UNION CARBIDE

UCAR CARBON COMPANY INC. P.O. BOX 513, COLUMBIA, TENNESSEE 38402-0513

August 21, 1989

Mr. Robert J. Mitrey, P.E.
Associate Sanitary Engineer
New York State Dept. of Environmental Conservation
600 Delaware Avenue
Buffalo, NY 14202-1073

Dear Mr. Mitrey:

As agreed in my May 23, 1989, letter to Mr. Peter J. Buechi, P.E., quarterly groundwater samples will be collected and analyzed for the agreed parameters noted in Mr. Buechi's letter of April 19, 1989.

I have enclosed a copy of the fifth quarter's groundwater analysis. Bedrock well, BW-4, is the only site which indicates some volatile organic contamination. Bedrock well, BW-6, upgradient showed no contamination.

The following will briefly summarize the current groundwater data from this well, BW-4.

Date	Contaminate	Concentration ppb
7/88	Hexachlorobutadiene	13
3/89	"	150
6/89	"	22
11/88	Trichloroethylene	30
3/89	"	570
6/89	"	740
7/88	1,1,2,2 Tetrachloroethylene	44
11/88	"	1,300
3/89	"	1,600
6/89	"	1,500

One of the three organic contaminates in this well, trichloroethylene, appears to be increasing from previous testing.

As noted in the Conestoga-Rovers & Associates Report of May 16, 1989, this well, BW-4-86, is located upgradient of the bulk of the SWMF fill in regards to the overburden groundwater flow direction; therefore, any contamination in the overburden at this location may be originating off-site to the north.

We do not feel at this point in time that the contamination at BW-4-86 is related to the Republic SWMF.

If you have further questions regarding this matter, please feel free to contact me at 615/380-4215.

Very truly yours,

UNION CARBIDE CORPORATION
UCAR Carbon Company, Inc.

Rick Bolton

R. A. Bolton, Manager
Health, Safety, & Environmental Affairs

RABolton:gwa

cc: Messrs. Jim Devald
Dave O'Tool
A. C. Ogg

ADVANCED
ENVIRONMENTAL SERVICES INC.

REPUBLIC SOLID WASTE MANAGEMENT FACILITY
POST-CLOSURE MONITORING PROGRAM

Report Prepared For

UNION CARBIDE CORPORATION
CARBON PRODUCTS DIVISION

Frank J. Scrivano
Project Manager

Paul T. McMahon
Technical Evaluation

July 19, 1989
AES Report CTC

COMMITMENT
TO
HONESTY - QUALITY - SERVICE

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/28/89 DATE SAMPLED: 6/28/89

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
B-W-1	610.73	595.00	15.0gal	594.85

Scott Mayfield 11/3/89

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/28/89 DATE SAMPLED: 6/30/89

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
M-W-1	609.43	598.17	3.5 gal.	590.81

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/29/89 DATE SAMPLED: *

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
O-W-1	608.16	602.08	N/A	N/A

* No sampling required.

Scott McJunkin 7/3/89

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/29/89 DATE SAMPLED: *

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
O-W-2 North	606.16	596.23	N/A	N/A

Scott Wigginton 7/3/89

FIELD TECHNICIAN

* No sampling required.

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/29/89 DATE SAMPLED: *

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
M-W-2	607.54	588.73	3.75 gal.	*584.02

* Well dry - no samples. Al Ogg notified.

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/29/89 DATE SAMPLED: 6/29/89

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
B-W-2	608.43	595.13	15.0 gal.	594.62

Scott Wyckoff 7/3/89

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/29/89 DATE SAMPLED: 6/29/89

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
B-W-3	604.72	594.58	20.0 gal.	594.49

Scott Mayfield 7/3/89

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/28/89 DATE SAMPLED: 6/29/89

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
M-W-3	601.61	594.29	6.5 gal.	593.27

7/3/89

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/28/89 DATE SAMPLED: 6/28/89

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
B-W-4	607.08	597.25	55.0 gal.	597.06

7/3/89

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide AES JOB CODE: CTC

DATE PURGED: 6/28/89 DATE SAMPLED: 6/28/89

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
B-W-5	603.33	595.17	15.0 gal.	595.11

7/5/89

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Cabide AES JOB CODE: CTC

DATE PURGED: 6/28/89 DATE SAMPLED: 6/28/89

WELL IDENTIFICATION	TOP OF PIPE ELEVATION	ELEVATION BEFORE PURGING	AMOUNT PURGED	ELEVATION BEFORE SAMPLING
/ B-W-6	607.04	592.96	26.0 gal.	587.73

7/3/89

FIELD TECHNICIAN

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No. - / Sample ID - / Sample Date-	9232 WELL WATER GRAB B-W-1 06/28/89	9233 WELL WATER GRAB B-W-4 06/28/89	9234 WELL WATER GRAB B-W-5 06/28/89
Ammonia (as N) (mg/l)	350.1	0.01		0.36	4.18	0.09
Nitrite (mg/l)	353.2	0.01		* BQL	BQL	BQL
Total Kjeldahl Nitrogen(mg/l)	351.2	0.1		0.9	4.9	0.2

* Below Quantifiable Limits

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No. - / Sample ID - / Sample Date-	9235 WELL WATER GRAB B-W-6 06/28/89	9236 WELL WATER GRAB BLIND DUP 06/28/89
Ammonia (as N) (mg/l)	350.1	0.01		0.3	0.39
Nitrite (mg/l)	353.2	0.01		* BQL	BQL
Total Kjeldahl Nitrogen(mg/l)	351.2	0.1		0.2	0.7

* Below Quantifiable Limits

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Milligrams/Liter or ppm
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
Nitrite	9233	* BQL	BQL	BQL	None	None
Ammonia (as N)	9234	0.09	0.09	0.09	None	None
Total Kjeldahl Nitrogen	9236	0.7	0.7	0.7	None	None

Relative Percent Difference =
Range/Average X 100
* Below Quantifiable Limits

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - ACCURACY

Type of Analysis: Matrix Spikes and E.P.A. Standards
Client: UNION CARBIDE A.E.S. Job Code: CTC

(Units:mg/l or ppm)

Analytical Parameters	Sample No.	Type	Observed Conc.	Original Conc.	Added Conc.	Percent Recovery*
Nitrite	9233	SPK	0.24	BQL **	0.25	96
Ammonia (as N)		EPA	1.90	2.00	---	95
Ammonia (as N)	9234	SPK	0.32	0.09	0.25	92
Total Kjeldahl Nitrogen		EPA	5.03	5.00	---	101
Total Kjeldahl Nitrogen	9236	SPK	4.6	0.7	5.0	78

* % Recovery=100 x ((Observed Conc. - "background" Original Conc.)/"Spike" Added Conc.)
** Below Quantifiable Limits

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No. -	9232	9233	9234
			Sample ID -	WELL WATER B-W-1 GRAB	WELL WATER B-W-4 GRAB	WELL WATER B-W-5 GRAB
			Sample Date-	06/28/89	06/28/89	06/28/89
Soluble Iron (Fe)	236.1	0.3		2.2	2.8	0.9
Total Iron (Fe)	236.1	0.3		2.2	3.1	3.1
Soluble Potassium (K)	258.1	0.1		4.4	19.5	3.2
Total Potassium (K)	258.1	0.1		3.7	20.7	2.9
Soluble Zinc (Zn)	289.1	0.05		0.09	0.09	0.11
Total Zinc (Zn)	289.1	0.05		0.34	0.16	0.23

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No. -	9235	9236
			Sample ID -	WELL WATER B-W-6 GRAB	WELL WATER BLIND DUP GRAB
			Sample Date-	06/28/89	06/28/89
Soluble Iron (Fe)	236.1	0.3		1.8	2.0
Total Iron (Fe)	236.1	0.3		31.1	2.7
Soluble Potassium (K)	258.1	0.1		4.6	4.1
Total Potassium (K)	258.1	0.1		5.2	4.4
Soluble Zinc (Zn)	289.1	0.05		0.07	0.07
Total Zinc (Zn)	289.1	0.05		1.20	0.42

Margaret L. Skowron

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Milligrams/Liter, or ppm
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
Iron	9232	2.2	2.2	2.2	None	None
Potassium	9232	3.7	3.7	3.7	None	None
Zinc	9232	0.34	0.35	0.34	0.01	2.9

Relative Percent Difference =
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - ACCURACY

Type of Analysis: Matrix Spikes and E.P.A. Standards
Client: UNION CARBIDE A.E.S. Job Code: CTC

(Units:mg/l or ppm)

Analytical Parameters	Sample No.	Type	Observed Conc.	Original Conc.	Added Conc.	Percent Recovery*
Iron	9232	SPK	7.8	2.2	5.0	112
EPA (Fe) STD	988	EPA	0.96	1.00	---	96
Potassium	9232	SPK	26.6	3.7	20.0	114
EPA (K) STD	988	EPA	10.8	10.0	---	108
Zinc	9232	SPK	1.30	0.34	1.00	96
EPA (Zn) STD	988	EPA	0.50	0.50	---	100

* % Recovery=100 x ((Observed Conc. - "background" Original Conc.)/"Spike" Added Conc.)

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No. -	9312	9313	9314
			Sample ID -	WELL WATER GRAB B-W-1	WELL WATER GRAB B-W-2	WELL WATER GRAB B-W-3
			Sample Date-	6/29/89	6/29/89	6/29/89
Ammonia (as N) (mg/l)	350.1	0.01		* N/R	0.68	2.14
Nitrite (mg/l)	353.2	0.01		** BQL	BQL	BQL
Total Kjeldahl Nitrogen(mg/l)	351.2	0.1		N/R	0.9	2.2

* Not Required
** Below Quantifiable Limits

Margaret L. Skowron

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No. -	9315	9316
			Sample ID -	WELL WATER GRAB M-W-3	WELL WATER GRAB BLIND DUP
			Sample Date-	6/29/89	6/29/89
Ammonia (as N) (mg/l)	350.1	0.01		0.39	* N/R
Nitrite (mg/l)	353.2	0.01		0.02	** BQL
Total Kjeldahl Nitrogen(mg/l)	351.2	0.1		0.3	N/R

* Not Required
** Below Quantifiable Limits

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Milligrams/Liter or ppm
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
Nitrite	9315	0.02	0.02	0.02	None	None
Ammonia (as N)	9313	0.68	0.69	0.68	0.01	1.5
Total Kjeldahl Nitrogen	9315	0.3	0.3	0.3	None	None

Relative Percent Difference =
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - ACCURACY

Type of Analysis: Matrix Spikes and E.P.A. Standards
Client: UNION CARBIDE A.E.S. Job Code: CTC

(Units:mg/l or ppm)

Analytical Parameters	Sample No.	Type	Observed Conc.	Original Conc.	Added Conc.	Percent Recovery*
Nitrite	9315	SPK	0.20	0.02	0.25	72
Ammonia (as N)	9313	SPK	0.89	0.68	0.25	84
Ammonia (as N)		EPA	1.90	2.00	---	95
Total Kjeldahl Nitrogen	9315	SPK	5.4	0.3	5.0	102
Total Kjeldahl Nitrogen		EPA	5.0	5.0	---	100

* % Recovery=100 x ((Observed Conc. - "background" Original Conc.)/"Spike" Added Conc.)

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Quant. Limits		AES Lab No. - 9313 Sample ID - WELL WATER GRAB B-W-2	AES Lab No. - 9314 Sample ID - WELL WATER GRAB B-W-3	AES Lab No. - 9315 Sample ID - WELL WATER GRAB M-W-3
			Sample Date-	6/29/89	6/29/89	6/29/89
Soluble Iron (Fe)	236.1	0.3		1.6	2.2	1.6
Total Iron (Fe)	236.1	0.3		3.9	4.6	2.9
Soluble Potassium (K)	258.1	0.1		15.4	14.0	2.5
Total Potassium (K)	258.1	0.1		17.2	12.8	1.9
Soluble Zinc (Zn)	289.1	0.05		0.21	0.65	0.15
Total Zinc (Zn)	289.1	0.05		0.72	0.86	0.50

Margaret L. Skowron

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Milligrams/Liter, or ppm
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
Iron	9313	3.9	3.9	3.9	None	None
Potassium	9313	17.4	17.1	17.2	0.3	1.7
Zinc	9313	0.72	0.72	0.72	None	None

Relative Percent Difference =
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - ACCURACY

Type of Analysis: Matrix Spikes and E.P.A. Standards
Client: UNION CARBIDE A.E.S. Job Code: CTC

(Units:mg/l or ppm)

Analytical Parameters	Sample No.	Type	Observed Conc.	Original Conc.	Added Conc.	Percent Recovery*
IRON	9313	SPK	8.4	3.9	5.0	90
EPA (Fe) STD	988	EPA	1.09	1.00	---	109
Potassium	9313	SPK	38.1	17.2	20.0	104
EPA (K) STD	988	EPA	10.8	10.0	---	108
Zinc	9313	SPK	1.74	0.72	1.00	102
EPA (Zn) STD	988	EPA	0.91	1.00	---	91

* % Recovery=100 x ((Observed Conc. - "background" Original Conc.)/"Spike" Added Conc.)

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No. - 9345	Sample ID - WELL WATER GRAB M-W-1	Sample Date- 6/30/89
Soluble Iron (Fe)	236.1	0.3			0.6
Total Iron (Fe)	236.1	0.3			53.8
Soluble Potassium (K)	258.1	0.1			41.4
Total Potassium (K)	258.1	0.1			41.3
Soluble Zinc (Zn)	289.1	0.05			BQL*
Total Zinc (Zn)	289.1	0.05			1.04

*Below Quantifiable Limits

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No. - 9345 / Sample ID - WELL WATER GRAB M-W-1 / Sample Date- 6/30/89
Ammonia (as Nitrogen) (mg/l)	350.1	0.01	7.63
Nitrite (mg/l)	353.2	0.01	0.01
Total Kjeldahl Nitrogen (mg/l)	351.2	0.1	6.9

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

AES Lab No. - 9388

Analytical Parameter(s)	Method No.	Quant. Limits	Sample ID - Sample Date-	TRIP BLANK 06/28/89
Ammonia (as N) (mg/l)	350.1	0.01		* BQL
Nitrite (mg/l)	353.2	0.01		BQL
Total Kjeldahl Nitrogen(mg/l)	351.2	0.1		BQL

* Below Quantifiable Limits

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: INORGANICS

Client: UNION CARBIDE A.E.S. Job Code CTC

(All results are in mg/l)

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No. - 9388 Sample ID - TRIP BLANK Sample Date- 06/28/89
Total Iron (Fe)	236.1	0.3	* BQL
Total Potassium (K)	258.1	0.1	BQL
Total Zinc (Zn)	289.1	0.05	BQL

* Below Quantifiable Limits

Margaret L. Skowron
Inorganic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Milligrams/Liter, or ppm
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
Iron	9388	* BQL	BQL	BQL	None	None
Potassium	9388	BQL	BQL	BQL	None	None
Zinc	9388	BQL	BQL	BQL	None	None

Relative Percent Difference =
Range/Average X 100
* Below Quantifiable Limits

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - ACCURACY

Type of Analysis: Matrix Spikes and E.P.A. Standards
Client: UNION CARBIDE A.E.S. Job Code: CTC

(Units:mg/l or ppm)

Analytical Parameters	Sample No.	Type	Observed Conc.	Original Conc.	Added Conc.	Percent Recovery*
Iron	9388	SPK	5.2	** BQL	5.0	104
EPA (Fe) STD	988	EPA	0.96	1.00	---	96
Potassium	9388	SPK	20.2	BQL	20.0	101
EPA (K) STD	988	EPA	10.8	10.0	---	108
Zinc	9388	SPK	0.98	BQL	1.00	98
EPA (Zn) STD	988	EPA	0.50	0.50	---	100

* % Recovery=100 x ((Observed Conc. - "background" Original Conc.)/"Spike" Added Conc.)
** Below Quantifiable limits

ADVANCED ENVIRONMENTAL SERVICES, INC.
PARAMETER TRACEABILITY REPORT
WET CHEMISTRY DEPARTMENT

AES JOB CODE CTC

ANALYST	ANALYTICAL METHOD	SAMPLE CODE	DATE OF ANALYSIS	TIME OF ANALYSIS
T. Shannon	353.5	9232-35	6-29-89	1900 2100
A. Fratello	350.1	9232-35	7-3-89	0430-0830
A. Fratello	351.2	9232-35	7-4-89	0030 - 0330

ADVANCED ENVIRONMENTAL SERVICES, INC.
PARAMETER TRACEABILITY REPORT
ATOMIC SPECTROSCOPY DEPARTMENT

AES JOB CODE CTC

ANALYST	ANALYTICAL METHOD	SAMPLE CODE	DATE OF ANALYSIS	TIME OF ANALYSIS
[illegible]	258.1	[illegible]	7-6-89	[illegible]
T. Pattillo	258.1	[illegible]	7-9-89	23:30-24:00
[illegible]	258.1	[illegible]	7-10-89	[illegible]

ADVANCED ENVIRONMENTAL SERVICES, INC.
PARAMETER TRACEABILITY REPORT
ATOMIC SPECTROSCOPY DEPARTMENT

AES JOB CODE CTC

ANALYST	ANALYTICAL METHOD	SAMPLE CODE	DATE OF ANALYSIS	TIME OF ANALYSIS
T. Portfolio	236.1	9213-9215	7-10-89	05:08 - 06:00
T. Portfolio	258.1	9213-9215	7-9-89	23:30 - 24:00
T. Portfolio	289.1	9213-9215	7-10-89	04:28 - 05:00

ADVANCED ENVIRONMENTAL SERVICES, INC.
PARAMETER TRACEABILITY REPORT
WET CHEMISTRY DEPARTMENT

AES JOB CODE CTC

ANALYST	ANALYTICAL METHOD	SAMPLE CODE	DATE OF ANALYSIS	TIME OF ANALYSIS
T. Skinner	253.5	9312-9316	6-29-89	1900 2100
A. FRATELLO	350.1	9313-15	7-3-89	0430-0830
A. FRATELLO	351.2	9313-15	7-6-89	0630-0800

ADVANCED ENVIRONMENTAL SERVICES, INC.
PARAMETER TRACEABILITY REPORT
ATOMIC SPECTROSCOPY DEPARTMENT

AES JOB CODE CTC

ANALYST	ANALYTICAL METHOD	SAMPLE CODE	DATE OF ANALYSIS	TIME OF ANALYSIS
[illegible]	258.1	9345	7-6-89	1041-1120
T. Pottplis	258.1	9345	7-9-89	23:30-24:00
[illegible]	258.1	9345	7-6-89	[illegible]-1300

ADVANCED ENVIRONMENTAL SERVICES, INC.
PARAMETER TRACEABILITY REPORT
WET CHEMISTRY DEPARTMENT

AES JOB CODE CTC

ANALYST	ANALYTICAL METHOD	SAMPLE CODE	DATE OF ANALYSIS	TIME OF ANALYSIS
T. SKOWRON	353.5	9345-	7-3-89	1800 2000
A. FRATELLO	350.1	9345	7-3-89	0430-0830
A. FRATELLO	351.2	9345		

ADVANCED ENVIRONMENTAL SERVICES, INC.
PARAMETER TRACEABILITY REPORT
WET CHEMISTRY DEPARTMENT

AES JOB CODE CTC

ANALYST	ANALYTICAL METHOD	SAMPLE CODE	DATE OF ANALYSIS	TIME OF ANALYSIS
[illegible]	357.2	9388	7/3/84	0030-0330
[illegible]	357.1	9388	7/3/84	0430-0830
[illegible]	357.2	9388	7/3/84	1700-2000

ADVANCED ENVIRONMENTAL SERVICES, INC.
PARAMETER TRACEABILITY REPORT
ATOMIC SPECTROSCOPY DEPARTMENT

AES JOB CODE CTC

ANALYST	ANALYTICAL METHOD	SAMPLE CODE	DATE OF ANALYSIS	TIME OF ANALYSIS
[illegible]	7360.1	9358	7-6-89	11:45-12:30
T. Portfolio	258.1	9358	7-9-89	23:30-24:00
[illegible]	239.1	9358	7-10-89	12:00-13:00

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: HSL VOLATILES

Units Of Measure: Micrograms/ Liter or ppb
Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No.- / Sample ID - / Sample Date-	9233 WELL WATER BW - 4 GRAB 06/28/89	9235 WELL WATER BW - 6 GRAB 06/28/89	9388 TRIP BLANK GRAB 06/28/89
2-Methylnaphthalene	8270	10		* BQL	BQL	BQL
Bis(2-Chloroethyl)Ether	"	"		BQL	BQL	BQL
1,3-Dichlorobenzene	"	"		BQL	BQL	BQL
1,4-Dichlorobenzene	"	"		BQL	BQL	BQL
1,2-Dichlorobenzene	"	"		BQL	BQL	BQL
Bis(2-Chloroisopropyl) Ether	"	"		BQL	BQL	BQL
Hexachloroethane	"	"		BQL	BQL	BQL
N-Nitrosodi-N-Propylamine	"	"		BQL	BQL	BQL
Nitrobenzene	"	"		BQL	BQL	BQL
Isophorone	"	"		BQL	BQL	BQL
Bis(2-Chloroethoxy)Methane	"	"		BQL	BQL	BQL
1,2,4-Trichlorobenzene	"	"		BQL	BQL	BQL
Naphthalene	"	"		BQL	BQL	BQL
Hexachlorobutadiene	"	"		22	BQL	BQL
Hexachlorocylopentadiene	"	"		BQL	BQL	BQL
2-Chloronaphthalene	"	"		BQL	BQL	BQL
Dimethylphthalate	"	"		BQL	BQL	BQL
Acenaphthylene	"	"		BQL	BQL	BQL
2,6-Dinitrotoluene	"	"		BQL	BQL	BQL
Acenaphthene	"	"		BQL	BQL	BQL
2,4-Dinitrotoluene	"	"		BQL	BQL	BQL
Diethylphthalate	"	"		BQL	BQL	BQL

* Below Quantifiable Limits

Wayne J. Juda
Organic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.

LABORATORY REPORT

Type of Analysis: HSL VOLATILES

Units Of Measure: Micrograms/ Liter or ppb

Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No.-	9233	9235	9388
			Sample ID -	WELL WATER BW - 4	WELL WATER BW - 6	TRIP BLANK
			Sample Date-	GRAB 06/28/89	GRAB 06/28/89	GRAB 06/28/89
Fluorene	8270	10		* BQL	BQL	BQL
4-Chlorophenylphenylether	"	"		BQL	BQL	BQL
N-Nitrosdiphenylamine	"	"		BQL	BQL	BQL
Benzyl Alcohol	"	"		BQL	BQL	BQL
4-Chloroaniline	"	"		BQL	BQL	BQL
4-Bromophenylphenylether	"	"		BQL	BQL	BQL
Hexachlorobenzene	"	"		BQL	BQL	BQL
Phenanthrene	"	"		BQL	BQL	BQL
Anthracene	"	"		BQL	BQL	BQL
Di-N-Butylphthalate	"	"		BQL	BQL	BQL
Fluoranthene	"	"		BQL	BQL	BQL
Benzidine	"	"		BQL	BQL	BQL
Pyrene	"	"		BQL	BQL	BQL
Butylbenzylphthalate	"	"		BQL	BQL	BQL
Benzo(a)Anthracene	"	"		BQL	BQL	BQL
3,3'-Dichlorobenzidine	"	20		BQL	BQL	BQL
Chrysene	"	10		BQL	BQL	BQL
Bis(2-Ethylhexyl)Phthalate	"	"		BQL	BQL	BQL
Di-N-Octylphthalate	"	"		BQL	BQL	BQL
Benzo(b)Fluoranthene	"	"		BQL	BQL	BQL
Benzo(k)Fluoranthene	"	"		BQL	BQL	BQL
Benzo(a)Pyrene	"	"		BQL	BQL	BQL
Indeno(1,2,3-C,D)Pyrene	"	"		BQL	BQL	BQL
Dibenzo(a,h)Anthracene	"	"		BQL	BQL	BQL
Benzo(g,h,i)Perrylene	"	"		BQL	BQL	BQL

* Below Quantifiable Limits

Wayne J. Juda
Organic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: HSL VOLATILES

Units Of Measure: Micrograms/ Liter or ppb
Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No.- / Sample ID - / Sample Date-	9233 WELL WATER BW - 4 GRAB 06/28/89	9235 WELL WATER BW - 6 GRAB 06/28/89	9388 TRIP BLANK GRAB 06/28/89
Phenol	8270	10		* BQL	BQL	BQL
2-Chlorophenol	"	"		BQL	BQL	BQL
2-Nitrophenol	"	"		BQL	BQL	BQL
2,4-Dimethylphenol	"	"		BQL	BQL	BQL
4-Chloro-3-Methylphenol	"	"		BQL	BQL	BQL
2,4,6-Trichlorophenol	"	"		BQL	BQL	BQL
2,4-Dinitrophenol	"	"		BQL	BQL	BQL
4-Nitrophenol	"	"		BQL	BQL	BQL
4,6-Dinitro-2-Methylphenol	"	"		BQL	BQL	BQL
Pentachlorophenol	"	"		BQL	BQL	BQL
2,4-Dichlorophenol	"	"		BQL	BQL	BQL
4-Methylphenol	"	"		BQL	BQL	BQL
Benzoic Acid	"	20		BQL	BQL	BQL
2,4,5-Trichlorophenol	"	10		BQL	BQL	BQL
3-Nitroaniline	"	"		BQL	BQL	BQL
Dibenzofuran	"	"		BQL	BQL	BQL
4-Nitroaniline	"	"		BQL	BQL	BQL
2-Methylphenol	"	"		BQL	BQL	BQL
Benzidine	"	30		BQL	BQL	BQL
1,2-Diphenylhydrazine	"	10		BQL	BQL	BQL
Aniline	"	"		BQL	BQL	BQL

* Below Quantifiable Limits

Wayne J. Juda
Organic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: HSL VOLATILES

Units Of Measure: Micrograms/ Liter or ppb
Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No.-	9233	9235	9388
			Sample ID -	WELL WATER BW - 4 GRAB	WELL WATER BW - 6 GRAB	TRIP BLANK GRAB
			Sample Date-	06/28/89	06/28/89	06/28/89
Chloromethane	8240	10		* BQL	BQL	BQL
Vinyl Chloride	"	"		BQL	BQL	BQL
Chlororethane	"	"		BQL	BQL	BQL
Bromomethane	"	"		BQL	BQL	BQL
2-Chloroethylvinylether	"	"		BQL	BQL	BQL
Ethylbenzene	"	5.0		BQL	BQL	BQL
Methylene Chloride	"	"		BQL	BQL	BQL
Chlorobenzene	"	"		BQL	BQL	BQL
1,1-Dichloroethylene	"	"		BQL	BQL	BQL
1,1-Dichloroethane	"	"		BQL	BQL	BQL
trans-1,2-Dichloroethylene	"	"		BQL	BQL	BQL
Chloroform	"	"		BQL	BQL	BQL
1,2-Dichloroethane	"	"		BQL	BQL	BQL
1,1,1-Trichloroethane	"	"		BQL	BQL	BQL
Carbon Tetrachloride	"	"		BQL	BQL	BQL
Bromodichloromethane	"	"		BQL	BQL	BQL
1,2-Dichloropropane	"	"		BQL	BQL	BQL
trans-1,3-Dichloropropene	"	"		BQL	BQL	BQL
Trichloroethylene	"	"		740	BQL	BQL
Benzene	"	"		BQL	BQL	BQL
cis-1.3-Dichloropropene	"	"		BQL	BQL	BQL
1,1,2-Trichloroethane	"	"		BQL	BQL	BQL
Dibromochloromethane	"	"		BQL	BQL	BQL
Bromoform	"	"		BQL	BQL	BQL

* Below Quantifiable Limits

Wayne J. Juda
Organic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT

Type of Analysis: HSL VOLATILES

Units Of Measure: Micrograms/ Liter or ppb
Client: UNION CARBIDE A.E.S. Job Code CTC

Analytical Parameter(s)	Method No.	Quant. Limits	AES Lab No.- / Sample ID - / Sample Date-	9233 WELL WATER BW - 4 GRAB 06/28/89	9235 WELL WATER BW - 6 GRAB 06/28/89	9388 TRIP BLANK GRAB 06/28/89
1,1,2,2-Tetrachloroethylene	8240	5.0		1,500	* BQL	BQL
1,1,2,2-Tetrachloroethane	"	5.0		BQL	BQL	BQL
Toluene	"	5.0		BQL	BQL	BQL
Trichlorofluoromethane	"	5.0		BQL	BQL	BQL
Acetone	"	50		BQL	BQL	BQL
Carbon Disulfide	"	5.0		BQL	BQL	BQL
2-Butanone	"	50		BQL	BQL	BQL
Vinyl Acetate	"	10		BQL	BQL	BQL
2-Hexanone	"	50		BQL	BQL	BQL
4-Methyl-2-Pentanone	"	50		BQL	BQL	BQL
Styrene	"	5.0		BQL	BQL	BQL
O-Xylene	"	5.0		BQL	BQL	BQL
M/P-Xylene	"	5.0		BQL	BQL	BQL

* Below Quantifiable Limits

Wayne J. Juda
Organic Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Micrograms/ Liter or ppb
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Method	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
Chloromethane	8240	9235	<10	<10	<10	None	None
Vinyl Chloride	"	"	"	"	"	"	"
Chlororethane	"	"	"	"	"	"	"
Bromomethane	"	"	"	"	"	"	"
2-Chloroethylvinylether	"	"	"	"	"	"	"
Ethylbenzene	"	"	<5.0	<5.0	<5.0	"	"
Methylene Chloride	"	"	"	"	"	"	"
Chlorobenzene	"	"	"	"	"	"	"
1,1-Dichloroethylene	"	"	"	"	"	"	"
1,1-Dichloroethane	"	"	"	"	"	"	"
trans-1,2-Dichloroethylene	"	"	"	"	"	"	"
Chloroform	"	"	"	"	"	"	"
1,2-Dichloroethane	"	"	"	"	"	"	"
1,1,1-Trichloroethane	"	"	"	"	"	"	"
Carbon Tetrachloride	"	"	"	"	"	"	"
Bromodichloromethane	"	"	"	"	"	"	"
1,2-Dichloropropane	"	"	"	"	"	"	"
trans-1,3-Dichloropropane	"	"	"	"	"	"	"
Trichloroethylene	"	"	"	"	"	"	"
Benzene	"	"	"	"	"	"	"
cis-1,3-Dichlorpropene	"	"	"	"	"	"	"
1,1,2-Trichloroethane	"	"	"	"	"	"	"
Bromoform	"	"	"	"	"	"	"

Relative Percent Difference =
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Micrograms/ Liter or ppb
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Method	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
1,1,2,2-Tetrachloroethylene	8240	9235	<5.0	<5.0	<5.0	None	None
1,1,2,2-Tetrachloroethane	"	"	"	"	"	"	"
Toluene	"	"	"	"	"	"	"
Acetone	"	"	<50	<50	<50	"	"
Carbon Disulfide	"	"	<5.0	<5.0	<5.0	"	"
2-Butanone	"	"	<50	<50	<50	"	"
Vinyl Acetate	"	"	<5.0	<5.0	<5.0	"	"
2-Hexanone	"	"	<50	<50	<50	"	"
4-Methyl-2-Pentanone	"	"	"	"	"	"	"
Styrene	"	"	<5.0	<5.0	<5.0	"	"
Xylenes (total)	"	"	"	"	"	"	"

Relative Percent Difference =
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Micrograms/ Liter or ppb
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Method	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
2-Methylnaphthalene	8270	9233	<10	<10	<10	None	None
Bis(2-Chloroethyl)Ether	"	"	"	"	"	"	"
1,3-Dichlorobenzene	"	"	"	"	"	"	"
1,4-Dichlorobenzene	"	"	"	"	"	"	"
1,2-Dichlorobenzene	"	"	"	"	"	"	"
Bis(2-Chloroisopropyl)Ether	"	"	"	"	"	"	"
Hexachloroethane	"	"	"	"	"	"	"
N-Nitrosdi-N-Propylamine	"	"	"	"	"	"	"
Nitrobenzene	"	"	"	"	"	"	"
Isophorone	"	"	"	"	"	"	"
Bis(2-Chloroethoxy)Methane	"	"	"	"	"	"	"
1,2,4,-Trichlorobenzene	"	"	"	"	"	"	"
Naphthanlene	"	"	"	"	"	"	"
Hexachlorobutadiene	"	"	23	21	22	2.0	9
Hexachlorocyclopentadiene	"	"	<10	<10	<10	None	None
2-Chloronaphthalene	"	"	"	"	"	"	"
Dimethylphthalate	"	"	"	"	"	"	"
Acenphthylene	"	"	"	"	"	"	"
2,6-Dinitrotoluene	"	"	"	"	"	"	"
Acenphthene	"	"	"	"	"	"	"
2,4-Dinitrotoluene	"	"	"	"	"	"	"
Diethylphthalate	"	"	"	"	"	"	"
Fluorene	"	"	"	"	"	"	"
4-Chlorophenylphenylether	"	"	"	"	"	"	"
N-Nitrosdiphenylamine	"	"	"	"	"	"	"
Benzyl Alcohol	"	"	"	"	"	"	"

Relative Percent Difference =
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Micrograms/Liter or ppb
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Method	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
4-Chloroaniline	8270	9233	<10	<10	<10	None	None
4-Bromophenylphenylether	"	"	"	"	"	"	"
Hexachlorobenzene	"	"	"	"	"	"	"
Phenanthrene	"	"	"	"	"	"	"
Anthracene	"	"	"	"	"	"	"
Di-N_Butylphthalate	"	"	"	"	"	"	"
Fluoranthene	"	"	"	"	"	"	"
2-Nitroaniline	"	"	"	"	"	"	"
Pyrene	"	"	"	"	"	"	"
Butylbenzylphthalate	"	"	"	"	"	"	"
Benzo(a)Anthracene	"	"	"	"	"	"	"
3,3'-Dichlorobenzidine	"	"	<20	<20	<20	"	"
Chrysene	"	"	<10	<10	<10	"	"
Bis(2-Ethylhexyl)Phthalate	"	"	"	"	"	"	"
Di-N-Octylphthalate	"	"	"	"	"	"	"
Benzo(b)Fluoranthene	"	"	"	"	"	"	"
Benzo(k)Fluoranthene	"	"	"	"	"	"	"
Benzo(a)Pyrene	"	"	"	"	"	"	"
Indeno(1,2,3,-C,D)Pyrene	"	"	"	"	"	"	"
Dibenzo(a,h)Anthracene	"	"	"	"	"	"	"
Benzo(g,h,i)Perylene	"	"	"	"	"	"	"
Benzidine	"	"	<30	<30	<30	"	"
4-Nitroaniline	"	"	<10	<10	<10	"	"
3-Nitroaniline	"	"	"	"	"	"	"
Dibenzofuran	"	"	"	"	"	"	"
Phenol	"	"	"	"	"	"	

Relative Percent Difference =
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - PRECISION

Type of Analysis: Duplicate Analysis
Units of Analysis: Micrograms/Liter or ppb
Client: UNION CARBIDE A.E.S. Job Code:CTC

Analytical Parameters	Method	Sample No.	Original Conc.	Duplicate Conc.	Average Conc.	Range	Rel. % Difference
2-Chlorophenol	8270	9233	<10	<10	<10	None	None
2-Nitrophenol	"	"	"	"	"	"	"
2,4_Dimethylphenol	"	"	"	"	"	"	"
4-Chloro-3-Methylphenol	"	"	"	"	"	"	"
2,4,6,-Trichlorophenol	"	"	"	"	"	"	"
2,4-Dinitrophenol	"	"	"	"	"	"	"
4-Nitrophenol	"	"	"	"	"	"	"
4,6-Dinitro-2-Methylphenol	"	"	"	"	"	"	"
Pentachlorophenol	"	"	"	"	"	"	"
2,4-Dichlorophenol	"	"	"	"	"	"	"
4-Methylphenol	"	"	"	"	"	"	"
2,4,5-Trichlorophenol	"	"	"	"	"	"	"
2-Methylphenol	"	"	"	"	"	"	"
Benzoic Acid	"	"	<20	<20	<20	"	"
1,2-Diphenylhydrazine	"	"	<10	<10	<10	"	"
Aniline	"	"	"	"	"	"	"

Relative Percent Difference =
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.
LABORATORY REPORT
QUALITY CONTROL - ACCURACY

Type of Analysis: Matrix Spikes and E.P.A. Standards
Client: UNION CARBIDE A.E.S. Job Code: CTC

(Units: ug/l , or ppb)

Analytical Parameters	Method	Sample No.	Type	Observed Conc.	Original Conc.	Added Conc.	Percent Recovery*
1,1-Dichloroethylene	8240	9235	SPK	26	<5.0	29	90
trans-1,2-Dichloroethylene	"	9235	SPK	23	<5.0	26	88
trans-1,3-Dichloropropylene	"	9235	SPK	27	<5.0	33	82
1,1,2,2-Tetrachloroethane	"	9235	SPK	35	<5.0	32	109
1,3-Dichlorobenzene	8270	9235	SPK	49	<10	50	98
Nitrobenzene	"	9235	SPK	47	<10	50	94
Naphthalene	"	9235	SPK	51	<10	50	102
Dimethylphthalate	"	9235	SPK	55	<10	50	110
Acenaphthene	"	9235	SPK	45	<10	50	90

* % Recovery=100 x ((Observed Conc. - "background" Original Conc.)/"Spike" Added Conc.)

ADVANCED ENVIRONMENTAL SERVICES, INC.
PARAMETER TRACEABILITY REPORT
GAS CHROMATOGRAPHY DEPARTMENT

AES JOB CODE CJIC

ANALYST	ANALYTICAL METHOD	SAMPLE CODE	DATE OF ANALYSIS	TIME OF ANALYSIS
[illegible]	624/8240	[illegible]	7/5/89	13 - 1500
[illegible]	625/8270	9339359388	7/7/89	900 - 1200

APPENDIX A

CHAIN OF CUSTODY RECORDS

ADVANCED ENVIRONMENTAL SERVICES INC.
2186 LIBERTY DRIVE
NIAGARA FALLS, NY 14304
(716) 283-3120

CHAIN OF CUSTODY RECORD

JOB CODE: CTC

PROJECT NAME: UNION CARBIDE

SAMPLER'S SIGNATURE: Scott MacFarlane

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	GRAB	COMP	SAMPLE TYPE	NO. OF CONTAINERS	REMARKS
	1	6/28/91	1050 AM	B-W-6	✓		well water	6	2-1000ml, 2-500, 2-VOAs
	2		1145 AM	B-W-1	✓			3	1-1000 ml, 1-500 ml
	3		1145 AM	Blind Dup	✓			3	" "
	4		225 PM	B-W-5	✓			3	" "
	5		336 PM	B-W-4	✓			6	2-1000ml, 2-500ml, 2-VOA
							TOTAL CONTAINERS	21	

	DATE	TIME	
RELINQUISHED BY (Sign) 1 Scott MacFarlane	6/28/91	4:15 PM	RECEIVED BY (Sign) 2 Barbara Anne Thompson
RELINQUISHED BY (Sign) 2	DATE	TIME	RECEIVED BY (Sign) 3
RELINQUISHED BY (Sign) 3	DATE	TIME	RECEIVED BY (Sign) 4
RELINQUISHED BY (Sign) 4	DATE	TIME	RECEIVED BY (Sign) 5

REMARKS:

ADVANCED ENVIRONMENTAL SERVICES INC.

2186 LIBERTY DRIVE
NIAGARA FALLS, NY 14304
(716) 283-3120

CHAIN OF CUSTODY RECORD

JOB CODE: CTC

PROJECT NAME: UNION CARBIDE (wells)

SAMPLER'S SIGNATURE: Scott Mayfarlane

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	GRAB	COMP	SAMPLE TYPE	NO. OF CONTAINERS	REMARKS
	1	6/3/59	1045AM	M-W-1	✓		well water	4	1-1000ml, 2-500ml, 1-125ml
							TOTAL CONTAINERS	4	

RELINQUISHED BY (Sign)	DATE	TIME	RECEIVED BY (Sign)
1 Scott Mayfarlane	6/3/59		2 Colleen Harris
RELINQUISHED BY (Sign)	DATE	TIME	RECEIVED BY (Sign)
2			3
RELINQUISHED BY (Sign)	DATE	TIME	RECEIVED BY (Sign)
3			4
R NQUISHED BY (Sign)	DATE	TIME	RECEIVED BY (Sign)
4			5

MARKS:

ADVANCED ENVIRONMENTAL SERVICES INC.
2186 LIBERTY DRIVE
NIAGARA FALLS, NY 14304
(716) 283-3120

CHAIN OF CUSTODY RECORD

JOB CODE: CTC

PROJECT NAME: UNION Carbide

SAMPLER'S SIGNATURE: Matt Mayfield

SAMPLE NO.	SEQ. NO.	DATE	TIME	SAMPLE LOCATION	GRAB	COMP	SAMPLE TYPE	NO. OF CONTAINERS	REMARKS
		6/29/89	1000	M-W-3	✓		well water	4	1-1000ml, 2-500ml, 1-125ml
		"	1110	B-W-3	✓		"	4	" " "
			1200	B-W-2	✓		"	4	" " "
			1230	B-W-1	✓		"	1	1-125ml
			"	Dup	✓		"	1	"
							TOTAL CONTAINERS	4	

	DATE	TIME	
RELINQUISHED BY (Sign) 1 Matt Mayfield	6/29/89		RECEIVED BY (Sign) 2 Matt Hayes
RELINQUISHED BY (Sign) 2			RECEIVED BY (Sign) 3
RELINQUISHED BY (Sign) 3			RECEIVED BY (Sign) 4
RELINQUISHED BY (Sign) 4			RECEIVED BY (Sign) 5

REMARKS: