



32NC3.GW61

UNION CARBIDE CORPORATION P.O. BOX 887, NIAGARA FALLS, NY 14302  
CARBON PRODUCTS DIVISION

January 8, 1987

New York State  
Department of Environmental Conservation  
Region 9 Office  
600 Delaware Avenue  
Buffalo, New York 14202

Att: Mr. Robert J. Mitrey, P.E.

Re: Republic Solid Waste Management Facility - 1986 Annual Report

*1- Mike MM  
G.W. data  
1- J.P.  
Please review  
Any comments?  
Korvane*

*NO*

Dear Mr. Mitrey:

As per the Republic Solid Waste Management Facilities Agreement dated December 31, 1981, attached are the following annual operating reports for the year 1986:

1. One copy of the 1986 fourth quarter and year-to-date report of the types and quantities of the wastes deposited at the facility. (Note: active use of the site ceased during November 1986)
2. One copy of the results of the Quarterly Ground Water Monitoring Report, certified sampling and analytical results performed by Recra Environmental Laboratories. Fourth quarter results are not available at this time but will be forwarded immediately under separate cover letter as they are received by Union Carbide Corporation from Recra.
3. One copy of the revised topographical map providing elevation current as of November 20, 1986, compiled by Conestoga-Rovers and Associates.

Lastly, please note the following:

1. Approximately 6000 cu.yds. of cover material (clay and topsoil) have been stockpiled in preparation for closure of the site.
2. The current topographical map represents contours in compliance with Union Carbide Corporation's closure plan submitted in 1986.

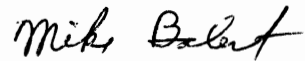
New York State Department of Environmental Conservation

January 8, 1987

3. Closure of the site is estimated to be complete by June of 1987.

If you have any questions, do not hesitate to contact me.

Very truly yours,

A handwritten signature in cursive script that reads "Mike Balent".

Chief Plant Engineer

M.A. Balent, P.E.  
nmd

Attachments

CC: Messrs. G.A. Hamm (letter only)  
T. Prosser (letter only)  
A.C. Ogg (letter only)

TYPES AND QUANTITIES OF WASTES DEPOSITED

Union Carbide Corporation  
Carbon Products Division

REPUBLIC SOLID WASTE FACILITY

Period: 9/30/86 thru 12/31/86

<u>Material Deposited</u>	<u>Amount Deposited (in Lbs.)</u>				<u>Accumulated Total Year-to-Date</u>
	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u> *	
Carbonaceous Material	3,200,000	10,000,000	12,000,000	3,000,000	28,200,000
Wood Scrap	450,000	400,000	120,000	100,000	1,070,000
Firebrick	<u>300,000</u>	<u>85,000</u>	<u>100,000</u>	<u>50,000</u>	<u>535,000</u>
TOTALS	3,950,000	10,485,000	12,220,000	3,150,000	29,805,000

\* Active operation of the site ceased during November 1986.

md B



# RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

April 3, 1986

Mr. James Foreman  
Union Carbide Corporation  
Carbon Products Division  
P.O. Box 887  
Niagara Falls, NY 14302

Re: Analytical Results

Dear Mr. Foreman:

Please find enclosed results of the analyses of the samples received at our laboratories on March 12, 1986.

The information contained in this report has been reviewed for completeness and accuracy by the individuals whose signature appears on this cover letter.

If you have any questions concerning these data, do not hesitate to contact our Customer Service Representative at (716) 692-7620.

Sincerely,

RECRA ENVIRONMENTAL LABORATORIES

James A. Ploscyca  
Laboratory Director

Richard V. Finn  
Inorganic Coordinator

RVF/JAP/jhs  
Enclosure - Field Report

I.D. #86-272  
#5C057307

## ANALYTICAL RESULTS

## UNION CARBIDE-REPUBLIC PLANT

Report Date: 4/3/86  
Date Received: 3/12/86

PARAMETER	DATE OF ANALYSIS	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
			W-1 (3/12/86)	W-3 (3/12/86)
Biochemical Oxygen Demand (5 Day)	3/13/86	mg/l	5.7	<2
Chloride	3/17/86	mg/l	92	5.3
Sulfate	3/25/86	mg/l	7.2	78
Specific Conductance (25°C)	3/13/86	umhos/cm	1,400	440
Total Residue (103°C)	3/14/86	mg/l	1,030	667
Total Phosphorus	3/19/86	mg P/l	0.156	<0.01
Total Recoverable Phenolics	3/27/86	mg/l	<0.01	<0.02
Total Iron	3/14/86	mg/l	3.8	27
Total Mercury	3/14/86	mg/l	<0.0006	<0.001

COMMENTS: Analyses were performed according to U.S. Environmental Protection Agency methodologies. The values reported as "less than" (<) indicate the working detection limit for the particular sample or parameter. Well W-2 was dry and could not be sampled.

FOR RECRA ENVIRONMENTAL LABORATORIES

DATE

*D. V. Finn*

*4/3/86*



I.D. #86-272



**RECRA RESEARCH, INC.**

*Hazardous Waste And Toxic Substance Control*

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FIELD REPORT

QUARTERLY GROUNDWATER MONITORING  
UNION CARBIDE REPUBLIC PLANT  
NIAGARA FALLS, NEW YORK

March 11 and 12, 1986

Prepared For:

Union Carbide Corporation  
Carbon Product Division  
P.O. Box 887  
Niagara Falls, NY 14303

Attention: Mr. Michael Balent

Prepared By:

Recra Research, Inc.  
4248 Ridge Lea Road  
Amherst, NY 14226

#5C057307

Written By: Jerome L. Miller

Reviewed By: *Paul A. Stackel*

Date: 3/27/86

## 1.0 INTRODUCTION

The following field report describes the quarterly groundwater monitoring conducted at Union Carbide's Republic Plant located in Niagara Falls, New York. This field event was performed on March 12, 1986 by Recra personnel Jerome L. Miller and Donald Johnson.

## 2.0 METHODOLOGIES

Collection of samples was performed in accordance with accepted EPA methodologies. Chain of custody was initiated at time of sample collection and maintained through delivery to Recra Environmental Laboratories located in Tonawanda, New York.

## 3.0 FIELD OBSERVATIONS

Information concerning well evacuation and sampling procedures is presented in Table I. Measurements for pH, specific conductance, and temperature were made in the field using calibrated instrumentation and EPA approved methods. A summary of these data are presented in Table II.



TABLE I

UNION CARBIDE REPUBLIC PLANT  
NIAGARA FALLS, NEW YORK

## WELL INFORMATION

March 11, 1986

WELL I.D.	DATE OF SAMPLE	TIME	SIZE/TYPE OF CASING	WATER LEVEL (FT.)*	BOTTOM OF WELL (FT.)*	VOLUME OF STANDING WATER (GAL.)	VOLUME EVACUATED (GAL.)	METHOD OF EVACUATION	METHOD OF SAMPLING	RECHARGE RATE +
W-1	3/11/86	1225	2" Steel	7.35	21.00	2.18	6.0 to dryness	Peristaltic Pump	Peristaltic Pump	Rapid
W-2	3/11/86	1245	4" Steel	19.70	20.16	0.30	0.30 to dryness	Peristaltic Pump	DRY	
W-3	3/11/86	1310	2" Steel	3.40	20.00	2.66	8.0	Peristaltic Pump	Peristaltic Pump	Continuous

\* From Top of Casing.

+ Recharge Rate Determined by the following Criteria:

Continuous - no drop in water level during evacuation.

Rapid - recharges within one (1) hour.

Slow - recharges after eight (8) hours.

Very Slow - must return another day.

FOR RECRA RESEARCH, INC.

DATE

*Jerome L. Miller*  
 3-27-86





## TABLE II

UNION CARBIDE REPUBLIC PLANT  
NIAGARA FALLS, NEW YORK

## FIELD MEASUREMENTS

March 12, 1986

WELL	DATE	TIME	pH (standard units)	SPECIFIC CONDUCTANCE (umhos/cm)	TEMP (°C)
W-1	3/12/86	1040	7.74	920	7
W-2	3/12/86	1020	DRY		
W-3	3/12/86	1010	7.54	287	6

FOR RECRA RESEARCH, INC.

Jerome L. Miller

DATE

3-27-86

# RECRA RESEARCH, INC.

## CHAIN OF CUSTODY RECORD

PROJECT NO. 5C057307		SITE NAME Union Carbide		NO OF CON-TAINERS	1/2 gal plastic	1/2 gal plastic	1/2 gal glass							REMARKS								
SAMPLERS (SIGNATURE): <i>Jimmy Miller</i>																						
STATION NO	DATE	TIME	COMP.												GRAB	STATION LOCATION						
W-1	3/12/86					3	1	1	1													
W-3	3/12/86					3	1	1	1													
<b>Total</b>						<b>6</b>	<b>3</b>	<b>2</b>	<b>2</b>													
RELINQUISHED BY (SIGNATURE)		DATE / TIME		RECEIVED BY (SIGNATURE)			RELINQUISHED BY (SIGNATURE)		DATE / TIME		RECEIVED BY (SIGNATURE)											
<i>Jimmy Miller</i>		3/12/86 3:15		<i>Keith T. Searles</i>																		
RELINQUISHED BY (SIGNATURE)		DATE / TIME		RECEIVED BY (SIGNATURE)			RELINQUISHED BY (SIGNATURE)		DATE / TIME		RECEIVED BY (SIGNATURE)											
RELINQUISHED BY (SIGNATURE)		DATE / TIME		RECEIVED FOR LABORATORY BY (SIGNATURE)			DATE / TIME		REMARKS													

(Distribution: Original at companies, shipment copy to coordinator field file.)



**RECRA ENVIRONMENTAL, INC.**

*Hazardous Waste And Toxic Substance Control*

July 14, 1986

Mr. Michael Balent  
Union Carbide Corporation  
Carbon Products Division  
P.O. Box 887  
Niagara Falls, NY 14302

Re: Analytical Results

Dear Mr. Balent:

Please find enclosed results of the analyses of the samples received at our laboratories on June 6, 1986.

The information contained in this report has been reviewed for completeness and accuracy by the individuals whose signature appears on this cover letter.

If you have any questions concerning these data, do not hesitate to contact our Customer Service Representative at (716) 692-7620.

Sincerely,

RECRA ENVIRONMENTAL LABORATORIES

James A. Ploscyca  
Laboratory Director

Richard V. Finn  
Inorganic Coordinator

RVF/JAP/jhs.  
Enclosure - Field Report

I.D. #86-586 (2)  
#5C057307

ANALYTICAL RESULTS  
UNION CARBIDE-REPUBLIC PLANT

Report Date: 7/14/86  
Date Received: 6/6/86

PARAMETER	DATE OF ANALYSIS	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
			W-1 (6/6/86)	W-3 (6/6/86)
Biochemical Oxygen Demand (5 Day)	6/12/86*	mg/l	14	<4
Chloride	6/23/86	mg/l	104	3.2
Sulfate	6/16/86	mg/l	3.6	45
Specific Conductance (25°C)	6/19/86	µmhos/cm	1,730	680
Total Residue (103°C)	6/13/86	mg/l	1,350	435
Total Phosphorus	6/18/86	mg P/l	0.88	<0.02
Total Recoverable Phenolics	6/13/86	mg/l	0.021	<0.02
Total Iron	6/23/86	mg/l	180	21
Total Mercury	6/25/86	mg/l	<0.0008	<0.0008

\*Samples for BOD analyses were collected on 6/11/86.

COMMENTS: Analyses were performed according to U.S. Environmental Protection Agency methodologies. The values reported as "less than" (<) indicate the working detection limit for the particular sample or parameter. Well W-2 was dry and could not be sampled.

RECRA ENVIRONMENTAL, INC.

DATE

*D. V. Zinn*  
7/14/86



I.D. #86-586 (2)



4/3398

**RECRA ENVIRONMENTAL, INC.**

*Hazardous Waste And Toxic Substance Control*

FIELD REPORT

QUARTERLY GROUNDWATER MONITORING  
UNION CARBIDE REPUBLIC PLANT  
NIAGARA FALLS, NEW YORK

June 5 and 6, 1986  
June 10 and 11, 1986

Prepared For:

Union Carbide Corporation  
Carbon Product Division  
P.O. Box 887  
Niagara Falls, NY 14303

Attention: Mr. Michael Balent

Prepared By:

Recra Environmental, Inc.  
4248 Ridge Lea Road  
Amherst, NY 14226

#5C057307

Written By: Jerome L. Miller

Reviewed By: *James O. Hatch*

Date: *6/27/86*

## 1.0 INTRODUCTION

The following field report describes the quarterly groundwater monitoring conducted at Union Carbide's Republic Plant located in Niagara Falls, New York. This field event was performed on June 5 and 6, 1986 by Recra personnel Jerome L. Miller and Donald Johnson. Due to unforeseen circumstances mandated holding time for the biochemical oxygen demand samples was exceeded. This situation necessitated resampling, which took place on June 10 and 11, 1986.

## 2.0 METHODOLOGIES

Collection of samples was performed in accordance with accepted EPA methodologies. Chain of custody was initiated at time of sample collection and maintained through delivery to Recra Environmental Laboratories located in Tonawanda, New York.

## 3.0 FIELD OBSERVATIONS

Information concerning well evacuation and sampling procedures is presented in Table I. Measurements for pH, specific conductance, and temperature were made in the field using calibrated instrumentation and EPA approved methods. A summary of these data are presented in Table II.



## TABLE II

UNION CARBIDE REPUBLIC PLANT  
NIAGARA FALLS, NEW YORK

## FIELD MEASUREMENTS

June 6, 1986

WELL	DATE	TIME	pH (standard units)	SPECIFIC CONDUCTANCE (umhos/cm)	TEMP (°C)
W-1	6/6/86	1010	7.43	1700	10
W-2	6/6/86	1020	DRY		
W-3	6/6/86	1030	7.50	0600	10

FOR RECRA RESEARCH, INC.

DATE

Jerry Miller6-26-86



TABLE I

 UNION CARBIDE REPUBLIC PLANT  
 NIAGARA FALLS, NEW YORK

## WELL INFORMATION

June 5 and 10, 1986

WELL I.D.	DATE OF SAMPLE	TIME	SIZE/TYPE OF CASING	WATER LEVEL (FT.)*	BOTTOM OF WELL (FT.)*	VOLUME OF STANDING WATER (GAL.)	VOLUME EVACUATED (GAL.)	METHOD OF EVACUATION	RECHARGE RATE +
W-1	6/5/86	1010	2" Steel	8.18	21.00	2.05	2.05 to dryness	Peristaltic Pump	Rapid
W-2	6/5/86	1020	4" Steel	Dry	20.16	-----			
W-3	6/5/86	1035	2" Steel	7.07	20.00	2.07	2.07 to dryness	Peristaltic Pump	Rapid
W-1	6/10/86	1048	2" Steel	8.55	21.00	1.99	1.99 to dryness	Peristaltic Pump	Rapid
W-3	6/10/86	1105	2" Steel	7.90	20.00	1.94	1.94 to dryness	Peristaltic Pump	Rapid

\* From Top of Casing.

+ Recharge Rate Determined by the following Criteria:

Continuous - no drop in water level during evacuation. FOR RECRA RESEARCH, INC.

Rapid - recharges within one (1) hour.

Slow - recharges after eight (8) hours.

Very Slow - must return another day.

DATE

6/26/86



# RECRA RESEARCH, INC.

## CHAIN OF CUSTODY RECORD

PROJECT NO.				SITE NAME				NO OF CONTAINERS					REMARKS	
5057307				Union Carbide										
SAMPLERS (SIGNATURE):														
<i>Jerry Miller</i>														
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION									
W-1	6-6-86							5	2	1	1	1		
W-3	↓							5	2	1	1	1		
<i>Total</i>								10	4	2	2	2		
RELINQUISHED BY (SIGNATURE)			DATE / TIME		RECEIVED BY (SIGNATURE)			RELINQUISHED BY (SIGNATURE)			DATE / TIME:		RECEIVED BY (SIGNATURE):	
<i>Jerry Miller</i>			6/6/86 1530		<i>Donna Barton</i>									
RELINQUISHED BY (SIGNATURE):			DATE / TIME:		RECEIVED BY (SIGNATURE):			RELINQUISHED BY (SIGNATURE):			DATE / TIME:		RECEIVED BY (SIGNATURE):	
RELINQUISHED BY (SIGNATURE)			DATE / TIME		RECEIVED FOR LABORATORY BY (SIGNATURE)			DATE / TIME		REMARKS				

*Distribution: Original accompanies shipment; copy to coordinator, field files.*

# RECRA RESEARCH, INC.

## CHAIN OF CUSTODY RECORD

PROJECT NO. <b>50057307</b>				SITE NAME <b>Union Carbide</b>				NO OF CONTAINERS	<div style="border: 1px solid black; padding: 5px; display: inline-block;">1st plastic</div>							REMARKS		
SAMPLERS (SIGNATURE) <i>Jerry Miller</i>																		
STATION NO	DATE	TIME	COMP	GRAB	STATION LOCATION													
<b>w-1</b>	<b>6-11-86</b>																	
<b>w-3</b>																		
<b>Total</b>									<b>4</b>	<b>2</b>	<b>2</b>							
RELINQUISHED BY (SIGNATURE): <i>Jerry Miller</i>			DATE TIME 6/11/86 1457		RECEIVED BY (SIGNATURE): <i>David J. Zula</i>				RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED BY (SIGNATURE):				
RELINQUISHED BY (SIGNATURE):			DATE TIME:		RECEIVED BY (SIGNATURE):				RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED BY (SIGNATURE):				
RELINQUISHED BY (SIGNATURE):			DATE TIME:		RECEIVED FOR LABORATORY BY (SIGNATURE):				DATE/TIME:		REMARKS							

Distribution: Original accompanies shipment; copy to coordinator field files.

1/3977

ANALYTICAL RESULTS  
UNION CARBIDE-REPUBLIC PLANT

PARAMETER	UNITS OF MEASURE	DATE OF ANALYSIS	SAMPLE IDENTIFICATION (DATE)	
			W-1 (9/11/86)	W-3 (9/11/86)
Biochemical Oxygen Demand (5 Day)	mg/l	9/12/86	5.8	<4
Chloride	mg/l	9/19/86	92	3.4
Sulfate	mg/l	9/15/86	<1	50
Specific Conductance (25°C)	µmhos/cm	9/19/86	1,890	654
Total Residue (103°C)	mg/l	9/18/86	1,120	430
Total Phosphorus	mg P/l	9/24/86	0.32	0.11
Total Recoverable Phenolics	mg/l	9/19/86	<0.01	<0.01
Total Iron	mg/l	9/19/86	231	56
Total Mercury	mg/l	9/19/86	<0.0006	<0.001

## COMMENTS:

Analyses were performed according to U.S. Environmental Protection Agency methodologies. The values reported as "less than" (<) indicate the working detection limit for the particular sample or parameter. Well W-2 was dry and could not be sampled.



I.D. #86-874.

RECR ENVIRONMENTAL, INC.



1/3898

**RECRA ENVIRONMENTAL, INC.**

*Hazardous Waste And Toxic Substance Control*

FIELD REPORT

QUARTERLY GROUNDWATER MONITORING  
UNION CARBIDE REPUBLIC PLANT  
NIAGARA FALLS, NEW YORK

September 10 and 11, 1986

Prepared For:

Union Carbide Corporation  
Carbon Product Division  
P.O. Box 887  
Niagara Falls, New York 14303

Attention: Mr. Michael Balent

Prepared By:

Recra Environmental, Inc.  
4248 Ridge Lea Road  
Amherst, New York 14226

#5C057307

Written By: Dennis Malucci

Reviewed By: *[Signature]*

Date: 9/23/86

## 1.0 INTRODUCTION

The following field report describes the quarterly groundwater monitoring conducted at Union Carbide's Republic Plant located in Niagara Falls, New York. This field event was performed on September 10 and 11, 1986 by Recra personnel Dennis Malucci and Joseph Glab.

## 2.0 METHODOLOGIES

Collection of samples was performed in accordance with accepted EPA methodologies. Chain of custody was initiated at time of sample collection and maintained through delivery to Recra Environmental Laboratories located in Tonawanda, New York.

## 3.0 FIELD OBSERVATIONS

Information concerning well evacuation and sampling procedures is presented in Table I. Measurements for pH, specific conductance, and temperature were made in the field using calibrated instrumentation and EPA approved methods. A summary of these data are presented in Table II.



TABLE II  
UNION CARBIDE REPUBLIC PLANT  
NIAGARA FALLS, NEW YORK

## FIELD MEASUREMENTS

September 11, 1986

WELL	DATE	TIME	pH (standard units)	SPECIFIC CONDUCTANCE (umhos/cm)	TEMP (°C)
W-1	9/11/86	1150	7.21	1,700	14
W-2	9/11/86	1124	No Sample - Insufficient Volume		
W-3	9/11/86	1148	7.04	960	14

FOR RECRA ENVIRONMENTAL, INC.

*Dennis Malucci*

DATE

9-23-86

TABLE I  
 UNION CARBIDE REPUBLIC PLANT  
 NIAGARA FALLS, NEW YORK

WELL INFORMATION

September 10, 1986

WELL I.D.	DATE OF EVACUATION	TIME	SIZE/TYPE OF CASING	WATER LEVEL (FT.)*	BOTTOM OF WELL (FT.)*	VOLUME OF STANDING WATER (GAL.)	VOLUME EVACUATED (GAL.)	METHOD OF EVACUATION	METHOD OF SAMPLING	RECHARGE RATE +
W-1	9/10/86	1117	2" Steel	11.16	21.00	1.6	2 to dryness	Peristaltic Pump	Peristaltic Pump	Rapid
W-2	9/10/86	1106	4" Steel	19.75	20.16	0.26	0.25 to dryness	Peristaltic Pump	No Sample - Insufficient Volume	
W-3	9/10/86	1042	2" Steel	13.00	20.00	1.1	3	Peristaltic Pump	Peristaltic Pump	Continuous

\* From Top of Casing.

+ Recharge Rate Determined by the following Criteria:

Continuous - no drop in water level during evacuation.

Rapid - recharges within one (1) hour.

Slow - recharges after eight (8) hours.

Very Slow - must return another day.

FOR RECRA ENVIRONMENTAL, INC.

Dennis Malucci

DATE

9-23-86

# RECRA ENVIRONMENTAL, INC.

## CHAIN OF CUSTODY RECORD

PROJECT NO.: 50057307					SITE NAME: UNION CARBIDE					NO. OF CONTAINERS	1/2 GAL. PLASTIC			90% PLASTIC			100% GLASS			REMARKS	
SAMPLERS (SIGNATURE): Dennis Malucci																					
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION																
W-1	9/11/86			X						3	1	1	1								
W-2																					NO SAMPLE DAY
W-3	9/11/86			X						3	1	1	1								
<del>PH</del>																					
																					Not INSUFFICIENT RECHARGE FOR P.C. VOLUME!
										6	2	2	2								
RELINQUISHED BY (SIGNATURE): Dennis Malucci			DATE/TIME: 9-11-86 3:36 PM		RECEIVED BY (SIGNATURE):					RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED BY (SIGNATURE):						
RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED BY (SIGNATURE):					RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED BY (SIGNATURE):						
RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED FOR LABORATORY BY (SIGNATURE):					DATE/TIME:		REMARKS:									





1/3977

**RECRA ENVIRONMENTAL, INC.**

*Hazardous Waste And Toxic Substance Control*

October 7, 1986

Mr. Michael Balent  
Chief Engineer  
Union Carbide Corporation  
Carbon Products Division  
P.O. Box 887  
Niagara Falls, NY 14302

Re: Analytical Results

Dear Mr. Balent:

Please find enclosed results concerning the analyses of the samples recently submitted by your firm.

Pertinent Information: Quote #: 85-452  
Matrix: Aqueous  
Samples Received: 9/11/86

The information contained in this report has been carefully reviewed for completeness and accuracy.

If you have any questions concerning these data, do not hesitate to contact our Customer Service Representative at (716) 833-8203.

Sincerely,

RECRA ENVIRONMENTAL, INC.

James A. Ploscyca  
Laboratory Director

RVF/JAP/jhs  
Enclosure - Field Report

I.D. #86-874  
#5C057307

ANALYTICAL RESULTS  
UNION CARBIDE-REPUBLIC PLANT  
QUALITY CONTROL

REPLICATE ANALYSIS

PARAMETER	SAMPLE I.D.	UNITS OF MEASURE	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION
Biochemical Oxygen Demand (5 Day)	*	mg/l	<10	<10	<10	-
Chloride	*	mg/l	1,372	1,375	1,374	2.2
Sulfate	*	mg/l	2,050	1,940	1,995	78
Specific Conductance (25°C)	*	µmhos/cm	3,227	3,327	3,277	71
Total Residue (103°C)	W-3	mg/l	426	434	430	5.7
Total Phosphorus	*	mg P/l	1.37	1.36	1.365	0.007
Total Recoverable Phenolics	*	mg/l	69.7	63.6	66.7	4.3
Total Iron	W-3	mg/l	56.3	55.9	56.1	0.28
Total Mercury	W-3	mg/l	<0.001	<0.001	<0.001	-

\*These samples are not part of this report, but are samples of similar matrix that were used for quality control at the time of analysis.

I.D. #86-874



ANALYTICAL RESULTS  
UNION CARBIDE-REPUBLIC PLANT  
QUALITY CONTROL

RECOVERY ANALYSIS

PARAMETER	SAMPLE I.D.	µg OF SPIKE	% RECOVERY
Chloride	*	2,500	99.9
Sulfate	*	100	90
Total Phosphorus	*	50	98.8
Total Recoverable Phenolics	*	302	100.4
Total Iron	W-3	500	98
Total Mercury	W-3	0.4	97

\*These samples are not part of this report, but are samples of similar matrix that were used for quality control at the time of analysis.





UNION CARBIDE CORPORATION  
 CARBON PRODUCTS DIVISION  
 P. O. BOX 657, NIAGARA FALLS, N. Y. 14302

February 16, 1987

*Handwritten notes:*  
 2-17-87  
 NO  
 logged  
 attention on  
 Robert G. ...  
 investigation  
 2/2/87

Mr. R.J. Mitrey  
 New York State,  
 Department of Environmental Conservation  
 600 Delaware Avenue  
 Buffalo, New York 14202

Subject: 4th Quarter Ground Water Analysis -  
 Republic Solid Waste Management Facility

Dear Mr. Mitrey:

As per my letter dated January 8, 1987 (copy attached), attached for your review is copy of the Ground Water Monitoring results for Union Carbide, Carbon Products Division's Republic Solid Waste Management Facility for the fourth quarter of 1986.

If you have any questions, do not hesitate to contact me.

Very truly yours,

*Michael A. Balent*

Chief Plant Engineer

M.A. Balent, P.E.  
 nmd

Attachments

Messrs. G.A. Hamm  
 H.T. Prosser  
 A.C. Ogg



**RECRA ENVIRONMENTAL, INC.**

*Chemical Waste Analysis, Prevention and Control*

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February 7, 1987

Mr. Michael Balent  
Union Carbide Corporation  
Carbide Products Division  
P.O. Box 887  
Niagara Falls, NY 14302

Re: Analytical Results

Dear Mr. Balent:

Please find enclosed results concerning the analyses of the samples recently submitted by your firm.

Pertinent Information: Quote #: Q87-009  
Matrix: Aqueous  
Samples Received: 1/16 & 21/87  
Sample Dates: 1/16/87, 1/21/87

If you have any questions concerning these data, do not hesitate to contact our Customer Service Representative at (716) 691-2600.

Sincerely,

RECRA ENVIRONMENTAL, INC.

  
Arun K. Bhattacharya, Ph.D.  
Senior Vice President/  
Laboratory Director

RVF/AKB/pb  
Enclosure - Field Report

I.D. #87-060  
#87-060A  
#7C057433

## ANALYTICAL RESULTS

Prepared For

Union Carbide Corporation  
Carbide Products Division  
P.O. Box 887  
Niagara Falls, New York 14302

Prepared By

Recra Environmental, Inc.  
10 Hazelwood Drive, Suite 106  
Amherst, New York 14150

METHODOLOGIES

Specific methodologies employed in obtaining the enclosed analytical results are indicated on the specific data table. The method numbers presented refer to the following U.S. Environmental Protection Agency reference.

- o 40 CFR Part 136 "Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act" October 26, 1984 (Federal Register) U.S. Environmental Protection Agency.

COMMENTS

Comments pertain to data on one or all pages of this report.

Values reported as "less than" (<) indicate the working detection limit for the particular sample and/or parameter.

Total Organic Carbon results may not include volatile constituents since the sample was purged with an inert gas prior to analysis.



I.D. #87-060

AQUEOUS MATRIX  
WATER QUALITY TESTING

PARAMETER	METHOD NUMBER	UNITS OF MEASURE	ANALYSIS DATE	SAMPLE IDENTIFICATION	
				MW-1	MW-2
Biochemical Oxygen Demand	405.1	mg/l	1/22/87*	7.6	<2 <sup>3</sup>
Total Organic Carbon	415.1	mg/l	1/30/87	8.1	2.5
Chloride	325.3	mg/l	1/21/87	80	1.0
Total Recoverable Phenolics	420.1	mg/l	1/28/87	<0.01	<0.01
Total Phosphorous	365.2	mg P/l	1/24/87	0.37	0.13
Total Residue (103°C)	160.3	mg/l	1/22/87	1,110	374
Sulfate	375.4	mg/l	1/29/87	2.8	84

\*BOD subsample taken on 1/21/87.



I.D. #86-060

AQUEOUS MATRIX  
TOTAL METALS

PARAMETER (Units of Measure = mg/l)	METHOD NUMBER	ANALYSIS DATE	SAMPLE IDENTIFICATION	
			MW-1	MW-3
Total Iron	236.1	1/27/87	369	3.8
Total Mercury	245.1	1/26/87	<0.0005	<0.0005

I.D. #87-060







QUALITY CONTROL INFORMATION - PRECISION  
 AQUEOUS MATRIX  
 WATER QUALITY TESTING

PARAMETER	METHOD NUMBER	UNITS OF MEASURE	ANALYSIS DATE	SAMPLE I.D.	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION
Biochemical Oxygen Demand	405.1	mg/l	1/22/87	MW-3	<2	<2	<2	-
Total Organic Carbon	415.1	mg/l	1/30/87	*	13	11	12	1.4
Chloride	325.3	mg/l	1/21/87	*	47.7	46.6	47.15	0.78
Total Recoverable Phenolics	420.1	mg/l	1/28/87	MW-3	<0.01	<0.01	<0.01	-
Total Phosphorous	365.2	mg P/l	1/24/87	MW-3	0.126	0.126	0.126	0
Total Residue (103°C)	160.3	mg/l	1/22/87	MW-3	374	374	374	0
Sulfate	375.4	mg/l	1/29/87	*	218	222	220	2.8

\*Quality control results were generated from a sample of similar matrix at the time of sample analysis, and are not results of the actual sample submitted.

QUALITY CONTROL INFORMATION - ACCURACY  
AQUEOUS MATRIX  
WATER QUALITY TESTING

PARAMETER	METHOD NUMBER	ANALYSIS DATE	SAMPLE I.D.	MICROGRAMS OF SPIKE	PERCENT RECOVERY
Total Organic Carbon	415.1	1/30/87	*	200	88
Chloride	325.3	1/21/87	*	2,500	99.2
Total Recoverable Phenolics	420.1	1/28/87	MW-3	40.8	112.2
Total Phosphorous	365.2	1/24/87	MW-3	50	80.7
Sulfate	375.4	1/29/87	*	200	103

\*Quality control results were generated from a sample of similar matrix at the time of sample analysis, and are not results of the actual sample submitted.



I.D. #87-060



QUALITY CONTROL INFORMATION - PRECISION  
 AQUEOUS MATRIX  
 TOTAL METALS

PARAMETER (Units of Measure = mg/l)	METHOD NUMBER	ANALYSIS DATE	SAMPLE IDENTIFICATION	VALUE 1	VALUE 2	MEAN	STANDARD DEVIATION
Total Iron	236.1	1/27/87	MW-3	3.71	3.83	3.77	0.084
Total Mercury	245.1	1/26/87	MW-3	<0.0005	<0.0005	<0.0005	-

QUALITY CONTROL INFORMATION - ACCURACY  
AQUEOUS MATRIX  
TOTAL METALS

PARAMETER (Units of Measure = mg/l)	METHOD NUMBER	ANALYSIS DATE	SAMPLE IDENTIFICATION	MICROGRAMS OF SPIKE	PERCENT RECOVERY
Total Iron	236.1	1/27/87	MW-3	500	99
Total Mercury	245.1	1/26/87	MW-3	0.4	105

1/4649



**RECRA ENVIRONMENTAL, INC.**

*Hazardous Waste And Toxic Substance Control*

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FIELD REPORT

SEMI-ANNUAL GROUNDWATER MONITORING  
UNION CARBIDE REPUBLIC PLANT  
NIAGARA FALLS, NEW YORK

January 16 and 21, 1987

Prepared For:

Union Carbide Corporation  
Carbon Product Division  
P.O. Box 887  
Niagara Falls, NY 14303

Attention: Mr. Michael Balent

Prepared By:

Recra Environmental, Inc.  
4248 Ridge Lea Road  
Amherst, NY 14226

#7C057433

Written By: Robert Steiner

Reviewed By:

*James R. Stachowski*

Date:

*1/23/87*

## 1.0 INTRODUCTION

This field report describes the semi-annual groundwater monitoring conducted at Union Carbide's Republic Plant located in Niagara Falls, New York. This field event was performed on January 16, 1987 by Recra personnel Robert Steiner, Donald Johnson and Joseph Glab. Due to unforeseen circumstances, the mandated holding time for biochemical oxygen demand samples was exceeded. This situation necessitated resampling, which took place on January 21, 1987 by Recra personnel Robert Steiner and Lloyd Marciniak.

## 2.0 METHODOLOGIES

Collection of samples was performed in accordance with accepted EPA methodologies. Chain of custody was initiated at time of sample collection and maintained through delivery to the Recra Environmental, Inc. laboratory located in Tonawanda, New York. Copies of these documents are included in this report.

## 3.0 FIELD OBSERVATIONS

Information concerning well evacuation and sampling procedures is presented in Table I. Measurements for pH, specific conductance, and temperature were made in the field using calibrated instruments and EPA approved methods. A summary of these data are presented in Table II.





TABLE 1

 UNION CARBIDE REPUBLIC PLANT  
 NIAGARA FALLS, NEW YORK

## WELL INFORMATION

January 16 and 21, 1987

WELL I.D.	DATE OF EVACUATION	TIME	SIZE/TYPE OF CASING	WATER LEVEL (FT.)*	BOTTOM OF WELL (FT.)*	VOLUME OF STANDING WATER (GAL.)	VOLUME EVACUATED (GAL.)	METHOD OF EVACUATION	METHOD OF SAMPLING	RECHARGE RATE +
W-1	1/16/87	1210	2" Steel	8.22	21.00	2.09	2.20 to dryness	Peristaltic Pump	Peristaltic Pump	Rapid
W-2	1/16/87	1310	4" Steel	19.62	20.16	0.35	0.35 to dryness	Peristaltic Pump	NO SAMPLE INSUFFICIENT VOLUME	
W-3	1/16/87	1232	2" Steel	2.62	20.00	2.84	9.00	Peristaltic Pump	Peristaltic Pump	Continuous
W-1	1/21/87	1115	2" Steel	7.95	21.00	2.13	2.20 to dryness	Peristaltic Pump	Peristaltic Pump	Rapid
W-3	1/21/87	1154	2" Steel	2.88	20.00	2.79	8.50	Peristaltic Pump	Peristaltic Pump	Continuous

\* From Top of Casing.

# Elevation Above Sea Level.

+ Recharge Rate Determined by the following Criteria:

Continuous - no drop in water level during evacuation.

Rapid - recharges within one (1) hour.

Slow - recharges after eight (8) hours.

Very Slow - must return another day.

FOR RECRA ENVIRONMENTAL, INC.

Robert E. Stimer II

DATE 1/26/87

TABLE II  
UNION CARBIDE REPUBLIC PLANT  
NIAGARA FALLS, NEW YORK

## FIELD MEASUREMENTS

January 16, 1987

WELL	DATE	TIME	pH (standard units)	SPECIFIC CONDUCTANCE (umhos/cm)	TEMP (°C)
W-1	1/16/87	1354	7.41	1,510	8
W-2	1/16/87		NO SAMPLE - INSUFFICIENT VOLUME		
W-3	1/16/87	1330	7.48	440	7

FOR RECRA ENVIRONMENTAL, INC.

Robert E. Steiner II

DATE

1/26/87



# RECRA ENVIRONMENTAL, INC.

## CHAIN OF CUSTODY RECORD

PROJECT NO.: 7057433					SITE NAME: Union Carbide					NO. OF CON- TAINERS	5 gal. Plastic	16oz. Glass	16oz. Pl	4oz. Pl				REMARKS			
SAMPLERS (SIGNATURE): Robert E. Steiner II																					
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION																
W-1	1-16-87	13:50						4	1	1	1	1									
*W-3	1-16-87	13:26						8	2	2	2	2									
<div style="font-size: 2em; opacity: 0.5; pointer-events: none;">REG</div>																					
RELINQUISHED BY (SIGNATURE): Robert E. Steiner II				DATE/TIME: 1-16-87 1630		RECEIVED BY (SIGNATURE): K. Kaspriske				RELINQUISHED BY (SIGNATURE):				DATE/TIME:		RECEIVED BY (SIGNATURE):					
RELINQUISHED BY (SIGNATURE):				DATE/TIME:		RECEIVED BY (SIGNATURE):				RELINQUISHED BY (SIGNATURE):				DATE/TIME:		RECEIVED BY (SIGNATURE):					
RELINQUISHED BY (SIGNATURE):				DATE/TIME:		RECEIVED FOR LABORATORY BY (SIGNATURE):				DATE/TIME:		REMARKS:									

Distribution Original accompanies shipment copy to coordinator field files

\*D.C. taken at this point

ResAMPLE

RECRA ENVIRONMENTAL, INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7C057433					SITE NAME Union Carbide					NO. OF CONTAINERS	1/2 gal. plas.					REMARKS
SAMPLERS (SIGNATURE): Lloyd J. Manich / RES																
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION											
①	1/21/87			✓	MW-1					1	X					BOD
②	1/21/87			✓	MW-3					1	X					BOD
<del>Large signature scribble</del>																
TOTAL										2	X					
RELINQUISHED BY (SIGNATURE): Lloyd J. Manich			DATE/TIME 1-21-87 1329		RECEIVED BY (SIGNATURE): <i>[Signature]</i>					RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED BY (SIGNATURE):	
RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED BY (SIGNATURE):					RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED BY (SIGNATURE):	
RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED FOR LABORATORY BY (SIGNATURE):					DATE/TIME:			REMARKS * BOD re-sample; original samples taken 1-16-87.			