TENNESSEE GAS PIPELINE COMPANY
COMPRESSOR STATION 254
NASSAU, NEW YORK

O&M ACTIVITY LOG FORM

Personnel Performing O&M Activity: W. Kolanko

Date: 7-2-98

☑ Drainline A Excavation – Provide Description of Activity (include sketch as attachment)

N/A

Drainline Component Removed? (Yes/No)
Drainline Component and Surrounding Soil Disposed? (Yes/No) (Attach Manifest)
Repairs Made to Exposed Drainlines? (Yes/No) Describe:

☑ Air Receiver Tank Cap Excavation – Provide Description of Activity (include sketch as attachment)

N/A

Excavation Below Cap Performed? (Yes/No)
Excavated Materials Disposed Off-Site? (Yes/No) (Attach Manifest)
Cap Restored to Original Condition? (Yes/No) Describe:

☑ Drainage Area A Inspection – Rip-Rap Providing Adequate Erosion Protection? (Yes/No)

Repairs Made? (Yes/No) Describe:

☑ Service Road Area – Areal Coverage and Thickness of Stone Layer Adequate? (Yes/No)

Repairs Made? (Yes/No) Describe:

☑ Groundwater Monitoring – Groundwater Sampling Performed? (Yes/No) (Attach Summary Report and Analytical Results) – 6-18-98

☒ N/A Surface Water Monitoring – Surface Water Sampling Performed? (Yes/No) (Attach Summary Report and Analytical Results) – One time (4-30-97)

DRUM INVENTORY TRACKING RECORD

Project Name: El Paso Energy Groundwater Program

Location: New York Compressor Station 245

Collector: Rodney Sartor/ Alicia Forby

Identification Number	Date Generated	Content Origin	Quantity	Drum Contents	Comments
Residual Water	6/18	Gto MW03	6.5gal	Groundwater	
					PCB TEST RESULTS
					NEGATIVE - O.K.
					To POUR RESIDUAL
					WATER ON GROUND
					per Rodney Sartor
					8/14/98
					LME

* Analytical Results should be in w/in a month.
We will notify you of disposal at that time.
Any questions, please call
Rodney Sartor @ 1800 978 7386

druminv/6/8/98

Eco•Systems, Inc.
Consultants, Engineers and Scientists

August 6, 1998

Mr. Gerald Rider
Chief, Operation and Maintenance Section
Bureau of Hazardous Site Control
Division of Environmental Remediation
50 Wolf Road
Room 252
Albany, New York 12233-7010

Re: Tennessee Gas Pipeline Company Compressor Station 254
Order on Consent #A4-0329-9503
Letter Report - June 1998 Groundwater Sampling Results

Dear Mr. Rider:

On behalf of Tennessee Gas Pipeline (TGPL), *Eco·Systems, Inc.*, (*Eco·Systems*) is pleased to submit this letter report documenting the activities of the groundwater monitoring event during June, 1998 at TGPL Compressor Station 254 in Nassau, New York. These activities were conducted in accordance with Attachment 9: Soil/Drainline Remediation Operations and Maintenance Plan of the Final Documentation Report (Order on Consent #A4-0329-9503) as revised in correspondence from BB&L on December 9, 1996. This sampling event (June, 1998) included collection of a groundwater sample from the onsite Monitoring Well MW-3 for polychlorinated biphenyls (PCBs) (filtered) analyses. *Eco·Systems* was contracted to perform groundwater monitoring and related activities at Station 254 in accordance with TGPL. The results of the groundwater evaluation are presented below.

Scope of Work

The scope of work includes annual sampling for PCBs from Monitoring Well MW-3 at Station 254. The groundwater samples were collected and analyzed for total PCBs (filtered) following the procedures specified in the *Quality Assurance Project Plan for Soil/Drainline Remediation, New York Compressor Stations* (QAPP, BBL, May 1995). Groundwater sample collection information is presented in Table 1. The samples were analyzed using USEPA Method 608 for PCBs (filtered) at a reporting limit of 1.0 µg/L. A brief description of the sampling methodology is presented in Attachment A.

Results

Table 2 presents a summary of analytical results for PCBs during the sampling event (June, 1998). The analytical data from RECRA are included in the data validation reports in Attachment B. PCBs were not detected in Monitoring Well MW-3.

17171 Park Row, Suite 120 • Houston, Texas 77084 • Phone (281) 646-1886 • Toll Free (800) 978-7386 • Fax (281) 646-1176

ESI

Schedule

Monitoring Well MW-3 will be sampled annually as required by the O&M Plan. The next annual sampling event for Monitoring Well MW-3 is scheduled for the summer of 1999. Your office will be notified prior to field team mobilization in the event that a NYSDEC representative intends to monitor the event and/or split samples.

If you have any questions regarding the information presented herein, please call me at (972) 529-1062 or (800) 978-7386, or Sandy Marlin, TGPL, at (713) 420-2227.

Sincerely,

Lori D. Clarke

Lori Clarke
Project Manager

Tables, Attachments

cc: Eric Hamilton, NYSDEC - Region 4
Sandy Marlin, TGPL-Houston
Steve Morawski, TGPL-Northern Division
Wayne Kolanko, TGPL Compressor Station 254
John Roth, TGPL Compressor Station 237
Tim Webster, Harris Beach & Wilcox
Central File, El Paso-Houston

TABLES

TABLE 1
Summary of Field Sampling Data, June 1998
Tennessee Gas Pipeline Company
Station 254, Nassau, New York

	MW-3
Purge Date	6/18/98
Purge Method	Stainless Steel Bailer
Initial DTW (ft-btoc)	17.80
Total Depth (ft-btoc)	30.91
Casing Volume (gal)	2.14
Approx. Volume Purged (gal)	6.5
Turbidity (NTU)	> 200
pH	8.7
Temperature (°F)	61
Specific Conductance (µS)	80
Sample Collection Date	6/18/98
Sample Collection Time	16:54
Sample Collection Method	PVC Bailer (filtered)
Sample ID	254-MW03F-B-061898-MS/MSD
Sample Appearance	Cloudy

Notes:
gal = gallons
ft-btoc = feet below top of casing

TABLE 2
Summary of PCB Analytical Results for Filtered Groundwater Samples
Tennessee Gas Pipeline Company
Station 254, Nassau, NY

Monitoring Well	April - 1997	June - 1998
MW-3	ND	ND
MW-3DUP	ND	ND
RINSATE	ND	ND

Notes:

ND = Not detected

PCB quanitation limit = 1 µg/L for Aroclors 1016, 1232, 1242, 1248, 1254, and 12

PCB quanitation limit = 2 µg/L for Aroclor 1221.

ATTACHMENT A

Sampling Scope and Methodology

Groundwater Sample Collection

The sampling process was initiated by measuring the depth to water in the well. The casing volume for the well was calculated, and a minimum of three casing volumes was removed (if possible) from the well in order to obtain a sample representative of formation water. The well was purged with a stainless steel bailer. Field water quality parameters (turbidity, pH, temperature, and specific conductance) were measured, with calibrated instruments, initially and after each casing volume was removed. Instruments were calibrated daily according to the manufacturer specifications. Purging continued until three casing volumes were removed or the well purged dry. Physical characteristics of the groundwater, as well as the number of casing volumes, were recorded on a groundwater sample collection form.

The groundwater sample was collected from the well using a disposable PVC filter bailer. New bailer cord was attached to the bailer prior to use. The bailer was lowered and retrieved carefully from the well in order to prevent agitation and/or aeration of the sample water. Sample water collected in the bailer was forced by a hand pump through a 0.045 micron filter attached to the bottom of the bailer and collected in sample bottles. Each filter was used for only one source.

Samples were retained in new containers with Teflon-lined lids supplied by RECRA Environmental, Inc. (RECRA). Appropriate volumes were collected to ensure that the required quantitation limit could be met. Samples were immediately placed on ice in a cooler to ensure that the samples remained at or below 4 degrees Celsius (°C).

Decontamination/Cross Contamination Control

All non-disposable sampling equipment was decontaminated in the field prior to each use and between each sampling location according to the following procedure:

1) Wash using a laboratory-grade phosphate-free detergent solution (*Liquinox*) and a scrub brush to remove any particulate matter and/or surface film;
2) Rinse thoroughly with clean potable water;
3) Rinse thoroughly with organic-free deionized water;
4) Rinse with pesticide-grade isopropanol;
5) Rinse thoroughly with organic-free deionized water;
6) Air dry; and
7) Wrap decontaminated equipment in aluminum foil (shiny side out) for storage and transportation.

To prevent cross contamination between sample locations, all field activities were performed by personnel wearing clean, disposable latex gloves. Gloves were changed

after the completion of each task. Prior to purging and sampling, new plastic sheeting was placed on a work table and on the ground around the well to provide a clean work area. A new PVC bailer and filter were used at each sampling location.

Quality Assurance/Quality Control Samples

In order to determine the accuracy, precision, completeness, comparability, and representativeness of the groundwater samples, quality assurance/quality control (QA/QC) samples were collected in accordance with the QAPP and sent to RECRA for analysis. QA/QC samples included equipment rinsate blanks, field duplicates, matrix spikes (MS), and matrix spike duplicates (MSD).

Equipment rinsate blanks were prepared in the field by pouring analyte-free deionized water over and through the field-decontaminated bailer and into sample containers. Results were used to check the cleanliness of the sampling equipment and effectiveness of field decontamination procedures.

Field duplicate samples were collected simultaneously from the same source under identical conditions. The duplicates were collected by filling an extra set of jars with sample water from the monitoring well. The field duplicate results were used to determine the laboratory accuracy and the effect of sample matrix on sampling and analytical precision.

After the groundwater samples were received by the laboratory, one of the field samples, designated by field personnel, was separated into two different aliquots for use as the MS and MSD. The MS and MSD aliquots were spiked with known quantities of specific compounds and subjected to the entire analytical procedure. The effect of the sample matrix on the accuracy and precision of the analysis was determined by comparing the percent recovery of the known compounds in the MS and MSD aliquots.

Laboratory Analyses

All samples were analyzed for total PCBs (filtered) using USEPA Method 608 at a reporting limit of 1.0 µg/L. The laboratory analyses were performed by RECRA.

Data Validation

Eco·Systems validated the analytical data prepared by RECRA. The data packages were validated according to the guidelines presented in the QAPP. The primary purpose of data validation was to determine if any qualitative problems were evident from the laboratory QA/QC data.

ATTACHMENT B

QA/QC Review Report and Analytical Results

ANALYTICAL DATA QA/QC REVIEW:
TENNESSEE GAS PIPELINE
COMPRESSOR STATION 254
RECRA SDG A98-2368

Reviewer: Pam Johnson, Engineer

Date: July 24, 1998

Laboratory: RECRA Environmental Services, Inc.
Audubon Business Center
10 Hazelwood Drive
Amherst, NY 14228-2298

Sampling Location: Tennessee Gas Pipeline
Compressor Station 254
Nassau, New York

1.0 Introduction

1.1 Samples Reviewed

Eco·Systems, Inc. (*Eco·Systems*) collected 5 groundwater samples (including QA/QC samples) from Station 254 for analysis of PCBs. These samples were received by RECRA Environmental Services, Inc. (RECRA) on June 19, 1998. RECRA 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 1994), as well as the EPA document "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (EPA 1994b). 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.

Table 1. Samples Collected from Station 254

Sample	PCBs
254-FD1-B-061898	6/22/98
254-MW03-B-061898	6/22/98
254-RS1-B-061898	6/22/98

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.

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.

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°C) water samples is seven days from sample collection to time of extraction and then 40 days from sample extraction to analysis.

All holding times were met. It was noted in the SDG narrative that the samples were received at a temperature of approximately 4 °C . No qualification is necessary.

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.

Multi-component target compounds are analyzed at required concentrations. Three to five peaks are used for calibration and retention time windows of +/- 0.07 minutes are calculated. Calibration Factors (CFs) are determined for each selected multi-component analyte peak.

There were no problems noted with the initial calibration. No qualification is necessary.

2.3 Continuing Calibration

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 instrument blanks.

There were no problems noted with the continuing calibration. No qualification is necessary.

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 (DCB) 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 interferences 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. The EPA data validation guidelines have set QC limits of 30-150% for both compounds.

The surrogate spike recoveries were within QC limits. 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, and 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. No qualification is necessary.

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/MSD recoveries were inside the QC acceptance limits. Therefore, no qualification of the data 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. No qualification of data is needed.

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 internal standard associated with that compound. The compound quantitation must be based on the CF from the appropriate daily calibration standard.

There were no problems noted with the compound quantitation. No qualification is necessary.

2.9 Field Duplicates

Field duplicates are collected and analyzed as an indicator of the laboratory's overall precision. These analyses measure both the field and laboratory precision; therefore, the results may have more variability than laboratory duplicates which measure only laboratory performance.

A field duplicate was collected from MW03 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 254. 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

000005
Client No.

254-FD1-B-061898

Lab Name: Recra LabNet Contract: ECOSYS

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

Matrix: (soil/water) WATER Lab Sample ID: A8236802

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: PA46012.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 06/18/98 06/19/98

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 06/22/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 06/22/98

Injection Volume: 1.00(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

EL PASO ENERGY
METHOD 608 - POLYCHLORINATED BIPHENYLS
ANALYSIS DATA SHEET

000006
Client No.

254-MW03-B-061898

Lab Name: Recra LabNet Contract: ECOSYS

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

Matrix: (soil/water) WATER Lab Sample ID: A8236801

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: PA46009.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 06/18/98 06/19/98

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 06/22/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 06/22/98

Injection Volume: 1.00(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

EL PASO ENERGY
METHOD 608 - POLYCHLORINATED BIPHENYLS
ANALYSIS DATA SHEET

000007

Client No.

254-RS1-B-061898

Lab Name: Recra LabNet Contract: ECOSYS

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

Matrix: (soil/water) WATER Lab Sample ID: A8236803

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: PA46013.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 06/18/98 06/19/98

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 06/22/98

Concentrated Extract Volume: 10000(uL) Date Analyzed: 06/22/98

Injection Volume: 1.00(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

ATTACHMENT B
DATA VALIDATION SUMMARY SHEETS

Station # 254

SDG# A98-2368

DATA VALIDATION CRITERIA **STATUS**

I. HOLDING TIMES

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.

- Date sampled: 6-18-98
- Date received: 6-19-98 } 5 days
- Date extracted: 6-22-98
- Date analyzed: 6-22-98 } 1 day
- Must be w/in 7 days from Sample to Extraction: 40 days from extraction to Anal.
- Coolers arrived @ 4°C

III. INITIAL CALIBRATION

1. Individual Standard Mixture
   a. Verify from the Form VIII-PEST that the Individual Standard Mixures A and B were analyzed at the proper frequency on each GC column and instrument used for analysis. Check the raw data for each standard to verify that each of the standards was analyzed at the required concentration levels. — NA
   b. Check Forms VII-PEST-6 and PEST-7 with the raw data and deteremine that the midpoint standard concentration is 4 times the concentration of the low point standard concentration and verify that the resolution is greater than 90%.
   c. Check the Individual Standards Mixtures A and B data and Form VI-PEST-1 and review the calculated retention time windows for calculation and transcription errors. — NA
   d. Check the chromatograms and verify that at least on chromatogram from each of the Individual Standard Mixtures A and B yields peaks registering recorder/printer deflections between 50 and 100% full scale. — NA

PCB-1
~~PEST-1~~

Station # 254 SDG# A98-2368

DATA VALIDATION CRITERIA **STATUS**

III. INITIAL CALIBRATION (continued)

e. Verify that the concentrations of the low, medium and high level standards of Individual Mixtures A and B meet the criteria in PEST Section III.C.1 above. NA

f. Check the Individual Mixtures A and B data and Form VI-PEST-2 to verify that the %RSD for the calibration factors in each of the single component pesticides and surrogates in the initial calibration analyses on both columns are in compliance with the criteria in PEST Section III.C above. Check and recalculate the calibration factors and %RSD for one or more pesticides; verify that the recalculated values agree with the reported values. If errors are detected, more comprehensive recalculation and review should be performed. NA

2. Multi-component Target Compounds ICAL SHEETS

a. Verify from the ~~Form VIII PEST~~ 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.

TMX and DCBP (0.005, 0.01, 0.05, 0.1, 0.15)
AR1016 & AR1260 (0.005, 0.05, 0.5, 0.75, 1.0)
AR1221 (0.005, 0.05, 0.5, 0.75, 1.0)
AR1232 (0.005, 0.05, 0.5, 0.75, 1.0)
AR1242 (0.005, 0.05, 0.5, 0.75, 1.0)
AR1248 (0.005, 0.05, 0.5, 0.75, 1.0)
AR1254 (0.005, 0.05, 0.5, 0.75, 1.0)

b. Check the data for the mult-component target compounds and Form VI-PEST-3 to verify that at least three peaks were used for calibration and that the retention time windows were calculated as required. → 5 were used

c. Check the data to verify that calibration factors have been determined for each selected peak.

Calibration Factor $CF = \frac{Area}{NG (amount\ i.e.\ (0.005))}$

$TMX = \frac{529459}{0.05} = 10589180$ ✓

$DCBP = \frac{82485}{0.01} = 8248516$

PCB-2
~~PEST-2~~

Station # 254

SDG# A98-2368

DATA VALIDATION CRITERIA | **STATUS**

III. CALIBRATION VERIFICATION

1. Check the Form VIII-~~PEST~~ EXT to verify that the instrument blanks, PEMs, and Individual Standard Mixtures were analyzed at the required frequency and that no more than 12 hours was elapsed between continuing calibration brackets in an ongoing analytical sequence.

	Initial	1	2
TMX:	11:19	14:25	21:32
~~AR1242~~	9:37	14:00	
AR1254	10:28	21:07	

2. Check Forms VI-PEST-6 and PEST-7 and the data for the midpoint concentration of Individual Standard Mixtures A and B to verify that the resolution between any two adjacent peaks is greater than or equal to 90%.

• The %D for AR1242 was reported as 3.8% on Form VIIG EXT, but 4.2% in the data.

3. Check the data for each of the single component pesticides and surrogates in the midpoint concentration of the Individual Mixtures A and B and Form VII-PEST-2 to verify that the absolute retention times are within the appropriate retention time windows.

NA

4. Check the data from the midpoint concentration of Individual Standard Mixtures A and B and Form VII PEST-2 to verify that the percent difference between the calculated amount and the true amount for each of the pesticides and surrogates must be within +/-25%.

NA

V. BLANKS

1. Review the results of all associated blanks on the Form I-PEST and Form IV-PEST and raw data to evaluate the presence of target and non-target compounds in the blanks.

Method Blank = U
Rinsate = U

Station # 254

SDG# A98-2368

DATA VALIDATION CRITERIA | **STATUS**

V. BLANKS (continued)

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 pesticide or Aroclor/Toxaphene or any interfering peak. all Method Blank Results are undetected "U"

4. Verify that the instruemtn 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). NA

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-PEST should be completed associating all the samples with the method blank, and a second version of Form IV-PEST should be completed listing only those samples associated with the separate sulfur cleanup blank. NA

Station # 254 SDG# A98-2368

DATA VALIDATION CRITERIA **STATUS**

V. SURROGATE SPIKES

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

Ext $\%Rec = \frac{(NG)(DL\text{-}factor)}{2}$

TMX % Rec = $\frac{0.0130 \times 100}{2} \times 100\% = 65\%$ ✓

DCBP % Rec = $\frac{0.0142 \times 100}{2} \times 100\% = 71\%$ ✓

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.

3. Check the raw data to verify that the retention times on Form VIII-PEST are accurate and within retention time windows.

TCX w/in ±0.05 min
DCBP w/in ±0.10 min

Mean @ Ical	
5.42	TMX
18.16	DCBP

window		
TMX:	5.37	-5.47
DCBP:	18.06	- 18.26

FD1	5.4	18.10
MW#3	5.4	18.11
RS1	5.4	18.10
MB	5.41	18.12
MSB	5.41	18.13
MW3MS	5.4	18.10
MW3SD	5.4	18.10

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.

• 1 MS/MSD for every 20 samples

2. Check raw data and Forms III-PEST-1 and PEST-2 to verify that the results for matrix spike recoveries were calculated and transcribed correctly.

% Rec (MS) = $\frac{3.11}{5.0} \times 100\% = 62\%$ ✓

% Rec (MSD) = $\frac{3.32}{5.0} \times 100\% = 66\%$ ✓

% Rec (MB) = $\frac{3.24}{5.0} \times 100\% = 65\%$ ✓

3. Check raw data and Forms III-PEST-1 and PEST-2 to verify that the results for matrix spike relative percent difference were calculated and transcribed correctly.

% RPD = $\frac{3.32 - 3.11}{3.32} \times 100\% = 6\%$

↑ Between MS and MSD Results!

PCB-5
~~PEST-5~~

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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.

VII. TARGET COMPOUND IDENTIFICATION

1. Review Form I-PEST, the associated raw data and Form X-PEST-1 and PEST-2. Confirm reported detected analytes by comparing the sample chromatograms to the tabluated restuls and verifying peak measurements and retention times. 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.

   NA - Because there are no detections!

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.

   NA

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

   NA

PCB-6
~~PEST-6~~

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DATA VALIDATION CRITERIA **STATUS**

X. 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. ✓

PCB-7
~~PEST-7~~