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GROUND WATER MONITORING REPORT (5th)

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D55

Tennessee Gas Pipeline
an El Paso company

July 2, 2003

Mr. Gerald Rider
New York Department of Environmental Conservation (NYSDEC)
Chief, Operation and Maintenance Section
Bureau of Hazardous Site Control
625 Broadway
Albany, New York 12233-7010

Re: Fifth Annual Post-Remediation Groundwater Monitoring Report
Tennessee Gas Pipeline Company, Compressor Station 224
Clymer, New York

#907014

Dear Mr. Rider:

Tennessee Gas Pipeline Company (TGPL) is pleased to submit this report documenting the groundwater-monitoring event conducted during May 2003 at TGPL's Compressor Station 224 in Clymer, New York. This event represents the fifth annual post-remediation groundwater sampling event at this site. This monitoring event was performed in accordance with the Final Documentation Report for Soil, Sediment, and Drainline Remediation Activities, Attachment 3, Operations and Maintenance Plan[1]. Groundwater sampling, analysis, methods, and procedures were conducted in accordance with the Quality Assurance Project Plan for Soil, Drainline Remediation, New York Compressor Stations[2]. A brief description of the work performed, results, and future scheduled events are presented below.

WORK PERFORMED

Eco-Systems, Inc. (Eco-Systems) collected groundwater samples on May 8, 2003 from Monitoring Wells MW-2 and MW-6 (Figure 1). Depth-to-water measurements were collected prior to the initiation of purging and sampling activities. The wells were purged and sampled using a peristaltic pump and low-flow/low-impact sampling techniques. Field water-quality parameter readings (pH, temperature, specific conductance, turbidity, dissolved oxygen, and oxidation reduction potential) were collected during the purging process and recorded on Sample Collection Logs (Appendix A). Field parameters measured at the time of sample collection are presented in Table 1.

Filtered and unfiltered groundwater samples were collected using clean, laboratory-supplied containers, packed on ice, sealed, and then delivered with chain-of-custody documentation to Severn Trent Laboratories, Inc. (STL) of Amherst, New York, for analysis. The samples were analyzed for polychlorinated biphenyls (PCBs) using U. S. Environmental Protection Agency (EPA) Method 608, which has a lower reporting limit of 0.065 micrograms per liter (µg/L).

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[1] BB&L, 1998
[2] TGPL, February, 1996

Tennessee Gas Pipeline
1001 Louisiana Street Houston, Texas 77002
PO Box 2511 Houston, Texas 77252-2511

RESULTS

The analytical data, which were validated and determined to be acceptable (see Appendix B), showed that PCBs were not present above the lower reporting limit in any of the samples collected during this event.

CONCLUSIONS AND RECOMMENDATIONS

This sampling event represents the fifth consecutive time that PCBs have not been detected above the lower reporting limit (Table 2). Consequently, the closure requirements set forth by the Operations and Maintenance Plan[3] have been met.

Based on the data and conclusions presented herein, TGPL requests approval to plug and abandon Monitoring Wells MW-2 and MW-6 and close this site.

If you have any questions or comments regarding the information presented herein, please do not hesitate to contact me at (832) 676-7351, or Mr. David M. Boylan of Eco-Systems at (281) 646-1886.

Sincerely,

Bradley J. Marlo for

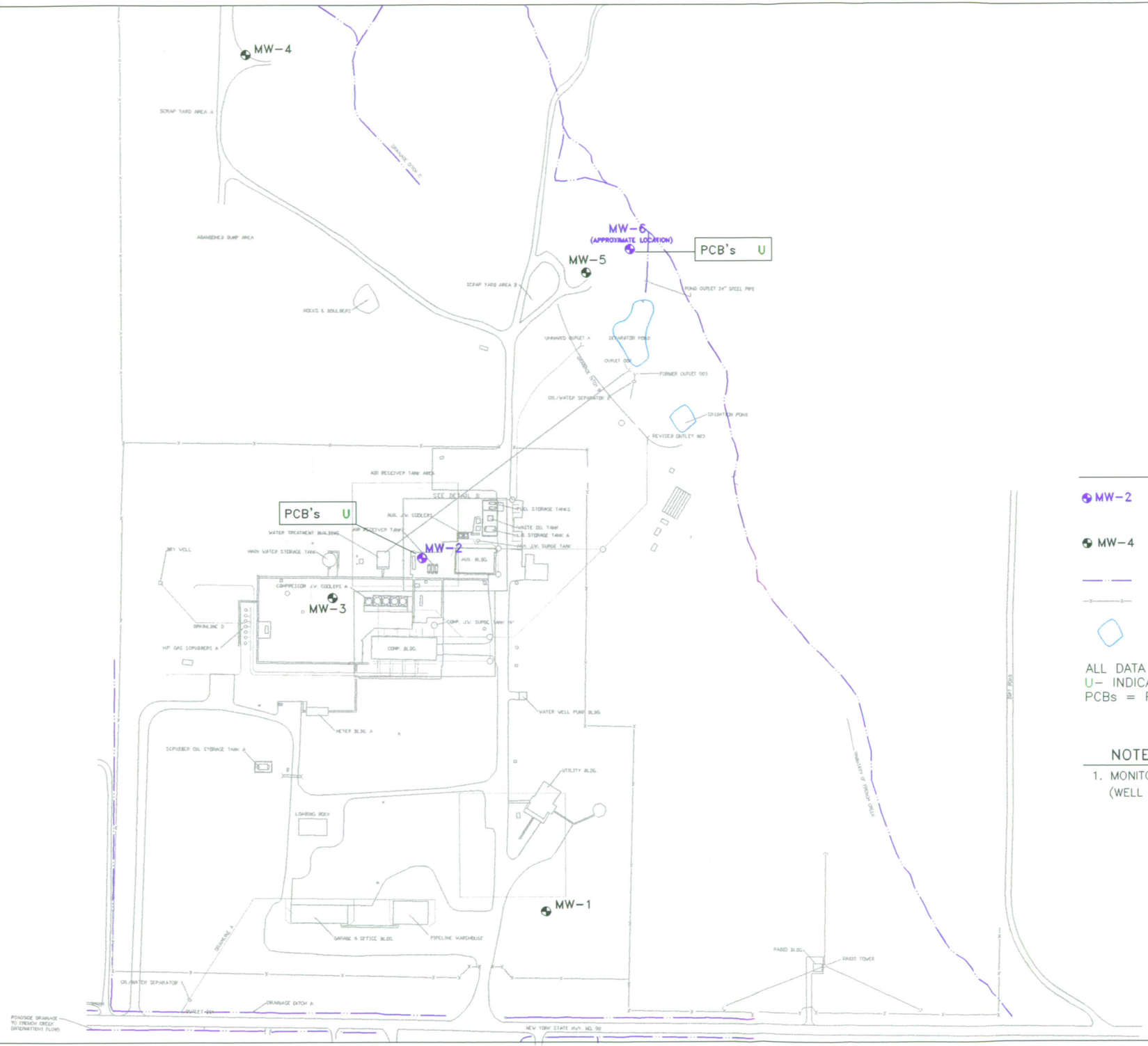
Ian Yanagisawa, P.E.
Principal Environmental Engineer

Tables, Figures, Appendices

cc: Scott Lewis, TGPL
Martin Doster, NYSDEC - Region 9
Mark Van Valkenburg, NYSDOH
Tom Sutton, TGPL Compressor Station 224
A. Tim Webster, Webster, Szanyi, LLP
Eco-Systems Central File
Jim Connors, Eco-Systems, Inc.

[3] BB&L, 1998

FIGURE



LEGEND

- MW-2 — MONITORING WELL LOCATION AND IDENTIFICATION (TO BE MONITORED)
- MW-4 — MONITORING WELL LOCATION AND IDENTIFICATION (ABANDONED)
- DRAINAGE DITCH
- FENCE LINE
- POND

ALL DATA IN MICROGRAMS PER LITER (µg/L).
U- INDICATES NOT DETECTED ABOVE THE REPORTED VALUE.
PCBs = POLYCHLORINATED BIPHENYLS.

NOTES

1. MONITORING WELL MW-6 LOCATION IS APPROXIMATE. (WELL NOT SURVEYED)

TENNESSEE GAS PIPELINE
COMPRESSOR STATION 224
CLYMER, NEW YORK

Eco-Systems, Inc.
Consultants, Engineers and Scientists

SCALE: 1"=200'	DRAWN BY:	DATE:
	CHKD. BY:	DATE:
PROJECT NO. ELP97710	CAD FILE TGP224-SM-060702.DWG	

ANALYTICAL DATA AND SITE LAYOUT MAP MAY 2003

FIGURE 1

TABLES

TABLE 1
Summary of Field Sampling Data, May 2003
Tennessee Gas Pipeline Company
Station 224 - Clymer, New York

FIELD PARAMETERS	MW2	MW6
Purge Date	5/8/03	5/8/03
Purge Method	Peristaltic Pump	Peristaltic Pump
Initial DTW (ft-btoc)	7.11	3.98
Total Depth (ft-btoc)	22.4	25.25
Casing Volume (gal)	7.8	10.8
Approx. Volume Purged (gal)	4	4
pH	6.2	6.41
Temperature (°C)	12.2	9.20
Specific Conductance (mS/cm)	0.172	0.357
Turbidity (NTU)	0.00	2
Dissolved Oxygen (mg/L)	4.9	2.40
ORP (mv)	188	-8
Sample Collection Date	5/8/03	5/8/03
Sample Collection Time	14:52	14:40
Sample Collection Method	Peristaltic Pump	Peristaltic Pump
Sample ID	224-MW02-E-050803 224-MW2F-E-050803	224-MW06-E-050803 224-MW6F-E-050803
Sample Appearance	Clear	Clear

Notes:

ft-btoc = feet below top of casing.

gal = gallons.

mS/cm = milliSiemens per centimeter.

NTU = Nephelometric Turbidity Units.

mg/L = milligrams per liter.

ORP = Oxidation/Reduction Potential.

mV = millivolts.

TABLE 2
Historical Groundwater Analytical Results
Tennessee Gas Pipeline Company
Station 224 - Clymer, New York

PARAMETERS	MW-2					MW-2F					MW-2 (DUP)					MW-6					MW-6F					SCG
	5/99	6/00	6/01	6/02	5/03	5/99	6/00	6/01	6/02	5/03	5/99	6/00	6/01	6/02	5/03	5/99	6/00	6/01	6/02	5/03	5/99	6/00	6/01	6/02	5/03	
PCBs(Total)	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.09

Notes:
"U" indicates parameter was sampled for, but not detected above the reported numerical value.
All data in micrograms per liter (µg/L).

APPENDIX A
SAMPLE COLLECTION LOGS

Eco-Systems, Inc.
Environmental Engineers and Scientists

Groundwater Sample Collection Log

Project Name: El Paso Groundwater Program
Project Number: ELP97-710
Boring ID: MW-2
Site Location: Station 224 - Clymer, New York

Start Date: 5/8/03 Finish Date: 5/8/03
Sample Technician: Keith Caywood
Purge/Sample Method: Peristaltic Pump
Well Diameter (d): 2"
Total Depth (TD): 22.4'
Approximate Depth of Water Column (h)
(h= TD - DTW [ft.-btoc]): 15.3'
Calculated Well Volume ($V=6hd^2$)
(V = vol in gal; d = well diam. in ft): 2.6 gal. (3) = 7.8 gal.

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft.-btoc)
5/8/03	13:44	7.11'
5/8/03	14:12	7.68'
5/8/03	14:33	7.81'

WELL DEVELOPMENT/PURGING DATA

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
5/8/03 13:55	0	6.3	0.178	12.8	0.55	5.4	194.0	Clear
14:05	1	6.3	0.178	12.7	0.25	4.9	187.0	Clear
14:18	2	6.2	0.177	12.4	0.15	5.0	185.0	Clear
14:38	3	6.2	0.174	12.3	0.00	5.0	188.0	Clear
14:52	4	6.2	0.172	12.2	0.00	4.9	188.0	Clear

Sample Identification: 224-MW02-E-050803; 224-FD1-E-0500803; 224-MW2F-E-050803; 224-RS1-E-050803
Weather Conditions During Sampling:
Comments:

Sample Technician: KC Date: 5/8/03

GROUNDWATER SAMPLE CONTAINERS				
	Date	Time	Sample Container	Preservative
MW02	5/8/03	14:52	2-LAG	-
MW2F	5/8/03	14:52	2-LAG	-
RS1	5/8/03	13:55	2-LAG	-
FD1	5/8/03	-	2-LAG	-

Notes:
ft.-btoc = feet below top of casing
mS/cm = milliSiemens per centimeter
°C = degrees Celsius
NTU = Nephelometric Turbidity Units
mg/L = milligrams per liter
mV = millivolts

Eco-Systems, Inc. **Groundwater Sample Collection Log**

Environmental Engineers and Scientists

Project Name: El Paso Groundwater Program
Project Number: ELP97-710
Boring ID: MW-6
Site Location: Station 224 - Clymer, New York

Start Date: 5/8/03 Finish Date: 5/8/03
Sample Technician: David Head
Purge/Sample Method: Peristaltic Pump
Well Diameter (d): 2"
Total Depth (TD): 25.25'
Approximate Depth of Water Column (h)
(h= TD - DTW [ft.-btoc]): 21.27'
Calculated Well Volume ($V=6hd^2$)
(V = vol in gal; d = well diam. in ft): 3.6 gal. (3) = 10.8 gal.

Depth-to-Water (DTW) Measurements		
Date	Time	DTW (ft.-btoc)
5/8/03	13:52	3.98'
5/8/03	14:15	4.12'
5/8/03	14:33	4.20'
5/8/03	14:40	4.19'

WELL DEVELOPMENT/PURGING DATA

Date/Time	Cumulative Volume (gal)	pH	Specific Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/l)	Oxidation/Reduction Potential (mV)	Comments
5/8/03 13:58	0	6.71	0.398	9.82	42.1	4.67	-10	Slightly cloudy
14:09	1	6.59	0.358	9.38	20.8	3.15	-15	Slightly cloudy
14:20	2	6.56	0.356	9.30	15.3	2.47	-18	Slightly cloudy
14:30	3	6.41	0.356	9.20	2.1	2.39	-7	Clear
14:40	4	6.41	0.357	9.20	2.0	2.40	-8	Clear

Sample Identification: 224-MW06-E-050803; 224-MW06-E-MS-050803; 224-MW06-E-MSSD-050803; 224-MW6F-050803
Weather Conditions During Sampling:
Comments:

Sample Technician: DH Date: 5/8/03

Notes: ft.-btoc = feet below top of casing
mS/cm = milliSiemens per centimeter
°C = degrees Celsius
NTU = Nephelometric Turbidity Units
mg/L = milligrams per liter
mV = millivolts

GROUNDWATER SAMPLE CONTAINERS

	Date	Time	Sample Container	Preservative
MW6	5/8/03	14:40	2-LAG	-
MS	5/8/03	14:40	2-LAG	-
MSD	5/8/03	14:40	2-LAG	-
MW6F	5/8/03	14:40	2-LAG	-

APPENDIX B
ANALYTICAL DATA QA/QC REVIEW
DATA VALIDATION REPORT

ANALYTICAL DATA QA/QC REVIEW:
TENNESSEE GAS PIPELINE
COMPRESSOR STATION 224
STL SDG A03-4457

Reviewer: Patty Sartor, Project Scientist

Date: June 2, 2003

Laboratory: Severn Trent Laboratories, Inc.
Audubon Business Center
10 Hazelwood Drive
Amherst, NY 14228-2298

Sampling Location: Tennessee Gas Pipeline
Compressor Station 224
Clymer, New York

1.0 Introduction

1.1 Samples Reviewed

Eco-Systems, Inc. (Eco-Systems) collected 8 groundwater samples (including QA/QC samples) from Station 224 for analysis of polychlorinated biphenyls (PCBs). These samples were received by Severn Trent Laboratories, Inc. (STL) on May 8, 2003. STL submitted a data package to Eco-Systems that contained the results and QA/QC data for each of the samples received and analyzed. The data package underwent a full data review following the criteria set forth in the QA Project Plan (Tenneco 1997), as well as the EPA document SW-846 On-line Test Methods for Evaluating Solid Waste Physical/Chemical Methods - 8000 Series Methods (EPA Revision 2, December 1996). Table 1 lists the samples that underwent the full data review, the analytes or analyte groups that were requested on the chain-of-custody form for each sample, as well as the date the analyses were run.

Samples Collected from Station 224

Sample	PCBs
224-FD1-E-050803	5/13/03
224-MW02-E-050803	5/13/03
224-MW2F-E-050803	5/13/03
224-MW06-E-050803	5/13/03
224-MW6F-E-050803	5/13/03
224-RS1-E-050803	5/13/03

This data review is divided into three sections: Introduction, PCBs, and a Summary. Section 2.0 describes what parameter(s) is being evaluated, the criteria being used to evaluate the data, and the results of the full data review. The qualifiers, if any, have been added to the laboratory data analysis sheets that are provided in Attachment A. Copies of the data validation summary sheets are provided in Attachment B.

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1.2 References

U.S. Environmental Protection Agency, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, Office of Solid Waste and Emergency Response, EPA 540/R-94-013, February 1994b.

U.S. Environmental Protection Agency. SW-846 On-line Test Methods for Evaluating Solid Waste Physical/Chemical Methods 8000 Series Methods. Office of Solid Waste. Revision 2, December 1996.

Tenneco Gas, Quality Assurance Project Plan, Revision 2, November 1997.

2.0 PCBs

2.1 Holding Times

The technical holding time criteria for PCBs in cooled (4±2°C) water samples is seven days from sample collection to time of extraction and then 40 days from sample extraction to analysis.

It was noted in the SDG narrative that the cooler was received at a temperature of 2°C. The holding times were met. No qualification of data is needed.

2.2 Initial Calibration

Compliance requirements for satisfactory initial calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for PCB compounds on the Target Compound List (TCL). Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

An initial calibration is determined using five calibration standards. A calibration factor is calculated for each standard using the total area of the peaks and the weight injected. The percent relative standard deviation (%RSD) of the calibration factors must be no greater than 20%. For the two surrogates, the % RSD must be no greater than 30%.

There were no problems noted with the initial calibration.

2.3 Calibration Verification

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Calibration verification checks and documents satisfactory performance of the instrument over specific time periods during sample analysis. To confirm the calibration and evaluate instrument performance, calibration verification is performed, consisting of the analysis of verification samples.

There were no problems noted with the calibration verification.

2.4 Surrogate Spikes

Laboratory performance on individual samples is established by means of spiking samples prior to extraction and analysis to determine surrogate spike recoveries. All samples are spiked with tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) prior to sample extraction. The evaluation of the recovery results of these surrogate spikes is not necessarily straightforward. The sample itself may produce effects due to such factors as interference and high concentrations of target and/or non-target analytes. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the evaluation and review of data based on specific sample results are often subjective.

There were no problems noted with the surrogate spikes. No qualification of data is necessary.

2.5 Blanks

The purpose of laboratory (or field) blanks is to determine the existence and magnitude of contamination problems resulting from laboratory (or field) activities. The criteria for evaluation of laboratory blanks apply to any blank associated with the samples (e.g., method blanks, instrument blanks, sulfur cleanup blanks). If problems with any blank exist, all associated data must be carefully evaluated to determine whether or not there is an inherent variability in the data, or if the problem is an isolated occurrence not affecting the other data.

None of the PCB target compounds were detected in the rinsate or method blank samples.

2.6 Matrix Spike/Matrix Spike Duplicates

Data for matrix spikes (MS) and matrix spike duplicates (MSD) are generated to determine long-term accuracy and precision of the analytical method on various matrices. No action is taken on MS/MSD data alone. However, the MS/MSD results can be used in conjunction with other QC criteria and determine the need for qualification.

The MS and MSD percent recoveries were both above QC limits. The MS blank recovery was normal. Data can not be validated based on MS/MSD results alone. No qualification is necessary.

2.7 Target Compound Identification

Qualitative criteria for compound identification have been established to minimize the number of erroneous identifications of compounds. An erroneous identification can either be a false positive (reporting a compound that is not present) or a false negative (not reporting a compound that is present).

There were no target compounds detected in any of the samples.

2.8 Compound Quantitation

Compound quantitation, as well as the adjustment of the contract required quantitation limit (CRQL), must be calculated according to the correct equation. Compound area responses must be calculated based on the ICAL response factor for the standard associated with that compound.

There were no problems noted with the compound quantitation.

2.9 Field Duplicates

Field duplicates are collected and analyzed as an indicator of the sampling and analytical precision. Since these analyses measure both the field and laboratory precision, the results may have more variability than laboratory duplicates which measure only laboratory performance.

A field duplicate was collected with MW02 for PCB analysis. All results were nondetect.

3.0 Summary

A full data review of PCBs was performed on the data package submitted for Station 224. There were no major problems that would prohibit the use of the data. Based on the data reviewed, there is sufficient information to conclude that the data are acceptable for use as stated in this report.

ATTACHMENT A
DATA SHEETS

EL PASO ENERGY
METHOD 608 - POLYCHLORINATED BIPHENYLS
ANALYSIS DATA SHEET

Client No.

224-FD1-E-050803

Lab Name: STL Buffalo Contract: ECOSYS

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3445701

Sample wt/vol: 1030.00 (g/mL) ML Lab File ID: PB06794.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 05/08/2003 05/09/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 05/12/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/13/2003

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.097	U
11104-28-2	Aroclor-1221	0.097	U
11141-16-5	Aroclor-1232	0.097	U
53469-21-9	Aroclor-1242	0.097	U
12672-29-6	Aroclor-1248	0.097	U
11097-69-1	Aroclor-1254	0.097	U
11096-82-5	Aroclor-1260	0.097	U

EL PASO ENERGY
METHOD 608 - POLYCHLORINATED BIPHENYLS
ANALYSIS DATA SHEET

Client No.

224-MW02-E-050803

Lab Name: STL Buffalo Contract: ECOSYS

Lab Code: RECNY Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: A3445702

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: PB06795.TX0

% Moisture: ____ decanted: (Y/N) N Date Samp/Recv: 05/08/2003 05/09/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 05/12/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/13/2003

Injection Volume: 1.00 (uL) Dilution Factor: 5.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.25	U
11104-28-2	Aroclor-1221	0.25	U
11141-16-5	Aroclor-1232	0.25	U
53469-21-9	Aroclor-1242	0.25	U
12672-29-6	Aroclor-1248	0.25	U
11097-69-1	Aroclor-1254	0.25	U
11096-82-5	Aroclor-1260	0.25	U

EL PASO ENERGY
METHOD 608 - POLYCHLORINATED BIPHENYLS
ANALYSIS DATA SHEET

Client No.

224-MW06-E-050803

Lab Name: STL Buffalo Contract: ECOSYS

Lab Code: RECNY Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: A3445703

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: PB06796.TX0

% Moisture: ____ decanted: (Y/N) N Date Samp/Recv: 05/08/2003 05/09/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 05/12/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/13/2003

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.10	U
11104-28-2	Aroclor-1221	0.10	U
11141-16-5	Aroclor-1232	0.10	U
53469-21-9	Aroclor-1242	0.10	U
12672-29-6	Aroclor-1248	0.10	U
11097-69-1	Aroclor-1254	0.10	U
11096-82-5	Aroclor-1260	0.10	U

EL PASO ENERGY
METHOD 608 - POLYCHLORINATED BIPHENYLS
ANALYSIS DATA SHEET

Client No.

224-MW2F-E-050803

Lab Name: STL Buffalo Contract: EPOSYS

Lab Code: RECNY Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: A3445704

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: PB06799.TX0

% Moisture: ____ decanted: (Y/N) N Date Samp/Recv: 05/08/2003 05/09/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 05/12/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/13/2003

Injection Volume: 1.00 (uL) Dilution Factor: 5.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.25	U
11104-28-2	Aroclor-1221	0.25	U
11141-16-5	Aroclor-1232	0.25	U
53469-21-9	Aroclor-1242	0.25	U
12672-29-6	Aroclor-1248	0.25	U
11097-69-1	Aroclor-1254	0.25	U
11096-82-5	Aroclor-1260	0.25	U

EL PASO ENERGY
METHOD 608 - POLYCHLORINATED BIPHENYLS
ANALYSIS DATA SHEET

Client No.

224-MW6F-E-050803

Lab Name: STL Buffalo Contract: ECOSYS

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A3445705

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: PB06800.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 05/08/2003 05/09/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 05/12/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/13/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.050	U
11104-28-2	Aroclor-1221	0.050	U
11141-16-5	Aroclor-1232	0.050	U
53469-21-9	Aroclor-1242	0.050	U
12672-29-6	Aroclor-1248	0.050	U
11097-69-1	Aroclor-1254	0.050	U
11096-82-5	Aroclor-1260	0.050	U

EL PASO ENERGY
METHOD 608 - POLYCHLORINATED BIPHENYLS
ANALYSIS DATA SHEET

Client No.
224-RS1-E-050803

Lab Name: STL Buffalo Contract: ECOSYS

Lab Code: RECNY Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: A3445706

Sample wt/vol: 1060.00 (g/mL) ML Lab File ID: PB06801.TX0

% Moisture: ____ decanted: (Y/N) N Date Samp/Recv: 05/08/2003 05/09/2003

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 05/12/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/13/2003

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	U

ATTACHMENT B
DATA VALIDATION SUMMARY SHEETS

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (1200)

Client: ECO SYSTEMS	Project Manager: DAVID BOYLAN	Date: 5/8/03	Chain of Custody Number: 098431
Address: 17171 PARK ROW #120	Telephone Number (Area Code)/Fax Number: 281 646 1886 / 281 646 1176	Lab Number:	Page 1 of 1
City: HOUSTON / State: TX / Zip Code: 77084	Site Contact:	Lab Contact: C. FOX	
Project Name and Location (State): TRPL SITE ON 224 CLYMER, NY	Carrier/Waybill Number: HAND DELIVERED		
Contract/Purchase Order/Quote No.: E.P.T. 710			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed	Soil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis (Attach list if more space is needed): PCBs 608	Special Instructions/ Conditions of Receipt
224-MW02E-050803	5/8/03	1452		X			2						X	
224-MW02F-E-050803	5/8/03	1452		X			2						X	
224-MW06-E-050803	5/8/03	1440		X			2						X	
224-MW06-E-MS-050803	5/8/03	1440		X			2						X	
224-MW06-E-MSD-050803	5/8/03	1440		X			2						X	
224-MW6F-E-050803	5/8/03	1440		X			2						X	
224-RSI-E-050803	5/8/03	1355		X			2						X	
224-FDI-E-050803	5/8/03	—		X			2						X	

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [ ] Return To Client [ ] Disposal By Lab [ ] Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: [ ] 24 Hours [ ] 48 Hours [ ] 7 Days [X] 14 Days [ ] 21 Days [ ] Other

QC Requirements (Specify)

1. Relinquished By	Date: 5/8/03	Time: 1920	1. Received By	Date: 5/8/03	Time: 1920
2. Relinquished By	Date:	Time:	2. Received By	Date:	Time:
3. Relinquished By	Date:	Time:	3. Received By	Date:	Time:

Comments

20

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Station #
224

SDG#
A03-4457

DATA VALIDATION CRITERIA — STATUS

I. HOLDING TIMES

Sampled - 5/8/03
Received - 5/8/03
Extracted - 5/12/03
Analyzed - 5/13/03

1. Compare the sample dates on the EPA Sample Traffic Report with the dates of analysis on Form I-PEST.

2. Compare the dates of extraction on the sample extraction sheets with the dates of analysis on Form I-PEST.

3. Verify that the samples were received intact and iced. Cooler @ 3°C

II. INITIAL CALIBRATION

.05, .10, .25, 1.0, 2.5

1. Multi-component Target Compounds
   a. Verify that each of the multi-component target compounds were analyzed at the required frequency. Check the raw data for the standards to verify that the multi-component analytes were analyzed at the required concentration. ✓
   b. Check the data for the multi-component target compounds and to verify that at least three peaks were used for calibration and that the retention time windows were calculated as required. ✓
   c. Check the data to verify that calibration factors have been determined for each selected peak. ✓

III. CALIBRATION VERIFICATION

1. Verify that the instrument blanks, PEMs, and Individual Standard Mixtures were analyzed at the required frequency and that no more than 12 hours elapsed between continuing calibration brackets in an ongoing analytical sequence. ✓

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DATA VALIDATION CRITERIA — STATUS

IV. BLANKS

1. Review the results of all associated blanks on the Form I-GC EXT and raw data to evaluate the presence of target and non-target compounds in the blanks. MBLK = U RBLK = U

2. Verify that a method blank analysis has been reported per SDG, per matrix, per concentration level, for each extraction batch and for each GC system used to analyze samples. ✓

3. Verify that the method blank analysis contains less than the CRQL of any target analyte or any interfering peak. ✓

4. Verify that the instrument blank analysis has been performed every 12 hours as the first analysis of the continuing calibration sequence. All acceptable sample analysis are to be bracketed by acceptable instrument blanks. Additionally, the instrument blank must follow sample analysis which contain an analyte at high concentration. Evaluate the results from various instrument blanks to verify that they do not contain any target analytes above one-half the CRQL values for water samples (assuming a 1-L extraction of water sample). ✓

5. Verify that the sulfur clean-up blanks were analyzed at the required frequency and that (assuming a 1-L extraction of water sample) the sulfur blanks do not contain any target compound above the CRQL. If a separate sulfur cleanup blank was prepared, one version of Form IV-GC EXT should be completed associating all the samples with the method blank, and a second version of Form IV-GC EXT should be completed listing only those samples associated with the separate sulfur cleanup blank. NOT Done

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DATA VALIDATION CRITERIA — STATUS

V. SURROGATE SPIKES

1. Check the raw data to verify the surrogate spike recoveries on Form II-GC EXT. ✓ Check for any calculation or transcription errors.

2. If recoveries are not within limits, check the raw data for possible interferences which may have affected surrogate recoveries. If low surrogate recoveries are observed, the reviewer should investigate whether the low recoveries were a result of sample dilution. ✓

FDI TMX TCX
4.19 4.19

3. Check the raw data to verify that the retention times are accurate and within retention time windows.

4. If retention times were not met, check the raw data for possible misidentification of GC peaks. Non-recovery of surrogates may also be due to shifts in retention times. ✓

VI. MATRIX SPIKE/MATRIX SPIKE DUPLICATES

1. Verify that MS and MSD samples were analyzed at the required frequency and that results are provided for each sample matrix. ✓

Both MS + SD % Rec. are above QC limits - MS/MSD were not evaluated based on MS/SD results.

→ 2. Check raw data and Form III-GC EXT to verify that the results for matrix spike recoveries were calculated and transcribed correctly. ✓

MS = $\frac{.738 - 0}{.48 \times 100} = 153.75$ (c.b. = 154) ✓

3. Check raw data and Form III-GC EXT to verify that the results for matrix spike relative percent difference were calculated and transcribed correctly. ✓

SD = $\frac{.734 - 0}{.48 \times 100} = 152.9$ (c.b. = 153) ✓

RPD = $\frac{154 - 153}{\frac{154 + 153}{2} \times 100} = \frac{1}{153.5 \times 100} = 0.000$ (c.b. = 0) ✓

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DATA VALIDATION CRITERIA	STATUS

VI. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (continued)

4. Compare %RSD results of non-spiked compounds between the orginal result, MS and MSD. ✓ All answers are "U".

VII. TARGET COMPOUND IDENTIFICATION

1. Review Form I-GC EXT and the associated raw data to confirm reported detected analytes by comparing the sample chromatograms to the tabulated results and verifying peak measurements and retention times.

No Detections in any Samples
NA

2. Confirm reported non-detected analytes by a review of the sample chromatograms. Check the associated blank data for potential interferences and check the calibration data for adequate retention time windows.

2. For multi-component target compounds (Toxaphene and Aroclors), the retention times and relative peak height ratios of major component peaks should be compared against the appropriate standard chromatogram.

3. Verify that GC/MS confirmation was performed for pesticide concentrations in the final extract which exceeded 10 ng/uL.

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DATA VALIDATION CRITERIA **STATUS**

VIII. COMPOUND QUANTITATION AND REPORTED CRQLS

1. Raw data should be examined to verify the correct calculation of all sample results reported by the laboratory. Data system printouts, chromatograms, and sample preparation log sheets should be compared to the reported positive sample results and quantitation limits. Verify that the sample values are reported correctly. ✓

2. Verify that the CRQLs have been adjusted to reflect all sample dilutions, splits, clean-up activities, and dry weight factors that area not accounted for by the method. ✓

IX. FIELD DUPLICATES

1. Compare the results reported for each sample and calculate the relative percent difference (RPD), if appropriate.

224-FD1-E-050803
with
224-MW02-E-050803
All "N". No comparison possible.