB. CHK.	✓											
	RF & AMTS. : 3-PT CALIB.	✓											
	Chromatograms: Calib. Chk.	✓											
	Chromatograms: 3-Pt. Calib.	✓											
	LINEARITY : 3-PT. CALIB	✓											
	RF COMPARISON	✓											
	SAMPLE/FIELD BLANK												
	METHOD/INSTR. BLANK			✓	✓								
	LAB DUPLICATE												
	FIELD DUP/REP												
	MAT. SPK./M. STD.												

ORIGINAL (Red)

COMMENTS :

DATA COMPLETENESS	CONC./MATRIX	LO/AQ											
FRACTION	TRAFFIC REPORT # CA	188	189	190	191	192	193	194	195	196	197	198	199
	LAB I.D. # 7112	01	02	03	04	05	06	07	08	09	10	11	12
BNA :	RUN DATE/TIME	✓											✓
	TARGET COMPOUND TAB.	✓											✓
	TARGET COMPOUND D.L.	✓											✓
	TENT. I.D. COMPOUND TAB.	✓											✓
	SURROGATE RECOVERY	✓											✓
	GC SCREEN TABULATION	N/R											✓
	GC/MS CHROMATOGRAMS	✓											✓
	TARGET CMPD. QUAN. LIST	✓											✓
	TARGET CMPD. SPECTRA	✓											✓
	TENT. I.D. CMPD. Q.L.	✓											✓
	TENT. CMPD. LIB. SRCH.	✓											✓
	CHRO./SENS. CHECKS	✓											✓
	~~BFB~~/DFTPP TUNE DATA	✓											✓
	I.S AREAS CHARTS	N/R											✓
	I.S. REL. RESP. FORM	N/R											✓
	RF & AMTS. : CALIB. CHK.	✓											✓
	RF & AMTS. : 3-PT CALIB.	✓											✓
	Chromatograms: Calib. Chk.	✓											✓
	Chromatograms: 3-Pt. Calib.	✓											✓
	LINEARITY : 3-PT. CALIB	✓											✓
	RF COMPARISON	✓											✓
	SAMPLE/FIELD BLANK												✓
	METHOD/INSTR. BLANK												
	LAB DUPLICATE	✓											
	FIELD DUP/REP												
	MAT. SPK./M. STD.	✓											
PEST. :	PESTICIDE TABULATION	✓											✓
	PEST. D.L. TABULATION	✓											✓
	PESTICIDE CHRO.	✓											✓
	PESTICIDE STD. CHRO.	✓											✓
	PESTICIDE STD. I.D.	✓											✓
	2nd COLUMN CONF.	N/a											✓
	GC/MS CONFIRMATION	N/a											✓
	PESTICIDE DUPLICATE										✓		
	PESTICIDE SPIKE										✓		
	PESTICIDE BLANK												✓
	STD SUMMARY	✓											✓
	LINEARITY CHK.	✓											✓
	DEGRAD. CHK.	✓											✓
	DBC RT SHIFT	✓											✓

ORIGINAL (Red)

DATA COMPLETENESS	CONC./MATRIX	LO/AQ										
FRACTION	TRAFFIC REPORT # CA	200	201	Prep	Prep							
	LAB I.D. # 7112-	13	14.									
BNA :	RUN DATE/TIME	✓										
	TARGET COMPOUND TAB.	✓										
	TARGET COMPOUND D.L.	✓										
	TENT. I.D. COMPOUND TAB.	✓										
	SURROGATE RECOVERY	✓										
	GC SCREEN TABULATION	N/R										
	GC/MS CHROMATOGRAMS	✓										
	TARGET CMPD. QUAN. LIST	✓										
	TARGET CMPD. SPECTRA	✓										
	TENT. I.D. CMPD. Q.L.	✓										
	TENT. CMPD. LIB. SRCH.	✓										
	CHRO./SENS. CHECKS	✓										
	~~BFB~~/DFTPP TUNE DATA	✓										
	I.S AREAS CHARTS	N/R										
	I.S. REL. RESP. FORM	N/R										
	RF & AMTS. : CALIB. CHK.	✓										
	RF & AMTS. : 3-PT CALIB.	✓										
	Chromatograms: Calib. Chk.	✓										
	Chromatograms: 3-Pt. Calib.	✓										
	LINEARITY : 3-PT. CALIB	✓										
	RF COMPARISON	✓										
	SAMPLE/FIELD BLANK											
	METHOD/INSTR. BLANK			✓	✓							
	LAB DUPLICATE											
	FIELD DUP/REP											
	MAT. SPK./M. STD.											
PEST. :	PESTICIDE TABULATION	✓										
	PEST. D.L. TABULATION	✓										
	PESTICIDE CHRO.	✓										
	PESTICIDE STD. CHRO.	✓										
	PESTICIDE STD. I.D.	✓										
	2nd COLUMN CONF.	N/a										
	GC/MS CONFIRMATION	N/a										
	PESTICIDE DUPLICATE											
	PESTICIDE SPIKE											
	PESTICIDE BLANK			✓	✓							
	STD SUMMARY	✓										
	LINEARITY CHK.	✓										
	DEGRAD. CHK.	✓										
	DBC RT SHIFT	✓										

ORIGINAL

KEY TO DATA COMPLETENESS FORM

ORIGINAL (Red)

Abbreviation Used on Form	Description of Checklist Item
Conc./Matrix	Concentration category submitted in analysis request (low, med, hi); and matrix (sol., aq.)
Fraction	Fill in acid, base/neutral, acid/base/neutral, or volatiles analysis
Run Date/Time	Instrument run date (to be used for correlating calibration)
Target Cmpd. Tab.	Tabulated results for target compounds
Target Cmpd. D.L.	Detection limits for target compounds (actual/level indicated by screen
Tent. I.D. Cmpd. Tab.	Tabulated results for tentatively identified compounds
Surr. Rec.	Surrogate recoveries results
GC Screen Tab.	Tabulated GC screen results indicating required level of followup
GC/MS Chromatograms	Chromatograms of GC/MS analysis runs
Target Cmpd. Quan. List	Target compounds quantitation list, showing areas, ret. times
Target Cmpd. Spectra	Enhanced and unenhanced spectra of target compound hits
Tent. I.D. Cmpd. Q.L.	Quantitation list for tentatively identified compounds
Tent. Cmpd. Lib. Srch.	Spectra and library match spectra of tentatively identified compounds
Chro./Sens. Checks	EICP's and R.R.F.'s for chromatographic sensitivity checks
BFB/DFTPP Tune Data	Spectra intensity lists, and criteria comparison forms for BFB, DFTPP
I.S. Areas Charts	Internal standards area control charts and description of remedial action
I.S. Rel. Resp. Form	Internal standards relative response listings for each sample run
RF and amts.: Calib. Chk.	Tabulated response factors and amount injected for all cmpds. in calibration check
RF and amts.: 3-Pt. Calib.	Tabulated response factors and amount injected for all cmpds. in 3-point calibration
Chromatograms: Calib. Chk.	Chromatograms for calibration check standard
Chromatograms: 3-Pt. Calib.	Chromatograms for 3-point multilevel calibration standards.
Linearity: 3-Pt. Calib.	Tabulated correlation coefficient or relative standard deviation for calibration
RF Comparison	Tabulated comparison of calibration Response Factor with check standard
Sample/Field Blank	Equipment rinse or reagent water blank shipped with samples from field
Method/Instr. Blank	Method or instrument blank which is prepared at lab
Lab Duplicate	Sample which was split by lab for duplicate analysis
Field Dup/Rep	Sample which was split or collected twice in the field
Mat. Spk./M. Std.	Matrix spike or method standard (blind, or done by lab)
Pest. Tab.	Tabulated results for pesticides
Pest. D.L. Tab.	Tabulated detection limits for pesticides
Pest. Chro.	Chromatograms for pesticide screening
2nd Col. Conf.	Confirmation of pesticide results by using a second GC column and temperature
GC/MS Conf.	Confirmation of pesticide results by GC/MS analysis
Pest. Dup., Spk. Blk.	Pesticide duplicate, spike, and blank
Pest. Std. Chro.	Chromatogram of pesticide standard
Pest. Std. I.D.	Pesticide standard identification form
TCDD	2,3,7,8-tetrachlorodibenzodioxin
TCDD Tab., D.L., EICP, Blk.	TCDD tabulated results, detection limits, extracted ion current profile, blank

KEY TO SYMBOLS USED IN DATA COMPLETENESS TABLE

Symbol	Meaning	Symbol	Meaning
✓	Data item present	I	Incomplete data item
NA	Data item not applicable or not required	NC	Data item not clearly explained (units of conc., etc)
P	Data item within established control limits	* or [number]	See footnote
F	Data item outside established control limits	XX/XX/XX XX:XX	Date/Time of run (calibration, etc.)
MS	Missing item		

BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS

FRACTION	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)
VOA	Field	low	AQ	CA199	NUS	$MeCl_2$ (1.2 ug/L / 5) #1 2-butanone (1.6 ug/L / 10) #2
BNA	field	low	AQ	CA199	NUS	N.D
PEST	field	low	AQ	CA199	NUS	N.D.
VOA	method	low	AQ	BLJ078	RMA.	$MeCl_2$ (4.8 ug/L / 5) #1 Acetone (3.1 ug/L / 10) #1 2-HEXANONE (6.2 ug/L / 10) #1 MIBK (4.4 ug/L / 10) #1 2-butanone (2.16 ug/L / 10) #2
BNA	method	low	AQ	57112K192	RMA	N.D.
Pest.	method	low	AQ	B17091 A+B	RMA	N.D.
VOA	method	low	AQ	BLJ086	RMA	$MeCl_2$ (2.6 ug/L / 5) #1 2-HEXANONE (3.8 ug/L / 10) #1 MIBK (1.5 ug/L / 10) #1
VOA	method	low	AQ	BLJ100	RMA.	$MeCl_2$ (2.1 ug/L / 5) #1 2-HEXANONE (2.8 ug/L / 10) #1 2-butanone (1.2 ug/L / 10) #2

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN THE SAMPLE ANALYTICAL DATA SUMMARY. TENTATIVELY IDENTIFIED COMPOUNDS IN BLANKS ARE LISTED ON A SEPARATE FOR

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM QUANTITATION LIST, DIAGNOSTICS, CHROMATOGRAM AND/OR SPECTRA.

~~MB2~~ MB1

Case No. 4248 SAS1644C Contractor RMAL Contract No. 68-01-7016

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL, TIC OR UNKNOWN)	CONC.	UNITS	CRDL
BLJ078 ~~MB2~~	5/1/85	VOA	H_2O	L	J	75-09-2	Methylene Chloride	4.8	ug/l	5
MB1						67-64-1	Acetone	3.1	ug/l	10
						591-78-6	2-Hexanone	6.2	ug/l	10
						108-10-1	4-Methyl-2-Pentanone	4.4	ug/l	10
S7112KC192	5/6/85	BNA	H_2O	low	K	108-88-3	Toluene	14	ug/l	—
							Dichlorocyclohexane	8.2	ug/l	—

Comments:

FORM IV

TENTATIVE IDENTIFICATION SUMMARY

ME 3

Case No. 4248 SAS1644C Contractor RMAL Contract No. 68-01-7016

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL, TIC OR UNKNOWN)	CONC.	UNITS	CRDL
BLJ086 ~~MB3~~ MB2	5/1/85	VOA	H_2O	L	J	75-09-2	Methylene Chloride	2.6	ug/l	5
						591-78-6	2 - Hexanone	3.8	ug/l	10
						108-10-1	4- Methyl-2- Pentanone	1.5	ug/l	10

Comments:

FORM IV

000004

REAGENT BLANK SUMMARY

Case No. 424B SAS 1644C Contractor Rocky Mountain Analytical Lab Contract No. 68-01-7016

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL, TIC OR UNKNOWN)	CONC.	UNITS	CRDL
B17091A+B	6-13-85	Pest	H_2O	low	B		No PP Pest / PCB's Detected			

Comments:

FORM IV

REAGENT BLANK SUMMARY

Case No. 4248 SAS 1644C Contractor RMAL Contract No. 68-01-7016

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL, TIC OR UNKNOWN)	CONC.	UNITS	CRDL
BLJ100 ~~MB1~~	5/2/85	VOA	H_2O	L	J	75-09-2	Methylene Chloride	2.1	ug/l	5
MB-3						591-78-6	2-Hexanone	2.8	ug/l	10

Comments:

FORM IV

WATER SURROGATE PERCENT RECOVERY SUMMARY

Case No. 4248 SAS1644C Contract Lab : RMAL Contract No. : 68-01-7016

Level : Low

SMO Traffic No.	Volatile: Toluene-D8 (86-119)	BFB (85-121)	1,2 Dichloro-Ethane-D4 (77-120)	Semi-Volatile: Nitro-Benzene-D5 (41-120)	2-Fluoro-Biphenyl (44-119)	Terphenyl-D14 (33-128)	Phenol-D5 (15-103)	2-Fluoro-Phenol (23-121)	2,4,6 Tribromo-Phenol (10-130)	Pesti: Dibut Chloren ** (48-
MB-1	104	109	99.6	71.9	75.2	91.9	21.2	42.2	115	***
MB-2	102	101	99.3	-	-	-	-	-	-	-
MB-3	100	108	89.4	-	-	-	-	-	-	-
CA188	95.0	116	108	54.8	55.5	104	20.1	37.9	79.1 ✓	***
CA189	98.7	109	107	61.2	71.0	92.4	18.4	35.4	92.5 •	***
CA190	92.6	106	101	49.0	44.0	70.6	24.9	38.5	59.0 ✓	***
CA191	99.4	105	101	65.4	63.8	107	15.3	35.7	90.1 •	***
CA192	102	106	109	52.0	57.7	97.3	0%	0%	4.6% reext	***
CA193	102	107	110	72.6	75.2	91.5	24.0	47.1	84.3 ✓	***
CA194	101	103	112	63.5	66.7	89.7	19.4	41.9	87.3 •	***
CA195	101	108	110	73.8	65.3	55.3	0%	0%	0% reext.	***
CA196	103	106	101	64.2	54.7	44.4	18.3	32.8	68.5 •	***
CA197	102	105	107	79.3	72.4	69.2	21.5	36.7	56.8 ✓	***
CA198	91.7	110	101	74.6	66.9	57.3	18.7	34.6	70.7 •	***
CA199	95.2	112	101	67.3	63.8	87.6	18.0	34.0	68.1 •	***
CA200	101	107	98.7	45.5	48.4	63.5	15.9	28.7	49.0 •	***
CA201	94.1	115	102	59.1	58.5	80.6	4.55%	9.25%	18.7 reext	***
CA188MS	101	105	102	89.5	76.5	87.3	23.2	39.3	90.1 •	***
CA188MSD	97.4	102	111	77.4	74.2	114	25.0	43.0	97.4 •	***
CA192RE	-	-	-	67.0	64.4	63.9	0%	0%	32.6	***
CA195RE	-	-	-	69.0	90.8	85.5	0%	0%	0%	***
CA201RE	-	-	-	49.2	64.8	94.2	0%	0%	0%	***

Volatiles : 0 out of 57 : Outside of Q.C. Limits
Semi-Volatiles : ~~13~~ 16 out of 120 ; Outside of Q.C. Limits
Pesticides: *** ; Outside of Q.C. Limits **

* Values are outside Q.C. Limits.
** Advisory Limits Only.
*** Data to be submitted later

COMMENTS :
- Actual D.L for some acids in CA189, 191, 194, 196, 198, 199 may be slightly higher than reported
- Actual D.L for all acids in 192, 195, 201 substantial higher than reported

000002

Case No. 4248 / SAS 1644C Contr Laboratory Rocky Mountain Analytical Contract No. 68-01-7016

SMO TRAFFIC NO.	VOLATILE: TOLUENE-D8 (88-119)	BFB (85-121)	1,2 DICHLORO-ETHANE-D4 (77-120)	SEMI-VOLATILE: NITRO-BENZENE-D5 (41-120)	2-FLUORO-BIPHENYL (44-119)	TERPHENYL-D14 (33-128)			PHENOL-D5 (15-103)	2-FLUORO-PHENOL (23-121)	2,4,6 TRIBROMO-PHENOL (10-130)	PESTICIDE: DIBUTYL-CHLORENDATE ** (48-136)
CA188	-	-	-	-	-	-			-	-	-	88
CA189	-	-	-	-	-	-			-		-	78
CA190	-	-	-	-	-	-			-		-	82
CA191	-	-	-	-	-	-			-		-	78
CA192	-	-	-	-	-	-			-		-	76
CA193	-	-	-	-	-	-			-		-	67
CA194	-	-	-	-	-	-			-		-	98
CA195	-	-	-	-	-	-			-		-	92
CA196	-	-	-	-	-	-			-		-	84
CA197	-	-	-	-	-	-			-		-	84
CA198	-	-	-	-	-	-			-		-	98
CA199	-	-	-	-	-	-			-		-	92
CA200	-	-	-	-	-	-			-		-	90
CA201	-	-	-	-	-	-			-		-	90
CA199MS	-	-	-	-	-	-			-		-	83
CA199MSD	-	-	-	-	-	-			-		-	106
											-	
Recovery Blank	-	-	-	-	-	-			-	-	-	91

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

**ADVISORY LIMITS ONLY

Volatiles: _____ out of _____ ; outside of QC limits

Semi-Volatiles: _____ out of _____ ; outside of QC limits

Pesticides: 0 out of 12 ; outside of QC limits

Comments: VOA & BNA All acceptable pest surrogate recoveries.

FORM II

4/84

000003

C N 1240 BAS 140 ntr r K µV air ayl . C act . 6 01 01

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO. CA 188	1,1-Dichloroethene	0.25	0	85	170*	82	164*	4	14	61-145
	Trichloroethene	0.25	0	55	110	57	114	4	14	71-120
	Chlorobenzene	0.25	0	68	136*	55	110	21*	13	75-130
	Toluene	0.25	0	62	124	59	118	5	13	76-125
	Benzene	0.25	0	56	112	70	140*	22*	11	76-127
B/N SMO SAMPLE NO. CA 188	1,2,4-Trichlorobenzene	50	0	26	52	24	40	8	28	39-98
	Acenaphthene	50	0	32	64	32	64	0	31	46-118
	2,4 Dinitrotoluene	50	0	25	50	26	52	4	38	24-96
	Di-n-Butylphthalate	50	0	27	54	24	48	12	40	11-117
	Pyrene	50	0	70	140*	105	210*	45*	31	26-127
	N-Nitroso-Di-n-Propylamine	50	0	25	50	23	46	8	38	41-116
	1,4-Dichlorobenzene	50	0	23	46	21	42	9	28	36-97
ACID SMO SAMPLE NO. CA 188	Pentachlorophenol	100	0	6.8	6.8*	8.0	8.0*	16	50	9-103
	Phenol	100	0	19	19	22	22	15	42	12-89
	2-Chlorophenol	100	0	57	57	66	66	15	40	27-123
	4-Chloro-3-Methylphenol	100	0	79	79	80	80	1	42	23-97
	4-Nitrophenol	100	0	21	21	21	21	0	50	10-80
PEST SMO SAMPLE NO.	Lindane								15	56-123
	Heptachlor								20	40-131
	Aldrin		SEE	COMMENT					22	40-120
	Dieldrin								18	52-126
	Endrin								21	56-121
	4,4'-DDT								27	38-127

No effect.

No effect.

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs 2 out of 5; outside QC limits
B/N 1 out of 7; outside QC limits
ACID 0 out of 5; outside QC limits
PEST ____ out of ____; outside QC limits

RECOVERY: VOAs 4 out of 10; outside QC limits
B/N 2 out of 14; outside QC limits
ACID 2 out of 10; outside QC limits
PEST ____ out of ____; outside QC limits

Comments: Pesticide data will be submitted later as a separate package.

- Actual d.l PCP substantially higher
- Actual d.l phenol & 4-NO_2-Ø-OH slightly higher

4/84

FORM III

000003

WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. 4248 SAS 1644C Contractor Rocky Mountain Analytical Contract No. 68-01-7016

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO.	1,1-Dichloroethene								14	61-145
	Trichloroethene								14	71-120
	Chlorobenzene								13	75-130
	Toluene								13	76-125
	Benzene								11	76-127
B/N SMO SAMPLE NO.	1,2,4-Trichlorobenzene								28	39-98
	Acenaphthene								31	46-118
	2,4 Dinitrotoluene								38	24-96
	Di-n-Butylphthalate								40	11-117
	Pyrene								31	26-127
	N-Nitroso-Di-n-Propylamine								38	41-116
	1,4-Dichlorobenzene								28	36-97
ACID SMO SAMPLE NO.	Pentachlorophenol								50	9-103
	Phenol								42	12-89
	2-Chlorophenol								40	27-123
	4-Chloro-3-Methylphenol								42	23-97
	4-Nitrophenol								50	10-80
PEST SMO SAMPLE NO. CA197*	Lindane	0.2	0	0.29*	86	0.30*	90	4.5	15	56-123
	Heptachlor	0.2	0	0.25	74	0.26	78	5.3	20	40-131
	Aldrin	0.2	0	0.27	80	0.24	71	12	22	40-120
	Dieldrin	0.5	0	0.74	89	0.73	88	1.1	18	52-126
	Endrin	0.5	0	0.83	100	0.83	100	0	21	56-121
	4,4'-DDT	0.5	0	0.88	106	0.78	94	12	27	38-127

* based on 600 mls.

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs ____ out of ____; outside QC limits
B/N ____ out of ____; outside QC limits
ACID ____ out of ____; outside QC limits
PEST 0 out of 6; outside QC limits

RECOVERY: VOAs ____ out of ____; outside QC limits
B/N ____ out of ____; outside QC limits
ACID ____ out of ____; outside QC limits
PEST 0 out of 12; outside QC limits

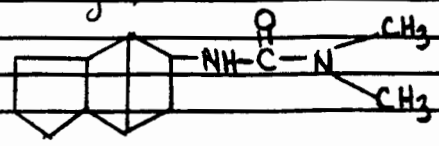
Comments: Gel acceptable

FORM III

4/84

TENTATIVELY IDENTIFIED COMPOUND SAMPLE RESULTS

ALL TENTATIVE IDENTIFICATIONS OF CONFIDENT MATCHING QUALITY, WHICH AREN'T SUSPECTED ARTIFACTS/CONTAMINANTS, ARE LISTED BELOW:

SAMPLE #	FRACTION	SCAN #(S)	SPECTRUM MATCH INDICES TYPE	SCORE	TYPE	SCORE	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS
CA188	VOA						N.D.		
	BNA	1582	Fit	916			11 ug/L	Isomer of Norea	
		1604	Fit	916			8.9 ug/L	Isomer of Norea	
		1614	Fit	976			11 ug/L	Norea - Excellent match	
									
							Norea - Herban	3-(hexahydro-4,7-methanoinden-5-yl)-1,1-dimethylurea.	
							other Names:	Hercules 7531 - A selective herbicide to control annual grass and broadleaf weeds.	
							LD_{50} (rat) 2000 mg/kg		
							CAS no. 18530-56-8.		
CA189	VOA						N.D		
	BNA						N.D		
CA190	VOA						N.D		
	BNA						N.D.		
CA191	VOA						N.D		
	BNA						N.D		
CA192	VOA						N.D		
	BNA						N.D		
CA193	VOA						N.D		
	BNA						N.D.		
CA194	VOA						N.D		
	BNA	249					18 ug/L	ethyl cyclopentane	good match
CA195	VOA						N.D		
	BNA	1105					45.3 ug/L	Unknown	
		1096					66 ug/L	Unknown	
		1132					17 ug/L	Unknown.	
		1595	Fit	874			250 ug/L	Norea precursor.	
		1616	Fit	954			90 ug/L	Norea precursor.	
		1623	Fit	992			48 ug/L	Norea - see discription above	
		1752					15 ug/L	Unknown	
		1777	Fit	884			8.6 ug/L	Norea related compound.	
		254	Fit	990			[illegible] ug/L	ethyl cyclopentane	
		1790	Fit	683			6 ug/L	Norea precursor.	
		1378	Fit	989			8 ug/L	2(3H)-Benzothiazolone.	
		1464					24 ug/L	Unknown.	
		1739					18 ug/L	Unknown.	
CA196	VOA						N.D		
	BNA						N.D.		

TENTATIVELY IDENTIFIED COMPOUND SAMPLE RESULTS

ALL TENTATIVE IDENTIFICATIONS OF CONFIDENT MATCHING QUALITY, WHICH AREN'T SUSPECTED ARTIFACTS/CONTAMINANTS, ARE LISTED BELOW:

SAMPLE #	FRACTION	SCAN #(S)	SPECTRUM MATCH INDICES				ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS
			TYPE	SCORE	TYPE	SCORE			
CA197	VOA						N.D		
	BNA						N.D.		
CA198	VOA						N.D		
	BNA						N.D.		
CA199	VOA						N.D		
	BNA						N.D		
CA200	VOA						N.D		
	BNA						N.D.		
CA201	VOA						N.D		
	BNA						N.D.		

GC/MS TUNING AND MASS CALIBRATION

000007

ORIGINAL (Red)

Decafluorotriphenylphosphine (DFTPP)

Case No. 4248/SAS1644C Contractor RMAL Contract No. 68-01-7016

Instrument ID K Date 5/6/1985 Time 6:29

Lab ID DFK189 Data Release Authorized By: 19

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE	
51	30.0 - 60.0% of mass 198	30.78	
68	less than 2.0% of mass 69	0.51	(1.56)[1]
69	mass 69 relative abundance	32.63	
70	less than 2.0% of mass 69	0.14	(0.42)[1]
127	40.0 - 60.0% of mass 198	41.33	
197	less than 1.0% of mass 198	—	
198	base peak, 100% relative abundance	100.00	
199	5.0 - 9.0% of mass 198	6.51	
275	10.0 - 30.0% of mass 198	17.67	
365	greater than 1.00% of mass 198	1.58	
441	present, but less than mass 443	7.47	
442	greater than 40.0% of mass 198	50.81	
443	17.0 - 23.0% of mass 442	9.59	(18.9)

[1] Value in parenthesis is % mass 69.
[2] Value in parenthesis is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

Tune OK -PV.

SAMPLE ID	LAB ID		DATE OF ANALYSIS	TIME OF ANALYSIS
Standard	STDK 190	50 ppm HSL Std	5/6/85	7:24
Surrogate check	STDK 191	Surr check	5/6/85	8:18
MB 2	7112-MB2	57112K192	5/6/85	9:50
CA188 ~~CS021~~ 5/6/85 mmk	7112-01	57112K193	5/6/85	10:53
CA188 ~~CS021~~ mmk MS	7112-01 MS	57112K194	5/6/85	11:38
CA188 MSD	7112-01 MSD	57112K195	5/6/85	12:32
CA189	7112-02	57112K196	5/6/85	13:22
CA190	7112-03	57112K197	5/6/85	14:16
CA191	7112-04	57112K198	5/6/85	5/6/85 mmk ~~14:16~~ 15:07
CA192	7112-05	57112K199	5/6/85	15:58
CA193	7112-06	57112K200	5/6/85	16:48
CA194	7112-07	57112K201	5/6/85	17:40

GC/MS TUNING AND MASS CALIBRATION
Decafluorotriphenylphosphine (DFTPP)

000008

Case No. 4248/SAS1644C Contractor KMAL Contract No. 68-01-7016

Instrument ID K Date 5/6/85 Time 19:56

Lab ID DFK 202 Data Release Authorized By: KG

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	36.27
68	less than 2.0% of mass 69	0.50 (1.25)[1]
69	mass 69 relative abundance	39.97
70	less than 2.0% of mass 69	0.18 (0.45)[1]
127	40.0 - 60.0% of mass 198	41.19
197	less than 1.0% of mass 198	0.00
198	base peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	6.69
275	10.0 - 30.0% of mass 198	16.99
365	greater than 1.00% of mass 198	1.42
441	present, but less than mass 443	6.82
442	greater than 40.0% of mass 198	48.02
443	17.0 - 23.0% of mass 442	9.18 (19.12)[2]

[1] Value in parenthesis is % mass 69.
[2] Value in parenthesis is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

Tune OK RV.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
50 ppm HSL STD	STDK203	5/6/85	19:05
Surr. STD	STDK204	5/6/85	20:01
CA195	7112-08 S7112K205 case 4248/SAS1644C	5/6/85	20:58
CA196	7112-09 S7112K206 " "	5/6/85	21:50
CA197	7112-10 S7112K207 " "	5/6/85	22:42
CA190	7112-03 S7112K208 " "	5/6/85	23:32
CA192 7112-05	7112-05 S7112K209 " "	5/7/85	0:20
CA198	7112-11 S7112K210 " "	5/7/85	1:29
CA199	7112-12 S7112K211 " "	5/7/85	2:20
CA200	7112-13 S7112K212	5/7/85	3:18
CA201	7112-14 S7112K213	5/7/85	4:03
CA200	7112-13 S7112K214	5/7/85	4:51

GC/MS TUNING AND MASS CALIBRATION
Decafluorotriphenylphosphine (DFTPP)

Case No. 4247/SAS1644C Contractor RMAL Contract No. 68-01-70

Instrument ID K Date 5/9/85 Time 6:32

Lab ID DFK257 Data Release Authorized By: KDFAUST

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.5
68	less than 2.0% of mass 69	0.97 (1.93)
69	mass 69 relative abundance	50.2
70	less than 2.0% of mass 69	0.00 (—)
127	40.0 - 60.0% of mass 198	44.3
197	less than 1.0% of mass 198	0.00
198	base peak, 100% relative abundance	100
199	5.0 - 9.0% of mass 198	6.67
275	10.0 - 30.0% of mass 198	17.6
365	greater than 1.00% of mass 198	1.94
441	present, but less than mass 443	6.28
442	greater than 40.0% of mass 198	50.6
443	17.0 - 23.0% of mass 442	9.97 (19.7)

[1] Value in parenthesis is % mass 69.
[2] Value in parenthesis is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

TUNE OK IN.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYS
50 PPM STD	50 PPM HSL STD (STDK258)	5/9/85	
surrogates	SURROGATE CHECK STDK259		
	7111-03 S7111K260		9:13
	7112-08 S7112K261		
	7112-14 S7112K262		11:23
	7105-19 S7105K263		12:13
	~~7103~~ 7111-03 reinjection S7111K264		13:05
Blank	7107-MB S7107K265		
ED167	7107-01 S7107K266 case #4142		15:37
ED167 MS	7107-01MS S7107K267		16:15
ED167 MS	7107-01MS S7107K268		17:17
ED167 MSD	7107-01MSD S7107K269		18:17

GC/MS TUNING AND MASS CALIBRATION

000010

Bromofluorobenzene (BFB)

Case No. 4248 / SAS 1644 C Contractor RMAL Contract No. 68-01-7016

Instrument ID J Date 5/1/85 Time 8:28

Lab ID BFJ076 Data Release Authorized By: KJ

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of the base peak	19.66
75	30.0 - 60.0% of the base peak	51.01
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of the base peak	7.41
173	Less than 1.0% of the base peak	0.00
174	Greater than 50.0% of the base peak	82.70
175	5.0 - 9.0% of mass 174	6.24 (7.55)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	82.40 (99.63)[1]
177	5.0 - 9.0% of mass 176	5.92 (7.18)[2]

[1] Value in parenthesis is % mass 174.
[2] Value in parenthesis is % mass 176.

Tune OK.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
50 PPB STD	STDJ077	5-1-85	08:51
MB-2	BLJ078	5-1-85	09:59
CA188	S7112J079 7112-01	5-1-85	10:45
CA188 MS	S7112J080 7112-01MS	5-1-85	11:32
CA188 MSD	S7112J081 7112-01MSD	5-1-85	13:05
CA189	S7112J082 7112-02	5-1-85	14:08
CA188MSD	S7112J083 7112-01MSD	5-1-85	14:52

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FORM V