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SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

January 17, 2000

Eric Wilson, On-Scene Coordinator
U.S. Environmental Protection Agency
Removal Action Branch
2890 Woodbridge Avenue
Edison, NJ 08837

EPA CONTRACT NO: 68-W5-0019
TDD NO: 02-99-08-0019
DOCUMENT CONTROL NO: START-02-F-03681
SUBJECT: FLOODPLAIN SOIL/SEDIMENT SAMPLING AND ANALYSIS SUMMARY REPORT - CORNELL DUBILIER ELECTRONICS

Dear Mr. Wilson:

Enclosed please find the Floodplain Soil/Sediment Sampling and Analysis Summary Report for the Cornell Dubilier Electronics site located in South Plainfield, Middlesex County, New Jersey. If you have any questions or comments, please call me at (732) 225-6116.

Very truly yours,

ROY F. WESTON, INC.

M. Mahnkopf

Michael Mahnkopf
Project Manager

Enclosure

cc: TDD File

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SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

FLOODPLAIN SOIL/SEDIMENT SAMPLING AND ANALYSIS SUMMARY REPORT

CORNELL DUBILIER ELECTRONICS
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY

Prepared by

Superfund Technical Assessment and Response Team
Roy F. Weston, Inc.
Federal Programs Division
Edison, New Jersey 08837

Prepared for

U.S. Environmental Protection Agency
Region II - Removal Action Branch
Edison, New Jersey 08837

DCN #: START-02-F-03681
TDD #: 02-99-08-0019
EPA Contract No.: 68-W5-0019

Approved by:

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M. Mahnkopf

Michael Mahnkopf
Project Manager

Date: 01/17/00

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Dan Crouse

Dan Crouse
Group Leader

Date: 01-17-00

EPA

_____

Eric Wilson
On-Scene Coordinator

Date: _____

In Association with Resource Applications, Inc., R.E. Sarriera Associates, Tetra Tech EM, Inc., C.C. Johnson & Malhotra, P.C., and GRB Environmental Services, Inc.

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1.0 BACKGROUND

The Cornell-Dubilier Site is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey (Attachment A, Figure 1). The site is approximately 25 acres in size. Facing Hamilton Boulevard are several buildings currently occupied by approximately 15 businesses. The rear of the property consists of an open field and adjoining wetlands. The facility is currently known as Hamilton Industrial Park.

The site is bordered by Hamilton Boulevard to the northwest, Spicer Avenue to the southwest, a wetlands area to the southeast, the Bound Brook and Conrail railroad tracks to the northeast. The Bound Brook traverses the southeast section of the site.

Cornell-Dubilier operated at the site from 1936 to 1962, manufacturing electronic components, including capacitors. It is alleged that during its operation, Cornell-Dubilier disposed of polychlorinated biphenyl (PCB) contaminated materials and other hazardous substances at the site.

Previous investigations have identified PCBs and heavy metals at the Cornell-Dubilier site and in the Bound Brook downstream of the site. Water, sediment and fish samples were collected from the Bound Brook at one (1) location adjacent to the site, three (3) locations between the site and New Market Pond, and two (2) locations in New Market Pond. Samples were also collected from one (1) location upstream of the site.

Sampling events were conducted on neighboring residential and commercial areas in June and October, 1997 and April and May, 1998. The purpose was to identify off-site migration of contaminants from the Cornell-Dubilier site on these surrounding areas.

Sampling events were conducted along the Bound Brook in August, September, October, November and December, 1997 to identify PCB contamination upstream, midstream, and/or downstream of the Cornell-Dubilier site.

2.0 OBJECTIVE/SAMPLING APPROACH

The objective of this investigation was to characterize PCB contamination in the floodplain of the Bound Brook in Reaches 5 and 6 (as defined in the "Soil And Sediment Sampling And Analysis Report; Cornell Dubilier Electronics - Bound Brook", dated 09/07/98). Reaches 5 and 6 had the highest mean surface soil PCB concentrations of the areas investigated in August through December 1997.

The areas chosen for this investigation were selected based on their proximity to high use areas. This data will be used for risk assessment and to determine if additional investigations are required to evaluate health concerns.

In accordance with the June 16, 1999 Floodplain Sampling QA/QC Work Plan (DCN: START-02-F-03620), surface (0-2") soil samples were collected from Areas 1-4 described below.

Area 1. Veteran's Memorial Park, bordered by Cedar Brook to the north, residential properties located on Kaine Street to the east, and Bound Brook to the south. Thirty-four (34) surface soil samples were collected from this area of concern. Sample locations were determined in the field utilizing a systematic sampling scheme based on 120' spacing.

Area 2. Area located on the north side of Cedar Brook, between Lowden and Oakmoor Avenues. Seventeen (17) surface soil and four (4) surface sediment samples were collected from this area of concern. Sample locations were determined in the field utilizing a systematic sampling scheme based on 75' spacing.

Area 3. Area located on the north side of Bound Brook in the vicinity of Fred Allen Drive. Twenty-eight (28) surface soil samples were collected from this area of concern. Sample locations were determined in the field utilizing a systematic sampling scheme based on 75' spacing.

Area 4. Area located adjacent to stream 14-14-2-3 (as identified on the Flood Insurance Map for the Township of Piscataway), south of New Market Avenue and 525' east of Highland Avenue. Nineteen (19) surface soil and two (2) surface sediment samples were collected from this area of concern. Sample locations were determined in the field utilizing a systematic sampling scheme based on 50' spacing.

Results of the screening soil samples will be evaluated to determine if additional sampling is required to delineate the horizontal extent of PCB contamination or assess risk.

3.0 SAMPLING & ANALYSIS

Soil sampling activities were performed on June 21, June 22 and June 23, 1999 by the following personnel:

1. Eric Wilson - USEPA, Region II
2. Michael Mahnkopf - START, Region II
3. John Brennan - START, Region II
4. Patrick Austin - START, Region II
5. Jeremy Sawetz - START, Region II

All soil samples were collected utilizing dedicated plastic scoops and/or spatulas. All soil samples were analyzed by Southwest Labs of Oklahoma, 1700 West Albany, Suite C, Broken Arrow, OK, 74012, (918) 251-0545.

For additional information, see the June 29, 1999 Trip Report included as Appendix 2 and project logbook # START-02-209.

3.1 Area 1

Pursuant to the procedures discussed above in Section 2.0, thirty-two (32) surface (0-2") soil samples (A1-01 through A1-18, A1-20 through A1-32, A1-34) were collected and analyzed for total PCBs. Soil sample locations are shown on Figure 2.

QA/QC samples included the collection of two (2) field duplicate samples (A1-19 was the duplicate of A1-18; A1-33 was the duplicate of A1-32) and two (2) matrix spike/matrix spike duplicate samples (A1-20 MS/MSD; A1-29 MS/MSD). Samples A1-19, A1-33, A1-20 MS/MSD and A1-29 MS/MSD were analyzed for total PCBs.

Analytical results indicate soil samples A1-01 through A1-34 exhibited total PCB concentrations which ranged from non-detect (A1-34) to 25 ppm (A1-26). Aroclor-1254 accounted for the total concentration of PCB detected in all samples except A1-14. Aroclor 1248 and Aroclor 1254 were detected in sample A1-14 at 0.21 ppm and 0.17 ppm respectively. Analytical results are summarized in Table 1 and the laboratory Form I's and data validation results are included as Appendix 3.

3.2 Area 2

Pursuant to the procedures discussed above in Section 2.0, sixteen (16) surface (0-2") soil samples (A2-01 through A2-011, A2-13 through A2-17) and four (4) surface (0-2") sediment samples (A2-18 through A2-21) were collected and analyzed for total PCBs. Soil sample locations are shown on Figure 3.

QA/QC samples included the collection of one (1) field duplicate sample (A2-12 was the duplicate of A2-11) and one (1) matrix spike/matrix spike duplicate sample (A2-06 MS/MSD). Samples A2-12 and A2-06 MS/MSD were analyzed for total PCBs.

Analytical results indicate soil samples A2-01 through A2-21 exhibited total PCB concentrations which ranged from 0.060 ppm (A2-18) to 2.0 ppm (A2-17). Aroclor-1254 accounted for the total concentration of PCB detected in all samples. Analytical results are summarized in Table 2 and the laboratory Form I's and data validation results are included as Appendix 3.

3.3 Area 3

Pursuant to the procedures discussed above in Section 2.0, twenty-six (26) surface (0-2") soil samples (A3-01, A3-03 through A3-23, A3-25 through A3-28) were collected and analyzed for total PCBs. Soil sample locations are shown on Figure 4.

QA/QC samples included the collection of two (2) field duplicate samples (A3-02 was the duplicate of A3-01; A3-24 was the duplicate of A3-23) and two (2) matrix spike/matrix spike duplicate samples (A3-04 MS/MSD; A3-21 MS/MSD). Samples A3-02, A3-24, A3-04 MS/MSD and A3-21 MS/MSD were analyzed for total PCBs.

Analytical results indicate soil samples A3-01 through A3-28 exhibited total PCB concentrations which ranged from 2.5 ppm (A3-21) to 7.5 ppm (A3-14). Aroclor-1254 accounted for the total concentration of PCB detected in all samples. Analytical results are summarized in Table 3 and the laboratory Form I's and data validation results are included as Appendix 3.

3.4 Area 4

Pursuant to the procedures discussed above in Section 2.0, eighteen (18) surface (0-2") soil samples (A4-01 through A4-08, A4-10 through A4-19) and two (2) surface (0-2") sediment samples (A4-20, A4-21) were collected and analyzed for total PCBs. Soil sample locations are shown on Figure 5.

QA/QC samples included the collection of one (1) field duplicate sample (A4-09 was the duplicate of A4-08) and one (1) matrix spike/matrix spike duplicate sample (A4-10 MS/MSD). Samples A4-09 and A4-10 MS/MSD were analyzed for total PCBs.

Analytical results indicate soil samples A4-01 through A4-21 exhibited total PCB concentrations which ranged from non-detect (A4-01, A4-02, A4-06, A4-13, A4-18, A4-21) to 0.21 ppm (A4-15). Aroclor-1254 accounted for the total concentration of PCB detected in all samples. Analytical results are summarized in Table 4 and the laboratory Form I's and data validation results are included as Appendix 3.

4.0 CONTROL POINT LOCATIONS

In order to document sample locations, several control points were established in Areas 1 - 4 as follows:

Area 1. Two (2) control points were established utilizing existing structures. Utility pole # 6309SPF served as control point 1 (C1). Utility pole # 7855 served as control point 2 (C2) and was located 480' north of C1. C1 and C2 formed the baseline for 120' grid spacing in this area. See Figure 2 for control point locations.

Area 2. Fence posts were installed along the centerline of the Cedar Brook and designated as control points. Control points 1, 2 and 3 (C1, C2, C3) were installed at the designated 0', 300' and 525' intervals respectively. C1, C2 and C3 formed the baseline for 75' grid spacing in this area. See Figure 3 for control point locations.

Area 3. Fence posts were installed along the centerline of the Bound Brook and designated as control points. Control points 1, 2, 3 and 4 (C1, C2, C3, C4) were installed at the designated 0', 300', 600' and 900' intervals respectively. C1, C2, C3 and C4 formed the baseline for 75' grid spacing in this area. See Figure 4 for control point locations.

Area 4. Two (2) control points were installed in Area 4. Control point 1 (C1) was installed 100' west of the centerline of stream 14-14-2-3 and 14.5' west of utility pole #63498 and is located at the south edge of the sidewalk (south side of New Market Avenue). Control point 2 (C2) is located 290' south of C1. The line formed by control points C1 and C2 is perpendicular to New Market Avenue and serves as the baseline for a 50' sampling grid for this area. See Figure 5 for control point locations.

On June 25, 1999, locational data was obtained for all control points discussed above using a global positioning system (GPS) unit operated by a representative of USEPA's Division of Environmental Science and Assessment (DESA). See Table 5 for locational data.

5.0 SITE SPECIFIC QUALITY ASSURANCE/QUALITY CONTROL PLAN

The objective of this QA/QC plan is to provide analytical results which are legally defensible in a court of law. The QA/QC plan incorporated procedures for field sampling, chain of custody, laboratory analyses, and reporting to assure generation of sound analytical results. Sampling procedures were conducted in accordance with USEPA protocols.

5.1 Sampling Equipment and Methods

Samples were collected at the locations and depths as described in this report. Procedural changes dictated by field conditions were fully documented in the field notes and the trip report.

Equipment utilized for this project were dedicated plastic scoops and spatulas.

All samples were transferred immediately after collection into sample bottles selected by parameter as listed below. Sample bottles used for this project were prepared in accordance with USEPA criteria for polychlorinated biphenyls (PCBs).

The type of sample container required for the Cornell Dubilier Electronics floodplain soil/sediment investigation were as follows:

a. Polychlorinated Biphenyls - 8 oz. glass bottle with teflon closure.

All soil samples were packed on ice immediately following collection.

All samples were labeled with the following information:

a. sample number;
b. date and time of collection;
c. site name;
d. sample collector's initials;
e. analyses required.

Accurate field notes were maintained which included the information listed above. Additional information included, but was not limited to:

a. sample location sketch;
b. sample method;
c. general comments, including any modification from the sample plan.

5.2 Chain of Custody

Chain of custody was maintained for all samples. Chain of custody originated with the collection of the samples and was maintained until the samples were relinquished to the laboratory. The chain of custody form detailed the following information:

a. sample identification number;
b. sample collection date and time;
c. sample matrix;
d. expected contaminant concentration (low, medium, high);
e. sample type (grab or composite);
f. sample preservation;
g. analytical parameters;
h. name(s) and signatures(s) of sampler(s);
i. signatures(s) of individual(s) with control over samples.

5.3 Quality Assurance/Quality Control Samples

The matrix for all samples included in this investigation was soil/sediment. QA/QC samples included the collection of one (1) field duplicate and one (1) matrix spike/matrix spike duplicate sample for each matrix (soil/sediment) per sampling date at a ratio of one (1) per twenty (20) samples. Extra volume was submitted to allow the laboratory to perform matrix spike sample analysis. This analysis provides information about the effect of sample matrix digestion and measurement methodology. Field duplicate samples provide an indication of sample homogeneity and were not identified to the laboratory.

5.4 Sample QA/QC Data

A CLP format deliverable QA/QC package was provided for all samples submitted for analysis.

6.0 DATA VALIDATION

Data was evaluated in accordance with Region II guidelines using the following data validation SOP: SOP HW-6, "USEPA Region II Data Validation SOP for Statement of Work OLCO 3.2, Rev.11, June 1996". Laboratory analytical results were assessed by the data reviewer for compliance with required precision, accuracy, completeness, representativeness, and sensitivity.

Data validation was performed by ESAT, Region II under the USEPA Contract Laboratory Program. Data validation results indicate that the analytical results are valid and acceptable. For specific comments, see the Data Validation Results included as Appendix 3.

TABLE - 1 PCB DATA (Area 1)

SITE NAME: Cornell - Dubilier Electronics
SAMPLING DATE: June 21, 1999
UNITS: ug/kg (unless otherwise indicated)

Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A1-01	A1-02	A1-03	A1-04	A1-05	A1-06	A1-07	A1-08	A1-09	A1-10	A1-11
CLP Sample #	BWZ-06	BWZ-07	BWZ-08	BWZ-09	BWZ-10	BWZ-11	BWZ-12	BWZ-13	BWZ-14	BWZ-15	BWZ-16
Lab ID #	39092.01	39092.02	39092.03	39092.04	39092.05	39092.06	39092.07	39092.08	39092.09	39092.10	39092.11
Percent Moisture	20	12	7	15	12	12	8	12	6	10	9
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1
PCB											
Aroclor-1016	40 U	36 U	33 U	36 U	37 U	37 U	34 U	35 U	34 U	35 U	35 U
Aroclor-1221	82 U	74 U	68 U	74 U	75 U	76 U	68 U	70 U	69 U	72 U	72 U
Aroclor-1232	40 U	36 U	33 U	36 U	37 U	37 U	34 U	35 U	34 U	35 U	35 U
Aroclor-1242	40 U	36 U	33 U	36 U	37 U	37 U	34 U	35 U	34 U	35 U	35 U
Aroclor-1248	40 U	36 U	33 U	36 U	37 U	37 U	34 U	35 U	34 U	35 U	35 U
Aroclor-1254	300 J	280 J	240 J	1300	82 JN	480	150 J	540	120 JN	170 J	120 J
Aroclor-1260	40 U	36 U	33 U	36 U	37 U	37 U	34 U	35 U	34 U	35 U	35 U
Total PCB (mg/kg)	0.30 J	0.28 J	0.24 J	1.3	0.082 JN	0.48	0.15 J	0.54	0.12 JN	0.17 J	0.12 J

Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A1 - 12	A1 - 13	A1 - 14	A1 - 15	A1 - 16	A1 - 17	A1 - 18	A1 - 19	A1 - 20	A1-21	A1-22
CLP Sample #	BWZ-17	BWZ-18	BWZ-19	BWZ-20	BWZ-21	BWZ-22	BWZ-23	BWZ-24	BWZ-25	BWZ-26	BWZ-27
Lab ID #	39092.12	39092.13	39092.14	39092.15	39092.16	39092.17	39092.18	39092.19	39092.20	39092.21	39092.22
Percent Moisture	11	12	8	12	7	8	16	14	20	9	17
Dilution Factor	1	1	1	1	1	1	10	10	1	1	1
PCB											
Aroclor-1016	34 U	36 U	36 U	38 U	35 U	35 U	380 U	380 U	41 U	36 U	38 U
Aroclor-1221	69 U	73 U	72 U	76 U	72 U	71 U	780 U	770 U	84 U	73 U	77 U
Aroclor-1232	34 U	36 U	36 U	38 U	35 U	35 U	380 U	380 U	41 U	36 U	38 U
Aroclor-1242	34 U	36 U	36 U	38 U	35 U	35 U	380 U	380 U	41 U	36 U	38 U
Aroclor-1248	34 U	36 U	210 J	38 U	35 U	35 U	380 U	380 U	41 U	36 U	38 U
Aroclor-1254	310	84	170	380	190 J	200	5500	6300	1600	1000 D	290
Aroclor-1260	34 U	36 U	36 U	38 U	35 U	35 U	380 U	380 U	41 U	36 U	38 U
Total PCB (mg/kg)	0.31	0.084 J	0.38 J	0.38	0.19 J	0.20	5.5	6.3	1.6	1.0 D	0.29

Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A1 - 23	A1 - 24	A1 - 25	A1 - 26	A1 - 27	A1 - 28	A1 - 29	A1 - 30	A1 - 31	A1-32	A1-33	A1-34
CLP Sample #	BWZ-28	BWZ-29	BWZ-30	BWZ-31	BWZ-32	BWZ-33	BWZ-34	BWZ-35	BWZ-36	BWZ-37	BWZ-38	BWZ-39
Lab ID #	39092.23	39092.24	39092.25	39092.26	39092.27	39092.28	39092.29	39092.30	39092.31	39092.32	39092.33	39092.34
Percent Moisture	16	5	11	10	13	8	16	10	13	8	9	9
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1	1
PCB												
Aroclor-1016	39 U	34 U	36 U	35 U	36 U	36 U	39 U	37 U	37 U	34 U	34 U	34 UJ
Aroclor-1221	80 U	70 U	72 U	72 U	74 U	73 U	78 U	74 U	75 U	69 U	69 U	69 UJ
Aroclor-1232	39 U	34 U	36 U	35 U	36 U	36 U	39 U	37 U	37 U	34 U	34 U	34 UJ
Aroclor-1242	39 U	34 U	36 U	35 U	36 U	36 U	39 U	37 U	37 U	34 U	34 U	34 UJ
Aroclor-1248	39 U	34 U	36 U	35 U	36 U	36 U	39 U	37 U	37 U	34 U	34 U	34 UJ
Aroclor-1254	21000 D	6400 D	6600 D	25000 D	3100 D	120	190	120	2700 D	720 J	740 J	34 UJ
Aroclor-1260	39 U	34 U	36 U	35 U	36 U	36 U	39 U	37 U	37 U	34 U	34 U	34 UJ
Total PCB (mg/kg)	21 D	6.4 D	6.6 D	25 D	3.1 D	0.12	0.19	0.12	2.7 D	0.72 J	0.74 J	UJ

U - Non-detected compound.
UJ- Analyte was not detected. The reported quantitation limit is qualified estimated.
J - Estimated Value
JN - Presumptive evidence of a compound at an estimated value.
D- From Dilution

TABLE - 2 PCB DATA (Area 2)

SITE NAME: Cornell - Dubilier Electronics
SAMPLING DATE: June 22, 1999
UNITS: ug/kg (unless otherwise indicated)

Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A2-01	A2-02	A2-03	A2-04	A2-05	A2-06	A2-07	A2-08	A2-09	A2-10	A2-11
CLP Sample #	BWZ-43	BWZ-44	BWZ-45	BWZ-46	BWZ-47	BWZ-48	BWZ-49	BWZ-50	BWZ-51	BWZ-52	BWZ-53
Lab ID #	39116.01	39116.02	39116.03	39116.04	39116.05	39116.06	39116.07	39116.08	39116.09	39116.10	39116.11
Percent Moisture	16	9	20	23	18	21	21	36	39	26	22
Dilution Factor	1	1	1	1	1	1	1	10	10	10	10
PCB											
Aroclor-1016	38 U	34 U	40 U	42 U	40 U	40 U	40 U	480 U	510 U	430 U	420 U
Aroclor-1221	77 U	68 U	81 U	86 U	80 U	82 U	82 U	980 U	1000 U	880 U	860 U
Aroclor-1232	38 U	34 U	40 U	42 U	40 U	40 U	40 U	480 U	510 U	430 U	420 U
Aroclor-1242	38 U	34 U	40 U	42 U	40 U	40 U	40 U	480 U	510 U	430 U	420 U
Aroclor-1248	38 U	34 U	40 U	42 U	40 U	40 U	40 U	480 U	510 U	430 U	420 U
Aroclor-1254	580 D	120	780 D	95	880 D	730 D	940 D	1100 J	800 J	1100	1000
Aroclor-1260	38 U	34 U	40 U	42 U	40 U	40 U	40 U	480 U	510 U	430 U	420 U
Total PCB (mg/kg)	0.58 D	0.12	0.78 D	0.095	0.88 D	0.73 D	0.94 D	1.1 J	0.8 J	1.1	1

Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A2 - 12	A2 - 13	A2 - 14	A2 - 15	A2 - 16	A2 - 17	A2 - 18	A2 - 19	A2 - 20	A2-21
CLP Sample #	BWZ-54	BWZ-55	BWZ-56	BWZ-57	BWZ-58	BWZ-59	BWZ-60	BWZ-61	BWZ-62	BWZ-63
Lab ID #	39116.12	39116.13	39116.14	39116.15	39116.16	39116.17	39116.18	39116.19	39116.20	39116.21
Percent Moisture	23	19	22	24	30	26	21	46	41	26
Dilution Factor	10	10	10	10	10	10	10	10	10	1
PCB										
Aroclor-1016	420 U	410 U	400 U	420 U	460 U	430 U	410 U	610 U	550 U	44 U
Aroclor-1221	860 U	820 U	800 U	850 U	940 U	860 U	840 U	1200 U	1100 U	89 U
Aroclor-1232	420 U	410 U	400 U	420 U	460 U	430 U	410 U	610 U	550 U	44 U
Aroclor-1242	420 U	410 U	400 U	420 U	460 U	430 U	410 U	610 U	550 U	44 U
Aroclor-1248	420 U	410 U	400 U	420 U	460 U	430 U	410 U	610 U	550 U	44 U
Aroclor-1254	1000	380 J	670 J	850	320 J	2000	60 J	580 J	180 J	480 DJ
Aroclor-1260	420 U	410 U	400 U	420 U	460 U	430 U	410 U	610 U	550 U	44 U
Total PCB (mg/kg)	1	0.38 J	0.67 J	0.85	0.32 J	2	0.06 J	0.58 J	0.18 J	0.48 DJ

U - Non-detected compound.
UJ- Analyte was not detected. The reported quantitation limit is qualified estimated.
J - Estimated Value
JN - Presumptive evidence of a compound at an estimated value.
D- From Dilution

TABLE - 3 PCB DATA (Area 3)

SITE NAME: Cornell - Dubilier Electronics
SAMPLING DATE: June 23, 1999
UNITS: ug/kg (unless otherwise indicated)

Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A3-01	A3-02	A3-03	A3-04	A3-05	A3-06	A3-07	A3-08	A3-09	A3-10	A3-11
CLP Sample #	BWZ-64	BWZ-65	BWZ-66	BWZ-67	BWZ-68	BWZ-69	BWZ-70	BWZ-71	BWZ-72	BWZ-73	BWZ-74
Lab ID #	39129.01	39129.02	39129.03	39129.04	39129.05	39129.06	39129.07	39129.08	39129.09	39129.10	39129.11
Percent Moisture	25	25	35	23	38	26	47	23	33	30	18
Dilution Factor	10	10	10	10	10	10	10	10	10	10	10
PCB											
Aroclor-1016	440 U	420 U	510 U	400 U	530 U	430 U	620 U	420 U	480 U	470 U	400 U
Aroclor-1221	890 U	860 U	1000 U	800 U	1100 U	870 U	1200 U	860 U	970 U	950 U	810 U
Aroclor-1232	440 U	420 U	510 U	400 U	530 U	430 U	620 U	420 U	480 U	470 U	400 U
Aroclor-1242	440 U	420 U	510 U	400 U	530 U	430 U	620 U	420 U	480 U	470 U	400 U
Aroclor-1248	440 U	420 U	510 U	400 U	530 U	430 U	620 U	420 U	480 U	470 U	400 U
Aroclor-1254	4600	4700	4000	4500	3400	3700	3800	4900	3800	4400	5200
Aroclor-1260	440 U	420 U	510 U	400 U	530 U	430 U	620 U	420 U	480 U	470 U	400 U
Total PCB (mg/kg)	4.6	4.7	4	4.5	3.4	3.7	3.8	4.9	3.8	4.4	5.2

Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A3 - 12	A3 - 13	A3 - 14	A3 - 15	A3 - 16	A3 - 17	A3 - 18	A3 - 19	A3 - 20	A3-21	A3-22
CLP Sample #	BWZ-75	BWZ-76	BWZ-77	BWZ-78	BWZ-79	BWZ-80	BWZ-81	BWZ-82	BWZ-83	BWZ-84	BWZ-85
Lab ID #	39129.12	39129.13	39129.14	39129.15	39129.16	39129.17	39129.18	39129.19	39129.20	39129.21	39129.22
Percent Moisture	30	29	28	26	33	61	26	55	19	25	34
Dilution Factor	10	10	10	10	10	10	10	10	10	10	10
PCB											
Aroclor-1016	460 U	460 U	440 U	440 U	490 U	820 UJ	440 U	720 UJ	380 U	440 U	480 U
Aroclor-1221	930 U	940 U	900 U	890 U	1000 U	1600 UJ	890 U	1500 UJ	760 U	890 U	980 U
Aroclor-1232	460 U	460 U	440 U	440 U	490 U	820 UJ	440 U	720 UJ	380 U	440 U	480 U
Aroclor-1242	460 U	460 U	440 U	440 U	490 U	820 UJ	440 U	720 UJ	380 U	440 U	480 U
Aroclor-1248	460 U	460 U	440 U	440 U	490 U	820 UJ	440 U	720 UJ	380 U	440 U	480 U
Aroclor-1254	5800	5900	7500	4000	5000	4200 J	4700	4100 J	5700	2500	2700
Aroclor-1260	460 U	460 U	440 U	440 U	490 U	820 UJ	440 U	720 UJ	380 U	440 U	480 U
Total PCB (mg/kg)	5.8	5.9	7.5	4	5	4.2 J	4.7	4.1 J	5.7	2.5	2.7

Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A3 - 23	A3 - 24	A3 - 25	A3 - 26	A3 - 27	A3 - 28
CLP Sample #	BWZ-86	BWZ-87	BWZ-88	BWZ-89	BWZ-90	BWZ-91
Lab ID #	39129.23	39129.24	39129.25	39129.26	39129.27	39129.28
Percent Moisture	68	68	31	52	29	55
Dilution Factor	10	10	10	10	10	10
PCB						
Aroclor-1016	1000 UJ	950 UJ	460 U	670 U	450 U	710 U
Aroclor-1221	2100 UJ	1900 UJ	940 U	1400 U	920 U	1400 U
Aroclor-1232	1000 UJ	950 UJ	460 U	670 U	450 U	710 U
Aroclor-1242	1000 UJ	950 UJ	460 U	670 U	450 U	710 U
Aroclor-1248	1000 UJ	950 UJ	460 U	670 U	450 U	710 U
Aroclor-1254	3700 J	3200 J	3000 J	6000 J	2900 J	3100 J
Aroclor-1260	1000 UJ	950 UJ	460 U	670 U	450 U	710 U
Total PCB (mg/kg)	3.7 J	3.2 J	3 J	6 J	2.9 J	3.1 J

U - Non-detected compound.
UJ- Analyte was not detected. The reported quantitation limit is qualified estimated.
J - Estimated Value
JN - Presumptive evidence of a compound at an estimated value.
D- From Dilution

TABLE - 4 PCB DATA (Area 4)

SITE NAME: Cornell - Dubilier Electronics
SAMPLING DATE: June 21, 1999
UNITS: ug/kg (unless otherwise indicated)

Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A4-01	A4-02	A4-03	A4-04	A4-05	A4-06	A4-07	A4-08	A4-09	A4-10	A4-11
CLP Sample #	BWZ-96	BWZ-97	BWZ-98	BWZ-99	BXA-00	BXA-01	BXA-02	BXA-03	BXA-04	BXA-05	BXA-06
Lab ID #	39116.22	39116.23	39116.24	39116.25	39116.26	39116.27	39116.28	39116.29	39116.30	39116.31	39116.32
Percent Moisture	27	6	16	10	9	8	9	9	7	5	9
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1
PCB											
Aroclor-1016	45 U	35 U	39 U	36 U	36 U	36 U	36 U	36 U	35 U	34 U	35 U
Aroclor-1221	91 U	70 U	80 U	73 U	73 U	72 U	73 U	73 U	72 U	69 U	72 U
Aroclor-1232	45 U	35 U	39 U	36 U	36 U	36 U	36 U	36 U	35 U	34 U	35 U
Aroclor-1242	45 U	35 U	39 U	36 U	36 U	36 U	36 U	36 U	35 U	34 U	35 U
Aroclor-1248	45 U	35 U	39 U	36 U	36 U	36 U	36 U	36 U	35 U	34 U	35 U
Aroclor-1254	45 U	35 U	80 J	100 J	60 J	36 U	74 J	130 J	98 J	55 J	96 J
Aroclor-1260	45 U	35 U	39 U	36 U	36 U	36 U	36 U	36 U	35 U	34 U	35 U
Total PCB (mg/kg)	U	U	0.08 J	0.1 J	0.06 J	U	0.074 J	0.13 J	0.098 J	0.055 J	0.096 J

Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample ID #	A4 - 12	A4 - 13	A4 - 14	A4 - 15	A4 - 16	A4 - 17	A4 - 18	A4 - 19	A4 - 20	A4-21
CLP Sample #	BXA-07	BXA-08	BXA-09	BXA-10	BXA-11	BXA-12	BXA-13	BXA-14	BXA-15	BXA-16
Lab ID #	39116.33	39116.34	39116.35	39116.36	39116.37	39116.38	39116.39	39116.40	39116.41	39092.42
Percent Moisture	7	12	13	12	15	15	12	9	24	18
Dilution Factor	1	1	1	1	1	1	1	1	1	1
PCB										
Aroclor-1016	34 U	38 U	38 U	37 U	37 U	38 U	36 U	35 U	43 U	39 U
Aroclor-1221	68 U	76 U	76 U	74 U	76 U	77 U	74 U	72 U	88 U	79 U
Aroclor-1232	34 U	38 U	38 U	37 U	37 U	38 U	36 U	35 U	43 U	39 U
Aroclor-1242	34 U	38 U	38 U	37 U	37 U	38 U	36 U	35 U	43 U	39 U
Aroclor-1248	34 U	38 U	38 U	37 U	37 U	38 U	36 U	35 U	43 U	39 U
Aroclor-1254	93 J	38 U	140 J	210	140 J	130 J	36 U	40	55	39 U
Aroclor-1260	34 U	38 U	38 U	37 U	37 U	38 U	36 U	35 U	43 U	39 U
Total PCB (mg/kg)	0.093 J	U	0.14 J	0.21	0.14 J	0.13 J	U	0.04	0.055	U

U - Non-detected compound.
UJ- Analyte was not detected. The reported quantitation limit is qualified estimated.
J - Estimated Value
JN - Presumptive evidence of a compound at an estimated value.
D- From Dilution

Table 5
GPS Points for cornell-Dubilier Site
Table References Coordinates for
Geographic, WGS84 Projection (Decimal Degrees)
and
NJ State Plane, WGS 84 Projection (feet)

SITE_NAME	POINT_ID	COMMENT	MAD_LAT_DD	MAD_LON_DD	X_COORD NJ State Plane (ft)	Y_COORD NJ State Plane (ft)
Area 1	C1	POLE 6309 SPF	40.580044	-74.415561	515577.94875	636217.99593
Area 1	C2	POLE 7855	-40.581350	-74.415550	515580.57492	636693.50270
Area 2	C1	CENTER LINE CEDEAR BROOK	40.581962	-74.417695	514984.63721	636916.08732
Area 2	C2		40.581787	-74.418741	514694.09647	636851.95905
Area 2	C3		40.581703	-74.419535	514473.59495	636821.14425
Area 4	C1	POLE 63498 SPF	40.579098	-74.424783	513016.91634	635870.89595
Area 4	C2		40.578413	-74.425293	512875.48703	635621.27572
Area 3	C1	AT STREAM 14-14-2-3	40.580933	-74.424671	513047.35671	636539.58521
Area 3	C2		40.580924	-74.425752	512747.22419	636536.02086
Area 3	C3		40.581156	-74.426770	512464.24132	636620.09911
Area 3	C4		40.581358	-74.427821	512172.38676	636693.63551

Notes: Points Collected with Trimble Pro XR GPS unit. Points were differentially corrected using Trimble Pathfinder Software. Corrected points were exported to ArcView Shapefile, in geographic projection and WGS datum. Exported Shapefile was then reprojected (using ArcView reproduction tool) into NJ Stare Plane (feet), WGS84 datum. From there, an ArcView Script (View_AddXYCoordTOFTab) was loaded compiled, and run on the Feature Table (Ftab) of the reprojected shapefile. The above table is an impot of selected fields of the final Ftab.

APPENDIX 1

SITE MAPS/FIGURES

APPENDIX 2

TRIP REPORT - JUNE 29, 1999

Roy F. Weston, Inc.
Federal Programs Division
Suite 201
1090 King Georges Post Road
Edison, New Jersey 08837-3703
732-225-6116 • Fax 732-225-7037

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

29 June 1999

Mr. Eric Wilson
U.S. Environmental Protection Agency
Removal Action Branch
2890 Woodbridge Avenue
Edison, New Jersey 08837

TDD NO: 02-98-08-0072
DCN NO: START-02-F-03656
SUBJECT: RESIDENTIAL SOIL SAMPLING TRIP REPORT
CORNELL-DUBILIER ELECTRONICS,
SOUTH PLAINFIELD, NEW JERSEY

Dear Mr. Wilson:

Enclosed please find one (1) copy of the Sampling Trip Report for the floodplain soil/sediment sampling episode conducted at Cornell-Dubilier Electronics from 21 - 23 June 1999. If you have any questions or comments, please contact me at (732) 225-6116 or (609) 499-6542.

Sincerely,

ROY F. WESTON, INC.

for
Michael Mahnkopf
Project Manager

cc: John Bulich, Region II ESAT/RSCC

Enclosure

SAMPLING TRIP REPORT

SITE NAME: Cornell-Dubilier Electronics
DCN #: START-02-F-03656
TDD #: 02-98-08-0072

SAMPLE DATES: 21 - 23 June 1999

EPA I.D. NO.: GZ

1. Site Location: Former Cornell-Dubilier Electronics
333 Hamilton Boulevard, South Plainfield, New Jersey

Surface (0-2") soil /sediment samples were collected from the following areas, illustrated in Figure 1:

1. Area A1 - Veteran's Memorial Park
2. Area A2 - North side of Cedar Brook, between Lowden and Oakmoor Avenues
3. Area A3 - North side of Bound Brook in the vicinity of Fred Allen Drive
4. Area A4 - Adjacent to a drainage swale, south of New Market Avenue and approximately 525 feet east of Highland Avenue

2. Sample Descriptions: Ninety-eight (98) surface soil samples and six (6) surface sediment (including field duplicates and MS/MSDs) were collected and submitted for total polychlorinated biphenyl (PCB) analysis (Table 1).

3. Laboratory Receiving Samples:

Analysis	Name and Address of Laboratory
Total PCBs	Southwest Labs of Oklahoma 1700 West Albany, Suite C Broken Arrow, OK 74012 (918) 251-0545

4. Sample Dispatch Data:

On 21 June 1999, fifty-five (55) samples were shipped by Region II START personnel, via Federal Express (airbill No. 802546321349), to Southwest Labs of Oklahoma.

On 22 June 1999, twenty-one (21) samples were shipped by Region II START personnel, via Federal Express (airbill No. 810158220925), to Southwest Labs of Oklahoma.

On 23 June 1999, twenty-eight (28) samples were shipped by Region II START personnel, via Federal Express (airbill No. 810158220936), to Southwest Labs of Oklahoma.

On-Site Personnel:

Name	Representing	Duties on Site
Eric Wilson	U.S. EPA	On-Scene Coordinator
Michael Mahnkopf	Region II START	Project Manager
John Brennan	Region II START	Sample Management
Patrick Austin	Region II START	Sample Technician
Jeremy Sawetz	Region II START	Sample Technician

6. Additional Comments:

From 21 - 23 June 1999, ninety-eight (98) surface soil samples and six (6) surface sediment samples [one hundred and four (104) samples] were collected from Areas A1 through A4. Of these, six (6) of the samples were field duplicates and six (6) samples were designated for MS/MSD analysis. All samples were collected with dedicated plastic scoops/spatulas. Attached are copies of the Organic Traffic Reports and Chain of Custody Records (Appendix A).

7. Report prepared by: Michael Mahnkopf Date: 28 June 1999

8. Report reviewed by: Mark Huston Date: 28 June 1999

TABLE 1 - Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A1-01	BWZ-06	101	Soil	0-2"	06/21/99 0955 hrs	Total PCBs	Area A1
A1-02	BWZ-07	102	Soil	0-2"	06/21/99 0957 hrs	Total PCBs	Area A1
A1-03	BWZ-08	103	Soil	0-2"	06/21/99 0959 hrs	Total PCBs	Area A1
A1-04	BWZ-09	104	Soil	0-2"	06/21/99 1000 hrs	Total PCBs	Area A1
A1-05	BWZ-10	105	Soil	0-2"	06/21/99 1008 hrs	Total PCBs	Area A1
A1-06	BWZ-11	106	Soil	0-2"	06/21/99 1006 hrs	Total PCBs	Area A1
A1-07	BWZ-12	107	Soil	0-2"	06/21/99 1004 hrs	Total PCBs	Area A1
A1-08	BWZ-13	108	Soil	0-2"	06/21/99 1002 hrs	Total PCBs	Area A1

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A1-09	BWZ-14	109	Soil	0-2"	06/21/99 1010 hrs	Total PCBs	Area A1
A1-10	BWZ-15	110	Soil	0-2"	06/21/99 1012 hrs	Total PCBs	Area A1
A1-11	BWZ-16	111	Soil	0-2"	06/21/99 1014 hrs	Total PCBs	Area A1
A1-12	BWZ-17	112	Soil	0-2"	06/21/99 1020 hrs	Total PCBs	Area A1
A1-13	BWZ-18	113	Soil	0-2"	06/21/99 1010 hrs	Total PCBs	Area A1
A1-14	BWZ-19	114	Soil	0-2"	06/21/99 1020 hrs	Total PCBs	Area A1
A1-15	BWZ-20	115	Soil	0-2"	06/21/99 1022 hrs	Total PCBs	Area A1
A1-16	BWZ-21	116	Soil	0-2"	06/21/99 1026 hrs	Total PCBs	Area A1

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A1-17	BWZ-22	117	Soil	0-2"	06/21/99 1024 hrs	Total PCBs	Area A1
A1-18	BWZ-23	118	Soil	0-2"	06/21/99 1000 hrs	Total PCBs	Area A1
A1-19	BWZ-24	119	Soil	0-2"	06/21/99 1005 hrs	Total PCBs	Duplicate of A1-18
A1-20	BWZ-25	120	Soil	0-2"	06/21/99 1010 hrs	Total PCBs	Area A1 MS/MSD
A1-21	BWZ-26	121	Soil	0-2"	06/21/99 1015 hrs	Total PCBs	Area A1
A1-22	BWZ-27	122	Soil	0-2"	06/21/99 1020 hrs	Total PCBs	Area A1
A1-23	BWZ-28	123	Soil	0-2"	06/21/99 1025 hrs	Total PCBs	Area A1
A1-24	BWZ-29	124	Soil	0-2"	06/21/99 1030 hrs	Total PCBs	Area A1

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A1-25	BWZ-30	125	Soil	0-2"	06/21/99 1020 hrs	Total PCBs	Area A1
A1-26	BWZ-31	126	Soil	0-2"	06/21/99 1022 hrs	Total PCBs	Area A1
A1-27	BWZ-32	127	Soil	0-2"	06/21/99 1025 hrs	Total PCBs	Area A1
A1-28	BWZ-33	128	Soil	0-2"	06/21/99 1045 hrs	Total PCBs	Area A1
A1-29	BWZ-34	129	Soil	0-2"	06/21/99 1040 hrs	Total PCBs	Area A1 MS/MSD
A1-30	BWZ-35	130	Soil	0-2"	06/21/99 1035 hrs	Total PCBs	Area A1
A1-31	BWZ-36	131	Soil	0-2"	06/21/99 1025 hrs	Total PCBs	Area A1
A1-32	BWZ-37	132	Soil	0-2"	06/21/99 1010 hrs	Total PCBs	Area A1

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A1-33	BWZ-38	133	Soil	0-2"	06/21/99 1010 hrs	Total PCBs	Duplicate of A1-32
A1-34	BWZ-39	134	Soil	0-2"	06/21/99 1033 hrs	Total PCBs	Area A4
A4-01	BWZ-96	191	Soil	0-2"	06/21/99 1400 hrs	Total PCBs	Area A4
A4-02	BWZ-97	192	Soil	0-2"	06/21/99 1402 hrs	Total PCBs	Area A4
A4-03	BWZ-98	193	Soil	0-2"	06/21/99 1402 hrs	Total PCBs	Area A4
A4-04	BWZ-99	194	Soil	0-2"	06/21/99 1406 hrs	Total PCBs	Area A4
A4-05	BXA-00	195	Soil	0-2"	06/21/99 1412 hrs	Total PCBs	Area A4
A4-06	BXA-01	196	Soil	0-2"	06/21/99 1416 hrs	Total PCBs	Area A4

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A4-07	BXA-02	197	Soil	0-2"	06/21/99 1430 hrs	Total PCBs	Area A4
A4-08	BXA-03	198	Soil	0-2"	06/21/99 1436 hrs	Total PCBs	Area A4
A4-09	BXA-04	199	Soil	0-2"	06/21/99 1438 hrs	Total PCBs	Duplicate of A4-08
A4-10	BXA-05	200	Soil	0-2"	06/21/99 1430 hrs	Total PCBs	Area A4 MS/MSD
A4-11	BXA-06	201	Soil	0-2"	06/21/99 1428 hrs	Total PCBs	Area A4
A4-12	BXA-07	202	Soil	0-2"	06/21/99 1426 hrs	Total PCBs	Area A4
A4-13	BXA-08	203	Soil	0-2"	06/21/99 1420 hrs	Total PCBs	Area A4
A4-14	BXA-09	204	Soil	0-2"	06/21/99 1440 hrs	Total PCBs	Area A4

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A4-15	BXA-10	205	Soil	0-2"	06/21/99 1440 hrs	Total PCBs	Area A4
A4-16	BXA-11	206	Soil	0-2"	06/21/99 1434 hrs	Total PCBs	Area A4
A4-17	BXA-12	207	Soil	0-2"	06/21/99 1430 hrs	Total PCBs	Area A4
A4-18	BXA-13	208	Soil	0-2"	06/21/99 1424 hrs	Total PCBs	Area A4
A4-19	BXA-14	209	Soil	0-2"	06/21/99 1422 hrs	Total PCBs	Area A4
A4-20	BXA-15	210	Sediment	0-2"	06/21/99 1400 hrs	Total PCBs	Area A4
A4-21	BXA-16	211	Sediment	0-2"	06/21/99 1410 hrs	Total PCBs	Area A4
A2-01	BWZ-43	138	Soil	0-2"	06/22/99 1205 hrs	Total PCBs	Area A2

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999.

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A2-02	BWZ-44	139	Soil	0-2"	06/22/99 1210 hrs	Total PCBs	Area A2
A2-03	BWZ-45	140	Soil	0-2"	06/22/99 1155 hrs	Total PCBs	Area A2
A2-04	BWZ-46	141	Soil	0-2"	06/22/99 1200 hrs	Total PCBs	Area A2
A2-05	BWZ-47	142	Soil	0-2"	06/22/99 1205 hrs	Total PCBs	Area A2
A2-06	BWZ-48	143	Soil	0-2"	06/22/99 1210 hrs	Total PCBs	Area A2 MS/MSD
A2-07	BWZ-49	144	Soil	0-2"	06/22/99 1205 hrs	Total PCBs	Area A2
A2-08	BWZ-50	145	Soil	0-2"	06/22/99 1200 hrs	Total PCBs	Area A2
A2-09	BWZ-51	146	Soil	0-2"	06/22/99 1205 hrs	Total PCBs	Area A2

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A2-10	BWZ-52	147	Soil	0-2"	06/22/99 1200 hrs	Total PCBs	Area A2
A2-11	BWZ-53	148	Soil	0-2"	06/22/99 1150 hrs	Total PCBs	Area A2
A2-12	BWZ-54	149	Soil	0-2"	06/22/99 1155 hrs	Total PCBs	Duplicate of A2-11
A2-13	BWZ-55	150	Soil	0-2"	06/22/99 1146 hrs	Total PCBs	Area A2
A2-14	BWZ-56	151	Soil	0-2"	06/22/99 1140 hrs	Total PCBs	Area A2
A2-15	BWZ-57	152	Soil	0-2"	06/22/99 1145 hrs	Total PCBs	Area A2
A2-16	BWZ-58	153	Soil	0-2"	06/22/99 1135 hrs	Total PCBs	Area A2
A2-17	BWZ-59	154	Soil	0-2"	06/22/99 1140 hrs	Total PCBs	Area A2

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A2-18	BWZ-60	155	Sediment	0-2"	06/22/99 1135 hrs	Total PCBs	Area A2
A2-19	BWZ-61	156	Sediment	0-2"	06/22/99 1155 hrs	Total PCBs	Area A2
A2-20	BWZ-62	157	Sediment	0-2"	06/22/99 1210 hrs	Total PCBs	Area A2
A2-21	BWZ-63	158	Sediment	0-2"	06/22/99 1215 hrs	Total PCBs	Area A2
A3-01	BWZ-64	159	Soil	0-2"	06/23/99 1110 hrs	Total PCBs	Area A3
A3-02	BWZ-65	160	Soil	0-2"	06/23/99 1115 hrs	Total PCBs	Duplicate of A3-01
A3-03	BWZ-66	161	Soil	0-2"	06/23/99 1120 hrs	Total PCBs	Area A3
A3-04	BWZ-67	162	Soil	0-2"	06/23/99 1120 hrs	Total PCBs	Area A3 MS/MSD

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A3-05	BWZ-68	163	Soil	0-2"	06/23/99 1125 hrs	Total PCBs	Area A3
A3-06	BWZ-69	164	Soil	0-2"	06/23/99 1130 hrs	Total PCBs	Area A3
A3-07	BWZ-70	165	Soil	0-2"	06/23/99 1135 hrs	Total PCBs	Area A3
A3-08	BWZ-71	166	Soil	0-2"	06/23/99 1140 hrs	Total PCBs	Area A3
A3-09	BWZ-72	167	Soil	0-2"	06/23/99 1140 hrs	Total PCBs	Area A3
A3-10	BWZ-73	168	Soil	0-2"	06/23/99 1142 hrs	Total PCBs	Area A3
A3-11	BWZ-74	169	Soil	0-2"	06/23/99 1142 hrs	Total PCBs	Area A3
A3-12	BWZ-75	170	Soil	0-2"	06/23/99 1146 hrs	Total PCBs	Area A3

TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A3-13	BWZ-76	171	Soil	0-2"	06/23/99 1146 hrs	Total PCBs	Area A3
A3-14	BWZ-77	172	Soil	0-2"	06/23/99 1155 hrs	Total PCBs	Area A3
A3-15	BWZ-78	173	Soil	0-2"	06/23/99 1158 hrs	Total PCBs	Area A3
A3-16	BWZ-79	174	Soil	0-2"	06/23/99 1201 hrs	Total PCBs	Area A3
A3-17	BWZ-80	175	Soil	0-2"	06/23/99 1202 hrs	Total PCBs	Area A3
A3-18	BWZ-81	176	Soil	0-2"	06/23/99 1215 hrs	Total PCBs	Area A3
A3-19	BWZ-82	177	Soil	0-2"	06/23/99 1212 hrs	Total PCBs	Area A3
A3-20	BWZ-83	178	Soil	0-2"	06/23/99 1230 hrs	Total PCBs	Area A3

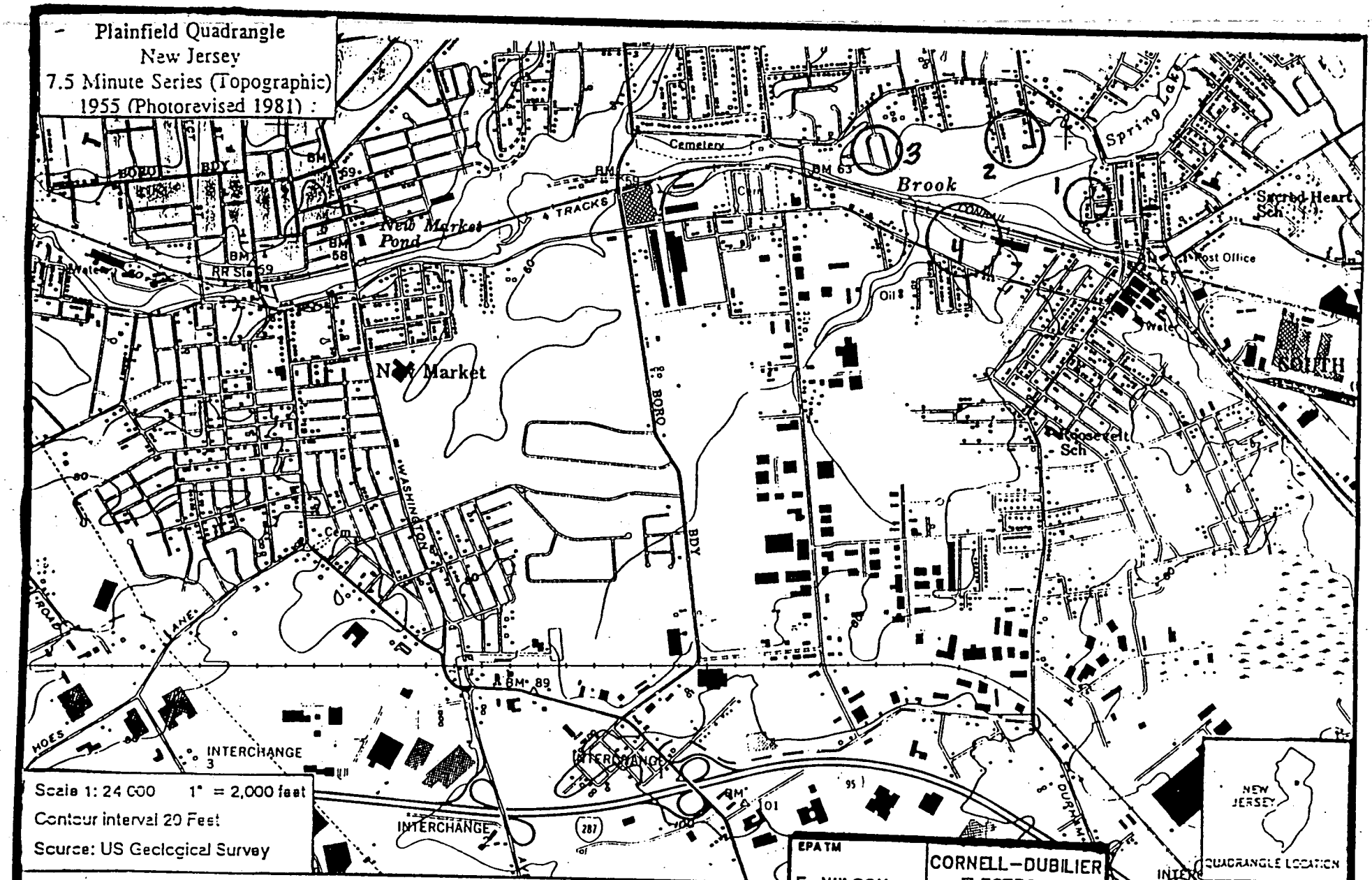
TABLE 1 (cont'd.) Floodplain Soil/Sediment Sample Description and Analysis
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Field Sample ID	CLP Sample No.	Tag No.	Matrix	Depth	Date/Time	Analysis	Location *
A3-21	BWZ-84	179	Soil	0-2"	06/23/99 1230 hrs	Total PCBs	Area A3 MS/MSD
A3-22	BWZ-85	180	Soil	0-2"	06/23/99 1245 hrs	Total PCBs	Area A3
A3-23	BWZ-86	181	Soil	0-2"	06/23/99 1255 hrs	Total PCBs	Area A3
A3-24	BWZ-87	182	Soil	0-2"	06/23/99 1250 hrs	Total PCBs	Duplicate of A3-23
A3-25	BWZ-88	183	Soil	0-2"	06/23/99 1300 hrs	Total PCBs	Area A3
A3-26	BWZ-89	184	Soil	0-2"	06/23/99 1300 hrs	Total PCBs	Area A3
A3-27	BWZ-90	185	Soil	0-2"	06/23/99 1305 hrs	Total PCBs	Area A3
A3-28	BWZ-91	186	Soil	0-2"	06/23/99 1305 hrs	Total PCBs	Area A3

* Area A1 - Veteran's Memorial Park; Area A2 - North side of Cedar Brook, between Lowden and Oakmoor Avenues; Area A3 - North side of Bound Brook in the vicinity of Fred Allen Drive; and Area A4 - Adjacent to drainage swale, south of New Market Ave. and approximately 525 feet east of Highland Ave.

FIGURE 1

Location Plan
Cornell-Dubilier Electronics
South Plainfield, NJ



WESTON

Roy F. Weston, Inc.
FEDERAL PROGRAMS DIVISION

IN ASSOCIATION WITH RESOURCE APPLICATION, Inc.
C.C. JOHNSON & MALHOTRA, P.C., R.E. SARRIERA ASSOCIATES,
PRC ENVIRONMENTAL MANAGEMENT, AND GRB ENVIRONMENTAL SERVICES, INC.

EPA TM E. WILSON	CORNELL–DUBILIER ELECTRONICS S. PLAINFIELD, NJ
START PM M. MAHNKOPF	FIGURE 1 SITE LOCATION MAP

APPENDIX A

Organic Traffic Reports & Chain of Custody Records
Cornell-Dubilier Electronics
South Plainfield, NJ
21 - 23 June 1999

Cooler #1

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency, Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 27133

1. Project Code	
Account Code	
2. Region No.	2
Sampling Co.	WESTON START
4. Date Shipped	6.21.99
Carrier	FED.EX
Regional Information	NJD981557879
Sampler (Name)	J. BRENNAN
Airbill Number	802546321349
Non-Superfund Program	
Sampler Signature	JOHN B
5. Ship To	SOUTHWEST LABS OF OKLAHOMA 1700 WEST ALGONQUIN, SUITE C BROKEN ARROW, OK 74012 (918) 251-0545 ATTN: HARRY BORG
Site Name	CORNELL-DUBILIER
City, State	S. PLAINFIELD, NJ
Site Spill ID	G2

3. Purpose*: Lead [X] SF, [ ] PRP, [ ] ST, [ ] FED; Early Action: [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI; Long-Term Action*: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Field QC, 5. Soil/Sediment, 6. Oil (High only), 7. Waste (High only), 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl, 2. HNO3, 3. NaHSO4, 4. H2SO4, 5. Ice only, 6. Other (Specify in Column D), N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7)	E RAS Analysis VOA	BNA	Pest/PCB	High only: ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
BW2-06	5	M	G	5			X		101	A1-01	6/21/99 0955	N/A	JB	
BW2-07									102	A1-02	0957			
BW2-08									103	A1-03	0959			
BW2-09									104	A1-04	1000			
BW2-10									105	A1-05	1008			
BW2-11									106	A1-06	1006			
BW2-12									107	A1-07	1004			
BW2-13									108	A1-08	1002			
BW2-14									109	A1-09	1010			
BW2-15									110	A1-10	1012			

Shipment for Case Complete? (Y/N): Y

Page 1 of 14

Sample(s) to be Used for Laboratory QC: — None —

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
JOHN B	6/21/99 1630				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-15 REV.

367383

Cooler #1

EPA — United States Environmental Protection Agency, Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	
Account Code	
2. Region No.	2
Sampling Co.	WESTON START
4. Date Shipped	6-21-99
Carrier	FED EX
Regional Information	NJD 981557879
Sampler (Name)	J. BRENNAN
Airbill Number	802546 321349
Non-Superfund Program	
Sampler Signature	
5. Ship To	SOUTHWEST LABS OF OKLAHOMA, 1700 WEST ALBANY, SUITE C, BROKEN ARROW, OK 74012, (918) 251-6545, ATTN: MARK BORG
Site Name	CORNELL-DUBILIER
City, State	S. PLAINFIELD, NJ
Site Spill ID	G2

3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI

Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp Grab	D Preservative (from Box 7)	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
BW2-16	S	M	G	5			X		111	A1-11	6/21/99 1014	N/A	JB	
BW2-17									112	A1-12	1020			
BW2-18									113	A1-13	1010			
BW2-19									114	A1-14	1020			
BW2-20									115	A1-15	1022			
BW2-21									116	A1-16	1026			
BW2-22									117	A1-17	1024			
BW2-23									118	A1-18	1000			
BW2-24									119	A1-19	1005			D
BW2-25									120	A1-20	1010			MS/MSD

Shipment for Case Complete? (Y/N) Y	Page 2 of 4	Sample(s) to be Used for Laboratory QC: BW2-25 (MS/MSD)	Additional Sampler Signatures
Chain of Custody Seal Number(s)			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/21/99 1630				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-15 REV.

367384

Cooler # 1

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	
Account Code	
2. Region No.	2
Sampling Co.	WESTON/START
4. Date Shipped	6-21-99
Carrier	FED EX
Regional Information	NJD 981557879
Sampler (Name)	J. Brennan
Airbill Number	802546321349
Non-Superfund Program	
Sampler Signature	
5. Ship To	SOUTHWEST LABS OF OKLAHOMA, 1700 WEST ALBANY, SUITE C, BROKEN ARROW, OK 74012, (918) 251-0545, ATTN: HARRY BORG
Site Name	CERCLA - DUBILIER
City, State	SPARTA, NJ
Site Spill ID	G2

3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp Grab	D Preservative (from Box 7)	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
BW2-26	5	M	G	5			X		121	A1-21	6/21/99 1015	N/A	JB	
BW2-27									122	A1-22	1020			
BW2-28									123	A1-23	1025			
BW2-29									124	A1-24	1030			
BW2-30									125	A1-25	1020			
BW2-31									126	A1-26	1022			
BW2-32									127	A1-27	1025			
BW2-33									128	A1-28	1045			
BW2-34									129	A1-29	1040			MS/MSD
BW2-35									130	A1-30	1035			

Shipment for Case Complete? (Y/N): Y

Page 3 of 4

Sample(s) to be Used for Laboratory QC: BW2-34 (MS/MSD)

Additional Sampler Signatures

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	6/21/99 1630				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

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A21-012-15 REV.7

367385

Cooler #1

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	WESTON START	6-21-99	FED EX

Regional Information: NJD981557879
Sampler (Name): J. Brennan
Airbill Number: 802 546 321 349
Non-Superfund Program:
Sampler Signature: [signature]
Site Name: Gurnell - Dubilier
City, State: S. Plainfield, NJ
Site Spill ID: G2

3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

5. Ship To: Southwest Labs of Oklahoma, 1700 West Albany, Suite C, Broken Arrow, OK 74012, (918) 251-0545
ATTN: Harry Borg

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7) Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
BW2-36	5	4m	G	5			X		131	A1-31	6/21/99 1025	N/A	JB	
BW2-37	↓	↓	↓	↓			↓		132	A1-32	1010	↓	↓	
BW2-38	↓	↓	↓	↓			↓		133	A1-33	1010	↓	↓	D
BW2-39	↓	↓	↓	↓			↓		134	A1-34	1033	↓	↓	

JB

Shipment for Case Complete? (Y/N): N
Page 4 of 4
Sample(s) to be Used for Laboratory QC: None
Additional Sampler Signatures:
Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/21/99 1630				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

A21-012-15 REV.

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

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367386

Cooler #2

EPA United States Environmental Protection Agency Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	Weston-START	6/21/99	Fed Ex

Regional Information: NJD981557879

Sampler (Name): J. Brennan

Airbill Number: 802546321349

Non-Superfund Program:

Sampler Signature: [signature]

Site Name: Cornell Dubilier

City/State: Plainfield, NJ

Site Spill ID: G2

3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

5. Ship To: Southwest Labs of Oklahoma, 1700 West Albany, Suite C, Broken Arrow, OK 74012, (918) 251-0545, ATTN: Harry Borg

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
BWL-96	5	L/M	G	5			X		191	A4-01	6/21/99 1400	N/A	JB	
BWL-97									192	A4-02	1402			
BWL-98									193	A4-03	1402			
BWL-99									194	A4-04	1406			
BXA-00									195	A4-05	1412			
BXA-01									196	A4-06	1416			
BXA-02									197	A4-07	1430			
BXA-03									198	A4-08	1436			
BXA-04									199	A4-09	1438			D
BXA-05									200	A4-10	1430			MS/MSD

Shipment for Case Complete? (Y/N): N

Page 1 of 3

Sample(s) to be Used for Laboratory QC: BXA-05 (MS/MSD)

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/21/99 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-15 REV

367388

Cooler #2

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	Weston-Start	6-21-99	Fed Ex

Regional Information: NJD 981557879

Sampler (Name): J. Brennan

Airbill Number: 802546321349

Non-Superfund Program:

Sampler Signature: [signature]

Site Name: Cornell-Dubilier

City, State: Plainfield, NJ

Site Spill ID: G2

3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

5. Ship To: Southwest Labs of Oklahoma, 1700 West Albany, Suite C, Broken Arrow, OK 74012, (918) 251-0545
ATTN: Harry Borg

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
BXA-06	5	L/M	G	5			X		201	A4-11	6/21/99 1426	N/A	JB	
BXA-07									202	A4-12	1426			
BXA-08									203	A4-13	1420			
BXA-09									204	A4-14	1440			
BXA-10									205	A4-15	1440			
BXA-11									206	A4-16	1434			
BXA-12									207	A4-17	1430			
BXA-13									208	A4-18	1424			
BXA-14									209	A4-19	1422			
BXA-15									210	A4-20	1400			

Shipment for Case Complete? (Y/N): Y

Page: 2 of 3

Sample(s) to be Used for Laboratory QC: —None—

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/21/99 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV.

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

367387

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	Account Code	2. Region No. 2	Sampling Co. Western Start	4. Date Shipped 6-21-99	Carrier Fed Ex
Regional Information NJD981557879		Sampler (Name) J. Brennan		Airbill Number 802 546 321 349	
Non-Superfund Program		Sampler Signature [signature]		5. Ship To Southwest Labs of Oklahoma 1700 West Albany Suite Broken Arrow, OK 74012 (918) 251-0547 ATTN: Harry Borg	
Site Name Cornell-Dubilier		3. Purpose* Lead: [X] SF [ ] PRP [ ] ST [ ] FED	Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI	Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NRLD	
City, State Splainfield, NJ	Site Spill ID GZ				

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
BXA-16	5	4m	G	5			X		211	A4-21	6/21/99 1410	N/A	JB	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	3 of 3	None		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/21/99 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-15 REV

383828

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code | Account Code
2. Region No. 2 | Sampling Co. Weston START
4. Date Shipped 6-22-99 | Carrier FED EX

Regional Information: NJD 981557879
Sampler (Name): J. BRENNAN
Airbill Number: 810158220925
Non-Superfund Program
Sampler Signature:
5. Ship To: SOUTHWEST LABS OF OKLAHOMA, 1700 WEST MCBANY, BROKEN ARROW, OK 74012 (918) 251-0545 ATTN: HARRY BORG
Site Name: Cornell-Dubilier
City, State: PLAINFIELD, NJ | Site Spill ID: 62
3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7) Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only: ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
BW2-43	5	L/M	G	5			X		138	A2-01	6/22/99 1205	N/A	JB	
BW2-44									139	A2-02	1210			
BW2-45									140	A2-03	1155			
BW2-46									141	A2-04	1200			
BW2-47									142	A2-05	1205			
BW2-48									143	A2-06	1210			MS/MSD
BW2-49									144	A2-07	1205			
BW2-50									145	A2-08	1200			
BW2-51									146	A2-09	1205			
BW2-52									147	A2-10	1200			

Shipment for Case Complete? (Y/N) Y | Page 1 of 3 | Sample(s) to be Used for Laboratory QC: BW2-48 (MS/MSD) | Additional Sampler Signatures | Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/22/99 1530				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none

A21-012-15 REV

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EPA Form 9110-2 (2/98)

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

383829

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	Weston-START	6-22-99	Fed Ex

Regional Information: NJD 981557879

Sampler (Name): J. BRENNAN

Airbill Number: 810158220925

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: SOUTHWEST LABS OF OKLAHOMA, 1700 WEST ALBANY, SUITE C, BROKEN ARROW, OK 74012, (918) 251-0545, ATTN: HARRY BOLG

Site Name: Cornell-Dubilier

City, State: S. PLAINFIELD, NJ

Site Spill ID: G2

3. Purpose*: Lead [X] SF, [ ] PRP, [ ] ST, [ ] FED

Early Action: [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI

Long-Term Action: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Field QC, 5. Soil/Sediment, 6. Oil (High only), 7. Waste (High only), 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl, 2. HNO3, 3. NaHSO4, 4. H2SO4, 5. Ice only, 6. Other (Specify in Column D), N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
BW2-53	S	L/m	G	5			X		148	A2-11	6/22/99 1150	N/A	JB	
BW2-54									149	A2-12	1155			D
BW2-55									150	A2-13	1146			
BW2-56									151	A2-14	1140			
BW2-57									152	A2-15	1145			
BW2-58									153	A2-16	1135			
BW2-59									154	A2-17	1140			
BW2-60									155	A2-18	1135			
BW2-61									156	A2-19	1155			
BW2-62									157	A2-20	1210			

Shipment for Case Complete? (Y/N) Y

Page 2 of 3

Sample(s) to be Used for Laboratory QC: —NONE—

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/22/99 1530				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

A21-012-15 REV

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EPA Form 9110-2 (2/98)

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

383830

Cooler #3

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	Account Code	2. Region No. 2	Sampling Co. Weston START	4. Date Shipped 6-22-99	Carrier Fed Ex
Regional Information NJD 981557879		Sampler (Name) J Brennan		Airbill Number 810158220925	
Non-Superfund Program		Sampler Signature		5. Ship To Southwest Labs of Oklahoma 1700 West Albany, Suite C Broken Arrow, OK 74012 (918) 251-0545 ATTN: Harry Borg	
Site Name Cornell-Dubilier		3. Purpose* Lead: [X] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD			
City, State Plainfield, NJ	Site Spill ID G2				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
BW2-63	5	Lm	G	5			X		158	A2-21	6/22/99 1215	N/A	JB	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	3 of 3	— None —		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
John F Brennan	6/22/99 1530				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV

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EPA Form 9110-2 (2/98)

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

383831

Cooler #4

EPA — United States Environmental Protection Agency, Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No.: 27133

1. Project Code	
Account Code	
2. Region No.	2
Sampling Co.	Weston START
4. Date Shipped	6.23.99
Carrier	Fed Ex
Regional Information	NJD 981557879
Sampler (Name)	J. BRENNAN
Airbill Number	8101582 20936
Non-Superfund Program	
Sampler Signature	
5. Ship To	SOUTHWEST LABS OF OKLAHOMA, 1700 WEST ALBANY, SUITE C, BROKEN ARROW, OK 74012, (918) 251-0545, ATTN: HARRY BORG
Site Name	Cornell Dubilier
City, State	S. PLAINFIELD, NJ
Site Spill ID	G2

3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
BW2-64	5	Lm	G	5			X		159	A3-01	6/23/99 1110	N/A	JB	
BW2-65									160	A3-02	1115			D
BW2-66									161	A3-03	1120			
BW2-67									162	A3-04	1120			MS/MSD
BW2-68									163	A3-05	1125			
BW2-69									164	A3-06	1130			
BW2-70									165	A3-07	1135			
BW2-71									166	A3-08	1140			
BW2-72									167	A3-09	1140			
BW2-73									168	A3-10	1142			

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 3	BW2-67 (MS/MSD)		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	6/23/99 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

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EPA Form 9110-2 (2/98)

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

383832

Cooler #4

EPA United States Environmental Protection Agency, Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	Weston START	6-23-99	Fed Ex

Regional Information: NJD 981557879

Sampler (Name): J. Brennan

Airbill Number: 810 1582 2093 6

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: SOUTHWEST LABS OF OKLAHOMA, 1700 WEST ALBANY, SUITE C, BROKEN ARROW, OK 74012, (918) 251-0545, ATTN: HARRY BORG

Site Name: Cornell-Dubilier

City, State: Stanhope, NJ

Site Spill ID: G2

3. Purpose*: Lead [X] SF, [ ] PRP, [ ] ST, [ ] FED; Early Action [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI; Long-Term Action [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Field QC, 5. Soil/Sediment, 6. Oil (High only), 7. Waste (High only), 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl, 2. HNO3, 3. NaHSO4, 4. H2SO4, 5. Ice only, 6. Other (Specify in Column D), N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
BW2-74	5	Lm	G	5			X		169	A3-11	6/23/99 1142	N/A	JB	
BW2-75									170	A3-12	1146			
BW2-76									171	A3-13	1146			
BW2-77									172	A3-14	1155			
BW2-78									173	A3-15	1158			
BW2-79									174	A3-16	1201			
BW2-80									175	A3-17	1202			
BW2-81									176	A3-18	1215			
BW2-82									177	A3-19	1212			
BW2-83									178	A3-20	1230			

Shipment for Case Complete? (Y/N): Y

Page 2 of 3

Sample(s) to be Used for Laboratory QC: — NONE —

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/23/99 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

A21-012-15 REV.

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

383833

Cod/Pr AY

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27133

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	Western-START	6-23-99	Fed Ex

Regional Information: NJD981557879

Sampler (Name): J. Brennan

Airbill Number: 8101582 20936

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: Southwest Labs of Oklahoma, 1702 West Albany, Suite C, Broken Arrow, OK 74012, (918) 251-8545, ATTN: Harry Borg

Site Name: Cornell-Dubilier

City, State: S. Plainfield, NJ

Site Spill ID: G2

3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI

Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
BWZ-84	5	L/M	G	5			X		179	A3-21	6/23/99 1230	N/A	JB	MS/MSD
BWZ-85									180	A3-22	JB ~~1220~~	1245		
BWZ-86									181	A3-23	JB ~~1245~~	1255		
BWZ-87									182	A3-24	JB ~~1255~~	1250		D
BWZ-88									183	A3-25	JB ~~1250~~	1300		
BWZ-89									184	A3-26	1300			
BWZ-90									185	A3-27	1305			
BWZ-91									186	A3-28	1305			

Shipment for Case Complete? (Y/N): Y

Page 3 of 3

Sample(s) to be Used for Laboratory QC: BWZ-84 (MS/MSD)

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/23/99 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none

A21-012-15 REV.

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EPA Form 9110-2 (2/98)

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

383834

APPENDIX 3

ANALYTICAL RESULTS (FORM I's)
&
DATA VALIDATION RESULTS

RECORD OF COMMUNICATION

TO: Mike MAHNKOPS

FROM: *JANET TROTTER*
Region II ESAT/RSCC

DATE: July 16, 1999

SUBJECT: QUALITY ASSURED DATA

MESSAGE * SDG# BWZ84

PLEASE SIGN BELOW IN ACKNOWLEDGEMENT OF RECEIPT OF THE FOLLOWING AND RETURN ONE COPY OF THIS RECORD OF COMMUNICATION TO THE RSCC-REGION II.

(1) Cornell Dubilier 27133 SWOK Orig + Soils

REPLY BY:

SIGNATURE: M Mahnkopf DATE: 7/19/99

DATE RECEIVED BY RSCC: / /

cc: EPA TASK MONITOR
ESAT, MANAGER
file

RECORD OF COMMUNICATION

REGIONAL SAMPLE CONTROL CENTER

DATE: JULY 12, 1999
SUBJECT: CLP Data Package for Quality Assurance Review
FROM: RSCC / ESAT
TO: George Karras, Hazardous Waste Support Section

Attached is the following ORGANIC Data Package to be reviewed for Quality Assurance

SITE	CORNELL-DUBILIER	CASE#	27133 / SDG # BW284
CONTRACTOR	STARTW	#SAMPLES	MATRIX
PHASE	SI	4	SOIL
LAB	SWOK		
TURN-AROUND-TIME	14 DAYS	FRACTION	PCB
CERCLIS ID #	NJD 981557879	SITE SPILL #	GZ

REGION II RSCC DATA TRANSFER LOG

Relinquished By		Received By	
Signature	Date/Time	Signature	Date/Time
		John Balicky	7-9-99
John Balicky	7-12-99	7/13/99	
	7/14/99	J. Trutter	7/14/99
J. Trutter	7/14/99 (DCR)	G Karras	7/14/99
G Karras	7/15/99	J. Trutter	7/15/99

(over for instructions) revised 3/99

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 27133 **SDG No.:** BWZ84 **LABORATORY:** SWOK

SITE: Cornell-Dublier

DATA ASSESSMENT

The current SOP HW-6 (Revision 11) June 1996, USEPA Region II Data Validation SOP for Statement of Work OLMO3.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R" (unusable). Due to the detection of QC problems some analytes may have the "J" (estimated), "N" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: _____ **Date** 7/14/99

Verified By: _____ **Date** 7/14/99

CLP DATA ASSESSMENT

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

Technical and contractual holding times were met.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

All surrogates in all samples were diluted below the CRQL.

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

No qualification of the data was necessary.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure

CLP DATA ASSESSMENT

cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" (or "R" where indicated) for these reasons:

A) Method blank contamination:

No problems.

5. CALIBRATION:

Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < 25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

No quqalification of the PCB data was necessary.

6. COMPOUND IDENTIFICATION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the

CLP DATA ASSESSMENT

concentration exceeds 10ng/ml in the final sample extract.

a. %Difference (dual column):

See attached CADRE Quantitaiton Limit Report for a list of samples qualified for this criteria.

7. CONTRACT PROBLEMS NON-COMPLIANCE:

a. Dilutions Not Required:

BWZ90DL, BWZ91DL - These analyses were not required, as the initial samples did not contain any hits exceeding the intial calibration range (SOW Sec. 10.2.3.6, page D-60/PEST).

b. Initial Analysis Too Dilute:

BWZ91 - This sample was analyzed at a ten-fold dilution; however, there were no target analytes on either column exceeding the initial calibration range (SOW Sec. 10.2.3.2, page D-59/PEST)."

8. FIELD DOCUMENTATION:

9. OTHER PROBLEMS:

10. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified not to be used:

BWZ84DL, BWZ89DL - The corresponding undiluted analyses were used, instead.

BWZ90DL, BWZ91DL - These analyses were not required, as the initial samples did not contain any hits exceeding the intial calibration range.

4A

Heptachlor epoxide, Dieldrin, 4,4'-DDE, 4,4'-DDD
Methoxychlor, alpha-Chlordane, gamma-Chlordane, Aroclor-1254

PBLKSI
Heptachlor, gamma-Chlordane

DC-422: The following pesticide samples have analytes for which the percent difference between column results exceeds primary criteria. Hits > CRQL are flagged "J." Or: if %D is > 50% and value is < CRQL, sample result is elevated to the CRQL and qualified "U."

BWZ84
Dieldrin, Endrin

~~BWZ84DL~~
~~4,4'-DDE, alpha-Chlordane, Aroclor-1254~~ - %D was <25.0

BWZ84MS
alpha-BHC, Heptachlor, Heptachlor epoxide, Dieldrin
Aroclor-1254 - J

BWZ84MSD
gamma-BHC (Lindane), Heptachlor, Aldrin, Heptachlor epoxide
Dieldrin, Aroclor-1254 - J

BWZ89
Dieldrin, 4,4'-DDE, 4,4'-DDT, Endrin aldehyde, Ar-1254 - J

~~BWZ89DL~~
~~Endrin, Aroclor-1254~~ - %D <25

BWZ90
Dieldrin, 4,4'-DDE, Endrin, 4,4'-DDT
Endrin aldehyde, gamma-Chlordane, Aroclor-1254 - J

BWZ90DL
4,4'-DDE, alpha-Chlordane

BWZ91
4,4'-DDE, Endrin, Aroclor-1254 - J

BWZ91DL
alpha-Chlordane

PBLKSI

SOP NO. HW-6

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CLP ORGANICS DATA REVIEW AND PRELIMINARY REVIEW (CLP/SOW OLMO 3.2)

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By: Karen Taylor Date: 6/17/96
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INTRODUCTION

Scope and Applicability

This SOP offers detailed guidance in evaluating laboratory data generated according to the methods in the "USEPA Contract Laboratory Program Statement of Work for Organics Analysis OLM03.2," August 1994. The validation methods and actions discussed in this document are based on the requirements set forth in the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994. This document attempts to cover technical as well as contractual problems specific to each fraction and sample matrix; however, situations may arise where data limitations must be assessed based on the reviewer's professional judgement.

In addition to technical requirements, contractual requirements are also covered in this document. While it is important that instances of contract non-compliance be addressed in the Data Assessment, the technical criteria are always used to qualify the analytical data.

Summary of Method

To ensure a thorough evaluation of each result in a data case, the reviewer must complete the checklist within this SOP, answering specific questions while performing the prescribed "ACTIONS" in each section. Qualifiers (or flags) are applied to questionable or unusable results as instructed. The data qualifiers discussed in this document are defined on page 4 of the National Functional Guidelines mentioned above.

The reviewer must prepare a detailed data assessment to be submitted along with the completed SOP checklist. The Data Assessment must list all data qualifications, reasons for qualifications, instances of missing data and contract non-compliance. This information is further summarized on the Organic Regional Data Assessment Summary and Data Rejection Summary forms (see attached).

CADRE reports, when available, are to be incorporated into the Data Assessment. To generate CADRE reports for a particular SDG, follow the SOP for Validating RAS/CLP Data Cases with MAGIC, CARD and CADRE (see attached).

Reviewer Qualifications

This SOP is intended for use by organic data validators who have successfully completed the USEPA Region II data validation training program. Data reviewers must possess a working knowledge of the USEPA Statement of Work and National Functional Guidelines mentioned above.

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DEFINITIONS

Acronyms

BFB - bromofluorobenzene
BHC - benzene hexachloride
BNA - base neutral acid
CADRE - Computer Aided Data Review and Evaluation
CARD - CLP Analytical Results Database
CCS - contract compliance screening
CLASS - Contract Laboratory Analytical Services Support
CLP - Contract Laboratory Program
CRQL - Contract Required Quantitation Limit
%D - percent difference
DCB -decachlorobiphenyl
DDD - dichlorodiphenyldichloroethane
DDE - dichlorodiphenylethane
DDT - dichlorodiphenyltrichloroethane
GC - gas chromatography
GC/EC - gas chromatograph/electron capture detector
GC/MS - gas chromatograph/mass spectrometer
GPC - gel permeation chromatography
IS - internal standard
kg - kilogram
µg - microgram
MAGIC - Mainframe Access Graphical Interface with CARD
MS - matrix spike
MSD - matrix spike duplicate
ℓ - liter
mℓ - mililiter
PCB - polychlorinated biphenyl
PE - performance evaluation
PEM - Performance Evaluation Mixture
QC - quality control
RAS - Routine Analytical Services
RIC - reconstructed ion chromatogram
RPD - relative percent difference
RRF - relative response factor
$\overline{RRF}$ - average relative response factor (from initial calibration)
RRT - relative retention time
RSD - relative standard deviation
RT - retention time
RSCC - Regional Sample Control Center
SDG - sample delivery group
SMC - system monitoring compound
SOP - standard operating procedure
SOW - Statement of Work
SVOA - semivolatile organic acid
TCL - Target Compound List
TCLP - Toxicity Characteristics Leachate Procedure
TCX -tetrachloro-m-xylene
TIC - tentatively identified compound

Acronyms (cont'd.)

TPO - technical project officer
VOA - volatile organic acid
VTSR - validated time of sample receipt
WAM - EPA Work Assignment Manager

Data Qualifiers

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

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

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

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

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

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

YES NO N/A

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 27133 LABORATORY: SWOK

SITE NAME: Cornell-Dubilier SDG Number(s): BWZ84

1.0 Chain of Custody and Sampling Trip Reports

1.1 Are the Traffic Reports/Chain-of-Custody Records present for all samples? [✓] ___ ___

ACTION: If no, contact RSCC, or contact the WAM to obtain replacement of missing or illegible copies from the lab.

1.2 Is the Sampling Trip Report present for all samples and all fractions? [✓] ___ ___

ACTION: If no, contact either RSCC or ask the WAM to obtain this information from the prime contractor.

2.0 Data Completeness and Deliverables

2.1 Have any missing deliverables been received and added to the data package? ___ [✓]

NOTE: The lab is required to submit data for only two analyses, for each fraction. (i.e., the original sample and one dilution, or the most concentrated dilution analyzed and one further dilution.)

ACTION: Contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the lab. If lab cannot provide them, note the effect on the review of the package in the Contract Problems/Non-compliance section of the Data Assessment and the Organic Regional Data Assessment Summary form.

2.2 Was CLASS CCS checklist included with package? [ ] [✓] ___

2.3 Are there any discrepancies between the Traffic Reports/Chain-of-Custody Records, Sampling Report and Sample Tags? ___ [✓] ___

	YES	NO	N/A
ACTION: If yes, contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the laboratory.			
3.0 Cover Letter SDG Narrative			
3.1 Is the Narrative or Cover Letter Present?	[✓]		
3.2 Are case number, SDG number and contract number contained in the SDG Narrative or cover letter (see SOW, Exhibit B, section 2.6.1)?	[✓]		
3.3 Does the narrative contain the following information:			
VOA: description of trap and columns used during sample analyses?	[ ]		✓
BNA: description of columns used during sample analyses?	[ ]		✓
Pest: description of columns used during sample analyses?	[✓]		
NOTE: As per section 6.23.3.1 SOW/p. D-11/Pest, Packed columns are not permitted.			
3.4 Does the narrative, VOA and BNA sections, contain a list of all TICs identified as alkanes and their estimated concentrations?	[ ]		✓
3.5 Does the narrative contain a record of all cooler temperatures? If the temperature of a cooler was exceeded, > 10° C, the lab must list by fraction and sample number, all affected samples.	[✓]		
3.6 Does the narrative contain a list of the pH values determined for each water sample submitted for volatile analysis (SOW Exhibit B, section 2.6.1.2)?	[ ]		✓
3.7 Does the Case Narrative contain the statement, "verbatim", as required in Section B of the SOW?	[✓]		
ACTION: If "No", to any question in this section, contact the WAM to obtain all necessary resubmittals. If information is not available, document in the Data Assessment under Contract Problems/Non-Compliance section.			

	YES	NO	N/A

4.0 Data Validation Checklist

4.1 Check the package for the following discrepancies:

	YES	NO	N/A
a. Is the package paginated in ascending order starting from the SDG narrative?	[✓]		
b. Are all forms and copies legible?	[✓]		
c. Is each fraction assembled in the order set forth in the SOW?	[✓]		
d. Is a Sample Data Summary Package submitted immediately preceding the Sample Data Package?	[ ]	✓	

The following checklist is divided into three parts. Part A is for any VOA analyses, Part B is for BNAs and Part C is Pesticide/PCBs.

Does this package contain:

VOA Data?		✓	
BNA Data?		✓	
Pesticide/PCB data?			

ACTION: Complete corresponding parts of checklist.

YES NO N/A

PART C: PESTICIDE/PCB ANALYSIS

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody Records or SDG Narrative indicate any problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? ___ [✓] ___

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50% - 90% water, all data should be qualified as estimated "J". If a soil sample, other than TCLP, contains more than 90% water, all data should be qualified as unusable "R".

ACTION: If samples were not iced, or if the ice was melted upon arrival at the laboratory, and the temperature of the cooler was elevated > 10^0 C, flag all positive results "J" and all non-detects "UJ".

ACTION: Check aqueous extraction log for sample pH, if adjustment was needed, it should have been noted in the SDG Narrative. If more information is needed, notify the WAM to contact the lab.

2.0 Holding Times

2.1 Have any PEST/PCB technical holding times, determined from date of collection to date of extraction, been exceeded? ___ [✓] ___

NOTE: Technical Holding Times: Water and soil samples for PEST/PCB analysis must be extracted within 7 days of the date of collection. Extracts must be analyzed within 40 days of the date extraction.

ACTION: If technical holding times are exceeded, flag all positive results as estimated "J" and sample quantitation limits "UJ" and document in the narrative that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of

YES NO N/A

additional storage on the sample results. At a minimum, all the data should at least be qualified "J", but the reviewer may determine that non-detects are unusable "R".

Table of Holding Time Violations
(See Chain-of-Custody Records)

Sample Analyzed	Sample Matrix	Date Sampled	Date Lab Received	Date Extracted	Date Analyzed

NOTE: Contractual Holding Times: Extraction of water samples must be completed within 5 days VTSR. Soil/sediment samples must be extracted within 10 days of VTSR. This requirement does not apply to Performance Evaluation (PE) samples. Extracts of water and soil/sediment samples must be analyzed within 40 days following start of extraction.

ACTION: If contractual holding times are exceeded, document in the Data Assessment and Organic Regional Data Assessment Summary form.

NOTE: The data reviewer must note in the Data Assessment whether or not **technical and contractual** holding times were met.

3.0 Surrogate Recovery (Form II)

3.1 Are the PEST/PCB Surrogate Recovery Summaries (Form II) present for each of the following matrices:

a. Low Water? [ ] ___ ___

b. Soil? [ ] ___ ___

3.2 Are all the PEST/PCB samples listed on the appropriate Surrogate Recovery Summary for each of the following matrices:

	YES	NO	N/A
a. Low Water?	[ ]		✓
b. Soil?	[✓]		

ACTION: Contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the laboratory. If missing deliverables are unavailable, document the effect in the Data Assessment.

3.3 Were outliers marked correctly with an asterisk?	[✓]		

ACTION: Circle all outliers with red pencil.

3.4 Were surrogate recoveries of TCX or DCB outside of the contract specification for any sample, method blank or sulfur clean-up blank (30-150%)?		[✓]	

All diluted out

ACTION: In the absence of matrix interference, qualification of the data is not required in the following three situations:

1. When surrogates on both columns are diluted out.

2. When one surrogate on one column was outside (either above or below) the contract limits but above 10%.

3. When the same surrogate on both columns is above the contract limit.

If the same surrogate on both columns is below the contract limit but above 10%, check chromatograms for interference. The reviewer may use professional judgement, and qualify only those analytes which elute in the region of the GC chromatogram where interference was observed.

If the same surrogate on both columns is below the contract limit but above 10% (with no interference), qualify non-detects and positive hits "J" (estimated).

If recoveries for both surrogates on both columns are below the contract limit but above 10%, flag positive results and non-detects for that sample "J".

	YES	NO	N/A

If recoveries are above the contract limit for both surrogates on both columns, then qualify positive values "J".

If both surrogates on one column are below the contract limit but above 10%, then use the data from the other column, providing both surrogates on that column are within contract limits. The validator must check from which column the concentration is reported for each analyte. If the value is reported from the failed column, then cross it out and use the value from the other column. Document this change in the Data Assessment.

If recovery is below 10% for either surrogate on any column, qualify positive results "J" and flag non-detects "R".

3.5 Were surrogate retention times (RT) within the windows established during the initial 3-point analysis of Individual Standard Mixture A (see Form VI Pest-1)?	[✓]		

ACTION: If the RT limits are not met, positive results and non-detects for that sample may be qualified unusable, "R", based on professional judgement.

3.6 Are there any transcription/calculation errors between raw data and Form II?		[✓]	

ACTION: If large errors exist, contact the WAM to obtain an explanation or resubmittal of corrected deliverables from the laboratory. Make any necessary corrections and document the effect in the Data Assessment.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present?	[✓]		
4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices (one MS/MSD must be performed for every 20 samples of similar matrix or concentration level):			
a. Low Water?	[✓]		

	YES	NO	N/A
b. Soil?	[✓]		

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

ACTION: Circle all outliers with red pencil.

4.3 How many PEST/PCB spike recoveries are outside QC limits?

Water	Soil
NA out of 12	6 out of 12

4.4 How many RPDs for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soil
0 out of 6	0 out of 6

ACTION: No action is taken on MS/MSD data alone. However, using informed professional judgement, the data reviewer may use the matrix spike and matrix spike duplicate results in conjunction with other QC criteria and determine the need for some qualification of the data.

5.0 Blanks (Form IV)

	YES	NO	N/A
5.1 Is the Method Blank Summary (Form IV) present?	[✓]		
5.2 Frequency of Analysis: Has a reagent/method blank been analyzed for each SDG, every 20 samples of similar matrix and concentration level or each extraction batch, whichever is more frequent?	[✓]		

ACTION: If any blank data are missing, take action as specified above in section 3.2. If blank data is not available, reject "R" all associated positive data. However, using professional judgement, the data reviewer may substitute field blank data for missing method blank data.

5.3 A separate Form IV should be present if part of an extraction batch required sulfur removal. In such cases some samples will be listed on two blank summary forms - once under the method

	YES	NO	N/A
blank, and once under the sulfur clean-up blank (PCBLK). Was this additional blank raw data and Form IV submitted when required?	[ ]	✓	
ACTION: If sulfur clean-up blank data and Form IV are missing, take action as specified in 3.2 above.			
5.4 Has a PEST/PCB instrument blank been analyzed at the beginning of every 12 hr. period following the initial calibration sequence (minimum contract requirement)?	✓		
ACTION: If any blank data are missing, take action as specified in section 3.2 above.			
5.5 Was the correct identification scheme used for all Pest/PCB blanks? (See page B-33, sec. 3.3.7.3 of the SOW for further information.)	✓		
ACTION: Contact the WAM to obtain resubmittals or make the required corrections on the forms. Document in the Data Assessment under Contract Problems/Non-Compliance all corrections made by the validator.			
5.6 Chromatography: review the blank raw data - chromatograms, quant. reports and data system printouts. Is the chromatographic performance (baseline stability) for each instrument acceptable?	✓		
ACTION: Use professional judgement to determine the effect on the data.			

6.0 Contamination

	YES	NO	N/A
NOTE: "Water blanks", "distilled water blanks" and "drilling water blanks" are validated like any other sample and are not used to qualify the data. Do not confuse them with the other QC blanks discussed below.			
6.1 Do any method/reagent, instrument, or cleanup blanks show positive hits for pest/PCBs?		✓	
6.2 If any method blanks and/or sulfur clean-up blanks contain "hits" for target compounds, are these hits greater than the CRQL for that			

	YES	NO	N/A
analyte?		[✓]	
6.3 In any instrument blanks, is the concentration of any target hit > 0.5 times CRQL for that analyte (see SOW, section 12.1.4.4.2, page D-77/PEST)?		[✓]	

NOTE: Most labs will report 0.5 times CRQLs on the instrument blank Form I instead of the actual method CRQLs. If the lab reported the actual CRQLs, then check if any detected hits are above 0.5 times the CRQLs reported on the Form I.

ACTION: If yes to any of the above questions: note in the Data Assessment under Contract Problems/Non-Compliance if any method or clean-up blanks contain hits > the CRQL, or of instrument blank contained hits > 0.5 times CRQL for that analyte.

6.4 Do any field/rinse blanks have positive pest/PCB results?		[ ]	✓

ACTION: Prepare a list of the samples associated with each contaminated blank. (Attach a separate sheet)

NOTE: All field blank results associated to a particular group of samples (may exceed one per case or one per day) may be used to qualify data. Do not convert <u>field blank</u> results to account for the difference in soil CRQLs. Blanks may not be qualified because of contamination in another blank. Field blanks must be qualified for surrogate, and/or calibration QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

NOTE: When applied as directed in the table below, the contaminant concentration in method/instrument/reagent/cleanup blanks is multiplied by the sample dilution factor, where necessary.

If the laboratory has not already done so, the contaminant concentration in <u>soil</u> blanks is multiplied by 33 times the sample dilution factor and corrected for %moisture (fraction of solid) where necessary. 30 grams of sodium sulfate are used to prepare each soil reagent/method blank as instructed on page D-72/PEST, section 12.1.2.3.1. Ask the WAM

YES NO N/A

to contact the laboratory if the soil blanks are not reported in soil units (µg/kg).

Flag sample result with a "U":	Report CRQL & qualify "U":	No qualification is needed:
Sample conc. > CRQL, but ≤ 5× blank.	Sample conc. < CRQL & is ≤ 5× blank value.	Sample conc. > CRQL & > 5× blank value.

NOTE: If gross blank contamination exists, all data in the associated samples should be qualified as "R", unusable.

6.5 Are there field/rinse/equipment blanks associated with every sample? [ ] ___ ___

ACTION: For low level samples, note in the Data Assessment that there is no associated field/rinse/equipment blank. For analytes with high concentrations, use professional judgement to qualify these values and document in the Data Assessment.

Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 Calibration and GC Performance

7.1 Are the following Gas Chromatograms and Data Systems Printouts for both columns present for all samples, blanks and MS/MSD:

a. Peak resolution check? [ ] ___ ___

b. Performance evaluation mixtures? [ ] ___ ___

c. Aroclor 1016/1260? [✓] ___ ___

d. Aroclors 1221, 1232, 1242, 1248, 1254? [✓] ___ ___

e. Toxaphene? [✓] ___ ___

f. Low points individual mixtures A & B? [ ] ___ ___

g. Med points individual mixtures A & B? [ ] ___ ___

h. High points individual mixtures A & B? [ ] ___ ___

	YES	NO	N/A
i. Instrument blanks?	[✓]	___	___
j. Were the appropriate GC columns used as specified on pg. D-11/PEST, sections 6.23.3.1 to 6.23.3.7, in the SOW?	[✓]	___	___
7.2 Do the chromatograms for all Individual Standard Mixtures and PEM analyses display single component analytes at > 10% but < 100% of full scale (see sections 9.3.5.8.1 thru 9.3.5.8.4, pages D-32 & 33/PEST)?	[ ]	___	___
Have chromatograms for Individual Standard Mixtures and PEM analyses been replotted, showing scaling factor(s), to meet the above requirements when necessary?	[ ]	___	___

NOTE: All standard chromatograms must clearly display all peaks at > 10% but < 100% of full scale, and replotted if necessary to accommodate peaks not properly scaled in the initial chromatogram(s). Both the initial and replotted chromatograms must be submitted with the data package.

ACTION: If all single component peaks are not clearly displayed on chromatograms for all Individual Standard Mixtures and PEM analyses, notify the WAM to obtain resubmittal of the necessary data.

7.3 Are Forms VI PEST 1-7 present and complete for each column-and each analytical sequence?	[✓]	___	___

ACTION: If no, take action as specified in 3.2 above.

7.4 Are there any transcription/ calculation errors between raw data and Forms VI?	___	[✓]	___

ACTION: If large errors exist, take action as specified in section 3.6 above.

7.5 Do all standard retention times, including each pesticide in each level of Individual Mixtures A & B, fall within the windows established during the Initial Calibration (see Form VI PEST-1)?	[ ]	___	___

ACTION: If no, all samples in the entire analytical sequence are potentially affected. Check to see if the chromatograms contain peaks within an expanded window surrounding the expected

	YES	NO	N/A
retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised RT window, qualify all positive results "JN" and non-detects as unusable (R). For aroclors, the RT may be outside the window, but the aroclor may still be identified from its distinctive pattern.			
7.6 Are the linearity criteria for the initial analyses of Individual Standards A & B within limits for both columns? (%RSD must be ≤ 25.0 for alpha and delta BHC, ≤ 30.0 for the two surrogates and ≤ 20% for all other analytes.)	[ ]	___	___
NOTE: Contractual requirements allow up to two single component TCL compounds, but not surrogates, on each column to exceed the criteria provided the %RSD is ≤ 30%. (See page D-28/Pest, sec. 9.2.5.7 in the SOW.) Technical criteria, however, are the same for all analytes.			
ACTION: If technical criteria were not met, qualify all associated positive results generated during the entire analytical sequence "J" and all non-detects "UJ". When %RSD > 90%, flag all non-detect results for that analyte "R" (unusable).			
ACTION: If more than two analytes failed %RSD, document in the Data Assessment Contract Problems/Non-Compliance section and Organic Regional Data Assessment Summary form.			
7.7 Is the resolution between each pair of adjacent peaks in the Resolution Check Mixture ≥ 60.0% for both columns? (See Form VI PEST-4.)	[✓]	___	___
ACTION: If no, qualify positive results for compounds that were not adequately resolved "J". Use professional judgement to determine if non-detects which elute in areas affected by co-eluting peaks should be qualified "N" as presumptive evidence of presence or unusable (R).			
7.8 Is Form VI PEST-5 present and complete for each Performance Evaluation Mixture (PEM) standard used for <u>both initial and continuing</u> calibrations (see SOW section 3.12.4.4, page B-52)?	[ ]	___	___

	YES	NO	N/A
ACTION: If no, take action as specified in section 3.2 above.			
7.9 For each PEM standard, was the resolution between each pair of adjacent peaks ≥ 90.0% on both columns?	[ ]	___	___
ACTION: Qualify positive results for compounds not adequately resolved estimated (J). Qualify non-detects based on professional judgement.			
7.10 Have Forms VI PEST-6 & PEST-7 been completed for all midpoint Individual Standards A and B used for initial calibration?	[ ]	___	___
For each standard, was the resolution between each pair of adjacent peaks ≥ 90.0% on both columns?	[ ]	___	___
ACTION: If no, qualify positive results for compounds that were not adequately resolved estimated (J). Use professional judgement to determine if non-detects which elute in areas affected by co-eluting peaks should be qualified "N" as presumptive evidence of presence or unusable "R".			
7.11 Is Form VII Pest-1 present and complete for each PEM standard analyzed during the analytical sequence for both columns?	[ ]	___	___
Was the %Breakdown of DDT and Endrin calculated using the equations given on page D-26/PEST, sec. 9.2.4.8 in the SOW?	[ ]	___	___
Were all pesticides and surrogates in each PEM standard within the RT windows established during the Initial Calibration?	[ ]	___	___
ACTION: If no, take action as specified in 3.2 above.			
7.12 Has the individual percent breakdown for DDT/Endrin exceeded 20.0% in any PEM on either column? (See Form VII PEST-1.)			
- for 4,4'-DDT?	___	[ ]	___
- for Endrin?	___	[ ]	___
Has the combined percent breakdown for DDT/Endrin			

	YES	NO	N/A
exceeded 30.0% in any PEM on either column (required for all PEM analyses)?	___	[ ]	___

ACTION: 1. If any percent breakdown has failed the QC criteria in either PEM in steps 2 and 17 in the initial calibration sequence (page D-28/Pest, sec. 9.2.5.6 in the SOW), qualify all samples in the entire analytical sequence as described in sections 2.a, b and c below.

2. If any percent breakdown failed the QC criteria in a PEM calibration verification analysis, review data beginning with the samples which followed the last in-control standard until the next acceptable PEM and qualify the data as described below.

a. 4,4'-DDT Breakdown: If DDT breakdown was > 20.0%:

i. Qualify all positive results for DDT with "J". If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT unusable, "R".

ii. Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity "JN".

b. Endrin Breakdown: If endrin breakdown was > 20.0%:

i. Qualify all positive results for endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for Endrin as unusable "R".

ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity "JN".

c. Combined Breakdown: If the combined 4,4'-DDT and endrin breakdown is greater than 30.0%:

i. Qualify all positive results for DDT and Endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for endrin as unusable

	YES	NO	N/A
"R". If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT as unusable "R".			
ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity "JN". Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity "JN".			
7.13 Are all percent difference (%D) values for PEM analytes and surrogates on both columns ≥ -25% and ≤ +25.0%? (See Form VII PEST-1.)	[ ]	___	___
ACTION: If no, qualify all associated positive results generated during the analytical sequence "J" and sample quantitation limits "UJ".			
NOTE: If the failing PEM is part of the initial calibration, all samples are potentially affected. If the offending standard is a calibration verification, the associated samples are those which followed the last in-control standard until the next passing standard.			
7.14 Is Form VII Pest-2 present and complete for each INDA and INDB calibration verification analyzed?	[ ]	___	___
ACTION: If no, take action specified in 3.2 above.			
7.15 Are there any transcription/calculation errors between raw data and Form VII Pest-2?	___	[ ]	___
ACTION: If large errors exists, take action as specified in section 3.6 above.			
7.16 Do all standard retention times for each INDA and INDB calibration verification fall within the RT windows established during the initial calibration sequence? (See Form VII PEST-2.)	[ ]	___	___
ACTION: If no, beginning with the samples which followed the <u>last in-control standard</u>, check to see if the chromatograms contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised			

	YES	NO	N/A
RT window, qualify all positive results and non-detects as unusable (R).			
7.17 Are all %D values for INDA and INDB calibration verification compounds ≥ -25.0% and ≤ +25.0%?	[ ]	___	___

ACTION: If the %D is outside the ±25.0% range for any compound(s), qualify associated positive results for that compound "J" and non-detects "UJ". The "associated samples" are those which followed the last in-control standard up to the next passing standard containing the analyte(s) in question. If the %D is > 90%, flag all non-detects for that analyte "R" (unusable).

8.0 Analytical Sequence Check (Form VIII-PEST)

8.1 Is Form VIII present and complete for each column and each period of analyses?	[✓]	___	___

ACTION: If no, take action specified in 3.2 above.

8.2 Was the proper analytical sequence followed for each initial calibration and subsequent analyses, and all standards analyzed at the required frequency for each GC/EC instrument used.? (See SOW pages D-23 & D-58/PEST.)	[✓]	___	___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly. Generally, the effect is negligible unless the sequence was grossly altered and/or the calibration was out of QC limits.

8.3 Were all samples analyzed within a 12 hour time period beginning with the injection of an instrument blank and bracketed by acceptable analyses of the proper standards?	[✓]	___	___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly. Document in the Data Assessment under Contract Problems/Non-Compliance and Organic Regional Data Assessment Summary.

8.4 If a multi-component analyte was detected in a sample, was a matching multi-component standard analyzed within 72 hours of the injection of the

	YES	NO	N/A
sample and within a valid 12 hour sequence?	[ ]	___	___

NOTE: This additional standard is for identification purposes only. Positive results for Aroclors and Toxaphene are quantitated from the initial calibration.

ACTION: If no, document in the Data Assessment under Contract Problems/Non-Compliance and on the Organic Regional Data Assessment Summary form.

9.0 Cleanup Efficiency Verification (Form IX)

	YES	NO	N/A
9.1 Is Form IX PEST-1 present and complete for each lot of Florisil Cartridges used? (Florisil Cleanup is required for all Pest/PCB extracts.)	[✓]	___	___
Are all samples listed on the Pesticide Florisil Cartridge Check Form?	[✓]	___	___

ACTION: If no, take action specified in 3.2 above. If data suggests florisil clean-up was not performed, document in the Data Assessment under the Contract Non-compliance section.

	YES	NO	N/A
9.2 Are percent recoveries (%REC) of the pesticide and surrogate compounds used to check the efficiency of the florisil clean-up procedure within QC limits of 80 - 120%?	[✓]	___	___

ACTION: Qualify only the analyte(s) which failed the recovery criteria as follows:

If %REC is < 80%, qualify positive results "J" and non-detects "UJ".

If any pesticide %REC was zero, flag non-detects "R" for that compound.

Use professional judgement to qualify positive results if any recoveries are > 120%.

NOTE: Sample data should be evaluated for potential interferences if recovery of 2,4,5-trichlorophenol was > 5% in the Florisil Cartridge Performance Check analysis. Document any problems found in the Data Assessment under the Contract Problems/Non-Compliance section.

	YES	NO	N/A
9.3 If GPC Cleanup was performed (mandatory for all soil sample extracts), is Form IX Pest-2 present?	[✓]		
Are all soil samples listed on Form IX Pest-2?	[✓]		

ACTION: If no, take action specified in 3.2 above. If data suggests GPC clean-up was not performed when required, document in the Data Assessment under the Contract Problems/Non-Compliance section and Organic Regional Data Assessment Summary.

	YES	NO	N/A
Are the %REC values for all pesticides in the GPC calibration solution between 80 - 110%?	[✓]		

ACTION: Qualify only those analytes which failed the recovery criteria as follows:

If %REC are < 80%, qualify positive results "J" and non-detects "UJ".

If any pesticide %REC was zero, flag non-detects "R" for that compound.

Use professional judgement to qualify positive results if any recoveries are > 110%.

NOTE: An Aroclor mixture containing Aroclors 1016 and 1260 is also analyzed during GPC calibration; however, Aroclor data is not listed on Form IX PEST-2. The raw GPC data for Aroclors 1016/1260 must be evaluated for pattern similarity with previously analyzed Aroclor standards.

9.4 The validator should verify that the correct identification scheme for the EPA Blank samples were used. See page B-35, sec. 3.3.7.8 and 3.3.7.9 of the SOW for further information.

	YES	NO	N/A
Was the correct identification scheme used for GPC and Florisil blanks?	[✓]		

10.0 Pesticide/PCB Identification

	YES	NO	N/A
10.1 Is Form X complete for every sample in which a pesticide or PCB was detected?	[✓]		

ACTION: If no, take action specified in 3.2 above.

	YES	NO	N/A
10.2 Are all sample chromatograms properly scaled, attenuated, etc. as required for proper identification of single and multi-component analytes? (Refer to SOW sections 11.3.7.1 thru 11.3.7.8, page D-70/Pest for specific details.)	[✓]		

NOTE: Proper verification of Pest/PCB results depends on clear, legible presentation of the raw data. Single component pesticides and all peaks chosen for quantitation of multi-component analytes must appear at less than full scale. Toxaphene and PCB patterns must be clearly visible to enable comparison with standard chromatograms.

ACTION: If retention times or apex of peaks cannot be verified, or if multi-component peak patterns cannot be discerned, contact the WAM to obtain rescaled chromatograms from the lab.

	YES	NO	N/A
10.3 Are there any transcription/calculation errors between raw data and Forms 10A and 10B?		[✓]	

ACTION: If large errors exist, take action as specified in section 3.6 above.

	YES	NO	N/A
10.4 Are RTs of sample compounds within the established RT windows for analyses on both columns?	[ ]		
Was GC/MS confirmation provided when required (when compound concentration is > 10 ug/mℓ in the final extract)?	[ ]		

ACTION: Use professional judgement to qualify positive results which were not confirmed by GC/MS analysis. Qualify as unusable (R) all positive results which were not confirmed on a second GC column. Also qualify as unusable (R) all positive results which do not meet RT window criteria, unless associated standard compounds are similarly biased. Use professional judgement to assign an appropriate quantitation limit.

	YES	NO	N/A
10.5 Is the percent difference (%D) calculated for the positive sample results on both columns > 25.0%?	[✓]	[ ]	

ACTION: If the reviewer finds neither column shows interference for the positive hits, the data should be flagged as follows:

YES NO N/A

% Difference	Qualifier
0 - 25%	None
25 - 70%	"J"
70 - 100%	"JN"
> 100% (No interference)	"R"
100 - 200% (Interference detected)*	"JN"
> 50% (Pesticide value is < CRQL)**	"U"
> 200%	"R"

* When the reported %D is 100 - 200%, but interference is detected on either column, qualify the data with "J".

** When the reported pesticide value is lower than the CRQL, and the %D is > 50%, raise the value to the CRQL and qualify "U", undetected.

NOTE: For Aroclors, if the %D is > 50%, but the pattern of GC peaks on both columns indicates a specific Aroclor is present, qualify that Aroclor "J".

NOTE: The lower of the two values is reported on Form I. If using professional judgement, the reviewer determines that the higher result was more acceptable, the reviewer should replace the value and indicate the reason for the change in the Data Assessment.

10.6 Check chromatograms for false negatives, especially the multiple-peak compounds (Toxaphene and the PCBs). Were there any false negatives? ___ [✓] ___

ACTION: Use professional judgement to decide if the compound should be reported. If the appropriate PCB standards were not analyzed within 72 hrs. of the sample(s) in question, qualify the data unusable "R".

Also note in Data Assessment under Contract Problems/Non-Compliance if the lab failed to analyze Aroclor standards when required.

11.0 Target Compound List (TCL) Analytes

11.1 Are the Organic Analysis Data Sheets (Form I Pest) present with required header information on each page, for each of the following:

a. Samples and/or fractions as appropriate? [✓] ___ ___

b. Matrix spikes and matrix spike duplicates? [✓] ___ ___

	YES	NO	N/A
c. Blanks?	[✓]	___	___
d. Instrument Blanks (per column & analysis)?	[✓]	___	___
11.2 Are the Pest chromatograms and quant. reports included in the sample data package for each of the following:			
a. Samples and/or fractions as appropriate?	[✓]	___	___
b. Matrix spikes and matrix spike duplicates?	[✓]	___	___
c. Blanks?	[✓]	___	___
d. Instrument Blanks (per column & analysis)?	[✓]	___	___

ACTION: If any data are missing, take action specified in 3.2 above.

11.3 Are the calibration factors shown in the quant. reports?	[ ]	✓	___
11.4 Is chromatographic performance acceptable with respect to:			
a. Baseline stability?	[✓]	___	___
b. Resolution?	[✓]	___	___
c. Peak shape?	[✓]	___	___
d. Full-scale graph attenuation?	[✓]	___	___
e. Other: _____?	[ ]	___	✓
11.5 Were any electropositive displacement (negative peaks) or unusual peaks seen?	___	[✓]	___

ACTION: Use professional judgement to determine the acceptability of the data. Address comments under System Performance section of the Data Assessment.

12.0 Compound Quantitation and Reported Detection Limits

12.1 Are there any transcription/calculation errors in Form I results? Check at least two positive results. Were any errors found?	___	[✓]	✓

YES NO N/A

NOTE: Single-peak pesticide results can be checked for rough agreement between quantitative results obtained on the two GC columns. Use professional judgement to decide whether a large discrepancy indicates the presence of an interfering compound. If an interfering compound is visible on the chromatogram, the lower of the two values should be reported and qualified as presumptively present at an approximated quantity "JN". This necessitates a determination of an estimated concentration on the confirmation column. The narrative should indicate that the presence of interferences has interfered with the evaluation of the second column confirmation.

12.2 Are the CRQLs adjusted to reflect sample dilutions? [✓] ___ ___

ACTION: If large errors exist, take action as specified in section 3.6 above.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQLs from the diluted sample). Replace concentrations which exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with the result from the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including those in the data summary package.

ACTION: Quantitation limits affected by large, off-scale peaks should be qualified as unusable (R). If the interference is on-scale, the reviewer may offer an approximated quantitation limit (UJ) for each affected compound.

NOTE: If a sample required greater than a 10 times dilution, then a 10 times more concentrated analysis must also be performed and submitted (see SOW, page D-60/PEST, section 10.2.3.5).

ACTION: If a more concentrated analysis is unavailable, document in the Contract Problems/Non-Compliance section of the Data Assessment. Use professional judgement to qualify non-detects and positive hits below the CRQL.

	YES	NO	N/A
13.0 Field Duplicates			
13.1 Were any field duplicates submitted?	[ ]	✓	

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

DPO: [X]ACTION [ ]FYI REGION II

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO.: 27133 LABORATORY: SWL-TULSA

SDG NO.: BWZ84 DATA USER: EPA Region II

SOW: OLM03.2 REVIEW COMPLETION DATE: 7/14/99

NO. OF SAMPLES: ___ WATER 4 SOIL ___ OTHER

REVIEWER: [ ] ESD [X] ESAT [ ] OTHER, CONTRACTOR: _____

QC ITEM	PEST	
HOLDING TIMES	O	
GC-MS PERFORMANCE	NA	
INITIAL CALIBRATIONS	O	
CONTINUING CALIBRATIONS	O	
FIELD BLANKS(F = N/A)	O	
LABORATORY BLANKS	O	
SURROGATES	O	
MATRIX SPIKE/DUPLICATES	O	
QC SAMPLES(LCS, PVS)	NA	
INTERNAL STANDARDS	NA	
COMPOUND IDENTIFICATION	M	
COMPOUND QUANTITATION	O	
SYSTEM PERFORMANCE	O	
OVERALL ASSESSMENT	M	

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DPO ACTION ITEMS:

SWOK continues to dilute samples unnecessarily. Even the initial analyses in this SDG were analyzed at a ten-fold dilution, with no target hits exceeding the initial calibration range.

AREAS OF CONCERN:

DATA REJECTION SUMMARY

Type of Review: Organic **Date:** 7/14/99 **Case/SDG No.:** BWZ84

Site Name: Cornell-Dublier **Lab Name:** SWL-TULSA

Reviewer's Initials: **Number of Samples, including REs, DLs and QC:** 10

Analytes Rejected Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples		
VOA(33)									0 / 0	=	%
ACID(14)									0 / 0	=	%
B/N(50)									0 / 0	=	%
PEST(21)									0 / 0	=	%
PCB(7)								10	0 / 70	=	0 %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Analytes Estimated Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples		
VOA(33)									0 / 0	=	%
ACID(14)									0 / 0	=	%
B/N(50)									0 / 0	=	%
PEST(21)									0 / 0	=	%
PCB(7)					5			10	5 / 70	=	7 %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

RECEIVED
JUL 0 9 1999

SOUTHWEST LABORATORY OF OKLAHOMA
(SWL-TULSA)
1700 West Albany, Suite A/ Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE

CONTRACT: 68-D5-0026

CASE NO: 27133

SDG NO: BWZ84

SAMPLES: BWZ84, BWZ89, BWZ90, BWZ91, BWZ84DL, BWZ89DL, BWZ90DL, BWZ91DL

FRACTION: Pesticide/PCB

This SDG consisted of 4 soil samples that were analyzed for pesticide/PCBs, by EPA SOW OLM03.2. The samples were analyzed on Restek dual analytical columns, RTX-PEST and RTX-PEST2 (the phases of both columns are proprietary). These columns were specifically designed for pesticide/PCB separation as required by the EPA's SOW. All applicable manufacturer's instructions were followed for the analysis of pesticides/PCBs. Manufacturer provided information on the performance characteristics of the columns are kept on site. Hydrogen was used as the carrier gas for all instruments except HP-6 and HP-8 (helium). The temperature of the cooler(s) was noted at 3 ° C.

The matrix of these soil samples caused problems with their analysis by introducing interference peaks in the sample chromatograms and degrading instrument performance. All of the samples also contained degraded arochlor patterns. It should be noted that when multi-responding compounds and/or large numbers of "interference" peaks are present in a sample, false positives of single response compounds are common. Since ECD detection is not a definitive means of detection, single-response analytes in the presence of multi-responders or interference will be reported, per the method, if a peak is within a target analyte's retention time window on both columns, then it is reported as that target analyte). This alleviates the possibility that false negative results will be reported. However, this may lead to false positives. The end data user should be aware of the limitations of the method and take appropriate care.

When analyzed at a 10x dilution the samples in this SDG caused breakdown of 4,4'-DDT in the calibration verification standards following their injection. The calibration verification standards analyzed before these samples met OLM03.2 continuing calibration criteria. When diluted 100X (samples BWZ84 and BWZ89 required this dilution to bring target analytes within calibration range) the samples met OLM03.2 acceptance criteria. A non-compliant 10x dilution analysis and a compliant 100x dilution analysis was performed for these samples. Forms for the compliant and non-compliant data have been submitted.

Blanks: No corrective action required.

Surrogates: No corrective action required.

Matrix Spikes: No corrective action required. 6 out of 12 recoveries wee outside of control limits due to matrix interference. The raw data for the 100x dilution analysis of the matrix spikes was included as miscellaneous data.

The following tables list the total nanograms injected on column for each calibration standard based upon amount injected, 0.5µL, 1µL, or 2µL:

RESOLUTION CHECK

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
gamma-Chlordane	0.005	0.01	0.02
Endosulfan I	0.005	0.01	0.02
4,4'-DDE	0.01	0.02	0.04
Dieldrin	0.01	0.02	0.04
Endosulfan Sulfate	0.01	0.02	0.04
Endrin Ketone	0.01	0.02	0.04
Methoxychlor	0.5	0.1	0.2
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.01	0.02	0.04

PERFORMANCE EVALUATION

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
gamma-BHC	0.005	0.01	0.02
alpha-BHC	0.005	0.01	0.02
4,4'-DDT	0.05	0.1	.02
beta-BHC	0.005	0.01	0.02
Endrin	0.025	0.05	0.1
Methoxychlor	0.125	0.25	0.5
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.01	0.02	0.04

INDIVIDUAL STANDARD MIXTURE A -- LOW

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.0025	0.005	0.01
Heptachlor	0.0025	0.005	0.01
gamma-BHC	0.0025	0.005	0.01
Endosulfan I	0.0025	0.005	0.01
Dieldrin	0.005	0.01	0.02
Endrin	0.005	0.01	0.02
4,4'-DDD	0.005	0.01	0.02
4,4'-DDT	0.005	0.01	0.02
Methoxychlor	0.025	0.05	0.1
Tetrachloro-m-xylene	0.0025	0.005	0.01
Decachlorobiphenyl	0.005	0.01	0.02

INDIVIDUAL STANDARD MIXTURE B -- LOW

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.0025	0.005	0.01
delta-BHC	0.0025	0.005	0.01
Aldrin	0.0025	0.005	0.01
Heptachlor epoxide	0.0025	0.005	0.01
alpha-Chlordane	0.0025	0.005	0.01
gamma-Chlordane	0.0025	0.005	0.01
4,4'-DDE	0.005	0.01	0.02
Endosulfan sulfate	0.005	0.01	0.02
Endrin aldehyde	0.005	0.01	0.02
Endrin ketone	0.005	0.01	0.02
Endosulfan II	0.005	0.01	0.02
Tetrachloro-m-xylene	0.0025	0.005	0.01
Decachlorobiphenyl	0.005	0.01	0.02

INDIVIDUAL STANDARD MIXTURE A -- MEDIUM

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.01	0.02	0.04
Heptachlor	0.01	0.02	0.04
gamma-BHC	0.01	0.02	0.04
Endosulfan I	0.01	0.02	0.04
Dieldrin	0.02	0.04	0.08
Endrin	0.02	0.04	0.08
4,4'-DDD	0.02	0.04	0.08
4,4'-DDT	0.02	0.04	0.08
Methoxychlor	0.1	0.2	0.4
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.02	0.04	0.08

INDIVIDUAL STANDARD MIXTURE B -- MEDIUM

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.01	0.02	0.04
delta-BHC	0.01	0.02	0.04
Aldrin	0.01	0.02	0.04
Heptachlor epoxide	0.01	0.02	0.04
alpha-Chlordane	0.01	0.02	0.04
gamma-Chlordane	0.01	0.02	0.04
4,4'-DDE	0.02	0.04	0.08
Endosulfan sulfate	0.02	0.04	0.08
Endrin aldehyde	0.02	0.04	0.08
Endrin ketone	0.02	0.04	0.08
Endosulfan II	0.02	0.04	0.08
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.02	0.04	0.08

INDIVIDUAL STANDARD MIXTURE A -- HIGH

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.04	0.08	0.16
Heptachlor	0.04	0.08	0.16
gamma-BHC	0.04	0.08	0.16
Endosulfan I	0.04	0.08	0.16
Dieldrin	0.08	0.16	0.32
Endrin	0.08	0.16	0.32
4,4'-DDD	0.08	0.16	0.32
4,4'-DDT	0.08	0.16	0.32
Methoxychlor	0.4	0.8	1.6
Tetrachloro-m-xylene	0.04	0.08	0.16
Decachlorobiphenyl	0.08	0.16	0.32

INDIVIDUAL STANDARD MIXTURE B -- HIGH

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.04	0.08	0.16
delta-BHC	0.04	0.08	0.16
Aldrin	0.04	0.08	0.16
Heptachlor epoxide	0.04	0.08	0.16
alpha-Chlordane	0.04	0.08	0.16
gamma-Chlordane	0.04	0.08	0.16
4,4'-DDE	0.08	0.16	0.32
Endosulfan sulfate	0.08	0.16	0.32
Endrin aldehyde	0.08	0.16	0.32
Endrin ketone	0.08	0.16	0.32
Endosulfan II	0.08	0.16	0.32
Tetrachloro-m-xylene	0.04	0.08	0.16
Decachlorobiphenyl	0.08	0.16	0.32

MULTI-RESPONSE STANDARD MIXTURES

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
Aroclor-1016	0.05	0.1	0.2
Aroclor-1221	0.1	0.2	0.4
Aroclor-1232	0.05	0.1	0.2
Aroclor-1242	0.05	0.1	0.2
Aroclor-1248	0.05	0.1	0.2
Aroclor-1254	0.05	0.1	0.2
Aroclor-1260	0.05	0.1	0.2
Toxaphene	0.25	0.5	1.0

All manual integrations in this data package for GC/EC have been performed for one of the following reasons:

a. Data system missed a peak during processing.
b. Data system improperly integrated a peak.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Drew Cowan
GC Supervisor
Dc

July 8, 1999

SAMPLE DELIVERY GROUP (SDG)
TRAFFIC REPORT (TR) COVER SHEET

LAB NAME: SOUTHWEST LABORATORY OF OKLAHOMA CONTRACT NO.: 68-D5-0026

LAB CODE: SWOK CASE NO.: 27133 SAS NO.:

FULL SAMPLE ANALYSIS PRICE IN CONTRACT:

SDG No./First Sample in SDG: BWZ84 Sample Receipt Date: 06/24/99 (MM/DD/YY)
(Lowest EPA Sample Number in first shipment of samples received under SDG).

Last Sample in SDG: BWZ91 Sample Receipt Date: 06/24/99
(Highest EPA Sample Number in last shipment of samples received under SDG).

EPA Sample Numbers in the SDG (listed in alphanumeric order):

1) BWZ84	11)
2) BWZ89	12)
3) BWZ90	13)
4) BWZ91	14)
5)	15)
6)	16)
7)	17)
8)	18)
9)	19)
10)	20)

Note: There are a maximum of 20 field samples in a SDG.

Attach Traffic Reports to this form in alphanumeric order
(i.e., the order listed on this form).

006

Harry M Roy
Sample Custodian

6-29-99
Date

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ84

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ84

Matrix: (soil/water) SOIL Lab Sample ID: 39129.21

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 25 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	gamma-BHC (Lindane)	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	82	P
959-98-8	Endosulfan I	21	PJ
60-57-1	Dieldrin	230	P
72-55-9	4,4'-DDE	120	
72-20-8	Endrin	64	P
33213-65-9	Endosulfan II	30	PJ
72-54-8	4,4'-DDD	44	U
1031-07-8	Endosulfan sulfate	44	U
50-29-3	4,4'-DDT	720	E
72-43-5	Methoxychlor	220	U
53494-70-5	Endrin ketone	44	U
7421-93-4	Endrin aldehyde	33	PJ
5103-71-9	alpha-Chlordane	120	P
5103-74-2	gamma-Chlordane	73	PB
8001-35-2	Toxaphene	2200	U
12674-11-2	Aroclor-1016	440	U
11104-28-2	Aroclor-1221	890	U
11141-16-5	Aroclor-1232	440	U
53469-21-9	Aroclor-1242	440	U
12672-29-6	Aroclor-1248	440	U
11097-69-1	Aroclor-1254	2500	
11096-82-5	Aroclor-1260	440	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

DO NOT USE

EPA SAMPLE NO.

BWZ84DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ84

Matrix: (soil/water) SOIL Lab Sample ID: 39129.21DL

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 25 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/07/99

Injection Volume: 0.5 (uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	220	U
319-85-7	beta-BHC	220	U
319-86-8	delta-BHC	220	U
58-89-9	gamma-BHC (Lindane)	220	U
76-44-8	Heptachlor	220	U
309-00-2	Aldrin	220	U
1024-57-3	Heptachlor epoxide	100	DPJ
959-98-8	Endosulfan I	220	U
60-57-1	Dieldrin	280	DPJ
72-55-9	4,4'-DDE	160	DPJ
72-20-8	Endrin	83	DPJ
33213-65-9	Endosulfan II	45	DPJ
72-54-8	4,4'-DDD	440	U
1031-07-8	Endosulfan sulfate	440	U
50-29-3	4,4'-DDT	1000	D
72-43-5	Methoxychlor	140	DPJ
53494-70-5	Endrin ketone	440	U
7421-93-4	Endrin aldehyde	440	U
5103-71-9	alpha-Chlordane	220	DP
5103-74-2	gamma-Chlordane	93	DPJB
8001-35-2	Toxaphene	22000	U
12674-11-2	Aroclor-1016	4400	U
11104-28-2	Aroclor-1221	8900	U
11141-16-5	Aroclor-1232	4400	U
53469-21-9	Aroclor-1242	4400	U
12672-29-6	Aroclor-1248	4400	U
11097-69-1	Aroclor-1254	3800	DJP
11096-82-5	Aroclor-1260	4400	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ89

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ84

Matrix: (soil/water) SOIL Lab Sample ID: 39129.26

Sample wt/vol: 30.8 (g/mL) G Lab File ID: _____

% Moisture: 52 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	34	U
319-85-7	beta-BHC	34	U
319-86-8	delta-BHC	34	U
58-89-9	gamma-BHC (Lindane)	34	U
76-44-8	Heptachlor	34	U
309-00-2	Aldrin	34	U
1024-57-3	Heptachlor epoxide	150	P
959-98-8	Endosulfan I	42	P
60-57-1	Dieldrin	420	P
72-55-9	4,4'-DDE	220	P
72-20-8	Endrin	130	
33213-65-9	Endosulfan II	94	P
72-54-8	4,4'-DDD	100	P
1031-07-8	Endosulfan sulfate	67	U
50-29-3	4,4'-DDT	1100	PE
72-43-5	Methoxychlor	340	U
53494-70-5	Endrin ketone	26	PJ
7421-93-4	Endrin aldehyde	68	P
5103-71-9	alpha-Chlordane	610	PE
5103-74-2	gamma-Chlordane	720	EB
8001-35-2	Toxaphene	3400	U
12674-11-2	Aroclor-1016	670	U
11104-28-2	Aroclor-1221	1400	U
11141-16-5	Aroclor-1232	670	U
53469-21-9	Aroclor-1242	670	U
12672-29-6	Aroclor-1248	670	U
11097-69-1	Aroclor-1254	6000	~~P~~ J
11096-82-5	Aroclor-1260	670	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DO NOT USE

BWZ89DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ84

Matrix: (soil/water) SOIL Lab Sample ID: 39129.26DL

Sample wt/vol: 30.8 (g/mL) G Lab File ID: _____

% Moisture: 52 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	340	U
319-85-7	beta-BHC	340	U
319-86-8	delta-BHC	340	U
58-89-9	gamma-BHC (Lindane)	340	U
76-44-8	Heptachlor	340	U
309-00-2	Aldrin	340	U
1024-57-3	Heptachlor epoxide	190	DPJ
959-98-8	Endosulfan I	77	DPJ
60-57-1	Dieldrin	560	DPJ
72-55-9	4,4'-DDE	400	DJ
72-20-8	Endrin	160	DPJ
33213-65-9	Endosulfan II	100	DPJ
72-54-8	4,4'-DDD	130	DPJ
1031-07-8	Endosulfan sulfate	670	U
50-29-3	4,4'-DDT	1800	D
72-43-5	Methoxychlor	180	DPJ
53494-70-5	Endrin ketone	670	U
7421-93-4	Endrin aldehyde	670	U
5103-71-9	alpha-Chlordane	920	DP
5103-74-2	gamma-Chlordane	970	DB
8001-35-2	Toxaphene	34000	U
12674-11-2	Aroclor-1016	6700	U
11104-28-2	Aroclor-1221	14000	U
11141-16-5	Aroclor-1232	6700	U
53469-21-9	Aroclor-1242	6700	U
12672-29-6	Aroclor-1248	6700	U
11097-69-1	Aroclor-1254	9800	D
11096-82-5	Aroclor-1260	6700	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ90

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ84

Matrix: (soil/water) SOIL Lab Sample ID: 39129.27

Sample wt/vol: 30.8 (g/mL) G Lab File ID: _____

% Moisture: 29 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	0.98	PJ
319-85-7	beta-BHC	23	U
319-86-8	delta-BHC	23	U
58-89-9	gamma-BHC (Lindane)	5.7	PJ
76-44-8	Heptachlor	20	JB
309-00-2	Aldrin	23	U
1024-57-3	Heptachlor epoxide	86	P
959-98-8	Endosulfan I	22	PJ
60-57-1	Dieldrin	250	P
72-55-9	4,4'-DDE	140	P
72-20-8	Endrin	63	P
33213-65-9	Endosulfan II	42	PJ
72-54-8	4,4'-DDD	36	PJ
1031-07-8	Endosulfan sulfate	45	U
50-29-3	4,4'-DDT	670	P
72-43-5	Methoxychlor	230	U
53494-70-5	Endrin ketone	29	PJ
7421-93-4	Endrin aldehyde	46	P
5103-71-9	alpha-Chlordane	130	P
5103-74-2	gamma-Chlordane	130	PB
8001-35-2	Toxaphene	2300	U
12674-11-2	Aroclor-1016	450	U
11104-28-2	Aroclor-1221	920	U
11141-16-5	Aroclor-1232	450	U
53469-21-9	Aroclor-1242	450	U
12672-29-6	Aroclor-1248	450	U
11097-69-1	Aroclor-1254	2900	~~R~~ J
11096-82-5	Aroclor-1260	450	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ90DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ84

Matrix: (soil/water) SOIL Lab Sample ID: 39129.27DL

Sample wt/vol: 30.8 (g/mL) G Lab File ID: _____

% Moisture: 29 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	230	U
319-85-7	beta-BHC	230	U
319-86-8	delta-BHC	230	U
58-89-9	gamma-BHC (Lindane)	230	U
76-44-8	Heptachlor	230	U
309-00-2	Aldrin	230	U
1024-57-3	Heptachlor epoxide	120	DPJ
959-98-8	Endosulfan I	230	U
60-57-1	Dieldrin	380	DPJ
72-55-9	4,4'-DDE	270	DPJ
72-20-8	Endrin	95	DPJ
33213-65-9	Endosulfan II	50	DPJ
72-54-8	4,4'-DDD	450	U
1031-07-8	Endosulfan sulfate	450	U
50-29-3	4,4'-DDT	1200	D
72-43-5	Methoxychlor	160	DPJ
53494-70-5	Endrin ketone	450	U
7421-93-4	Endrin aldehyde	44	DPJ
5103-71-9	alpha-Chlordane	300	DP
5103-74-2	gamma-Chlordane	170	DPJB
8001-35-2	Toxaphene	23000	U
12674-11-2	Aroclor-1016	4500	U
11104-28-2	Aroclor-1221	9200	U
11141-16-5	Aroclor-1232	4500	U
53469-21-9	Aroclor-1242	4500	U
12672-29-6	Aroclor-1248	4500	U
11097-69-1	Aroclor-1254	5900	D
11096-82-5	Aroclor-1260	4500	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ91

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ84

Matrix: (soil/water) SOIL Lab Sample ID: 39129.28

Sample wt/vol: 30.9 (g/mL) G Lab File ID: _____

% Moisture: 55 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	37	U
319-85-7	beta-BHC	88	
319-86-8	delta-BHC	37	U
58-89-9	gamma-BHC (Lindane)	15	PJ
76-44-8	Heptachlor	37	U
309-00-2	Aldrin	37	U
1024-57-3	Heptachlor epoxide	85	P
959-98-8	Endosulfan I	40	P
60-57-1	Dieldrin	240	P
72-55-9	4,4'-DDE	160	P
72-20-8	Endrin	68	PJ
33213-65-9	Endosulfan II	45	PJ
72-54-8	4,4'-DDD	52	PJ
1031-07-8	Endosulfan sulfate	71	U
50-29-3	4,4'-DDT	710	
72-43-5	Methoxychlor	370	U
53494-70-5	Endrin ketone	44	PJ
7421-93-4	Endrin aldehyde	30	PJ
5103-71-9	alpha-Chlordane	120	P
5103-74-2	gamma-Chlordane	100	PB
8001-35-2	Toxaphene	3700	U
12674-11-2	Aroclor-1016	710	U
11104-28-2	Aroclor-1221	1400	U
11141-16-5	Aroclor-1232	710	U
53469-21-9	Aroclor-1242	710	U
12672-29-6	Aroclor-1248	710	U
11097-69-1	Aroclor-1254	3100	~~P~~ J
11096-82-5	Aroclor-1260	710	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

D BWZ91DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ84

Matrix: (soil/water) SOIL Lab Sample ID: 39129.28DL

Sample wt/vol: 30.9 (g/mL) G Lab File ID: _____

% Moisture: 55 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	370	U
319-85-7	beta-BHC	370	U
319-86-8	delta-BHC	370	U
58-89-9	gamma-BHC (Lindane)	370	U
76-44-8	Heptachlor	370	U
309-00-2	Aldrin	370	U
1024-57-3	Heptachlor epoxide	130	DPJ
959-98-8	Endosulfan I	370	U
60-57-1	Dieldrin	320	DPJ
72-55-9	4,4'-DDE	310	DJ
72-20-8	Endrin	710	U
33213-65-9	Endosulfan II	710	U
72-54-8	4,4'-DDD	75	DPJ
1031-07-8	Endosulfan sulfate	710	U
50-29-3	4,4'-DDT	1200	D
72-43-5	Methoxychlor	150	DPJ
53494-70-5	Endrin ketone	710	U
7421-93-4	Endrin aldehyde	710	U
5103-71-9	alpha-Chlordane	270	DPJ
5103-74-2	gamma-Chlordane	140	DPJB
8001-35-2	Toxaphene	37000	U
12674-11-2	Aroclor-1016	7100	U
11104-28-2	Aroclor-1221	14000	U
11141-16-5	Aroclor-1232	7100	U
53469-21-9	Aroclor-1242	7100	U
12672-29-6	Aroclor-1248	7100	U
11097-69-1	Aroclor-1254	6600	DJ
11096-82-5	Aroclor-1260	7100	U

RECORD OF COMMUNICATION

TO: Mike MAHNKOPS

FROM: *JANET TROTTER*
Region II ESAT/RSCC

DATE: July 20, 1999

SUBJECT: QUALITY ASSURED DATA

MESSAGE * SDG # BWZ26

PLEASE SIGN BELOW IN ACKNOWLEDGEMENT OF RECEIPT OF THE FOLLOWING AND RETURN ONE COPY OF THIS RECORD OF COMMUNICATION TO THE RSCC-REGION II.

(1) Cornell Dubilier 27133 SWOK Org 20 Soils

REPLY BY: _____

SIGNATURE: _____ DATE: _____

DATE RECEIVED BY RSCC: ____/____/____

cc: EPA TASK MONITOR
ESAT, MANAGER
file

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 27133
LABORATORY: SWOK

SDG No.: BWZ26
SITE: Cornell Dubilier

DATA ASSESSMENT

The current SOP HW-6 (Revision 11) June 1996, USEPA Region II Data Validation SOP for Statement of Work OLMO 3.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N"(presumptive evidence for the presence of the material, "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: Mark Zambrowski Date: July 15, 1999

Verified By: [signature] Date: 2/19/1999

CLP DATA ASSESSMENT

SDG 1, BWZ26: PCB ONLY

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.
PCB: No problems.

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.
PCB: The following analytes were qualified "UJ" in sample BWZ39 due to surrogate recoveries less than criteria: Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, and Aroclor 1260.

3. LABORATORY CONTROL SAMPLE (LCS):

The LCS data is generated from a laboratory quality control sample. LCS data is intended to assess the ability of the contractor to perform the analytical method.
PCB: No problems.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank

SMC/Surrogate Report

SDG NO: BWZ26
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ26.ASF

SMC/SURROGATE CRITERIA

Pesticide

Percent Recovery Limits

	--- Water ---		---- Soil ---	
	Lower	Upper	Lower	Upper
Tetrachloro-m-xylene	30.0	150.0	30.0	150.0
Decachlorobiphenyl	30.0	150.0	30.0	150.0

DC-174: The following pesticide samples have surrogate percent recoveries which exceed the upper limit of the criteria window.
If %R for both surrogates on both columns are > contract limit, hits are flagged "J".

BWZ26DL, BWZ27, BWZ27DL, BWZ28, BWZ28DL, BWZ29
BWZ29DL, BWZ31, BWZ31DL, BWZ32, BWZ32DL, BWZ33DL
BWZ34DL, BWZ35DL, BWZ36DL, BWZ37, BWZ38, BWZ43
BWZ43DL, BWZ44, BWZ44DL, BWZ45, BWZ45DL, BWZ46
BWZ46DL, BWZ47, BWZ47DL, BWZ49, BWZ49DL

DC-176: The following diluted pesticide samples have surrogate percent recoveries of less than 10%. Professional judgement is recommended.
Hits and non-detects are not flagged.

BWZ28DL, BWZ29DL, BWZ30DL, BWZ31DL, BWZ37DL, BWZ38DL

DC-177: The following pesticide samples have surrogate percent recoveries outside the lower limit of the criteria window, but > 10%. Hits & non-detects are qualified "J" only for same surr. on both columns with no interference. Use professional judgement when interference is detected. Remove "J" when 1 surr. on 1 column is out.

BWZ39

DC-178: The following pesticide samples are not fully qualified for surrogate RT because of missing RT information. Visual inspection of the data is required. Samples with surrogates falling outside the RT window should be qualified based on professional judgement.

BWZ28DL, BWZ29DL, BWZ30DL, BWZ31DL, BWZ37DL, BWZ38DL

CLP DATA ASSESSMENT

contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:
PCB: No problems.

B) Field or rinse blank contamination:
PCB: No problems.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".
PCB: No problems.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 in both initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

B) Percent Relative Standard Deviation (%RSD) and Percent

CLP DATA ASSESSMENT

Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < ±30% (VOA) or ±25% (BNA). A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

PCB: No problems.

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.

PCB: No problems.

9. COMPOUND IDENTIFICATION:

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A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/ml in the final sample extract.

PCB: The following samples were qualified "J" for Aroclor 1254 due to exceeding % D criteria of 50% between columns: BWZ33DL, BWZ44DL, and BWZ46DL.

10. CONTRACT PROBLEMS NON-COMPLIANCE:
PCB: The following samples were not labeled with an "E" (SOW, B-40, Sect. 3.4.2.18) after Aroclor 1254 due to the analyte exceeding calibration criteria (SOW, D-60/Pest, Sect. 10.2.3.3) in the original analysis: BWZ26, BWZ28, BWZ29, BWZ30, BWZ31, BWZ32, BWZ36, BWZ37, BWZ38, BWZ43, BWZ45, and BWZ47.

The following samples were qualified "J" for Aroclor 1254 in the original analysis since the analyte exceeded the calibration curve (SOW, D-60/Pest, Sect. 10.2.3.3) but the associated dilutions reported Aroclor 1254 below the CRQL. The value was not transferred from the dilution. The area responses for Aroclor 1254 in the dilutions were reported below the target window of the midpoint and high point initial calibration as required by the above mentioned SOW citation: BWZ37 and BWZ38.

Sample dilution of the following samples was not required since the reported analytes did not exceed the initial calibration high point standards as required by the SOW, d-59/Pest10.2.3.2 and 10.2.3.3: BWZ33DL, BWZ35DL, BWZ39DL, and BWZ46DL.

11. FIELD DOCUMENTATION:

Quantitation Limit Report

SDG NO: **BWZ26**
CASE NO: **27133**

LABORATORY: **SWL-TULSA**
AGENCY INPUT FILE: **BWZ26.ASF**

CONTRACT REQUIRED SAMPLE QUANTITY

	Water	Low Soil	Med Soil
PES	1000.0 (ML)	30.0 (G)	

DC-158: The following pesticide samples have analyte concentrations below the quantitation limit (CRQL). All results below the CRQL are qualified "J".

BWZ26DL
Aldrin, Dieldrin, 4,4'-DDE, 4,4'-DDD
Methoxychlor, Endrin ketone, Endrin aldehyde

BWZ27DL
Aldrin, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Methoxychlor, Endrin ketone, Endrin aldehyde

BWZ28DL
Heptachlor epoxide, Dieldrin, 4,4'-DDE, 4,4'-DDD
Methoxychlor, Endrin aldehyde

BWZ29DL
Dieldrin, 4,4'-DDE, 4,4'-DDD, Methoxychlor
Endrin aldehyde, gamma-Chlordane

BWZ30DL
Dieldrin, 4,4'-DDE, 4,4'-DDD, Endrin aldehyde

BWZ31DL
Heptachlor epoxide, Dieldrin, 4,4'-DDE, 4,4'-DDD
Methoxychlor, Endrin aldehyde

BWZ32DL
Aldrin, Heptachlor epoxide, Dieldrin, 4,4'-DDD
Endosulfan sulfate, Methoxychlor, Endrin ketone, Endrin aldehyde

BWZ33
Dieldrin, 4,4'-DDD, Endrin aldehyde

BWZ33DL
Dieldrin, 4,4'-DDE, Endrin, Endosulfan II
4,4'-DDD, Methoxychlor, Endrin ketone, Endrin aldehyde
alpha-Chlordane, Aroclor-1254

J

BWZ34DL

Heptachlor epoxide, Endosulfan I, Dieldrin, 4,4'-DDE
Endrin, 4,4'-DDD, Methoxychlor, Endrin ketone
Endrin aldehyde, gamma-Chlordane, Aroclor-1254
J

BWZ35

Dieldrin, 4,4'-DDE, 4,4'-DDD, Methoxychlor
Endrin ketone, Endrin aldehyde

BWZ35DL

Dieldrin, 4,4'-DDE, Endrin, Endosulfan II
4,4'-DDD, Methoxychlor, Endrin ketone, Endrin aldehyde
alpha-Chlordane, gamma-Chlordane, Aroclor-1254
J

BWZ37DL

Dieldrin, 4,4'-DDE, Endrin, Endosulfan II
4,4'-DDD, Endosulfan sulfate, Methoxychlor, alpha-Chlordane
gamma-Chlordane, Aroclor-1254
J

BWZ38

gamma-BHC (Lindane)

BWZ38DL
J
Aroclor-1254

BWZ43DL

4,4'-DDD, Methoxychlor

BWZ44DL

Endrin, gamma-Chlordane

BWZ45DL

4,4'-DDE, Endrin, 4,4'-DDD, Methoxychlor

BWZ46DL
J
Aroclor-1254

BWZ47DL

Dieldrin, 4,4'-DDE, Endrin, 4,4'-DDD

BWZ49DL

Endrin

DC-422: The following pesticide samples have analytes for which the percent difference between column results exceeds primary criteria. Hits > CRQL are flagged "J." Or: if %D is > 50% and

value is < CRQL, sample result is elevated to the CRQL and qualified "U."

BWZ26
Endosulfan II

BWZ26DL
Endosulfan II

BWZ27
Endrin ketone, alpha-Chlordane

BWZ27DL
Endrin, Endosulfan II, Endrin ketone

BWZ28
Endosulfan II

BWZ28DL
Endosulfan II

BWZ29
Heptachlor epoxide, Endosulfan II, 4,4'-DDD

BWZ29DL
Endosulfan II, Methoxychlor

BWZ30
Endosulfan II, Methoxychlor, Endrin aldehyde

BWZ30DL
Endosulfan II

BWZ31
4,4'-DDE, Endosulfan II, Methoxychlor, Endrin aldehyde

BWZ31DL
Endrin aldehyde

BWZ32
delta-BHC, 4,4'-DDE, Endosulfan II, Endrin aldehyde

BWZ32DL
Endosulfan II, Endrin aldehyde, ~~Aroclor~~-1254

BWZ33
Aldrin, Endosulfan II

BWZ33DL

Endrin, Endrin ketone, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane Aroclor-1254 J

BWZ34

Heptachlor epoxide, Endosulfan II, Methoxychlor

BWZ34DL

Heptachlor epoxide, 4,4'-DDE, 4,4'-DDT

BWZ34MS

Heptachlor epoxide, Dieldrin, Endrin, Endrin ketone

BWZ34MSD

Heptachlor epoxide, Dieldrin, Endrin

BWZ35

Heptachlor epoxide, Endrin, Endosulfan II

BWZ35DL

Endrin, Endrin ketone, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ36

Endosulfan sulfate

BWZ37

Endosulfan II, 4,4'-DDT

BWZ37DL

gamma-Chlordane

BWZ38

delta-BHC, 4,4'-DDE, 4,4'-DDT

BWZ43

Heptachlor epoxide

BWZ43DL

Endosulfan II, Endrin ketone

BWZ44

4,4'-DDD, Endrin ketone, alpha-Chlordane, Aroclor-1254

BWZ44DL

4,4'-DDT Aroclor-1254 J

BWZ45

Heptachlor, Heptachlor epoxide, Endosulfan II, Endrin aldehyde

BWZ45DL

4,4'-DDE, Endosulfan II, 4,4'-DDD

BWZ46

Endrin aldehyde, alpha-Chlordane, Aroclor-1254 mz

BWZ46DL

Endrin ketone

BWZ47

Heptachlor epoxide, Endosulfan II

BWZ47DL

4,4'-DDE, Endosulfan II

BWZ49

Heptachlor epoxide, 4,4'-DDE, 4,4'-DDD, 4,4'-DDT
Endrin ketone, gamma-Chlordane

BWZ49DL

Heptachlor epoxide, Endrin, Endosulfan II, gamma-Chlordane

DC-423: The following pesticide samples have analytes for which the percent difference between column results exceeds expanded criteria. Hits > CRQL are flagged "NJ;" or "R" when %D > 100; or "NJ" when %D is between 100 - 200 (interference detected). Hits < CRQL are elevated to the CRQL and qualified "U."

BWZ26

Aldrin, Dieldrin, 4,4'-DDE, 4,4'-DDD
Methoxychlor, Endrin ketone, Endrin aldehyde

BWZ26DL

Aldrin, Dieldrin, 4,4'-DDE, 4,4'-DDD
Endrin ketone, Endrin aldehyde

BWZ27

Dieldrin, 4,4'-DDE, Endrin, 4,4'-DDD
Methoxychlor, Endrin aldehyde, gamma-Chlordane

BWZ27DL

Dieldrin, 4,4'-DDE, 4,4'-DDD, Endosulfan sulfate

Methoxychlor, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ28

delta-BHC, gamma-BHC (Lindane), Aldrin, Heptachlor epoxide
Dieldrin, 4,4'-DDD, Endosulfan sulfate, Endrin ketone
Endrin aldehyde

BWZ28DL

Heptachlor epoxide, Dieldrin, 4,4'-DDE, 4,4'-DDD
Methoxychlor, Endrin aldehyde

BWZ29

delta-BHC, gamma-BHC (Lindane), Aldrin, Dieldrin
4,4'-DDE, Endosulfan sulfate, Methoxychlor, Endrin ketone
Endrin aldehyde, gamma-Chlordane

BWZ29DL

Dieldrin, 4,4'-DDE, 4,4'-DDD, Endrin aldehyde
gamma-Chlordane

BWZ30

delta-BHC, Aldrin, Heptachlor epoxide, Dieldrin
4,4'-DDE, 4,4'-DDD, Endosulfan sulfate

BWZ30DL

Dieldrin, 4,4'-DDE, 4,4'-DDD, Endrin aldehyde

BWZ31

delta-BHC, gamma-BHC (Lindane), Aldrin, Heptachlor epoxide
Dieldrin, 4,4'-DDD, Endosulfan sulfate

BWZ31DL

delta-BHC, Heptachlor epoxide, Dieldrin, 4,4'-DDE
Endosulfan II, 4,4'-DDD

BWZ32

Heptachlor epoxide, Dieldrin, 4,4'-DDD, Methoxychlor
Endrin ketone

BWZ32DL

delta-BHC, Aldrin, Heptachlor epoxide, Dieldrin
4,4'-DDE, 4,4'-DDD, Endosulfan sulfate, Methoxychlor
Endrin ketone

BWZ33

Endosulfan I, Dieldrin, 4,4'-DDE, 4,4'-DDD
Methoxychlor, Endrin ketone, Endrin aldehyde, alpha-Chlordane

gamma-Chlordane

BWZ33DL
Dieldrin, 4,4'-DDE, Endosulfan II, 4,4'-DDD
4,4'-DDT, Aroclor-1254

BWZ34
Endosulfan I, Dieldrin, 4,4'-DDE, Endrin
4,4'-DDD, Endrin ketone, Endrin aldehyde, gamma-Chlordane

BWZ34DL
Endosulfan I, Dieldrin, Endrin, 4,4'-DDD
Methoxychlor, Endrin ketone, Endrin aldehyde, gamma-Chlordane

BWZ34MS
Endosulfan I, 4,4'-DDE, 4,4'-DDD, Methoxychlor
Endrin aldehyde, gamma-Chlordane

BWZ34MSD
Endosulfan I, 4,4'-DDE, 4,4'-DDD, Methoxychlor
Endrin ketone, Endrin aldehyde, gamma-Chlordane

BWZ35
Dieldrin, 4,4'-DDE, 4,4'-DDD, Methoxychlor
Endrin ketone, Endrin aldehyde, gamma-Chlordane

BWZ35DL
Dieldrin, 4,4'-DDE, Endosulfan II, 4,4'-DDD
Methoxychlor

BWZ36
Aldrin, Heptachlor epoxide, Dieldrin, 4,4'-DDE
Endrin aldehyde, gamma-Chlordane

BWZ36DL
Dieldrin, 4,4'-DDE, 4,4'-DDD, Endrin aldehyde

BWZ37
Aldrin, Heptachlor epoxide, Dieldrin, 4,4'-DDE
4,4'-DDD, Endosulfan sulfate, Endrin ketone, Endrin aldehyde

BWZ37DL
Dieldrin, 4,4'-DDE, Endosulfan II, 4,4'-DDD
Endosulfan sulfate, Methoxychlor

BWZ38
gamma-BHC (Lindane), Aldrin, Heptachlor epoxide, Dieldrin

Endosulfan II, 4,4'-DDD, Endosulfan sulfate, Endrin ketone
Endrin aldehyde, gamma-Chlordane

BWZ43
Dieldrin, 4,4'-DDD, Methoxychlor, Endrin ketone
Endrin aldehyde, gamma-Chlordane

BWZ43DL
4,4'-DDD, Methoxychlor, gamma-Chlordane

BWZ44
4,4'-DDE, Endrin, Methoxychlor, Endrin aldehyde
gamma-Chlordane

BWZ44DL
gamma-Chlordane

BWZ45
Dieldrin, Endrin, 4,4'-DDD, Methoxychlor
Endrin ketone, gamma-Chlordane

BWZ45DL
Endrin, Methoxychlor, Endrin ketone, gamma-Chlordane

BWZ46
Endrin, Methoxychlor, Endrin ketone, gamma-Chlordane

BWZ46DL S
Aroclor-1254

BWZ47
Dieldrin, Endrin, 4,4'-DDD, Methoxychlor
Endrin ketone, Endrin aldehyde, gamma-Chlordane

BWZ47DL
Dieldrin, 4,4'-DDD, Methoxychlor, Endrin ketone
gamma-Chlordane

BWZ49
Aldrin, Dieldrin, Endrin, Endosulfan II
Endosulfan sulfate, Methoxychlor

BWZ49DL
Methoxychlor, Endrin ketone, Endrin aldehyde

CLP DATA ASSESSMENT

12. OTHER PROBLEMS:

PCB: From the laboratory supplied chromatograms samples BWZ26, BWZ28, and BWZ30 appear to have Aroclor 1248 present in the appropriate retention time windows and with the proper peak pattern(SOW, D-62/Pest, 11.1.1.3). The quantitation reports submitted in the data package do not contain retention time list with area responses for all peaks in the chromatograms, only the peaks used for quantitation. It is not possible for someone reviewing the data to perform manual calculations and determine the concentration of other analytes which may be interfering or present. No further action was taken.

13. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified not to be used.

PCB: BWZ26DL, BWZ27DL, BWZ28DL, BWZ29DL, BWZ30DL, BWZ31DL, BWZ32DL, BWZ33DL, BWZ34DL, BWZ35DL, BWZ36DL, BWZ37DL, BWZ38DL, BWZ39DL, BWZ43DL, BWZ44DL, BWZ45DL, BWZ46DL, BWZ47DL, and BWZ49DL.

DPO: []ACTION []FYI REGION__2_

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO._27133__ LABORATORY_SWOK_____

SDG NO. BWZ26 _ DATA USER___EPA/Region II_____

SOW_OLMO 3.2 _____ REVIEW COMPLETION DATE_7/15/99___

NO. OF SAMPLES_____WATER ____20___SOIL _____OTHER

REVIEWER: [] ESD [x] ESAT [] OTHER, CONTRACTOR_____

QC ITEM	VOA	BNA	PEST		
HOLDING TIMES			O		
GC-MS PERFORMANCE			O		
INITIAL CALIBRATIONS			O		
CONTINUING CALIBRATIONS			O		
FIELD BLANKS(F = N/A)			O		
LABORATORY BLANKS			O		
SURROGATES			X		
MATRIX SPIKE/DUPLICATES			O		
QC SAMPLES(LCS, PVS)			O		
INTERNAL STANDARDS			F		
COMPOUND IDENTIFICATION			X		
COMPOUND QUANTITATION			X		
SYSTEM PERFORMANCE			O		
OVERALL ASSESSMENT			M		

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DATA REJECTION SUMMARY

Type of Review: Organic Date: 7/15/99 Case No.27133, SDG# BW226

Site Name: Cornell-Dubilier Lab Name: SWOK Reviewer's Initials: MZ

Number of Samples: H_2O, 20 soils, +QC + reanalyses/dilutions

Analytes Rejected Due To Exceeding Review Criteria For:

No. of Compounds/No. of Fractions(Samples)

	Surrogates	Holding Times	Calibrat-ion	Contam-ination	ID	Internal Standards	Other	Total # Samples	Total # Rejected/ Total # in All Samples
VOA(41)	0	0	0	0	0	0	0	0	NA
ACID(14)	0	0	0	0	0	0	0	0	NA
B/N(45)	0	0	0	0	0	0	0	0	NA
PEST(21)	0	0	0	0	0	0	0	0	NA
PCB(7)	0	0	0	0	0	0	0	44	0/308 = 0%

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITIERIA.

Analytes Estimated Due To Exceeding Review Criteria For:

No. of Compounds/No. of Fractions(Samples)

	Surrogates	Holding Times	Calibrat-ion	Contam-ination	ID	Internal Standards	Other	Total # Samples	Total # estimated/ Total # in All Samples
VOA(41)	0	0	0	0	0	0	0	0	NA
ACID(14)	0	0	0	0	0	0	0	0	NA
B/N(45)	0	0	0	0	0	0	0	0	NA
PEST(21)	0	0	0	0	0	0	0	0	NA
PCB(7)	7	0	0	0	3	0	6	44	16/308 = 6%

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITIERIA.

Holding Time Report

SDG NO: BWZ26
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ26.ASF

HOLDING TIME CRITERIA

Pesticide

	--- Extraction ---		---- Analysis ----	
	Primary	Expanded	Primary	Expanded
Water	7	28	40	60
Soil	7	28	40	60

No problems found for this qualification.

Matrix Spike Report

SDG NO: BWZ26
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ26.ASF

MATRIX SPIKE CRITERIA

Pesticide

Percent Recovery Limits & RPD

	Water			Soil		
	Lower	Upper	RPD	Lower	Upper	RPD
gamma-BHC (Lindane)	56.0	123.0	15.0	46.0	127.0	50.0
Heptachlor	40.0	131.0	20.0	35.0	130.0	31.0
Aldrin	40.0	120.0	22.0	34.0	132.0	43.0
Dieldrin	52.0	126.0	18.0	31.0	134.0	38.0
Endrin	56.0	121.0	21.0	42.0	139.0	45.0
4,4'-DDT	38.0	127.0	27.0	23.0	134.0	50.0

No problems found for this qualification.

Laboratory Blanks Report

SDG NO: BWZ26
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ26.ASF

LABORATORY BLANKS CRITERIA

Pesticide

Method Blank Contamination Threshold Multipliers

	First	Expanded
All compounds	5.00	5.00

No problems found for this qualification.

Calibration Report

SDG NO: **BWZ26**
CASE NO: **27133**

LABORATORY: **SWL-TULSA**
AGENCY INPUT FILE: **BWZ26.ASF**

CALIBRATION CRITERIA

Pesticide

Maximum %RSD (initial calibration)	- TCL analytes	20
	- surrogates	30
Maximum RPD (continuing calibration)		25
INDA/INDB percent resolution		90
Continuing calibration sequence time		12

DC-197: The following pesticide samples are not qualified because of missing calibration verification information. Visual inspection of the data is required.

BWZ26, BWZ26DL, BWZ27, BWZ27DL, BWZ28, BWZ28DL
BWZ29, BWZ29DL, BWZ30, BWZ30DL, BWZ31, BWZ31DL
BWZ32, BWZ32DL, BWZ33, BWZ33DL, BWZ34, BWZ34DL
BWZ34MS, BWZ34MSD, BWZ35, BWZ35DL, BWZ36, BWZ36DL
BWZ37, BWZ37DL, BWZ38, BWZ38DL, BWZ39, BWZ39DL
BWZ43, BWZ43DL, BWZ44, BWZ44DL, BWZ45, BWZ45DL
BWZ46, BWZ46DL, BWZ47, BWZ47DL, BWZ49, BWZ49DL
PBLKSA, PBLKSK

System Performance Report

SDG NO: BWZ26
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ26.ASF

SYSTEM PERFORMANCE CRITERIA

Resolution & Breakdown Limits

RESC percent resolution	60.00
PEM percent resolution	90.00
4,4'-DDT percent breakdown	20.00
Endrin percent breakdown	20.00
Combined percent breakdown	30.00

DC-215: The following pesticide samples are associated with a continuing PEM in which the RPD between the nominal and calculated amounts for a PEM compound is outside criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

BWZ26
4,4'-DDT, Methoxychlor

BWZ27
4,4'-DDT, Methoxychlor

BWZ28
4,4'-DDT, Methoxychlor

BWZ29
4,4'-DDT, Methoxychlor

BWZ30
4,4'-DDT, Methoxychlor

BWZ31
4,4'-DDT, Methoxychlor

BWZ32
4,4'-DDT, Methoxychlor

BWZ33
4,4'-DDT, Methoxychlor

BWZ34
4,4'-DDT, Methoxychlor

BWZ34MS
4,4'-DDT, Methoxychlor

BWZ34MSD
4,4'-DDT, Methoxychlor

BWZ35
4,4'-DDT, Methoxychlor

BWZ36
4,4'-DDT, Methoxychlor

BWZ37
4,4'-DDT, Methoxychlor

BWZ38
4,4'-DDT, Methoxychlor

BWZ39
4,4'-DDT, Methoxychlor

BWZ43
beta-BHC, Endrin, 4,4'-DDT, Methoxychlor

BWZ44
beta-BHC, Endrin, 4,4'-DDT, Methoxychlor

BWZ45
beta-BHC, Endrin, 4,4'-DDT, Methoxychlor

BWZ46
beta-BHC, Endrin, 4,4'-DDT, Methoxychlor

BWZ47
beta-BHC, Endrin, 4,4'-DDT, Methoxychlor

BWZ49
beta-BHC, Endrin, 4,4'-DDT, Methoxychlor

DC-226: The following pesticide samples are associated with a continuing PEM in which the DDT % breakdown exceeds criteria.
DDT detected in associated samples is qualified "J".

BWZ26, BWZ27, BWZ28, BWZ29, BWZ30, BWZ31
BWZ32, BWZ33, BWZ34, BWZ34MS, BWZ34MSD, BWZ35
BWZ36, BWZ37, BWZ38, BWZ43, BWZ44, BWZ45
BWZ46, BWZ47, BWZ49

DC-228: The following pesticide samples are associated with a continuing

PEM in which the DDT % breakdown exceeds criteria.
DDD and DDE detected in associated samples are qualified "NJ".

BWZ26, BWZ27, BWZ28, BWZ29, BWZ30, BWZ31
BWZ32, BWZ33, BWZ34, BWZ34MS, BWZ34MSD, BWZ35
BWZ36, BWZ37, BWZ38, BWZ43, BWZ44, BWZ45
BWZ47, BWZ49

DC-229: The following pesticide samples are associated with a continuing PEM in which the endrin % breakdown exceeds criteria.
Endrin detected in associated samples is qualified "J".

BWZ43, BWZ44, BWZ45, BWZ46, BWZ47, BWZ49

DC-231: The following pesticide samples are associated with a continuing PEM in which the endrin % breakdown exceeds criteria. Endrin aldehyde and/or endrin ketone detected in associated samples are qualified "NJ".

BWZ43, BWZ44, BWZ45, BWZ46, BWZ47, BWZ49

Percent Moisture Report

SDG NO: BWZ26
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ26.ASF

PERCENT MOISTURE LIMITS

	Primary	Expanded
PES	50%	90%

No problems found for this qualification.

YES NO N/A

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 27133 LABORATORY: SWOK

SITE NAME: Cornell-Dubilier SDG Number(s): BW226

1.0 Chain of Custody and Sampling Trip Reports

1.1 Are the Traffic Reports/Chain-of-Custody Records present for all samples? [✓] ___ ___

ACTION: If no, contact RSCC, or contact the WAM to obtain replacement of missing or illegible copies from the lab.

1.2 Is the Sampling Trip Report present for all samples and all fractions? [✓] ___ ___

ACTION: If no, contact either RSCC or ask the WAM to obtain this information from the prime contractor.

2.0 Data Completeness and Deliverables

2.1 Have any missing deliverables been received and added to the data package? ___ [✓]

NOTE: The lab is required to submit data for only two analyses, for each fraction. (i.e., the original sample and one dilution, or the most concentrated dilution analyzed and one further dilution.)

ACTION: Contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the lab. If lab cannot provide them, note the effect on the review of the package in the Contract Problems/Non-compliance section of the Data Assessment and the Organic Regional Data Assessment Summary form.

2.2 Was CLASS CCS checklist included with package? [✓] ___ ___

.3 Are there any discrepancies between the Traffic Reports/Chain-of-Custody Records, Sampling Report and Sample Tags? ___ [✓] ___

	YES	NO	N/A
ACTION: If yes, contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the laboratory.			
3.0 Cover Letter SDG Narrative			
3.1 Is the Narrative or Cover Letter Present?	[✓]		
3.2 Are case number, SDG number and contract number contained in the SDG Narrative or cover letter (see SOW, Exhibit B, section 2.6.1)?	[✓]		
3.3 Does the narrative contain the following information:			
VOA: description of trap and columns used during sample analyses?	[ ]		✓
BNA: description of columns used during sample analyses?	[ ]		✓
Pest: description of columns used during sample analyses?	[✓]		
NOTE: As per section 6.23.3.1 SOW/p. D-11/Pest, Packed columns are not permitted.			
3.4 Does the narrative, VOA and BNA sections, contain a list of all TICs identified as alkanes and their estimated concentrations?	[ ]		✓
3.5 Does the narrative contain a record of all cooler temperatures? If the temperature of a cooler was exceeded, > 10° C, the lab must list by fraction and sample number, all affected samples.	[✓]		
3.6 Does the narrative contain a list of the pH values determined for each water sample submitted for volatile analysis (SOW Exhibit B, section 2.6.1.2)?	[ ]		✓
3.7 Does the Case Narrative contain the statement, "verbatim", as required in Section B of the SOW?	[✓]		
ACTION: If "No", to any question in this section, contact the WAM to obtain all necessary resubmittals. If information is not available, document in the Data Assessment under Contract Problems/Non-Compliance section.			

	YES	NO	N/A
4.0 Data Validation Checklist			
4.1 Check the package for the following discrepancies:			
a. Is the package paginated in ascending order starting from the SDG narrative?	✓		
b. Are all forms and copies legible?	✓		
c. Is each fraction assembled in the order set forth in the SOW?	✓		
d. Is a Sample Data Summary Package submitted immediately preceding the Sample Data Package?	✓		

The following checklist is divided into three parts. Part A is for any VOA analyses, Part B is for BNAs and Part C is Pesticide/PCBs.

Does this package contain:

VOA Data?		✓
BNA Data?		✓
Pesticide/PCB data?	✓	

ACTION: Complete corresponding parts of checklist.

YES NO N/A

PART C: PESTICIDE/PCB ANALYSIS

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody Records or SDG Narrative indicate any problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data?

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50% - 90% water, all data should be qualified as estimated "J". If a soil sample, other than TCLP, contains more than 90% water, all data should be qualified as unusable "R".

calibration verification breakdown

ACTION: If samples were not iced, or if the ice was melted upon arrival at the laboratory, and the temperature of the cooler was elevated > 10° C, flag all positive results "J" and all non-detects "UJ".

ACTION: Check aqueous extraction log for sample pH, if adjustment was needed, it should have been noted in the SDG Narrative. If more information is needed, notify the WAM to contact the lab.

2.0 Holding Times

2.1 Have any PEST/PCB technical holding times, determined from date of collection to date of extraction, been exceeded?

NOTE: Technical Holding Times: Water and soil samples for PEST/PCB analysis must be extracted within 7 days of the date of collection. Extracts must be analyzed within 40 days of the date extraction.

ACTION: If technical holding times are exceeded, flag all positive results as estimated "J" and sample quantitation limits "UJ" and document in the narrative that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the

YES NO N/

reliability of the data and the effects of additional storage on the sample results. At a minimum, all the data should at least be qualified "J", but the reviewer may determine that non-detects are unusable "R".

Table of Holding Time Violations
(See Chain-of-Custody Records)

Sample Analyzed	Sample Matrix	Date Sampled	Date Lab Received	Date Extracted	Date Analyzed

NOTE: Contractual Holding Times: Extraction of water samples must be completed within 5 days VTSR. Soil/sediment samples must be extracted within 10 days of VTSR. This requirement does not apply to Performance Evaluation (PE) samples. Extracts of water and soil/sediment samples must be analyzed within 40 days following start of extraction.

ACTION: If contractual holding times are exceeded, document in the Data Assessment and Organic Regional Data Assessment Summary form.

NOTE: The data reviewer must note in the Data Assessment whether or not technical and contractual holding times were met.

3.0 Surrogate Recovery (Form II)

3.1 Are the PEST/PCB Surrogate Recovery Summaries (Form II) present for each of the following matrices:

a. Low Water? [ ] ___ ___

b. Soil? [ ] ___ ___

3.2 Are all the PEST/PCB samples listed on the appropriate Surrogate Recovery Summary for each of the following matrices:

	YES	NO	N/A
a. Low Water?	✓		✓
b. Soil?	✓		

ACTION: Contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the laboratory. If missing deliverables are unavailable, document the effect in the Data Assessment.

3.3 Were outliers marked correctly with an asterisk?	✓		

ACTION: Circle all outliers with red pencil.

3.4 Were surrogate recoveries of TCX or DCB outside of the contract specification for any sample, method blank or sulfur clean-up blank (30-150%)?		✓	

ACTION: In the absence of matrix interference, qualification of the data is not required in the following three situations:

1. When surrogates on both columns are diluted out.

2. When one surrogate on one column was outside (either above or below) the contract limits but above 10%. BW244 BW232 BW245 BW237 BW238 BW231

3. When the same surrogate on both columns is above the contract limit. BW227 BW226 BW229

If the same surrogate on both columns is below the contract limit but above 10%, check chromatograms for interference. The reviewer may use professional judgement, and qualify only those analytes which elute in the region of the GC chromatogram where interference was observed. [redacted]

If the same surrogate on both columns is below the contract limit but above 10% (with no interference), qualify non-detects and positive hits "J" (estimated). BW239 (J all analytes no hits)

If recoveries for both surrogates on both columns are below the contract limit but above 10%, flag positive results and non-detects for that sample "J".

YES NO N,

If recoveries are above the contract limit for both surrogates on both columns, then qualify positive values "J".

If both surrogates on one column are below the contract limit but above 10%, then use the data from the other column, providing both surrogates on that column are within contract limits. The validator must check from which column the concentration is reported for each analyte. If the value is reported from the failed column, then cross it out and use the value from the other column. Document this change in the Data Assessment.

If recovery is below 10% for either surrogate on any column, qualify positive results "J" and flag non-detects "R".

3.5 Were surrogate retention times (RT) within the windows established during the initial 3-point analysis of Individual Standard Mixture A (see Form VI Pest-1)? [ ] ✓ ___

O2 recovery is out others are OK

ACTION: If the RT limits are not met, positive results and non-detects for that sample may be qualified unusable, "R", based on professional judgement.

3.6 Are there any transcription/calculation errors between raw data and Form II? ___ [✓] ___

ACTION: If large errors exist, contact the WAM to obtain an explanation or resubmittal of corrected deliverables from the laboratory. Make any necessary corrections and document the effect in the Data Assessment.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [✓] ___ ___

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices (one MS/MSD must be performed for every 20 samples of similar matrix or concentration level):

a. Low Water? [ ] ___ ✓

	YES	NO	N/A
b. Soil?	[✓]		

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

ACTION: Circle all outliers with red pencil.

4.3 How many PEST/PCB spike recoveries are outside QC limits?

Water	Soil
_____ out of 12	0 out of 12

4.4 How many RPDs for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soil
_____ out of 6	0 out of 6

ACTION: No action is taken on MS/MSD data alone. However, using informed professional judgement, the data reviewer may use the matrix spike and matrix spike duplicate results in conjunction with other QC criteria and determine the need for some qualification of the data.

5.0 Blanks (Form IV)

	YES	NO	N/A
5.1 Is the Method Blank Summary (Form IV) present?	[✓]		
5.2 Frequency of Analysis: Has a reagent/method blank been analyzed for each SDG, every 20 samples of similar matrix and concentration level or each extraction batch, whichever is more frequent?	[✓]		

ACTION: If any blank data are missing, take action as specified above in section 3.2. If blank data is not available, reject "R" all associated positive data. However, using professional judgement, the data reviewer may substitute field blank data for missing method blank data.

5.3 A separate Form IV should be present if part of an extraction batch required sulfur removal. In such cases some samples will be listed on two blank summary forms - once under the method

YES NO N

to contact the laboratory if the soil blanks are not reported in soil units (µg/kg).

Flag sample result with a "U":	Report CRQL & qualify "U":	No qualification is needed:
Sample conc. > CRQL, but ≤ 5x blank.	Sample conc. < CRQL & is ≤ 5x blank value.	Sample conc. > CRQL & > 5x blank value.

NOTE: If gross blank contamination exists, all data in the associated samples should be qualified as "R", unusable.

6.5 Are there field/rinse/equipment blanks associated with every sample? [ ] [✓] [ ]

ACTION: For low level samples, note in the Data Assessment that there is no associated field/rinse/equipment blank. For analytes with high concentrations, use professional judgement to qualify these values and document in the Data Assessment.

Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 Calibration and GC Performance

7.1 Are the following Gas Chromatograms and Data Systems Printouts for both columns present for all samples, blanks and MS/MSD:

a. Peak resolution check? [✓] [ ] [ ]

b. Performance evaluation mixtures? [✓] [ ] [ ]

c. Aroclor 1016/1260? [✓] [ ] [ ]

d. Aroclors 1221, 1232, 1242, 1248, 1254? [✓] [ ] [ ]

e. Toxaphene? [✓] [ ] [ ]

f. Low points individual mixtures A & B? [✓] [ ] [ ]

g. Med points individual mixtures A & B? [✓] [ ] [ ]

h. High points individual mixtures A & B? [✓] [ ] [ ]

	YES	NO	N/A
i. Instrument blanks?	✓		
j. Were the appropriate GC columns used as specified on pg. D-11/PEST, sections 6.23.3.1 to 6.23.3.7, in the SOW?	✓		
7.2 Do the chromatograms for all Individual Standard Mixtures and PEM analyses display single component analytes at > 10% but < 100% of full scale (see sections 9.3.5.8.1 thru 9.3.5.8.4, pages D-32 & 33/PEST)?	✓		
Have chromatograms for Individual Standard Mixtures and PEM analyses been replotted, showing scaling factor(s), to meet the above requirements when necessary?		✓	

NOTE: All standard chromatograms must clearly display all peaks at > 10% but < 100% of full scale, and replotted if necessary to accommodate peaks not properly scaled in the initial chromatogram(s). Both the initial and replotted chromatograms must be submitted with the data package.

ACTION: If all single component peaks are not clearly displayed on chromatograms for all Individual Standard Mixtures and PEM analyses, notify the WAM to obtain resubmittal of the necessary data.

	YES	NO	N/A
7.3 Are Forms VI PEST 1-7 present and complete for each column and each analytical sequence?	✓		

ACTION: If no, take action as specified in 3.2 above.

	YES	NO	N/A
7.4 Are there any transcription/ calculation errors between raw data and Forms VI?		✓	

ACTION: If large errors exist, take action as specified in section 3.6 above.

	YES	NO	N/A
7.5 Do all standard retention times, including each pesticide in each level of Individual Mixtures A & B, fall within the windows established during the Initial Calibration (see Form VI PEST-1)?	✓		

ACTION: If no, all samples in the entire analytical sequence are potentially affected. Check to see if the chromatograms contain peaks within an expanded window surrounding the expected

YES NO N/A

retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised RT window, qualify all positive results "JN" and non-detects as unusable (R). For aroclors, the RT may be outside the window, but the aroclor may still be identified from its distinctive pattern.

7.6 Are the linearity criteria for the initial analyses of Individual Standards A & B within limits for both columns? (%RSD must be ≤ 25.0 for alpha and delta BHC, ≤ 30.0 for the two surrogates and ≤ 20% for all other analytes.) [ ] / ___

NOTE: Contractual requirements allow up to two single component TCL compounds, but not surrogates, on each column to exceed the criteria provided the %RSD is ≤ 30%. (See page D-28/Pest, sec. 9.2.5.7 in the SOW.) Technical criteria, however, are the same for all analytes.

ACTION: If technical criteria were not met, qualify all associated positive results generated during the entire analytical sequence "J" and all non-detects "UJ". When %RSD > 90%, flag all non-detect results for that analyte "R" (unusable).

ACTION: If more than two analytes failed %RSD, document in the Data Assessment Contract Problems/Non-Compliance section and Organic Regional Data Assessment Summary form.

7.7 Is the resolution between each pair of adjacent peaks in the Resolution Check Mixture ≥ 60.0% for both columns? (See Form VI PEST-4.) [/] ___ ___

ACTION: If no, qualify positive results for compounds that were not adequately resolved "J". Use professional judgement to determine if non-detects which elute in areas affected by co-eluting peaks should be qualified "N" as presumptive evidence of presence or unusable (R).

7.8 Is Form VI PEST-5 present and complete for each Performance Evaluation Mixture (PEM) standard used for both initial and continuing calibrations (see SOW section 3.12.4.4, page E-52)? [/] ___ ___

	YES	NO	N/A
ACTION: If no, take action as specified in section 3.2 above.			
7.9 For each PEM standard, was the resolution between each pair of adjacent peaks ≥ 90.0% on both columns?	✓		
ACTION: Qualify positive results for compounds not adequately resolved estimated (J). Qualify non-detects based on professional judgement.			
7.10 Have Forms VI PEST-6 & PEST-7 been completed for all midpoint Individual Standards A and B used for initial calibration?	✓		
For each standard, was the resolution between each pair of adjacent peaks ≥ 90.0% on both columns?	✓		
ACTION: If no, qualify positive results for compounds that were not adequately resolved estimated (J). Use professional judgement to determine if non-detects which elute in areas affected by co-eluting peaks should be qualified "N" as presumptive evidence of presence or unusable "R".			
7.11 Is Form VII Pest-1 present and complete for each PEM standard analyzed during the analytical sequence for both columns?	✓		
Was the %Breakdown of DDT and Endrin calculated using the equations given on page D-26/PEST, sec. 9.2.4.8 in the SOW?	✓		
Were all pesticides and surrogates in each PEM standard within the RT windows established during the Initial Calibration?	✓		
ACTION: If no, take action as specified in 3.2 above.			
7.12 Has the individual percent breakdown for DDT/Endrin exceeded 20.0% in any PEM on either column? (See Form VII PEST-1.)			
- for 4,4'-DDT?	✓		
- for Endrin?	✓		
Has the combined percent breakdown for DDT/Endrin			

YES NO N/

exceeded 30.0% in any PEM on either column (required for all PEM analyses)? / [ ]

ACTION: 1. If any percent breakdown has failed the QC criteria in either PEM in steps 2 and 17 in the initial calibration sequence (page D-28/Pest, sec. 9.2.5.6 in the SOW), qualify all samples in the entire analytical sequence as described in sections 2.a, b and c below.

2. If any percent breakdown failed the QC criteria in a PEM calibration verification analysis, review data beginning with the samples which followed the last in-control standard until the next acceptable PEM and qualify the data as described below.

a. 4,4'-DDT Breakdown: If DDT breakdown was > 20.0%:

i. Qualify all positive results for DDT with "J". If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT unusable, "R".

ii. Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity "JN".

b. Endrin Breakdown: If endrin breakdown was > 20.0%:

i. Qualify all positive results for endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for Endrin as unusable "R".

ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity "JN".

c. Combined Breakdown: If the combined 4,4'-DDT and endrin breakdown is greater than 30.0%:

i. Qualify all positive results for DDT and Endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for endrin as unusable

	YES	NO	N/
blank, and once under the sulfur clean-up blank (PCBLK). Was this additional blank raw data and Form IV submitted when required?	[ ]		/
ACTION: If sulfur clean-up blank data and Form IV are missing, take action as specified in 3.2 above.			
5.4 Has a PEST/PCB instrument blank been analyzed at the beginning of every 12 hr. period following the initial calibration sequence (minimum contract requirement)?	[/]		
ACTION: If any blank data are missing, take action as specified in section 3.2 above.			
5.5 Was the correct identification scheme used for all Pest/PCB blanks? (See page B-33, sec. 3.3.7.3 of the SOW for further information.)	[/]		
ACTION: Contact the WAM to obtain resubmittals or make the required corrections on the forms. Document in the Data Assessment under Contract Problems/Non-Compliance all corrections made by the validator.			
5.6 <u>Chromatography</u>: review the blank raw data - chromatograms, quant. reports and data system printouts. Is the chromatographic performance (baseline stability) for each instrument acceptable?	[/]		
ACTION: Use professional judgement to determine the effect on the data.			

6.0 Contamination

NOTE: "Water blanks", "distilled water blanks" and "drilling water blanks" are validated like any other sample and are <u>not</u> used to qualify the data. Do not confuse them with the other QC blanks discussed below.

	YES	NO	N/
6.1 Do any method/reagent, instrument, or cleanup blanks show positive hits for pest/PCBs?		[/]	
6.2 If any method blanks and/or sulfur clean-up blanks contain "hits" for target compounds, are these hits greater than the CRQL for that			

	YES	NO	N/A
analyte?		[ ]	✓
6.3 In any instrument blanks, is the concentration of any target hit > 0.5 times CRQL for that analyte (see SOW, section 12.1.4.4.2, page D-77/PEST)?		[ ]	✓

NOTE: Most labs will report 0.5 times CRQLs on the instrument blank Form I instead of the actual method CRQLs. If the lab reported the actual CRQLs, then check if any detected hits are above 0.5 times the CRQLs reported on the Form I.

ACTION: If yes to any of the above questions: note in the Data Assessment under Contract Problems/Non-Compliance if any method or clean-up blanks contain hits > the CRQL, or of instrument blank contained hits > 0.5 times CRQL for that analyte.

6.4 Do any field/rinse blanks have positive pest/PCB results?		[ ]	✓

ACTION: Prepare a list of the samples associated with each contaminated blank. (Attach a separate sheet)

NOTE: All field blank results associated to a particular group of samples (may exceed one per case or one per day) may be used to qualify data. Do not convert <u>field blank</u> results to account for the difference in soil CRQLs. Blanks may not be qualified because of contamination in another blank. Field blanks must be qualified for surrogate, and/or calibration QC problems.

BW237 } Duplicate
BW238

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

NOTE: When applied as directed in the table below, the contaminant concentration in method/instrument/reagent/cleanup blanks is multiplied by the sample dilution factor, where necessary.

If the laboratory has not already done so, the contaminant concentration in <u>soil</u> blanks is multiplied by 33 times the sample dilution factor and corrected for %moisture (fraction of solid) where necessary. 30 grams of sodium sulfate are used to prepare each soil reagent/method blank as instructed on page D-72/PEST, section 12.1.2.3.1. Ask the WAM

	YES	NO	N/A
"R". If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT as unusable "R".			
ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity "JN". Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity "JN".			
7.13 Are all percent difference (%D) values for PEM analytes and surrogates on both columns ≥ -25% and ≤ +25.0%? (See Form VII PEST-1.)	[ ]	[✓]	

ACTION: If no, qualify all associated positive results generated during the analytical sequence "J" and sample quantitation limits "UJ".

NOTE: If the failing PEM is part of the initial calibration, all samples are potentially affected. If the offending standard is a calibration verification, the associated samples are those which followed the last in-control standard until the next passing standard.

7.14 Is Form VII Pest-2 present and complete for each INDA and INDB calibration verification analyzed?	[✓]		

ACTION: If no, take action specified in 3.2 above.

7.15 Are there any transcription/calculation errors between raw data and Form VII Pest-2?		[✓]	

ACTION: If large errors exists, take action as specified in section 3.6 above.

7.16 Do all standard retention times for each INDA and INDB calibration verification fall within the RT windows established during the initial calibration sequence? (See Form VII PEST-2.)	[✓]		

ACTION: If no, beginning with the samples which followed the <u>last in-control standard</u>, check to see if the chromatograms contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised

YES NO N/A

RT window, qualify all positive results and non-detects as unusable (R).

7.17 Are all %D values for INDA and INDB calibration verification compounds ≥ -25.0% and ≤ +25.0%? ✓ ___ ___

ACTION: If the %D is outside the ±25.0% range for any compound(s), qualify associated positive results for that compound "J" and non-detects "UJ". The "associated samples" are those which followed the last in-control standard up to the next passing standard containing the analyte(s) in question. If the %D is > 90%, flag all non-detects for that analyte "R" (unusable).

8.0 Analytical Sequence Check (Form VIII-PEST)

8.1 Is Form VIII present and complete for each column and each period of analyses? ✓ ___ ___

ACTION: If no, take action specified in 3.2 above.

8.2 Was the proper analytical sequence followed for each initial calibration and subsequent analyses, and all standards analyzed at the required frequency for each GC/EC instrument used.? (See SOW pages D-23 & D-38/PEST.) ✓ ___ ___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly. Generally, the effect is negligible unless the sequence was grossly altered and/or the calibration was out of QC limits.

8.3 Were all samples analyzed within a 12 hour time period beginning with the injection of an instrument blank and bracketed by acceptable analyses of the proper standards? ✓ ___ ___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly. Document in the Data Assessment under Contract Problems/Non-Compliance and Organic Regional Data Assessment Summary.

8.4 If a multi-component analyte was detected in a sample, was a matching multi-component standard analyzed within 72 hours of the injection of the

	YES	NO	N/A
sample and within a valid 12 hour sequence?	✓		

NOTE: This additional standard is for identification purposes only. Positive results for Aroclors and Toxaphene are quantitated from the initial calibration.

ACTION: If no, document in the Data Assessment under Contract Problems/Non-Compliance and on the Organic Regional Data Assessment Summary form.

9.0 Cleanup Efficiency Verification (Form IX)

	YES	NO	N/A
9.1 Is Form IX PEST-1 present and complete for each lot of Florisil Cartridges used? (Florisil Cleanup is required for all Pest/PCB extracts.)	✓		
Are all samples listed on the Pesticide Florisil Cartridge Check Form?	✓		

ACTION: If no, take action specified in 3.2 above. If data suggests florisil clean-up was not performed, document in the Data Assessment under the Contract Non-compliance section.

	YES	NO	N/A
9.2 Are percent recoveries (%REC) of the pesticide and surrogate compounds used to check the efficiency of the florisil clean-up procedure within QC limits of 80 - 120%?	✓		

ACTION: Qualify only the analyte(s) which failed the recovery criteria as follows:

If %REC is < 80%, qualify positive results "J" and non-detects "UJ".

If any pesticide %REC was zero, flag non-detects "R" for that compound.

Use professional judgement to qualify positive results if any recoveries are > 120%.

NOTE: Sample data should be evaluated for potential interferences if recovery of 2,4,5-trichlorophenol was > 5% in the Florisil Cartridge Performance Check analysis. Document any problems found in the Data Assessment under the Contract Problems/Non-Compliance section.

	YES	NO	N/A
9.3 If GPC Cleanup was performed (mandatory for all soil sample extracts), is Form IX Pest-2 present?	✓		
Are all soil samples listed on Form IX Pest-2?	✓		

ACTION: If no, take action specified in 3.2 above. If data suggests GPC clean-up was not performed when required, document in the Data Assessment under the Contract Problems/Non-Compliance section and Organic Regional Data Assessment Summary.

Are the %REC values for all pesticides in the GPC calibration solution between 80 - 110%?	✓		

ACTION: Qualify only those analytes which failed the recovery criteria as follows:

If %REC are < 80%, qualify positive results "J" and non-detects "UJ".

If any pesticide %REC was zero, flag non-detects "R" for that compound.

Use professional judgement to qualify positive results if any recoveries are > 110%.

NOTE: An Aroclor mixture containing Aroclors 1016 and 1260 is also analyzed during GPC calibration; however, Aroclor data is not listed on Form IX PEST-2. The raw GPC data for Aroclors 1016/1260 must be evaluated for pattern similarity with previously analyzed Aroclor standards.

9.4 The validator should verify that the correct identification scheme for the EPA Blank samples were used. See page B-35, sec. 3.3.7.8 and 3.3.7.9 of the SOW for further information.

Was the correct identification scheme used for GPC and Florisil blanks?	✓		

10.0 Pesticide/PCB Identification

10.1 Is Form X complete for every sample in which a pesticide or PCB was detected?	✓		

ACTION: If no, take action specified in 3.2 above.

	YES	NO	N/A
10.2 Are all sample chromatograms properly scaled, attenuated, etc. as required for proper identification of single and multi-component analytes? (Refer to SOW sections 11.3.7.1 thru 11.3.7.8, page D-70/Pest for specific details.)	[✓]		

NOTE: Proper verification of Pest/PCB results depends on clear, legible presentation of the raw data. Single component pesticides and all peaks chosen for quantitation of multi-component analytes must appear at less than full scale. Toxaphene and PCB patterns must be clearly visible to enable comparison with standard chromatograms.

ACTION: If retention times or apex of peaks cannot be verified, or if multi-component peak patterns cannot be discerned, contact the WAM to obtain rescaled chromatograms from the lab.

	YES	NO	N/A
10.3 Are there any transcription/calculation errors between raw data and Forms 10A and 10B?		[✓]	

ACTION: If large errors exist, take action as specified in section 3.6 above.

	YES	NO	N/A
10.4 Are RTs of sample compounds within the established RT windows for analyses on both columns?	[✓]		
Was GC/MS confirmation provided when required (when compound concentration is > 10 ug/mℓ in the final extract)?	[ ]		✓

ACTION: Use professional judgement to qualify positive results which were not confirmed by GC/MS analysis. Qualify as unusable (R) all positive results which were not confirmed on a second GC column. Also qualify as unusable (R) all positive results which do not meet RT window criteria, unless associated standard compounds are similarly biased. Use professional judgement to assign an appropriate quantitation limit.

	YES	NO	N/A
10.5 Is the percent difference (%D) calculated for the positive sample results on both columns > 25.0%?	✓	[ ]	

ACTION: If the reviewer finds neither column shows interference for the positive hits, the data should be flagged as follows:

YES NO N/

% Difference	Qualifier
0 - 25%	None
25 - 70%	"J"
70 - 100%	"JN"
> 100%	"R"
100 - 200% (Interference detected)*	"JN"
> 50% (Pesticide value is < CRQL)**	"U"

* When the reported %D is 100 - 200%, but interference is detected on either column, qualify the data with "J".

** When the reported pesticide value is lower than the CRQL, and the %D is > 50%, raise the value to the CRQL and qualify "U", undetected.

NOTE: For Aroclors, if the %D is > 50%, but the pattern of GC peaks on both columns indicates a specific Aroclor is present, qualify that Aroclor "J".

NOTE: The lower of the two values is reported on Form I. If using professional judgement, the reviewer determines that the higher result was more acceptable, the reviewer should replace the value and indicate the reason for the change in the Data Assessment.

10.6 Check chromatograms for false negatives, especially the multiple-peak compounds (Toxaphene and the PCBs). Were there any false negatives? ___ [ ] ___

ACTION: Use professional judgement to decide if the compound should be reported. If the appropriate PCB standards were not analyzed within 72 hrs. of the sample(s) in question, qualify the data unusable "R". Aroclor 1248 ?

Also note in Data Assessment under Contract Problems/Non-Compliance if the lab failed to analyze Aroclor standards when required.

11.0 Target Compound List (TCL) Analytes

11.1 Are the Organic Analysis Data Sheets (Form I Pest) present with required header information on each page, for each of the following:

a. Samples and/or fractions as appropriate? [✓] ___ ___

b. Matrix spikes and matrix spike duplicates? [✓] ___ ___

	YES	NO	N/A
c. Blanks?	✓		
d. Instrument Blanks (per column & analysis)?	✓		
11.2 Are the Pest chromatograms and quant. reports included in the sample data package for each of the following:.			
a. Samples and/or fractions as appropriate?	✓		
b. Matrix spikes and matrix spike duplicates?	✓		
c. Blanks?	✓		
d. Instrument Blanks (per column & analysis)?	✓		
ACTION: If any data are missing, take action specified in 3.2 above.			
11.3 Are the calibration factors shown in the quant. reports?		✓	
11.4 Is chromatographic performance acceptable with respect to:			
a. Baseline stability?	✓		
b. Resolution?	✓		
c. Peak shape?	✓		
d. Full-scale graph attenuation?	✓		
e. Other: _____?	✓		✓
11.5 Were any electropositive displacement (negative peaks) or unusual peaks seen?		✓	
ACTION: Use professional judgement to determine the acceptability of the data. Address comments under System Performance section of the Data Assessment.			

12.0 Compound Quantitation and Reported Detection Limits

	YES	NO	N/A
12.1 Are there any transcription/calculation errors in Form I results? Check at least two positive results. Were any errors found?		✓	

YES NO N/A

NOTE: Single-peak pesticide results can be checked for rough agreement between quantitative results obtained on the two GC columns. Use professional judgement to decide whether a large discrepancy indicates the presence of an interfering compound. If an interfering compound is visible on the chromatogram, the lower of the two values should be reported and qualified as presumptively present at an approximated quantity "JN". This necessitates a determination of an estimated concentration on the confirmation column. The narrative should indicate that the presence of interferences has interfered with the evaluation of the second column confirmation.

12.2 Are the CRQLs adjusted to reflect sample dilutions? r/1 ___ ___

ACTION: If large errors exist, take action as specified in section 3.6 above.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQLs from the diluted sample). Replace concentrations which exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with the result from the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including those in the data summary package.

ACTION: Quantitation limits affected by large, off-scale peaks should be qualified as unusable (R). If the interference is on-scale, the reviewer may offer an approximated quantitation limit (UJ) for each affected compound.

NOTE: If a sample required greater than a 10 times dilution, then a 10 times more concentrated analysis must also be performed and submitted (see SOW, page D-60/PEST, section 10.2.3.5).

ACTION: If a more concentrated analysis is unavailable, document in the Contract Problems/Non-Compliance section of the Data Assessment. Use professional judgement to qualify non-detects and positive hits below the CRQL.

	YES	NO	N/A
13.0 Field Duplicates			
13.1 Were any field duplicates submitted?	/		

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

CW237
BL0230

RECEIVED
JUL 0 9 1999

SOUTHWEST LABORATORY OF OKLAHOMA
(SWL-TULSA)
1700 West Albany, Suite A/ Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE

CONTRACT: 68-D5-0026

CASE NO: 27133

SDG NO: BWZ26

SAMPLES: BWZ26, BWZ27, BWZ28, BWZ29, BWZ30, BWZ31, BWZ32, BWZ33, BWZ34, BWZ35, BWZ36, BWZ37, BWZ38, BWZ39, BWZ43, BWZ44, BWZ45, BWZ46, BWZ47, BWZ49, WZ26DL, BWZ27DL, BWZ28DL, BWZ29DL, BWZ30DL, BWZ31DL, BWZ32DL, BWZ33DL, BWZ34DL, BWZ35DL, BWZ36DL, BWZ37DL, BWZ38DL, BWZ39DL, BWZ43DL, BWZ44DL, BWZ45DL, BWZ46DL, BWZ47DL, BWZ49DL

FRACTION: Pesticide/PCB

This SDG consisted of 20 soil samples that were analyzed for pesticide/PCBs, by EPA SOW OLM03.2. The samples were analyzed on J&W dual analytical columns, DB-17MS and DB-XLB. The DB-17MS phase consists of (50%-Phenyl) Methylpolysiloxane and the DB-XLB is a proprietary phase. These columns were specifically designed for pesticide/PCB separation as required by the EPA's SOW. All applicable manufacturer's instructions were followed for the analysis of pesticides/PCBs. Manufacturer provided information on the performance characteristics of the columns are kept on site. Hydrogen was used as the carrier gas for all instruments except HP-6 and HP-8 (helium). The temperature of the coolers was noted at 5 ° C.

The matrix of these soil samples caused problems with their analysis by introducing interference peaks in the sample chromatograms and degrading instrument performance. Most of the samples also contained degraded arochlor patterns. It should be noted that when multi-responding compounds and/or large numbers of "interference" peaks are present in a sample, false positives of single response compounds are common. Since ECD detection is not a definitive means of detection, single-response analytes in the presence of multi-responders or interference will be reported, per the method, if a peak is within a target analyte's retention time window on both columns, then it is reported as that target analyte). This alleviates the possibility that false negative results will be reported. <u>However, this may lead to false positives</u>. The end data user should be aware of the limitations of the method and take appropriate care.

When analyzed undiluted the samples in this SDG caused breakdown of 4,4'-DDT in the calibration verification standards following their injection. The calibration verification standards analyzed before these samples met OLM03.2 continuing calibration criteria.

01

When diluted (All of the samples except BWZ34, BWZ35, and BWZ39 required dilution to bring target analytes within calibration range) the samples met OLM03.2 acceptance criteria. A non-compliant undiluted analysis and a compliant dilution analysis was performed for all these samples. Forms for the compliant and non-compliant data have been submitted.

Blanks: No corrective action required.

Surrogates: No corrective action required.

Matrix Spikes: No corrective action required. The raw data for the dilution analysis of the matrix spikes was included as miscellaneous data.

The following tables list the total nanograms injected on column for each calibration standard based upon amount injected, 0.5µL, 1µL, or 2µL:

RESOLUTION CHECK

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
gamma-Chlordane	0.005	0.01	0.02
Endosulfan I	0.005	0.01	0.02
4,4'-DDE	0.01	0.02	0.04
Dieldrin	0.01	0.02	0.04
Endosulfan Sulfate	0.01	0.02	0.04
Endrin Ketone	0.01	0.02	0.04
Methoxychlor	0.5	0.1	0.2
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.01	0.02	0.04

PERFORMANCE EVALUATION

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
gamma-BHC	0.005	0.01	0.02
alpha-BHC	0.005	0.01	0.02
4,4'-DDT	0.05	0.1	.02
beta-BHC	0.005	0.01	0.02
Endrin	0.025	0.05	0.1
Methoxychlor	0.125	0.25	0.5
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.01	0.02	0.04

INDIVIDUAL STANDARD MIXTURE A -- LOW

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.0025	0.005	0.01
Heptachlor	0.0025	0.005	0.01
gamma-BHC	0.0025	0.005	0.01
Endosulfan I	0.0025	0.005	0.01
Dieldrin	0.005	0.01	0.02
Endrin	0.005	0.01	0.02
4,4'-DDD	0.005	0.01	0.02
4,4'-DDT	0.005	0.01	0.02
Methoxychlor	0.025	0.05	0.1
Tetrachloro-m-xylene	0.0025	0.005	0.01
Decachlorobiphenyl	0.005	0.01	0.02

INDIVIDUAL STANDARD MIXTURE B -- LOW

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.0025	0.005	0.01
delta-BHC	0.0025	0.005	0.01
Aldrin	0.0025	0.005	0.01
Heptachlor epoxide	0.0025	0.005	0.01
alpha-Chlordane	0.0025	0.005	0.01
gamma-Chlordane	0.0025	0.005	0.01
4,4'-DDE	0.005	0.01	0.02
Endosulfan sulfate	0.005	0.01	0.02
Endrin aldehyde	0.005	0.01	0.02
Endrin ketone	0.005	0.01	0.02
Endosulfan II	0.005	0.01	0.02
Tetrachloro-m-xylene	0.0025	0.005	0.01
Decachlorobiphenyl	0.005	0.01	0.02

INDIVIDUAL STANDARD MIXTURE A -- MEDIUM

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.01	0.02	0.04
Heptachlor	0.01	0.02	0.04
gamma-BHC	0.01	0.02	0.04
Endosulfan I	0.01	0.02	0.04
Dieldrin	0.02	0.04	0.08
Endrin	0.02	0.04	0.08
4,4'-DDD	0.02	0.04	0.08
4,4'-DDT	0.02	0.04	0.08
Methoxychlor	0.1	0.2	0.4
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.02	0.04	0.08

INDIVIDUAL STANDARD MIXTURE B -- MEDIUM

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.01	0.02	0.04
delta-BHC	0.01	0.02	0.04
Aldrin	0.01	0.02	0.04
Heptachlor epoxide	0.01	0.02	0.04
alpha-Chlordane	0.01	0.02	0.04
gamma-Chlordane	0.01	0.02	0.04
4,4'-DDE	0.02	0.04	0.08
Endosulfan sulfate	0.02	0.04	0.08
Endrin aldehyde	0.02	0.04	0.08
Endrin ketone	0.02	0.04	0.08
Endosulfan II	0.02	0.04	0.08
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.02	0.04	0.08

INDIVIDUAL STANDARD MIXTURE A -- HIGH

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.04	0.08	0.16
Heptachlor	0.04	0.08	0.16
gamma-BHC	0.04	0.08	0.16
Endosulfan I	0.04	0.08	0.16
Dieldrin	0.08	0.16	0.32
Endrin	0.08	0.16	0.32
4,4'-DDD	0.08	0.16	0.32
4,4'-DDT	0.08	0.16	0.32
Methoxychlor	0.4	0.8	1.6
Tetrachloro-m-xylene	0.04	0.08	0.16
Decachlorobiphenyl	0.08	0.16	0.32

INDIVIDUAL STANDARD MIXTURE B -- HIGH

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.04	0.08	0.16
delta-BHC	0.04	0.08	0.16
Aldrin	0.04	0.08	0.16
Heptachlor epoxide	0.04	0.08	0.16
alpha-Chlordane	0.04	0.08	0.16
gamma-Chlordane	0.04	0.08	0.16
4,4'-DDE	0.08	0.16	0.32
Endosulfan sulfate	0.08	0.16	0.32
Endrin aldehyde	0.08	0.16	0.32
Endrin ketone	0.08	0.16	0.32
Endosulfan II	0.08	0.16	0.32
Tetrachloro-m-xylene	0.04	0.08	0.16
Decachlorobiphenyl	0.08	0.16	0.32

MULTI-RESPONSE STANDARD MIXTURES

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
Aroclor-1016	0.05	0.1	0.2
Aroclor-1221	0.1	0.2	0.4
Aroclor-1232	0.05	0.1	0.2
Aroclor-1242	0.05	0.1	0.2
Aroclor-1248	0.05	0.1	0.2
Aroclor-1254	0.05	0.1	0.2
Aroclor-1260	0.05	0.1	0.2
Toxaphene	0.25	0.5	1.0

All manual integrations in this data package for GC/EC have been performed for one of the following reasons:

a. Data system missed a peak during processing.
b. Data system improperly integrated a peak.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Drew Cowan
GC Supervisor
Dc

July 8, 1999

05

SAMPLE DELIVERY GROUP (SDG)
TRAFFIC REPORT (TR) COVER SHEET

LAB NAME: SOUTHWEST LABORATORY OF OKLAHOMA CONTRACT NO.: 68-D5-0026

LAB CODE: SWOK CASE NO.: 27133 SAS NO.: _____

FULL SAMPLE ANALYSIS PRICE IN CONTRACT: _____

SDG No./First Sample in SDG: (Lowest EPA Sample Number in first shipment of samples received under SDG). BWZ26 Sample Receipt Date: 06/22/99 (MM/DD/YY)

Last Sample in SDG: (Highest EPA Sample Number in last shipment of samples received under SDG). BWZ49 Sample Receipt Date: 06/23/99

EPA Sample Numbers in the SDG (listed in alphanumeric order):

1) BWZ26
2) BWZ27
3) BWZ28
4) BWZ29
5) BWZ30
6) BWZ31
7) BWZ32
8) BWZ33
9) BWZ34
10) BWZ35
11) BWZ36
12) BWZ37
13) BWZ38
14) BWZ39
15) BWZ43
16) BWZ44
17) BWZ45
18) BWZ46
19) BWZ47
20) BWZ49

Note: There are a maximum of 20 field samples in a SDG.

Attach Traffic Reports to this form in alphanumeric order (i.e., the order listed on this form).

Harry M Borg
Sample Custodian

6-29-99
Date

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ26

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.21

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		1.8	U
319-85-7	beta-BHC		1.8	U
319-86-8	delta-BHC		1.8	U
58-89-9	gamma-BHC (Lindane)		1.8	U
76-44-8	Heptachlor		1.8	U
309-00-2	Aldrin		6.3	P
1024-57-3	Heptachlor epoxide		1.8	U
959-98-8	Endosulfan I		1.8	U
60-57-1	Dieldrin		12	P
72-55-9	4,4'-DDE		8.2	P
72-20-8	Endrin		77	E
33213-65-9	Endosulfan II		75	PE
72-54-8	4,4'-DDD		5.0	P
1031-07-8	Endosulfan sulfate		3.6	U
50-29-3	4,4'-DDT		140	E
72-43-5	Methoxychlor		29	P
53494-70-5	Endrin ketone		6.6	P
7421-93-4	Endrin aldehyde		12	P
5103-71-9	alpha-Chlordane		43	E
5103-74-2	gamma-Chlordane		37	E
8001-35-2	Toxaphene		180	U
12674-11-2	Aroclor-1016		36	U
11104-28-2	Aroclor-1221		73	U
11141-16-5	Aroclor-1232		36	U
53469-21-9	Aroclor-1242		36	U
12672-29-6	Aroclor-1248		36	U
11097-69-1	Aroclor-1254 *	1000	~~760~~	
11096-82-5	Aroclor-1260		36	U

* From Dilution

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ26DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.21DL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/02/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	18	U
76-44-8	Heptachlor	18	U
309-00-2	Aldrin	8.8	DPJ
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	16	DPJ
72-55-9	4,4'-DDE	10	DPJ
72-20-8	Endrin	110	D
33213-65-9	Endosulfan II	100	DP
72-54-8	4,4'-DDD	7.0	DPJ
1031-07-8	Endosulfan sulfate	36	U
50-29-3	4,4'-DDT	190	D
72-43-5	Methoxychlor	53	DJ
53494-70-5	Endrin ketone	10	DPJ
7421-93-4	Endrin aldehyde	14	DPJ
5103-71-9	alpha-Chlordane	58	D
5103-74-2	gamma-Chlordane	47	D
8001-35-2	Toxaphene	1800	U
12674-11-2	Aroclor-1016	360	U
11104-28-2	Aroclor-1221	730	U
11141-16-5	Aroclor-1232	360	U
53469-21-9	Aroclor-1242	360	U
12672-29-6	Aroclor-1248	360	U
11097-69-1	Aroclor-1254 *	1000	D
11096-82-5	Aroclor-1260	360	U

* To Original

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ27

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.22

Sample wt/vol: 31.4 (g/mL) G Lab File ID: _____

% Moisture: 17 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/03/99

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	4.2	P
72-55-9	4,4'-DDE	21	P
72-20-8	Endrin	17	P
33213-65-9	Endosulfan II	6.4	
72-54-8	4,4'-DDD	38	P
1031-07-8	Endosulfan sulfate	16	
50-29-3	4,4'-DDT	71	E
72-43-5	Methoxychlor	41	P
53494-70-5	Endrin ketone	24	P
7421-93-4	Endrin aldehyde	19	P
5103-71-9	alpha-Chlordane	15	P
5103-74-2	gamma-Chlordane	11	P
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	290	
11096-82-5	Aroclor-1260	38	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ27DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.22DL

Sample wt/vol: 31.4 (g/mL) G Lab File ID: _____

% Moisture: 17 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	7.2	DJ
1024-57-3	Heptachlor epoxide	20	U
959-98-8	Endosulfan I	20	U
60-57-1	Dieldrin	6.1	DPJ
72-55-9	4,4'-DDE	20	DPJ
72-20-8	Endrin	28	DPJ
33213-65-9	Endosulfan II	58	DP
72-54-8	4,4'-DDD	40	DP
1031-07-8	Endosulfan sulfate	19	DPJ
50-29-3	4,4'-DDT	85	D
72-43-5	Methoxychlor	47	DPJ
53494-70-5	Endrin ketone	34	DPJ
7421-93-4	Endrin aldehyde	23	DPJ
5103-71-9	alpha-Chlordane	21	DP
5103-74-2	gamma-Chlordane	37	DP
8001-35-2	Toxaphene	2000	U
12674-11-2	Aroclor-1016	380	U
11104-28-2	Aroclor-1221	770	U
11141-16-5	Aroclor-1232	380	U
53469-21-9	Aroclor-1242	380	U
12672-29-6	Aroclor-1248	380	U
11097-69-1	Aroclor-1254	410	~~D~~
11096-82-5	Aroclor-1260	380	U

ONLY PCB DATA WERE VALIDATED

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ28

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.23

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		2.0	U
319-85-7	beta-BHC		2.0	U
319-86-8	delta-BHC		31	P
58-89-9	gamma-BHC (Lindane)		3.3	P
76-44-8	Heptachlor		2.0	U
309-00-2	Aldrin		8.9	P
1024-57-3	Heptachlor epoxide		42	PE
959-98-8	Endosulfan I		2.0	U
60-57-1	Dieldrin		150	PE
72-55-9	4,4'-DDE		230	E
72-20-8	Endrin		1300	E
33213-65-9	Endosulfan II		950	PE
72-54-8	4,4'-DDD		49	P
1031-07-8	Endosulfan sulfate		41	P
50-29-3	4,4'-DDT		2000	E
72-43-5	Methoxychlor		180	
53494-70-5	Endrin ketone		47	P
7421-93-4	Endrin aldehyde		160	PE
5103-71-9	alpha-Chlordane		760	E
5103-74-2	gamma-Chlordane		770	E
8001-35-2	Toxaphene		200	U
12674-11-2	Aroclor-1016		39	U
11104-28-2	Aroclor-1221		80	U
11141-16-5	Aroclor-1232		39	U
53469-21-9	Aroclor-1242		39	U
12672-29-6	Aroclor-1248		39	U
11097-69-1	Aroclor-1254 *	21000	~~13000~~	
11096-82-5	Aroclor-1260		39	U

* From Dilution

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EPA SAMPLE NO.

BWZ28DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.23DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	200	U
319-85-7	beta-BHC	200	U
319-86-8	delta-BHC	200	U
58-89-9	gamma-BHC (Lindane)	200	U
76-44-8	Heptachlor	200	U
309-00-2	Aldrin	200	U
1024-57-3	Heptachlor epoxide	64	DPJ
959-98-8	Endosulfan I	200	U
60-57-1	Dieldrin	150	DPJ
72-55-9	4,4'-DDE	220	DPJ
72-20-8	Endrin	2000	D
33213-65-9	Endosulfan II	1300	DP
72-54-8	4,4'-DDD	280	DPJ
1031-07-8	Endosulfan sulfate	390	U
50-29-3	4,4'-DDT	2500	D
72-43-5	Methoxychlor	250	DPJ
53494-70-5	Endrin ketone	390	U
7421-93-4	Endrin aldehyde	180	DPJ
5103-71-9	alpha-Chlordane	1100	D
5103-74-2	gamma-Chlordane	200	U
8001-35-2	Toxaphene	20000	U
12674-11-2	Aroclor-1016	3900	U
11104-28-2	Aroclor-1221	8000	U
11141-16-5	Aroclor-1232	3900	U
53469-21-9	Aroclor-1242	3900	U
12672-29-6	Aroclor-1248	3900	U
11097-69-1	Aroclor-1254 *	21000	~~D~~
11096-82-5	Aroclor-1260	3900	U

* To Original

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ29

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.24

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 5 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/03/99

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		1.8	U
319-85-7	beta-BHC		1.8	U
319-86-8	delta-BHC		6.8	P
58-89-9	gamma-BHC (Lindane)		2.4	P
76-44-8	Heptachlor		1.8	U
309-00-2	Aldrin		8.4	P
1024-57-3	Heptachlor epoxide		22	P
959-98-8	Endosulfan I		1.8	U
60-57-1	Dieldrin		14	P
72-55-9	4,4'-DDE		81	PE
72-20-8	Endrin		450	E
33213-65-9	Endosulfan II		380	PE
72-54-8	4,4'-DDD		34	P
1031-07-8	Endosulfan sulfate		19	P
50-29-3	4,4'-DDT		780	E
72-43-5	Methoxychlor		54	P
53494-70-5	Endrin ketone		33	P
7421-93-4	Endrin aldehyde		69	PE
5103-71-9	alpha-Chlordane		310	E
5103-74-2	gamma-Chlordane		94	PE
8001-35-2	Toxaphene		180	U
12674-11-2	Aroclor-1016		34	U
11104-28-2	Aroclor-1221		70	U
11141-16-5	Aroclor-1232		34	U
53469-21-9	Aroclor-1242		34	U
12672-29-6	Aroclor-1248		34	U
11097-69-1	Aroclor-1254 *	6400	~~3900~~	
11096-82-5	Aroclor-1260		34	U

* From Dilution

ONLY PCB DATA WERE VALIDATED

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EPA SAMPLE NO.

BWZ29DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.24DL

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 5 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	180	U
319-85-7	beta-BHC	180	U
319-86-8	delta-BHC	180	U
58-89-9	gamma-BHC (Lindane)	180	U
76-44-8	Heptachlor	180	U
309-00-2	Aldrin	180	U
1024-57-3	Heptachlor epoxide	180	U
959-98-8	Endosulfan I	180	U
60-57-1	Dieldrin	95	DPJ
72-55-9	4,4'-DDE	50	DPJ
72-20-8	Endrin	710	D
33213-65-9	Endosulfan II	540	DP
72-54-8	4,4'-DDD	140	DPJ
1031-07-8	Endosulfan sulfate	340	U
50-29-3	4,4'-DDT	1100	D
72-43-5	Methoxychlor	380	DPJ
53494-70-5	Endrin ketone	340	U
7421-93-4	Endrin aldehyde	82	DPJ
5103-71-9	alpha-Chlordane	450	D
5103-74-2	gamma-Chlordane	160	DPJ
8001-35-2	Toxaphene	18000	U
12674-11-2	Aroclor-1016	3400	U
11104-28-2	Aroclor-1221	7000	U
11141-16-5	Aroclor-1232	3400	U
53469-21-9	Aroclor-1242	3400	U
12672-29-6	Aroclor-1248	3400	U
11097-69-1	Aroclor-1254 *	6400	~~D~~
11096-82-5	Aroclor-1260	3400	U

* To Original

ONLY PCB DATA WERE VALIDATED

FORM I PEST

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ30

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.25

Sample wt/vol: 31.2 (g/mL) G Lab File ID: _____

% Moisture: 11 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		1.8	U
319-85-7	beta-BHC		1.8	U
319-86-8	delta-BHC		36	P
58-89-9	gamma-BHC (Lindane)		1.8	U
76-44-8	Heptachlor		1.8	U
309-00-2	Aldrin		8.4	P
1024-57-3	Heptachlor epoxide		11	P
959-98-8	Endosulfan I		1.8	U
60-57-1	Dieldrin		47	P
72-55-9	4,4'-DDE		56	P
72-20-8	Endrin		360	E
33213-65-9	Endosulfan II		280	PE
72-54-8	4,4'-DDD		15	P
1031-07-8	Endosulfan sulfate		8.0	P
50-29-3	4,4'-DDT		530	E
72-43-5	Methoxychlor		47	P
53494-70-5	Endrin ketone		3.6	U
7421-93-4	Endrin aldehyde		42	P
5103-71-9	alpha-Chlordane		230	E
5103-74-2	gamma-Chlordane		200	E
8001-35-2	Toxaphene		180	U
12674-11-2	Aroclor-1016		36	U
11104-28-2	Aroclor-1221		72	U
11141-16-5	Aroclor-1232		36	U
53469-21-9	Aroclor-1242		36	U
12672-29-6	Aroclor-1248		36	U
11097-69-1	Aroclor-1254 *	6600	~~3700~~	
11096-82-5	Aroclor-1260		36	U

* From Dilution

ONLY PCB DATA WERE VALIDATED

FORM I PEST

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DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ30DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.25DL

Sample wt/vol: 31.2 (g/mL) G Lab File ID: _____

% Moisture: 11 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/03/99

Injection Volume: 0.5 (uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	180	U
319-85-7	beta-BHC	180	U
319-86-8	delta-BHC	180	U
58-89-9	gamma-BHC (Lindane)	180	U
76-44-8	Heptachlor	180	U
309-00-2	Aldrin	180	U
1024-57-3	Heptachlor epoxide	180	U
959-98-8	Endosulfan I	180	U
60-57-1	Dieldrin	52	DPJ
72-55-9	4,4'-DDE	52	DPJ
72-20-8	Endrin	580	D
33213-65-9	Endosulfan II	400	DP
72-54-8	4,4'-DDD	84	DPJ
1031-07-8	Endosulfan sulfate	360	U
50-29-3	4,4'-DDT	720	D
72-43-5	Methoxychlor	1800	U
53494-70-5	Endrin ketone	360	U
7421-93-4	Endrin aldehyde	82	DPJ
5103-71-9	alpha-Chlordane	350	D
5103-74-2	gamma-Chlordane	180	U
8001-35-2	Toxaphene	18000	U
12674-11-2	Aroclor-1016	3600	U
11104-28-2	Aroclor-1221	7200	U
11141-16-5	Aroclor-1232	3600	U
53469-21-9	Aroclor-1242	3600	U
12672-29-6	Aroclor-1248	3600	U
11097-69-1	Aroclor-1254 *	6600	~~U~~
11096-82-5	Aroclor-1260	3600	U

* To Original

ONLY PCB DATA WERE VALIDATED

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ31

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.26

Sample wt/vol: 31.1 (g/mL) G Lab File ID: _____

% Moisture: 10 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/03/99

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		1.8	U
319-85-7	beta-BHC		1.8	U
319-86-8	delta-BHC		130	PE
58-89-9	gamma-BHC (Lindane)		2.5	P
76-44-8	Heptachlor		1.8	U
309-00-2	Aldrin		5.7	P
1024-57-3	Heptachlor epoxide		36	PE
959-98-8	Endosulfan I		1.8	U
60-57-1	Dieldrin		160	PE
72-55-9	4,4'-DDE		200	PE
72-20-8	Endrin		1300	E
33213-65-9	Endosulfan II		950	PE
72-54-8	4,4'-DDD		52	P
1031-07-8	Endosulfan sulfate		26	P
50-29-3	4,4'-DDT		1900	E
72-43-5	Methoxychlor		160	P
53494-70-5	Endrin ketone		3.5	U
7421-93-4	Endrin aldehyde		140	PE
5103-71-9	alpha-Chlordane		790	E
5103-74-2	gamma-Chlordane		690	E
8001-35-2	Toxaphene		180	U
12674-11-2	Aroclor-1016		35	U
11104-28-2	Aroclor-1221		72	U
11141-16-5	Aroclor-1232		35	U
53469-21-9	Aroclor-1242		35	U
12672-29-6	Aroclor-1248		35	U
11097-69-1	Aroclor-1254 *	25000	~~14000~~	
11096-82-5	Aroclor-1260		35	U

* From Dilution

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DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ31DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.26DL

Sample wt/vol: 31.1 (g/mL) G Lab File ID: _____

% Moisture: 10 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/03/99

Injection Volume: 0.5 (uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	180	U
319-85-7	beta-BHC	180	U
319-86-8	delta-BHC	250	DP
58-89-9	gamma-BHC (Lindane)	180	U
76-44-8	Heptachlor	180	U
309-00-2	Aldrin	180	U
1024-57-3	Heptachlor epoxide	55	DPJ
959-98-8	Endosulfan I	180	U
60-57-1	Dieldrin	200	DPJ
72-55-9	4,4'-DDE	250	DPJ
72-20-8	Endrin	2200	D
33213-65-9	Endosulfan II	1400	DP
72-54-8	4,4'-DDD	21	DPJ
1031-07-8	Endosulfan sulfate	350	U
50-29-3	4,4'-DDT	2800	D
72-43-5	Methoxychlor	250	DJ
53494-70-5	Endrin ketone	350	U
7421-93-4	Endrin aldehyde	180	DPJ
5103-71-9	alpha-Chlordane	1300	D
5103-74-2	gamma-Chlordane	180	U
8001-35-2	Toxaphene	18000	U
12674-11-2	Aroclor-1016	3500	U
11104-28-2	Aroclor-1221	7200	U
11141-16-5	Aroclor-1232	3500	U
53469-21-9	Aroclor-1242	3500	U
12672-29-6	Aroclor-1248	3500	U
11097-69-1	Aroclor-1254 *	~~25000~~	~~D~~
11096-82-5	Aroclor-1260	3500	U

* To Original

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ32

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.27

Sample wt/vol: 31.4 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		1.9	U
319-85-7	beta-BHC		1.9	U
319-86-8	delta-BHC		21	P
58-89-9	gamma-BHC (Lindane)		1.9	U
76-44-8	Heptachlor		1.9	U
309-00-2	Aldrin		1.9	U
1024-57-3	Heptachlor epoxide		5.7	P
959-98-8	Endosulfan I		1.9	U
60-57-1	Dieldrin		30	P
72-55-9	4,4'-DDE		55	P
72-20-8	Endrin		210	E
33213-65-9	Endosulfan II		160	PE
72-54-8	4,4'-DDD		21	P
1031-07-8	Endosulfan sulfate		3.6	U
50-29-3	4,4'-DDT		310	E
72-43-5	Methoxychlor		35	P
53494-70-5	Endrin ketone		19	P
7421-93-4	Endrin aldehyde		29	P
5103-71-9	alpha-Chlordane		130	E
5103-74-2	gamma-Chlordane		140	E
8001-35-2	Toxaphene		190	U
12674-11-2	Aroclor-1016		36	U
11104-28-2	Aroclor-1221		74	U
11141-16-5	Aroclor-1232		36	U
53469-21-9	Aroclor-1242		36	U
12672-29-6	Aroclor-1248		36	U
11097-69-1	Aroclor-1254 *	3100	~~2100~~	
11096-82-5	Aroclor-1260		36	U

* From Dilution

ONLY RLB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ32DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.27DL

Sample wt/vol: 31.4 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	34	DP
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	7.5	DPJ
1024-57-3	Heptachlor epoxide	6.6	DPJ
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	34	DPJ
72-55-9	4,4'-DDE	52	DP
72-20-8	Endrin	320	D
33213-65-9	Endosulfan II	210	DP
72-54-8	4,4'-DDD	24	DPJ
1031-07-8	Endosulfan sulfate	2.9	DPJ
50-29-3	4,4'-DDT	450	D
72-43-5	Methoxychlor	35	DPJ
53494-70-5	Endrin ketone	31	DPJ
7421-93-4	Endrin aldehyde	33	DPJ
5103-71-9	alpha-Chlordane	200	D
5103-74-2	gamma-Chlordane	200	D
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	360	U
11104-28-2	Aroclor-1221	740	U
11141-16-5	Aroclor-1232	360	U
53469-21-9	Aroclor-1242	360	U
12672-29-6	Aroclor-1248	360	U
11097-69-1	Aroclor-1254 *	3100	~~DP~~
11096-82-5	Aroclor-1260	360	U

* To Original

ONLY PLD DATA WERE VALIDATED

FORM I PEST

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ33

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.28

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/03/99

Injection Volume: 0.5 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	2.3	P
1024-57-3	Heptachlor epoxide	3.0	
959-98-8	Endosulfan I	2.0	P
60-57-1	Dieldrin	2.2	PJ
72-55-9	4,4'-DDE	3.9	P
72-20-8	Endrin	18	
33213-65-9	Endosulfan II	15	P
72-54-8	4,4'-DDD	2.8	PJ
1031-07-8	Endosulfan sulfate	3.6	U
50-29-3	4,4'-DDT	27	
72-43-5	Methoxychlor	19	P
53494-70-5	Endrin ketone	6.9	P
7421-93-4	Endrin aldehyde	3.1	PJ
5103-71-9	alpha-Chlordane	5.0	P
5103-74-2	gamma-Chlordane	6.6	P
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	73	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	120	
11096-82-5	Aroclor-1260	36	U

ONLY PCB DATA WERE VALIDATED

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EPA SAMPLE NO.

BWZ33DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.28DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	18	U
76-44-8	Heptachlor	18	U
309-00-2	Aldrin	18	U
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	3.3	DPJ
72-55-9	4,4'-DDE	4.9	DPJ
72-20-8	Endrin	28	DPJ
33213-65-9	Endosulfan II	6.1	DPJ
72-54-8	4,4'-DDD	8.0	DPJ
1031-07-8	Endosulfan sulfate	36	U
50-29-3	4,4'-DDT	48	DP
72-43-5	Methoxychlor	100	DJ
53494-70-5	Endrin ketone	23	DPJ
7421-93-4	Endrin aldehyde	35	DPJ
5103-71-9	alpha-Chlordane	14	DPJ
5103-74-2	gamma-Chlordane	22	DP
8001-35-2	Toxaphene	1800	U
12674-11-2	Aroclor-1016	360	U
11104-28-2	Aroclor-1221	730	U
11141-16-5	Aroclor-1232	360	U
53469-21-9	Aroclor-1242	360	U
12672-29-6	Aroclor-1248	360	U
11097-69-1	Aroclor-1254	190	~~DPP~~ J
11096-82-5	Aroclor-1260	360	U

ONLY PCB DATA WERE VALIDATED

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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ34

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.29

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	7.3	P
959-98-8	Endosulfan I	4.7	P
60-57-1	Dieldrin	7.7	P
72-55-9	4,4'-DDE	17	P
72-20-8	Endrin	7.8	P
33213-65-9	Endosulfan II	30	P
72-54-8	4,4'-DDD	7.2	P
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	57	
72-43-5	Methoxychlor	42	P
53494-70-5	Endrin ketone	10	P
7421-93-4	Endrin aldehyde	4.5	P
5103-71-9	alpha-Chlordane	29	
5103-74-2	gamma-Chlordane	12	P
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	78	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	190	
11096-82-5	Aroclor-1260	39	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ34DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.29DL

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
1024-57-3	Heptachlor epoxide	10	DPJ
959-98-8	Endosulfan I	7.6	DPJ
60-57-1	Dieldrin	8.6	DPJ
72-55-9	4,4'-DDE	28	DPJ
72-20-8	Endrin	8.7	DPJ
33213-65-9	Endosulfan II	54	D
72-54-8	4,4'-DDD	17	DPJ
1031-07-8	Endosulfan sulfate	39	U
50-29-3	4,4'-DDT	98	DP
72-43-5	Methoxychlor	83	DPJ
53494-70-5	Endrin ketone	23	DPJ
7421-93-4	Endrin aldehyde	8.3	DPJ
5103-71-9	alpha-Chlordane	33	D
5103-74-2	gamma-Chlordane	14	DPJ
8001-35-2	Toxaphene	2000	U
12674-11-2	Aroclor-1016	390	U
11104-28-2	Aroclor-1221	780	U
11141-16-5	Aroclor-1232	390	U
53469-21-9	Aroclor-1242	390	U
12672-29-6	Aroclor-1248	390	U
11097-69-1	Aroclor-1254	300	~~DJ~~
11096-82-5	Aroclor-1260	390	U

ONLY RCB DATA WERE VALIDATED

FORM I PEST

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ35

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.30

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 10 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	2.0	P
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	2.9	PJ
72-55-9	4,4'-DDE	3.0	PJ
72-20-8	Endrin	16	P
33213-65-9	Endosulfan II	16	P
72-54-8	4,4'-DDD	2.5	PJ
1031-07-8	Endosulfan sulfate	3.7	U
50-29-3	4,4'-DDT	31	
72-43-5	Methoxychlor	12	PJ
53494-70-5	Endrin ketone	2.7	PJ
7421-93-4	Endrin aldehyde	2.6	PJ
5103-71-9	alpha-Chlordane	9.3	
5103-74-2	gamma-Chlordane	5.1	P
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	120	
11096-82-5	Aroclor-1260	37	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ35DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.30DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 10 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/03/99

Injection Volume: 0.5 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	19	U
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	4.0	DPJ
72-55-9	4,4'-DDE	3.1	DPJ
72-20-8	Endrin	22	DPJ
33213-65-9	Endosulfan II	6.9	DPJ
72-54-8	4,4'-DDD	8.1	DPJ
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	55	D
72-43-5	Methoxychlor	32	DPJ
53494-70-5	Endrin ketone	14	DPJ
7421-93-4	Endrin aldehyde	22	DPJ
5103-71-9	alpha-Chlordane	9.9	DPJ
5103-74-2	gamma-Chlordane	16	DPJ
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	370	U
11104-28-2	Aroclor-1221	740	U
11141-16-5	Aroclor-1232	370	U
53469-21-9	Aroclor-1242	370	U
12672-29-6	Aroclor-1248	370	U
11097-69-1	Aroclor-1254	180	DJ
11096-82-5	Aroclor-1260	370	U

ONLY PCB DATA WERE VALIDATED

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ36

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.31

Sample wt/vol: 30.8 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		1.9	U
319-85-7	beta-BHC		1.9	U
319-86-8	delta-BHC		1.9	U
58-89-9	gamma-BHC (Lindane)		1.9	U
76-44-8	Heptachlor		1.9	U
309-00-2	Aldrin		54	PE
1024-57-3	Heptachlor epoxide		12	P
959-98-8	Endosulfan I		1.9	U
60-57-1	Dieldrin		35	P
72-55-9	4,4'-DDE		89	PE
72-20-8	Endrin		200	E
33213-65-9	Endosulfan II		210	E
72-54-8	4,4'-DDD		18	
1031-07-8	Endosulfan sulfate		33	P
50-29-3	4,4'-DDT		370	E
72-43-5	Methoxychlor		72	
53494-70-5	Endrin ketone		61	E
7421-93-4	Endrin aldehyde		30	P
5103-71-9	alpha-Chlordane		97	E
5103-74-2	gamma-Chlordane		29	P
8001-35-2	Toxaphene		190	U
12674-11-2	Aroclor-1016		37	U
11104-28-2	Aroclor-1221		75	U
11141-16-5	Aroclor-1232		37	U
53469-21-9	Aroclor-1242		37	U
12672-29-6	Aroclor-1248		37	U
11097-69-1	Aroclor-1254	* 2700	~~1900~~	
11096-82-5	Aroclor-1260		37	U

* From Dilution

ONLY PCB DATA WERE VALIDATED

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ36DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.31DL

Sample wt/vol: 30.8 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	19	U
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	40	DP
72-55-9	4,4'-DDE	100	DP
72-20-8	Endrin	270	D
33213-65-9	Endosulfan II	270	D
72-54-8	4,4'-DDD	59	DP
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	410	D
72-43-5	Methoxychlor	190	U
53494-70-5	Endrin ketone	37	U
7421-93-4	Endrin aldehyde	78	DP
5103-71-9	alpha-Chlordane	130	D
5103-74-2	gamma-Chlordane	130	D
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	370	U
11104-28-2	Aroclor-1221	750	U
11141-16-5	Aroclor-1232	370	U
53469-21-9	Aroclor-1242	370	U
12672-29-6	Aroclor-1248	370	U
11097-69-1	Aroclor-1254 *	2700	D
11096-82-5	Aroclor-1260	370	U

* To Original

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ37

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.32

Sample wt/vol: 31.7 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	8.8	P
1024-57-3	Heptachlor epoxide	3.6	P
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	18	P
72-55-9	4,4'-DDE	68	PE
72-20-8	Endrin	79	E
33213-65-9	Endosulfan II	86	PE
72-54-8	4,4'-DDD	12	P
1031-07-8	Endosulfan sulfate	19	P
50-29-3	4,4'-DDT	130	PE
72-43-5	Methoxychlor	88	
53494-70-5	Endrin ketone	47	P
7421-93-4	Endrin aldehyde	6.0	P
5103-71-9	alpha-Chlordane	37	E
5103-74-2	gamma-Chlordane	34	E
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	69	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	720	U
11096-82-5	Aroclor-1260	34	U

ONLY ALL DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ37DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.32DL

Sample wt/vol: 31.7 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	170	U
319-85-7	beta-BHC	170	U
319-86-8	delta-BHC	170	U
58-89-9	gamma-BHC (Lindane)	170	U
76-44-8	Heptachlor	170	U
309-00-2	Aldrin	170	U
1024-57-3	Heptachlor epoxide	170	U
959-98-8	Endosulfan I	170	U
60-57-1	Dieldrin	19	DPJ
72-55-9	4,4'-DDE	100	DPJ
72-20-8	Endrin	150	DJ
33213-65-9	Endosulfan II	38	DPJ
72-54-8	4,4'-DDD	30	DPJ
1031-07-8	Endosulfan sulfate	180	DPJ
50-29-3	4,4'-DDT	440	D
72-43-5	Methoxychlor	920	DPJ
53494-70-5	Endrin ketone	340	U
7421-93-4	Endrin aldehyde	340	U
5103-71-9	alpha-Chlordane	68	DJ
5103-74-2	gamma-Chlordane	46	DPJ
8001-35-2	Toxaphene	17000	U
12674-11-2	Aroclor-1016	3400	U
11104-28-2	Aroclor-1221	6900	U
11141-16-5	Aroclor-1232	3400	U
53469-21-9	Aroclor-1242	3400	U
12672-29-6	Aroclor-1248	3400	U
11097-69-1	Aroclor-1254	1700	~~P~~J
11096-82-5	Aroclor-1260	3400	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ38

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.33

Sample wt/vol: 32.0 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	3.7	P
58-89-9	gamma-BHC (Lindane)	1.5	PJ
76-44-8	Heptachlor	2.9	
309-00-2	Aldrin	7.7	P
1024-57-3	Heptachlor epoxide	5.8	P
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	18	P
72-55-9	4,4'-DDE	76	PE
72-20-8	Endrin	72	E
33213-65-9	Endosulfan II	16	P
72-54-8	4,4'-DDD	15	P
1031-07-8	Endosulfan sulfate	50	P
50-29-3	4,4'-DDT	150	PE
72-43-5	Methoxychlor	120	
53494-70-5	Endrin ketone	70	PE
7421-93-4	Endrin aldehyde	16	P
5103-71-9	alpha-Chlordane	38	E
5103-74-2	gamma-Chlordane	19	P
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	69	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	740	J
11096-82-5	Aroclor-1260	34	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

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DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ38DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.33DL

Sample wt/vol: 32.0 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	180	U
319-85-7	beta-BHC	180	U
319-86-8	delta-BHC	180	U
58-89-9	gamma-BHC (Lindane)	180	U
76-44-8	Heptachlor	180	U
309-00-2	Aldrin	180	U
1024-57-3	Heptachlor epoxide	180	U
959-98-8	Endosulfan I	180	U
60-57-1	Dieldrin	340	U
72-55-9	4,4'-DDE	340	U
72-20-8	Endrin	340	U
33213-65-9	Endosulfan II	340	U
72-54-8	4,4'-DDD	340	U
1031-07-8	Endosulfan sulfate	340	U
50-29-3	4,4'-DDT	340	U
72-43-5	Methoxychlor	1800	U
53494-70-5	Endrin ketone	340	U
7421-93-4	Endrin aldehyde	340	U
5103-71-9	alpha-Chlordane	180	U
5103-74-2	gamma-Chlordane	180	U
8001-35-2	Toxaphene	18000	U
12674-11-2	Aroclor-1016	3400	U
11104-28-2	Aroclor-1221	6900	U
11141-16-5	Aroclor-1232	3400	U
53469-21-9	Aroclor-1242	3400	U
12672-29-6	Aroclor-1248	3400	U
11097-69-1	Aroclor-1254	1600	~~U~~J
11096-82-5	Aroclor-1260	3400	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ39

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.34

Sample wt/vol: 31.8 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	69	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ39DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39092.34DL

Sample wt/vol: 31.8 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 06/22/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/22/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/03/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	18	U
76-44-8	Heptachlor	18	U
309-00-2	Aldrin	18	U
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	34	U
72-55-9	4,4'-DDE	34	U
72-20-8	Endrin	34	U
33213-65-9	Endosulfan II	34	U
72-54-8	4,4'-DDD	34	U
1031-07-8	Endosulfan sulfate	34	U
50-29-3	4,4'-DDT	34	U
72-43-5	Methoxychlor	180	U
53494-70-5	Endrin ketone	34	U
7421-93-4	Endrin aldehyde	34	U
5103-71-9	alpha-Chlordane	18	U
5103-74-2	gamma-Chlordane	18	U
8001-35-2	Toxaphene	1800	U
12674-11-2	Aroclor-1016	340	U
11104-28-2	Aroclor-1221	690	U
11141-16-5	Aroclor-1232	340	U
53469-21-9	Aroclor-1242	340	U
12672-29-6	Aroclor-1248	340	U
11097-69-1	Aroclor-1254	340	U
11096-82-5	Aroclor-1260	340	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ43

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.01

Sample wt/vol: 30.9 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		2.0	U
319-85-7	beta-BHC		2.0	U
319-86-8	delta-BHC		2.0	U
58-89-9	gamma-BHC (Lindane)		2.0	U
76-44-8	Heptachlor		2.0	U
309-00-2	Aldrin		2.0	U
1024-57-3	Heptachlor epoxide		14	P
959-98-8	Endosulfan I		2.0	U
60-57-1	Dieldrin		18	P
72-55-9	4,4'-DDE		20	
72-20-8	Endrin		21	
33213-65-9	Endosulfan II		73	E
72-54-8	4,4'-DDD		33	P
1031-07-8	Endosulfan sulfate		3.8	U
50-29-3	4,4'-DDT		230	E
72-43-5	Methoxychlor		100	P
53494-70-5	Endrin ketone		38	P
7421-93-4	Endrin aldehyde		25	P
5103-71-9	alpha-Chlordane		92	E
5103-74-2	gamma-Chlordane		64	PE
8001-35-2	Toxaphene		200	U
12674-11-2	Aroclor-1016		38	U
11104-28-2	Aroclor-1221		77	U
11141-16-5	Aroclor-1232		38	U
53469-21-9	Aroclor-1242		38	U
12672-29-6	Aroclor-1248		38	U
11097-69-1	Aroclor-1254 *	500	~~500~~	
11096-82-5	Aroclor-1260		38	U

* From Dilution

ONLY RCB WERE VALIDATED

FORM I PEST

OLM03.0

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ43DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.01DL

Sample wt/vol: 30.9 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
1024-57-3	Heptachlor epoxide	20	U
959-98-8	Endosulfan I	20	U
60-57-1	Dieldrin	38	U
72-55-9	4,4'-DDE	38	U
72-20-8	Endrin	57	D
33213-65-9	Endosulfan II	90	DP
72-54-8	4,4'-DDD	25	DPJ
1031-07-8	Endosulfan sulfate	38	U
50-29-3	4,4'-DDT	190	D
72-43-5	Methoxychlor	110	DPJ
53494-70-5	Endrin ketone	47	DP
7421-93-4	Endrin aldehyde	38	U
5103-71-9	alpha-Chlordane	88	D
5103-74-2	gamma-Chlordane	62	DP
8001-35-2	Toxaphene	2000	U
12674-11-2	Aroclor-1016	380	U
11104-28-2	Aroclor-1221	770	U
11141-16-5	Aroclor-1232	380	U
53469-21-9	Aroclor-1242	380	U
12672-29-6	Aroclor-1248	380	U
11097-69-1	Aroclor-1254	580 *	~~DP~~
11096-82-5	Aroclor-1260	380	U

* To original

ONLY PCB DATA WERE VALIDATED

FORM I PEST

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ44

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.02

Sample wt/vol: 32.3 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	6.3	P
72-20-8	Endrin	17	P
33213-65-9	Endosulfan II	32	
72-54-8	4,4'-DDD	12	P
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	62	E
72-43-5	Methoxychlor	52	P
53494-70-5	Endrin ketone	17	P
7421-93-4	Endrin aldehyde	9.6	P
5103-71-9	alpha-Chlordane	14	P
5103-74-2	gamma-Chlordane	9.2	P
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	68	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	120	P
11096-82-5	Aroclor-1260	34	U

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DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ44DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.02DL

Sample wt/vol: 32.3 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	17	U
319-85-7	beta-BHC	17	U
319-86-8	delta-BHC	17	U
58-89-9	gamma-BHC (Lindane)	17	U
76-44-8	Heptachlor	17	U
309-00-2	Aldrin	17	U
1024-57-3	Heptachlor epoxide	17	U
959-98-8	Endosulfan I	17	U
60-57-1	Dieldrin	34	U
72-55-9	4,4'-DDE	34	U
72-20-8	Endrin	23	DJ
33213-65-9	Endosulfan II	42	D
72-54-8	4,4'-DDD	34	U
1031-07-8	Endosulfan sulfate	34	U
50-29-3	4,4'-DDT	52	DP
72-43-5	Methoxychlor	170	U
53494-70-5	Endrin ketone	56	D
7421-93-4	Endrin aldehyde	34	U
5103-71-9	alpha-Chlordane	17	U
5103-74-2	gamma-Chlordane	8.1	DPJ
8001-35-2	Toxaphene	1700	U
12674-11-2	Aroclor-1016	340	U
11104-28-2	Aroclor-1221	680	U
11141-16-5	Aroclor-1232	340	U
53469-21-9	Aroclor-1242	340	U
12672-29-6	Aroclor-1248	340	U
11097-69-1	Aroclor-1254	170	~~DJP~~ J
11096-82-5	Aroclor-1260	340	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ45

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.03

Sample wt/vol: 30.9 (g/mL) G Lab File ID: _____

% Moisture: 20 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		2.1	U
319-85-7	beta-BHC		2.1	U
319-86-8	delta-BHC		2.1	U
58-89-9	gamma-BHC (Lindane)		2.1	U
76-44-8	Heptachlor		5.2	P
309-00-2	Aldrin		2.1	U
1024-57-3	Heptachlor epoxide		21	P
959-98-8	Endosulfan I		2.1	U
60-57-1	Dieldrin		26	P
72-55-9	4,4'-DDE		31	
72-20-8	Endrin		33	P
33213-65-9	Endosulfan II		83	PE
72-54-8	4,4'-DDD		56	P
1031-07-8	Endosulfan sulfate		4.0	U
50-29-3	4,4'-DDT		310	E
72-43-5	Methoxychlor		35	P
53494-70-5	Endrin ketone		63	P
7421-93-4	Endrin aldehyde		30	P
5103-71-9	alpha-Chlordane		140	E
5103-74-2	gamma-Chlordane		100	PE
8001-35-2	Toxaphene		210	U
12674-11-2	Aroclor-1016		40	U
11104-28-2	Aroclor-1221		81	U
11141-16-5	Aroclor-1232		40	U
53469-21-9	Aroclor-1242		40	U
12672-29-6	Aroclor-1248		40	U
11097-69-1	Aroclor-1254 *	780	~~690~~	
11096-82-5	Aroclor-1260		40	U

* From Dilution

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ45DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.03DL

Sample wt/vol: 30.9 (g/mL) G Lab File ID: _____

% Moisture: 20 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21	U
319-85-7	beta-BHC	21	U
319-86-8	delta-BHC	21	U
58-89-9	gamma-BHC (Lindane)	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	26	D
959-98-8	Endosulfan I	21	U
60-57-1	Dieldrin	40	U
72-55-9	4,4'-DDE	25	DPJ
72-20-8	Endrin	36	DPJ
33213-65-9	Endosulfan II	110	DP
72-54-8	4,4'-DDD	37	DPJ
1031-07-8	Endosulfan sulfate	40	U
50-29-3	4,4'-DDT	270	D
72-43-5	Methoxychlor	180	DPJ
53494-70-5	Endrin ketone	61	DP
7421-93-4	Endrin aldehyde	40	U
5103-71-9	alpha-Chlordane	120	D
5103-74-2	gamma-Chlordane	96	DP
8001-35-2	Toxaphene	2100	U
~~12674-11-2~~	~~Aroclor-1016~~	~~400~~	~~U~~
~~11104-28-2~~	~~Aroclor-1221~~	~~810~~	~~U~~
~~11141-16-5~~	~~Aroclor-1232~~	~~400~~	~~U~~
~~53469-21-9~~	~~Aroclor-1242~~	~~400~~	~~U~~
~~12672-29-6~~	~~Aroclor-1248~~	~~400~~	~~U~~
~~11097-69-1~~	~~Aroclor-1254~~ *	~~780~~	~~DP~~
~~11096-82-5~~	~~Aroclor-1260~~	~~400~~	~~U~~

* To Original

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ46

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.04

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 23 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	4.2	U
72-55-9	4,4'-DDE	4.2	U
72-20-8	Endrin	10	P
33213-65-9	Endosulfan II	27	
72-54-8	4,4'-DDD	4.2	U
1031-07-8	Endosulfan sulfate	4.2	U
50-29-3	4,4'-DDT	50	
72-43-5	Methoxychlor	39	P
53494-70-5	Endrin ketone	27	P
7421-93-4	Endrin aldehyde	20	P
5103-71-9	alpha-Chlordane	6.4	P
5103-74-2	gamma-Chlordane	5.5	P
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	86	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	95	P
11096-82-5	Aroclor-1260	42	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ46DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.04DL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 23 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	gamma-BHC (Lindane)	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	22	U
959-98-8	Endosulfan I	22	U
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	42	U
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	42	U
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	42	U
72-43-5	Methoxychlor	220	U
53494-70-5	Endrin ketone	75	DP
7421-93-4	Endrin aldehyde	42	U
5103-71-9	alpha-Chlordane	22	U
5103-74-2	gamma-Chlordane	22	U
8001-35-2	Toxaphene	2200	U
12674-11-2	Aroclor-1016	420	U
11104-28-2	Aroclor-1221	860	U
11141-16-5	Aroclor-1232	420	U
53469-21-9	Aroclor-1242	420	U
12672-29-6	Aroclor-1248	420	U
11097-69-1	Aroclor-1254	76	~~DJP~~ J
11096-82-5	Aroclor-1260	420	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ47

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.05

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

% Moisture: 18 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		2.0	U
319-85-7	beta-BHC		2.0	U
319-86-8	delta-BHC		2.0	U
58-89-9	gamma-BHC (Lindane)		2.0	U
76-44-8	Heptachlor		2.0	U
309-00-2	Aldrin		2.0	U
1024-57-3	Heptachlor epoxide		24	P
959-98-8	Endosulfan I		2.0	U
60-57-1	Dieldrin		27	P
72-55-9	4,4'-DDE		30	
72-20-8	Endrin		31	P
33213-65-9	Endosulfan II		75	PE
72-54-8	4,4'-DDD		74	PE
1031-07-8	Endosulfan sulfate		4.0	U
50-29-3	4,4'-DDT		200	E
72-43-5	Methoxychlor		140	P
53494-70-5	Endrin ketone		55	P
7421-93-4	Endrin aldehyde		34	P
5103-71-9	alpha-Chlordane		130	E
5103-74-2	gamma-Chlordane		100	PE
8001-35-2	Toxaphene		200	U
12674-11-2	Aroclor-1016		40	U
11104-28-2	Aroclor-1221		80	U
11141-16-5	Aroclor-1232		40	U
53469-21-9	Aroclor-1242		40	U
12672-29-6	Aroclor-1248		40	U
11097-69-1	Aroclor-1254 *	880	~~500~~	
11096-82-5	Aroclor-1260		40	U

* From Dilution

ONLY PCB DATA WERE VALIDATED

FORM I PEST

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ47DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.05DL

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

% Moisture: 18 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
1024-57-3	Heptachlor epoxide	24	D
959-98-8	Endosulfan I	20	U
60-57-1	Dieldrin	20	DPJ
72-55-9	4,4'-DDE	24	DPJ
72-20-8	Endrin	34	DJ
33213-65-9	Endosulfan II	100	DP
72-54-8	4,4'-DDD	34	DPJ
1031-07-8	Endosulfan sulfate	40	U
50-29-3	4,4'-DDT	260	D
72-43-5	Methoxychlor	200	DP
53494-70-5	Endrin ketone	64	DP
7421-93-4	Endrin aldehyde	40	U
5103-71-9	alpha-Chlordane	120	D
5103-74-2	gamma-Chlordane	97	DP
8001-35-2	Toxaphene	2000	U
12674-11-2	Aroclor-1016	400	U
11104-28-2	Aroclor-1221	800	U
11141-16-5	Aroclor-1232	400	U
53469-21-9	Aroclor-1242	400	U
12672-29-6	Aroclor-1248	400	U
11097-69-1	Aroclor-1254 *	880	~~D~~
11096-82-5	Aroclor-1260	400	U

* To Original

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ49

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.07

Sample wt/vol: 30.9 (g/mL) G Lab File ID: _____

% Moisture: 21 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
319-84-6	alpha-BHC		2.1	U
319-85-7	beta-BHC		2.1	U
319-86-8	delta-BHC		2.1	U
58-89-9	gamma-BHC (Lindane)		2.1	U
76-44-8	Heptachlor		7.5	
309-00-2	Aldrin		4.9	P
1024-57-3	Heptachlor epoxide		41	PE
959-98-8	Endosulfan I		2.1	U
60-57-1	Dieldrin		51	P
72-55-9	4,4'-DDE		40	P
72-20-8	Endrin		44	P
33213-65-9	Endosulfan II		19	P
72-54-8	4,4'-DDD		140	PE
1031-07-8	Endosulfan sulfate		21	P
50-29-3	4,4'-DDT		190	PE
72-43-5	Methoxychlor		38	P
53494-70-5	Endrin ketone		74	PE
7421-93-4	Endrin aldehyde		48	
5103-71-9	alpha-Chlordane		240	E
5103-74-2	gamma-Chlordane		280	PE
8001-35-2	Toxaphene		210	U
12674-11-2	Aroclor-1016		40	U
11104-28-2	Aroclor-1221		82	U
11141-16-5	Aroclor-1232		40	U
53469-21-9	Aroclor-1242		40	U
12672-29-6	Aroclor-1248		40	U
11097-69-1	Aroclor-1254 *	940	~~720~~	
11096-82-5	Aroclor-1260		40	U

* From Dilution

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ49DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ26

Matrix: (soil/water) SOIL Lab Sample ID: 39116.07DL

Sample wt/vol: 30.9 (g/mL) G Lab File ID: _____

% Moisture: 21 decanted: (Y/N) N Date Received: 06/23/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/07/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21	U
319-85-7	beta-BHC	21	U
319-86-8	delta-BHC	21	U
58-89-9	gamma-BHC (Lindane)	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	34	DP
959-98-8	Endosulfan I	21	U
60-57-1	Dieldrin	40	U
72-55-9	4,4'-DDE	40	U
72-20-8	Endrin	35	DPJ
33213-65-9	Endosulfan II	140	DP
72-54-8	4,4'-DDD	66	D
1031-07-8	Endosulfan sulfate	40	U
50-29-3	4,4'-DDT	350	D
72-43-5	Methoxychlor	260	DP
53494-70-5	Endrin ketone	92	DP
7421-93-4	Endrin aldehyde	58	DP
5103-71-9	alpha-Chlordane	200	D
5103-74-2	gamma-Chlordane	240	DP
8001-35-2	Toxaphene	2100	U
12674-11-2	Aroclor-1016	400	U
11104-28-2	Aroclor-1221	820	U
11141-16-5	Aroclor-1232	400	U
53469-21-9	Aroclor-1242	400	U
12672-29-6	Aroclor-1248	400	U
11097-69-1	Aroclor-1254 *	940	~~DP~~
11096-82-5	Aroclor-1260	400	U

* To Original

ONLY PEB DATA WERE VALIDATED

FORM I PEST

OLM03.0