

2021 Hazardous Waste Scanning Project

File Form Naming Convention.

(File_Type).(Program).(Site_Number).(YYYY-MM-DD).(File_Name).pdf

Note 1: Each category is separated by a period "."

Note 2: Each word within category is separated by an underscore "_"

Specific File Naming Convention Label:

report.HW.932035:1986-02-14.Well-Monitoring-Results.pdf



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

February 14, 1986

Niagara County Health Dept.
10th & East Falls Streets
Niagara Falls, New York 14303

Attn: Mr. Paul Dicky, Asst. Public Health Engr.

Dear Mr. Dicky:

Per your recent request, we attach all information on well monitoring and subsequent test results for the Republic Solid Waste Management Facility located at the Republic Plant of Union Carbide Corporation, Carbon Products Div., 3501 Hyde Park Blvd. The first tests were run as a part of the original Certificate to Operate in 1978.

If you have any further questions, please do not hesitate to call.

Very truly yours,

M. Balent

M.A. Balent, P.E.
baf

Chief Plant Engineer

Enc.

10/16/78

October 16, 1978

Mr. John Banaszak
New York State Dept. of Environmental Conservation
Region Nine Office
584 Delaware Avenue
Buffalo, New York 14202

Dear Mr. Banaszak:

Please find enclosed the report from Recra Research summarizing the leach testing and soil work performed for us. Also, please find the revised report and drawings reflecting changes in our submission for certification.

I trust this additional information is sufficient for your review of our request for a Certificate to Operate this solid waste facility. If you have any further questions please contact myself or Jim Foreman.

Very truly yours,

/s/ S.C.Dorr

S.C.Dorr
baf

Chief Plant Engineer

Enc.

CC: Messrs. R.A.Hardison
W.D.Haller/R.H.Geise

LEACHING POTENTIAL TEST REPORT

APPENDIX E

SITE NO.	APPLICATION NO.	DATE RECEIVED
DEPARTMENT ACTION <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved		DATE

SEE INSTRUCTIONS ON REVERSE SIDE

1. NAME OF PROJECT/FACILITY Solid Waste Management Facility		2. COUNTY Niagara	3. SITE NO.	4. APPLICATION NO. 32S03
5. NAME OF OWNER Union Carbide Corp., Carbon Prod. Div.		6. ADDRESS (Street, City, State, Zip Code) P.O.Box 887, Niagara Falls, N.Y. 14302		7. TELEPHONE NO.
8. NAME OF OPERATOR W. D. Michaels		9. ADDRESS (Street, City, State, Zip Code) same as above		10. TELEPHONE NO. 278-3252
11. COMPANY GENERATING WASTE Union Carbide Corp., Carbon Products Div.		12. ADDRESS OF FACILITY GENERATING WASTE (Street, City, State, Zip Code) 3625 Highland Ave., Niagara Falls, N.Y. 14302		
13. REPRESENTATIVE OF WASTE GENERATOR S. C. Dorr		14. MAILING ADDRESS OF REPRESENTATIVE P.O.Box 887, Niagara Falls, N.Y. 14302		15. TELEPHONE NO. 278-3541
16. DATE SAMPLES TAKEN /22-24, 9/21-25/78	17. SAMPLES TAKEN BY (Name and Employer) Recra Research Inc.			
18. ORGANIZATION PERFORMING ANALYSES Recra Research Inc.		19. ADDRESS (Street, City, State, Zip Code) 111 Wales Ave., Tonawanda, N.Y. 14150		
20. REPRESENTATIVE OF ORGANIZATION PERFORMING ANALYSES Mr. C. James Stellrecht		21. TITLE Technical Representative		22. TELEPHONE NO. 692-7620

23. ANALYSES OF LIQUID FRACTION: pH: Sample 1 _____ Sample 2 _____ Sample 3 _____

COMPONENT	CONCENTRATION			UNIT (Check One)	
	Sample 1	Sample 2	Sample 3	Wt. %	PPM
1) SEE ATTACHED				<input type="checkbox"/>	<input type="checkbox"/>
2) _____				<input type="checkbox"/>	<input type="checkbox"/>
3) _____				<input type="checkbox"/>	<input type="checkbox"/>
4) _____				<input type="checkbox"/>	<input type="checkbox"/>
5) _____				<input type="checkbox"/>	<input type="checkbox"/>
6) _____				<input type="checkbox"/>	<input type="checkbox"/>

24. ANALYSES OF SOLIDS FRACTION: Percent Solids: Sample 1 _____ Sample 2 _____ Sample 3 _____

COMPONENT	CONCENTRATION (Dry Weight)			UNIT (Check One)	
	Sample 1	Sample 2	Sample 3	Wt. %	PPM
1) SEE ATTACHED				<input type="checkbox"/>	<input type="checkbox"/>
2) _____				<input type="checkbox"/>	<input type="checkbox"/>
3) _____				<input type="checkbox"/>	<input type="checkbox"/>
4) _____				<input type="checkbox"/>	<input type="checkbox"/>
5) _____				<input type="checkbox"/>	<input type="checkbox"/>
6) _____				<input type="checkbox"/>	<input type="checkbox"/>

25. LEACHING TEST ON SOLIDS FRACTION: pH: Sample 1 _____ Sample 2 _____ Sample 3 _____

COMPONENT	CONCENTRATION			UNIT (Check One)	
	Sample 1	Sample 2	Sample 3	Wt. %	PPM
1) SEE ATTACHED				<input type="checkbox"/>	<input type="checkbox"/>
2) _____				<input type="checkbox"/>	<input type="checkbox"/>
3) _____				<input type="checkbox"/>	<input type="checkbox"/>
4) _____				<input type="checkbox"/>	<input type="checkbox"/>
5) _____				<input type="checkbox"/>	<input type="checkbox"/>
6) _____				<input type="checkbox"/>	<input type="checkbox"/>

26. CERTIFICATION

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. SIGNATURE AND TITLE OF REPRESENTATIVE OF WASTE GENERATOR X <i>S.C. Dorr Chief Plant Engineer</i>	DATE 10/13/78
b. SIGNATURE AND TITLE OF REPRESENTATIVE OF TREATMENT OR DISPOSAL FACILITY X	DATE

REVISED
T A B L E O F C O N T E N T S

<u>Section</u>	<u>Change Required</u>	<u>Page No.</u>
1.0 Introduction	Remains the same	1
2.0 Existing Conditions in Service Area	Remains the same	1
3.0 Projected Waste Generation	Remains the same	2
4.0 Alternative Courses of Action	Remains the same	2
5.0 Site Analysis of Proposed Project		
5.1 Waste Facility Location	Remains the same	3
5.2 Sub-Surface Conditions	" " "	3
5.3 Transportation System	" " "	3
5.4 Surface Water	" " "	3
5.5 Monitoring Area	Revised	See Rev.Attach.
6.0 Operation	Remains the same	4-5
7.0 Market Analysis	Remains the same	5
8.0 Cover Material		
8.1 Daily Cover	Remains the same	5
8.2 Cover Material	Revised	See Rev.Attach.
8.3 Final Cover	Remains the same	6

Appendices

A Waste Disposal (Vol. by Lift)	Remains the same	
B Application for Septic Tank Cleaner & Ind. Waste Collector Registration	Remains the same	
C Variance for Section 3.3, Par. a,b,e	Deleted	
Variance for Section 3.3, Par. d	Deleted	
Variance for Section 3.1, Par. c	Remains the same	
D Solid Waste Disposal Check List	Remains the same	
E Leaching Potential Test	New	See Rev.Attach.
F Ground Water Characteristics	New	See Rev.Attach.
G Soil Characteristics	New	See Rev.Attach.

J.E.Foreman/baf
10/13/78

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SOLID WASTE MANAGEMENT FACILITY

REVISIONS

5.0 SITE ANALYSIS OF PROPOSED PROJECT

5.5 Monitoring Area

The ground water monitoring wells are drilled holes to bedrock lined with perforated PVC pipe and covered with a screw cap. Two wells have been located on the north and south sides of the dump as shown on drawing no. AX-1A-15 (Revised 10/12/78). Usually, a sampling will be conducted semi-annually to assure no water contamination. When samples are taken, we select an independent testing laboratory to meet our requirements. A copy of the original water analysis is included in Appendix F with all future test results included in the Solid Waste Management file at our plant for immediate referral.

8.0 COVER MATERIAL

8.2 Cover Material

The material consists of aged waste deposited no less than 5 years previous. This particular "aged waste" is dust free and can support minimal plant life. Depending upon the amount of waste deposited, the working lift will be covered with this material, approximately 10-12 inches, and no less than once every two weeks. Characteristics of this material are described in Appendix G.

J.E.Foreman/baf
10/13/78

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October 13, 1978

Mr. James E. Foreman, III
Plant Engineer
Union Carbide Corporation
Carbon Products Division
P. O. Box 887
Niagara Falls, New York 14302

Re: Final Report - Groundwater and Leaching Potential Analyses

Dear Jim,

Please find enclosed the final analytical report of the leaching potential test performed on the carbonaceous waste and the results of groundwater analyses from the wells installed on Union Carbide property.

Recra is pleased we could be of service to you. Should you have any questions, please feel free to contact me and thank you for giving Recra this opportunity.

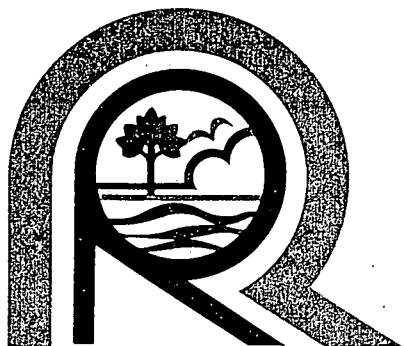
Yours very truly,

RECRA RESEARCH, INC.



C. James Stellrecht
Technical Representative

CJS:df



RECRA RESEARCH, INC. 111 Wales Avenue/Tonawanda, New York 14150/(716) 692-7620
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

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APPENDIX E

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION - CARBON DIVISION
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
LEACH TEST

Report Date: 10/12/78
Sample Date: 8/22-24/78

PARAMETER	UNIT OF MEASURE	SAMPLE IDENTIFICATION CARBON COMPOSITE - MEAN OF DUPLICATE TESTS
Carbon - Chloroform Extractable	mg/l	<2.0
Phenol	mg/l	0.110
Total Organic Carbon	mg/l	<1.0
pH	Standard Units	8.02
Chemical Oxygen Demand	mg/l	16.2
Chloride	mg/l	18.2
Fluoride	mg/l	0.569
Cyanide (Free)	mg/l	<0.3
Total Grease & Oils	mg/l	<1.0
Hydrocarbon Grease & Oils	mg/l	<1.0
Polar Grease & Oils	mg/l	<1.0
Total Chlorinated Hydrocarbons	µg/l as Chlorine, Lindane Standard	3.70
Hexavalent Chromium	mg/l	<0.01
Soluble Aluminum	mg/l	<0.03
Soluble Arsenic	µg/l	<3.5
Soluble Cadmium	mg/l	<0.003
Soluble Chromium	mg/l	<0.003
Soluble Copper	mg/l	0.005
Soluble Iron	mg/l	<0.01
Soluble Lead	mg/l	<0.02
Soluble Mercury	µg/l	<0.5
Soluble Nickel	mg/l	<0.02
Soluble Selenium	µg/l	<2.5
Soluble Zinc	mg/l	0.007

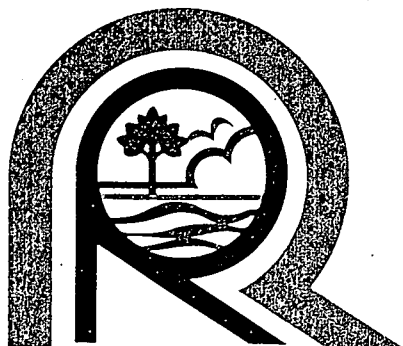
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COMMENTS: Samples of the carbon material were collected by Recra personnel on 8/22, 8/23 and 8/24/1978. These samples were composited and analyzed in duplicate.

For Recra Research, Inc.

Ralph K. Wyzel

Date 10-13-78



RECRA RESEARCH, INC. 111 Wales Avenue/Tonawanda, New York 14150/(716) 692-7620
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

ANALYTICAL RESULTS

UNION CARBIDE-CARBON DIVISION
GROUNDWATER WELL MONITORINGReport Date: 10/12/78
Sample Dates: 9/21-25/78

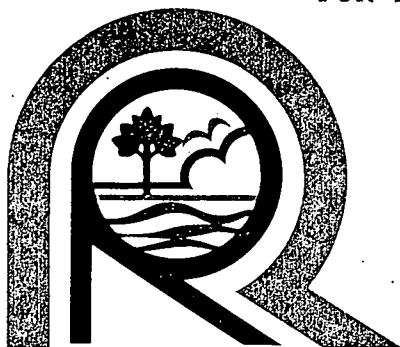
PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION	
		NORTH WELL	SOUTH WELL
		W-1	W-2
Carbon Chloroform Extract	mg/l	<2.5	<2.5
Soluble Aluminum	mg/l	1.36	1.60
Soluble Silver	mg/l	<0.003	<0.003
Soluble Calcium	mg/l	3.5	32
Soluble Total Chromium	mg/l	0.006	0.012
Soluble Hexavalent Chromium	mg/l	<0.01	<0.01
Soluble Potassium	mg/l	67	20.2
Soluble Sodium	mg/l	248	197
Soluble Lead	mg/l	0.02	0.02
Soluble Arsenic	ug/l	<3.5	<3.5
Soluble Mercury	ug/l	0.82	0.82
Soluble Copper	mg/l	0.014	0.014
Total Iron	mg/l	103	114

COMMENTS: Samples were collected by Recra personnel. Due to low recharge rates, samples were collected on both 9/21/78 and 9/25/78 from the North Well. Insufficient volume of sample was available for Chemical Oxygen Demand analyses from the both wells and Total Coliforms from the South Well. Due to the formation of a severe emulsion, Methylene Blue Active substances could not be determined for the North Well sample. Values reported as "less than" indicate the working detection limit for those sample analyses. The Biochemical Oxygen Demand being greater than the Total Organic Carbon from the South Well sample is believed to be a function of the suspended solids content of this sample.

FOR RECRA RESEARCH, INC.

Salt K. Wjeth

DATE 10-13-78



RECRA RESEARCH, INC.

TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

111 Wales Avenue/Tonawanda, New York 14150/(716) 692-7620

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APPENDIX F

ANALYTICAL RESULTS

UNION CARBIDE-CARBON DIVISION
GROUNDWATER WELL MONITORING

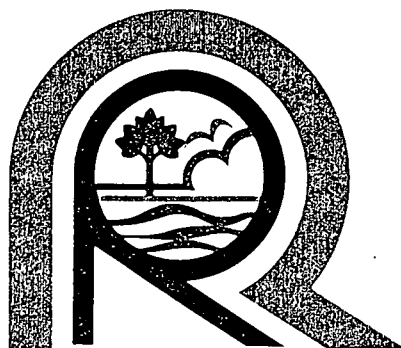
Report Date: 10/12/78
Sample Dates: 9/21/78 - 9/25/78

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION	
		NORTH WELL	SOUTH WELL
		W-1	W-2
Biochemical Oxygen Demand	mg/l	13.5	79.5
Chemical Oxygen Demand	mg/l	-	-
Conductivity	umhos/cm	1,430	2,920
pH	Standard Units	8.94	7.42
Alkalinity (pH 4.5)	mg/l as CaCO ₃	563	529
Chloride	mg/l	382	391
Hardness	mg/l as CaCO ₃	240	295
Color	Pt-Co Units	68	45
Total Solids	mg/l	2,720	2,910
Ammonia	mg N/l	4.42	0.23
Total Kjeldahl Nitrogen	mg N/l	7.38	0.21
Nitrate	mg N/l	2.7	2.5
Nitrite	mg N/l	40.005	0.041
Total Phosphorus	mg P/l	40.01	0.024
Sulfate	mg/l	360	940
Phenol	mg/l	0.235	0.238
Total Organic Carbon	mg/l	108	50
Methylene Blue			
Active Substances	mg/l	-	0.08
Total Coliforms	MPN/100mls	5,400	-

FOR RECRA RESEARCH, INC.

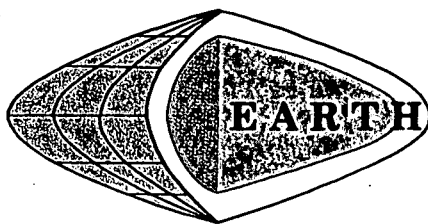
Robert K. Lytle

DATE 10-13-78



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**EARTH DIMENSIONS, INC.***Soil Investigations and Natural Resource Assessments*

797 Center Street • East Aurora, New York 14052 • (716) 655-1717

SOILS REPORT - WELL INSTALLATION**Union Carbide Corporation - Niagara Falls**

Two monitoring wells were installed on the Union Carbide Corporation's landfill site in the City of Niagara Falls. The approximate placement sites were located on site by Mr. James Foreman of Union Carbide.

Soil descriptions were written at the well sites based on the split spoon samples that were taken of every major soil horizon or at every five foot increments in the thicker soil horizons. The split spoon samples were advanced through the hollow stem augers.

The most southerly well was installed September 9 with the northerly well installed September 16, 1978. The continued collapsing of the bore hole for the north end well forced the installation of a 2 inch inside diameter well instead of a 4 inch inside diameter that was installed in the southern site.

Carbonaceous fill material was described as the surficial material at both locations. The original soil consisted of a stone free clayey and silty lake sediment resting on glacial till. Thickness of the lake sediment at the southerly well site was about 10 feet. This lake sediment mantle should be continuous across the total site as indicated in the Niagara County soil survey. No lake sediments were described or observed in any of the five bore sites augered at or near the northern well location. Therefore the original lake sediment and part of the glacial till material was excavated prior to land filling industrial wastes.

Permeability and infiltration of the carbonaceous fill are extremely high as observed by the water intake after an intense thunder storm September 9. This would allow water to move downward in the fill and perch on the glacial lake or till sediments. The glacial till over the dolomite bedrock was removed from the area near the northern well site as noted during the drilling of most easterly bore site. In essence, an internal pond exists within the fill by the north well.

Continued on page 2...

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SOILS REPORT-WELL INSTALLATION
Union Carbide Corporation - Niagara Falls
Page 2

The extent of this excavated area can not be delineated based on the existing surface fill configuration.

No perched water table was noted at the southerly site, but based on the original soil drainage characteristics, a natural perched water table would be present at the fill-soil contact from October through April most years. Water was detected in the glacial till in the till above bedrock, yet soil coloration would not suggest this moisture regime in this zone.

Prepared by,

Don Owens

Donald W. Owens
Soil Scientist

3I78
DWO/dew

9/16/78

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SURF. ELEV.

LOCATION North side of property
Hyde Park Boulevard

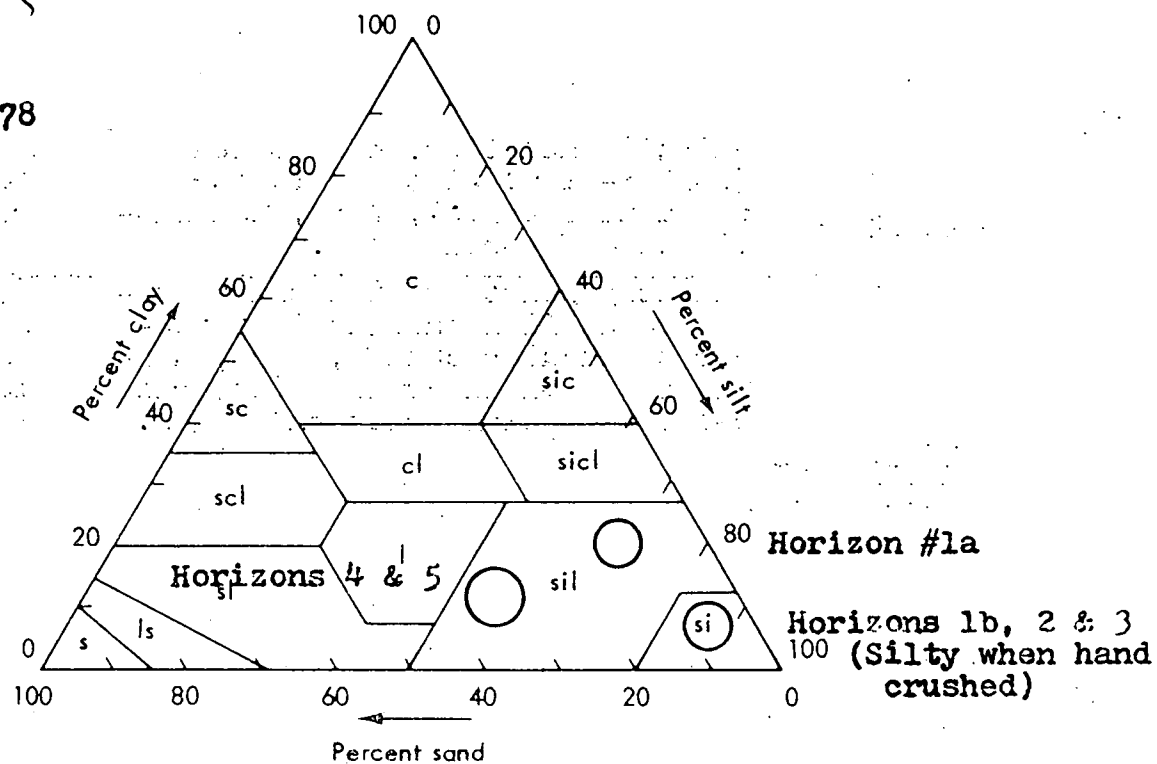
DATE STARTED 9/8/78 COMPLETED 9/8/78

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SHEET 1 OF 2

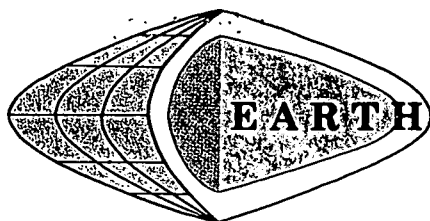
HOLE #1

3I78



c	Clay	scl	Sandy clay loam
si	Silt	sicl	Silty clay loam
s	Sand	cl	Clay loam
l	Loam	sil	Silt loam
sc	Sandy clay	sl	Sandy loam
sic	Silty clay	ls	Loamy sand

Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).



EARTH DIMENSIONS, INC.

Test Borings and Logs

797 Center Street • East Aurora, New York 14052 • (716) 655-1717

3178 HOLE NO. 1 Continued

SURF. ELEV. _____

PROJECT Union Carbide Corporation
Niagara Falls, New York

LOCATION North side of property
Hyde Park Boulevard

CLIENT REGRA Research Inc.

DATE STARTED 9/9/78 COMPLETED 9/9/78

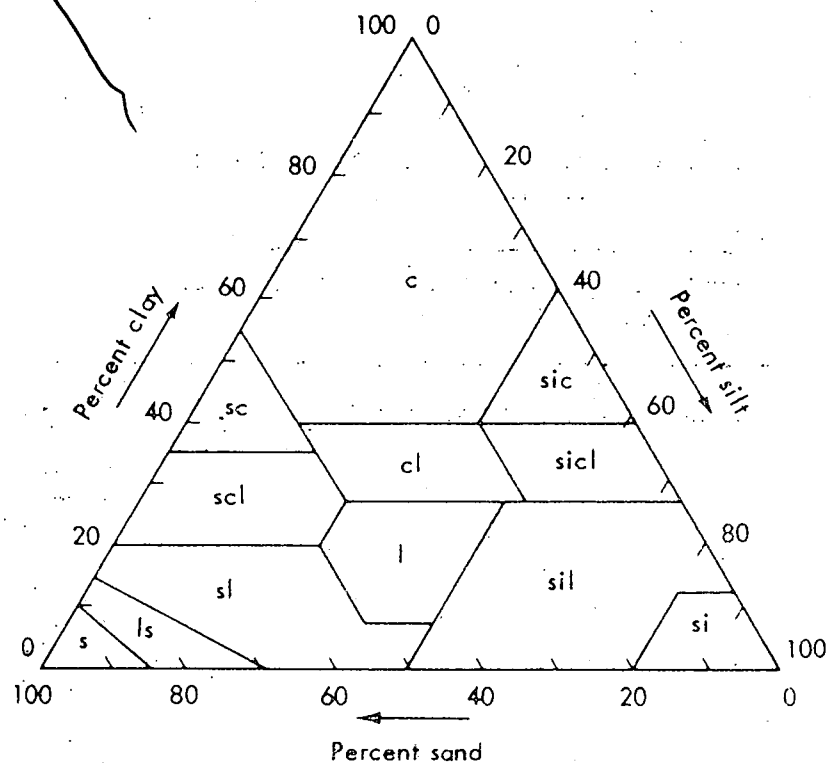
DEPTH (feet)	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		0	6	12	18	24	N		
								(Same horizon as described on previous page)	
20								Gray microcrystalline dolomite bedrock	
								Sampling discontinued at 20.5 feet	<u>PIPE NOTES</u> Used two 10.5 foot sec- tions of carbon steel pipe with one 4 inch coupling sealed with pipe dope. Well end packed with 1½ feet of greater than 1.5 mm well graded coarse sand and gravel below pipe and 1½ feet above pipe end. End of pipe double screened with 0.5 mm stainless steel screen- ing. Bentonite used between 6 and 18½ foot depths to seal vertical water movement along outside of pipe. The top 6 feet was back filled with SILT-CLAY lake sediment consider- ing the porous nature of the carbonaceous fill at this depth. Bottom of pipe 18.3 feet below surface. Pipe protruding 2.8 feet a- bove surface.

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dew N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

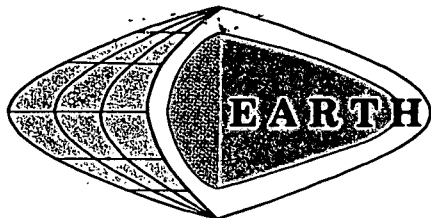
LOGGED BY Owens & Lenhardt

SHEET 2 OF 2



c	Clay	scl	Sandy clay loam
si	Silt	sicl	Silty clay loam
s	Sand	cl	Clay loam
l	Loam	sil	Silt loam
sc	Sandy clay	sl	Sandy loam
sic	Silty clay	ls	Loamy sand

Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).



EARTH DIMENSIONS, INC.

Test Borings and Logs

797 Center Street • East Aurora, New York 14052 • (716) 655-1717

3I78 HOLE NO. 2

SURF. ELEV. _____

PROJECT Union Carbide Corporation
Niagara Falls, New York
CLIENT RECRA Research, Inc.

LOCATION South side of fill area
Near Hyde Park Blvd.
DATE STARTED 9/9/78 COMPLETED 9/9/78

DEPTH Feet	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		11 6	6 12	12 18	18 24	N			
									Carbonaceous fill to 4.6 feet over silty and clayey lake sediments to 15. feet over sandy glacial fill to 19.8 feet over dolomitic bedrock
	1	7	7	10			17	Slightly moist, grayish-black carbonaceous fill material ranging from powder to angular chunks with intermixed wood, bricks, and gravelly soil, loose to very friable, nonplastic.	
5		9	17	21			38	Moist, highly mottled grayish-brown silty clay loam (SILTY-CLAY) friable.	No water observed at fill - original soil contact
	2							-----Clear transition to ----- Moist distinctly mottled reddish-brown SILTY-CLAY with vertical dessication cracks, finely laminated structure, very firm, plastic.	Sample #2 spans contact.
								-----grades downwards to-----	
10		13	15	18			33	Moist to extremely moist, brown heavy silt loam (CLAYEY-SILT) with very thin, very fine sandy lenses, finely laminated, firm, slightly plastic.	
	3								
15		12	20	22			42		
	4							Extremely moist to wet reddish-brown sandy loam (SILTY-SAND) w/ 10 to 15% predominantly fine and medium subangular dolomitic gravel, firm, nonplastic	Water at 13.5 feet below surface at completion.

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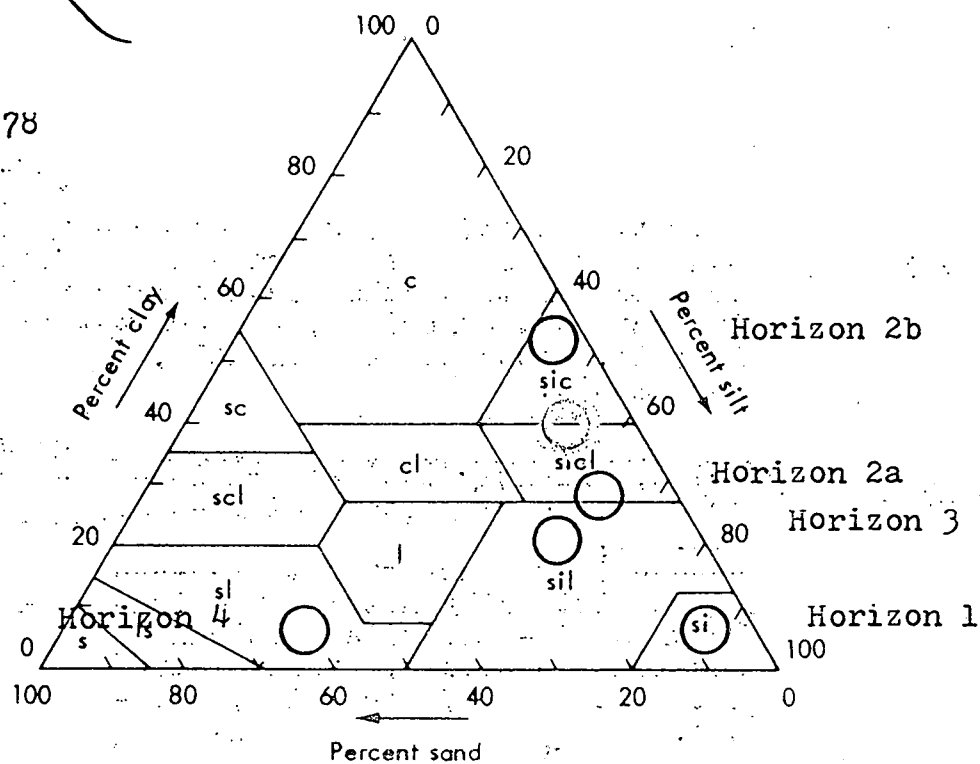
N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Lenhardt & Owens

SHEET 1 OF 2

HOLE #2

3178



c	Clay	scl	Sandy clay loam
si	Silt	sicl	Silty clay loam
s	Sand	cl	Clay loam
l	Loam	sil	Silt loam
sc	Sandy clay	sl	Sandy loam
sic	Silty clay	ls	Loamy sand

Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).



Test Borings and Logs

3178

SURF. ELEV.

LOCATION South side of fill area
Near Hyde Park Blvd.

DATE STARTED 9/9/78 COMPLETED 9/9/78

PIPE NOTES
Used one 10.0 feet and two 5.0 feet sections of carbon **steel pipe** with **2-4 inch couplings** sealed with pipe dope. Well end packed with 1 foot of greater than 1.5 mm well graded coarse sand and gravel below pipe and 1½ feet above pipe end. End of pipe double screened with 0.5 mm stainless steel screening. Bentonite used to plug the surface. One foot of pipe protruded above surface.

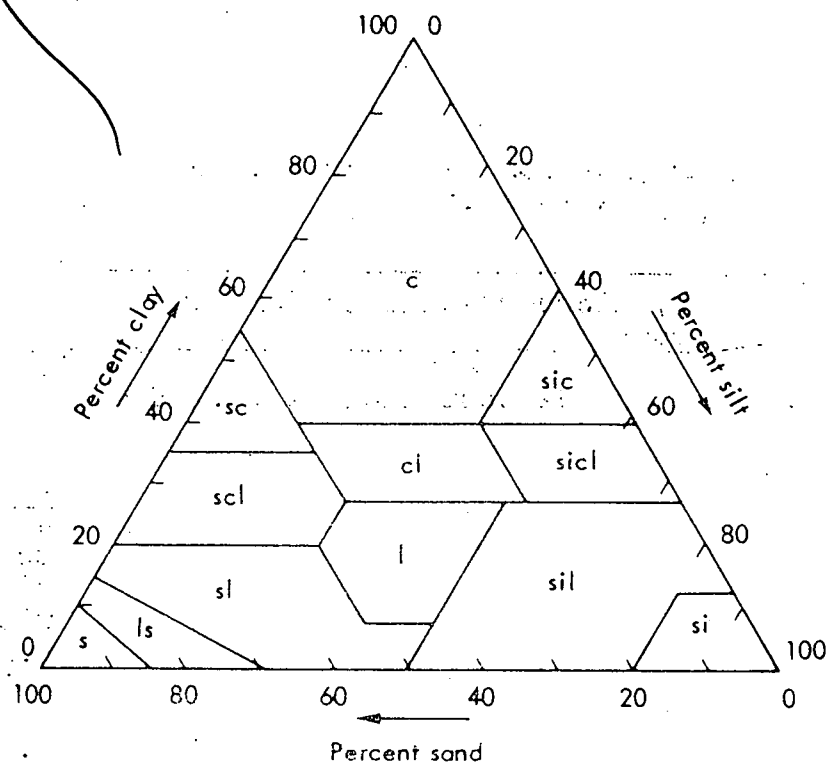
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION,
PROPERTY OF UNION CARBIDE CORP. IT IS
NOT TO BE DISCLOSED OR REPRODUCED WITHOUT THE
WRITTEN PERMISSION OF U. C. C. AND IS
NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE
INTERESTS OF U. C. C.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Lenhardt & Owens

SHEET 2 OF 2

dew



c Clay
 si Silt
 s Sand
 l Loam
 sc Sandy clay
 sic Silty clay

scl Sandy clay loam
 sicl Silty clay loam
 cl Clay loam
 sil Silt loam
 sl Sandy loam
 ls Loamy sand

Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

4736779

J

April 30, 1979

Mr. John C. McMahon, P.E.
New York State Dept. of Environmental Conservation
Region Nine Office
584 Delaware Avenue
Buffalo, New York 14202

Dear Mr. McMahon:

Please find enclosed a copy of the analytical results of our monitoring wells and surface runoff sampling performed on March 29, 1979. This information was requested in Special Conditions #4, #5, and #6 of our Operations Permit #2020 dated November 21, 1978.

During our review of the results, we noticed that the north wall (W1) showed considerably higher readings of total lead, mercury, and iron. Since our process and waste deposited in our facility does not contain any appreciable amounts of these minerals, we are in question as to their source. There are a number of possibilities that could cause these high results at the well, including a bad test, so we are performing another test of the same parameters on well W1. The information should be available by July 1, 1979 and we will inform you of the test results as soon as they are available.

We trust this additional information and extra sampling will aid in your review of our monitoring requirements. If there are any questions please contact either Mr. Foreman or myself.

Very truly yours,

/s/ S. C. Dorr

S.C.Dorr
baf

Chief Plant Engineer

Enc.

CC: Messrs. R.A.Hardison/E.B.Fawkes
W.D.Haller/V.L.Gustavson



Test Borings and Logs

HOLE NO. 3

SURF. ELEV.

LOCATION Southeastern portion of site, ap-
proximately 120 ft. north of south fence,
100 ft. west of east fence.
DATE STARTED 3/20/79 COMPLETED 3/20/79

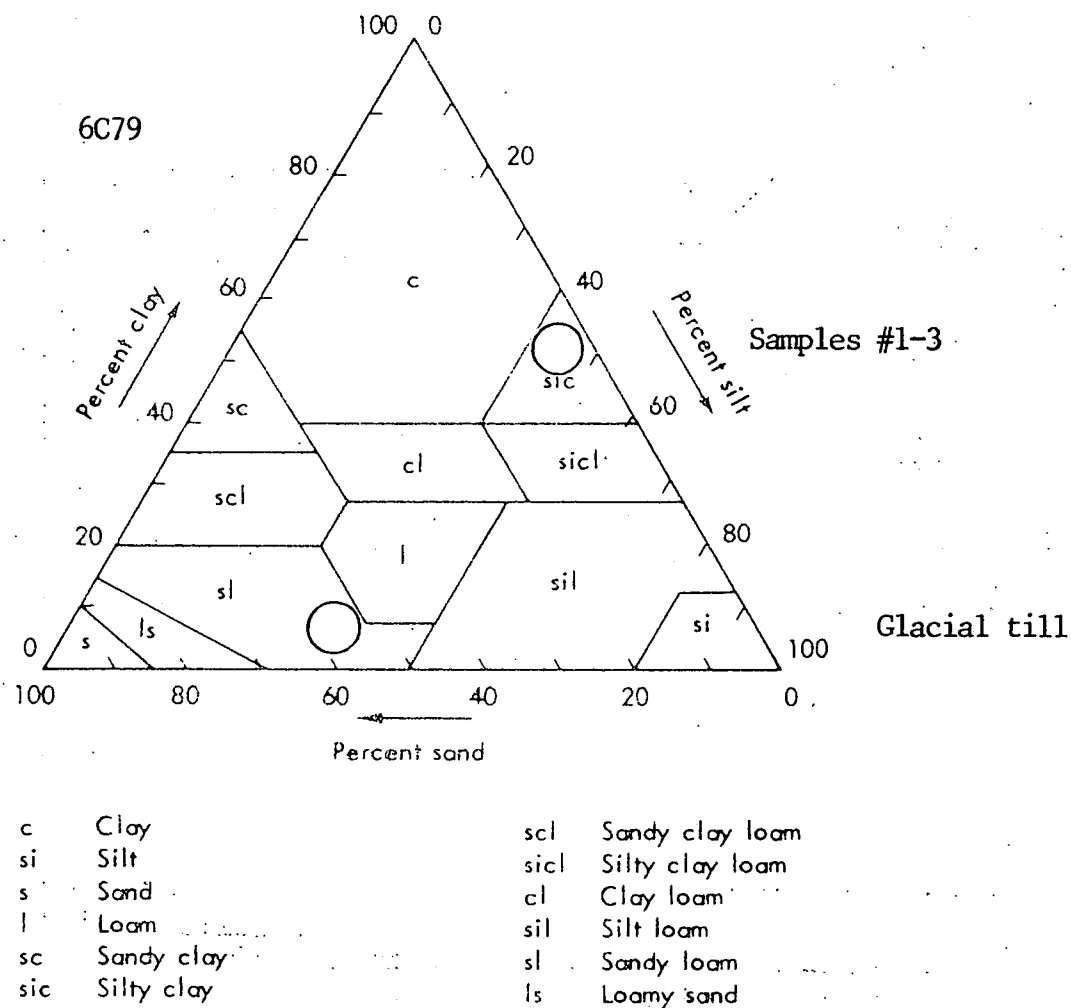
DATE STARTED 3/20/79 COMPLETED 3/20/79

Water table was 13.5
ft. below surface
at completion.

LOGGED BY Steven J. Pitt, Soil Scientist

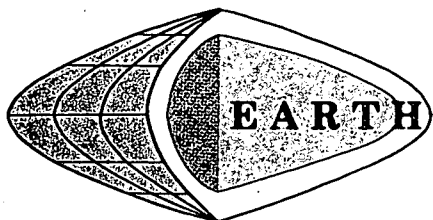
SHEET 1 OF 1

Well #3:



Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

March 31, 1979



EARTH DIMENSIONS, INC.

Soil Investigations and Natural Resource Assessments

797 Center Street • East Aurora, New York 14052 • (716) 655-1717

SOILS REPORT - WELL #3 INSTALLATION

Union Carbide Corporation - Niagara Falls

One additional monitoring well was installed on the Union Carbide Corporation's property southeast of the present landfill site in Niagara Falls. Last September, two monitoring wells were placed in the landfill.

Large boulders were encountered at the original placement site for well #3. This site was selected by Mr. James Foreman of Union Carbide. Six borings were augered in an attempt to reach bedrock. The extremely hard cherty dolomitic and granitic boulders were encountered at the following depths:

<u>Bore number</u>	<u>Depth to hard boulders *</u>
1	11.2
2	9.0
3	5.2
4	5.1
5	5.8
6	5.1

* Feet below surface.

Based on the difficulties encountered at the original placement site, permission was given to move the location further to the southeast to avoid the bouldery glacial till. This did not compromise the intended purpose of this well, to monitor the internal water table some distance from the landfill.

A stone-free clayey and silty lake sediment mantles glacial till at the original and relocated bored sites. This is similar to the glacial sediment sequence indicated in the Niagara County soil survey. The lake sediment was thinner and containing less clay at the original placement site than at the relocated site. A natural perched water table exists near the surface during wetter seasons. Water was detected in the thin glacial till yet soil coloration would not suggest this moisture regime in this zone. Two borings about 10 feet apart at the relocated well site revealed that the soil sequence was within inches at both sites.

Prepared by

Donald W. Owens
Donald W. Owens, Soil Scientist

DWO/dew
6C79

ANALYTICAL RESULTS
UNION CARBIDE-CARBON DIVISION

Report Date: 4/23/79

Sample Date: 3/29/79

SURFACE AND GROUNDWATER

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION			
		W1	W2	W3	SP1
Ammonia	mg/l	0.63	1.8	0.47	0.52
Nitrite	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
Nitrate	mg/l	2.0	4.5	1.0	0.20
Biochemical Oxygen Demand (5 Day)	mg/l	37.5	< 50	< 50	5
Chemical Oxygen Demand	mg/l	344	38.4	< 10	68.7
Total Kjeldahl Nitrogen	mg/l	1.1	-	0.56	-
Total Phosphorus	mg/l	1.1	0.25	0.04	0.25
Sulfate	mg/l	7.8	700	650	150
Methylene Blue Active Substances	mg/l	< 0.4	< 0.4	< 0.4	< 0.4
Alkalinity (pH 4.5)	mg/l as CaCO ₃	330	820	275	240
Total Solids (103°C)	mg/l	1,870	-	1,360	-
Color	Pt-Co Color Units	-	-	70	75
Total Hardness	mg/l as CaCO ₃	1,260	1,630	940	400
Chloride	mg/l	260	180	22	20
Total Coliform	MPN/100mls	430	< 30	≥ 24,000	40
Total Organic Carbon	mg/l	93	16.7	9.0	23.1
Phenols	mg/l	0.09	0.01	< 0.01	0.01
pH	Standard Units	7.84	6.83	7.38	7.19
Conductance	µmhos/cm	1,540	1,370	2,100	692
Carbon Chloroform Extraction	mg/l	10.8	-	-	3.3
Total Chlorinated Hydrocarbons	µg/l as Chlorine; Lindane Standard	2.1	0.7	1.0	0.8
Total Aluminum	mg/l	52	5.0	1.2	0.1
Total Arsenic	µg/l	11.4	< 1.7	< 1.7	< 1.7
Total Chromium	mg/l	0.088	0.008	< 0.003	< 0.003
Total Copper	mg/l	0.635	0.028	0.008	0.014
Total Lead	mg/l	0.60	< 0.02	< 0.02	< 0.02
Total Mercury	µg/l	36.6	< 0.7	< 0.7	< 0.7
Total Iron	mg/l	170	33	8.8	1.0
Total Potassium	mg/l	70	6.5	5.5	8.3
Total Sodium	mg/l	200	68	30	8.3
Total Calcium	mg/l	66	17	55	28
Total Silver	mg/l	0.011	< 0.003	< 0.003	0.005

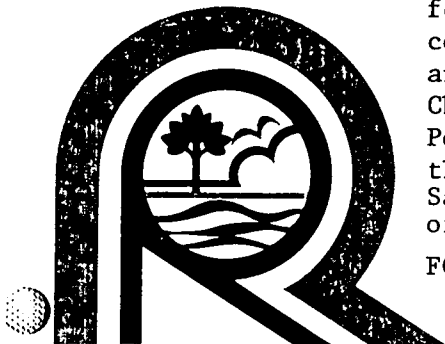
COMMENTS: Samples were collected by Recra personnel on 3/29/79. All analyses were performed according to U.S. Environmental Protection Agency methodologies except where noted. Due to an overestimation of BOD content, Samples W2 and W3 were inappropriately diluted, therefore yielding the reported detection limits. Sample W1 and W2 could not be quantified

for color since their colors were not comparable to the platinum-cobalt standards. Carbon Chloroform Extraction could not be analyzed on Samples W2 and W3 due to breakage of sample containers. Chromatograms used to quantify TCH show the possible presence of Polychlorinated Biphenyls. Values reported as "less than" indicate the working detection limits for the particular sample/parameter. Samples SP1 and W2 did not have all analyses performed due to lack of sufficient volume.

FOR RECRA RESEARCH, INC.

DATE

James L. Phosyga
4/23/79



RECRA RESEARCH, INC. 111 Wales Avenue/Tonawanda, New York 14150/(716) 692-7620
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

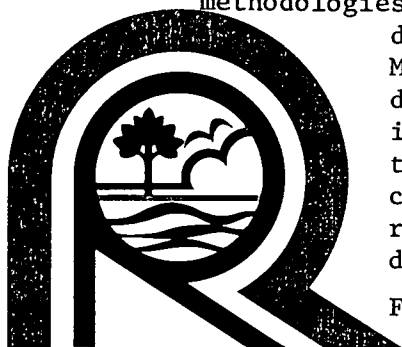
ANALYTICAL RESULTS
UNION CARBIDE-CARBON DIVISION

Report Date: 5/29/79
Sample Date: 4/30/79

GROUND WATER

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION
		WELL #1
Ammonia	mg/l	10.0
Nitrite	mg/l	< 0.01
Nitrate	mg/l	4.8
Biochemical Oxygen Demand (5 Day)	mg/l	13
Chemical Oxygen Demand	mg/l	71.8
Total Kjeldahl Nitrogen	mg/l	7.7
Total Phosphorus	mg/l	5.0
Sulfate	mg/l	< 1
Methylene Blue Active Substances	mg/l	-
Alkalinity (pH 4.5)	mg/l as CaCO ₃	780
Total Solids (103°C)	mg/l	1,570
Color	Pt-Co Color Units	100
Total Hardness	mg/l as CaCO ₃	920
Chloride	mg/l	190
Total Coliform	MPN/100mls	750
Total Organic Carbon	mg/l	26.1
Phenols	mg/l	< 0.01
pH	Standard Units	8.13
Conductance	µmhos/cm	1,480
Carbon Chloroform Extraction	mg/l	26.9
Total Chlorinated Hydrocarbons	µg/l as Chlorine; Lindane Standard	6.5
Total Aluminum	mg/l	7.4
Total Arsenic	µg/l	6.4
Total Chromium	mg/l	0.026
Total Copper	mg/l	0.103
Total Lead	mg/l	0.07
Total Mercury	µg/l	17
Total Iron	mg/l	6.5
Total Potassium	mg/l	110
Total Sodium	mg/l	160
Total Calcium	mg/l	46
Total Silver	mg/l	< 0.003

COMMENTS: Samples were collected by Recra personnel on 4/30/79. All analyses were performed according to U. S. Environmental Protection Agency methodologies. Values reported as "less than" indicate the working detection limits for a particular sample/parameter. Methylene Blue Active Substances could not be quantified due to the formation of a severe emulsion during extraction. The discrepancy between TKN and Ammonia is believed to be the result of an electrode interference, caused by coating of the membrane. The TKN value is probably more reliable since the interference may be removed during distillation.



FOR RECRA RESEARCH, INC.

DATE

[Signature]
5/29/79

RECRA RESEARCH, INC. 111 Wales Avenue / Tonawanda, New York 14150 / (716) 692-7620
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

4/30/80

January 30, 1980

Mr. John C. McMahon, P.E.
New York State
Department of Environmental Conservation
Region Nine Office
584 Delaware Ave.
Buffalo, New York 14202

Dear Mr. McMahon:

As requested under "Special Condition" of NYSDEC Permit #2020 for our Republic Solid Waste Facility, please find enclosed a copy of Recra Research's semi-annual well monitoring report (2 pages) dated 12/27/79 showing the analytical results of samples taken on 11/21/79.

Recra Research, Tonawanda, New York took the samples and prepared said report for us.

Very truly yours,

/s/ R.H.Meuser

R.H.Meuser
baf

Engineering Department

Enc.

FILE

December 27, 1979

Mr. R. Meuser
Union Carbide Corporation
Republic Plant
3501 Hyde Park Boulevard
Niagara Falls, New York

RECEIVED
ENGINEERING DEPT.
JAN 2 1980
U.C.C.-C.P.D.
NIAGARA PLANT

Re: Semi-Annual Well Monitoring

Dear Mr. Meuser:

Please find enclosed Recra Research, Inc.'s results of the analyses of well samples received at our laboratories on November 21, 1979.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA RESEARCH, INC.

Robert K. Wyeth/JAP

Robert K. Wyeth
Laboratory Director

JAP/RKW/jah
Enclosure

Job #: 989



RECRA RESEARCH, INC.

TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

P.O. Box 448 / Tonawanda, New York 14150 / (716) 838-6200

PHONE:
9-692-7620

RKW
1/7/80

*Pull -
Solid waste*

July 6, 1979

Mr. John C. McMahon, P.E.
New York State
Department of Environmental Conservation
Region Nine Office
584 Delaware Avenue
Buffalo, New York 14202

Dear Mr. McMahon:

Please find enclosed a copy of the analytical results of the resampling of our well W1, performed on April 30, 1979. The resampling of this well, as explained in our letter dated April 30, 1979, was a result of high mineral readings found in the earlier sample taken on March 29, 1979. The accompanying results are considerably lower than the previous tests and hope will be acceptable.

If any complications arise, please contact us as soon as possible.

Very truly yours,

/s/ J. E. Foreman

J.E.Foreman
baf

Engineering Department

CC: Messrs. R.Hardison/E.Fawkes
W.Haller/V.Gustavson

scnl

Ed.
6-2-79

May 29, 1979

Mr. James Foreman III
Plant Engineer
Union Carbide Corp.
Carbon Products Division
P. O. Box 887
Niagara Falls, New York 14302

RECEIVED
ENGINEERING DEPT.

JUN 1 1979

U.C.C.-C.P.D.
NIAGARA PLANT

Re: Analytical Results

Dear Jim:

Enclosed are the analytical results from your North Well
(Well No. 1) which was resampled on 4/30/79.

If you have any questions concerning these data, do not
hesitate to contact the undersigned.

Very truly yours,

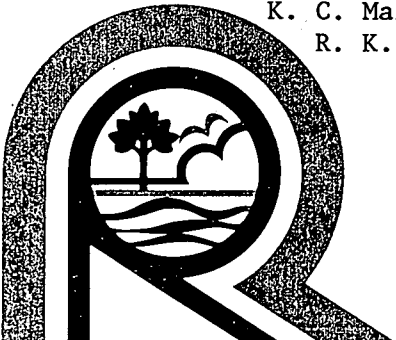
RECRA RESEARCH, INC.



John E. Banaszak, P.E.
Environmental Engineer

JEB/JAP/df
Enclosure
cc: R. A. Stadelmaier
K. C. Malinowski
R. K. Wyeth

Jim,
How does this
compare with prior
test?
Steve
5/5/79



RECRA RESEARCH, INC. 111 Wales Avenue / Tonawanda, New York 14150 / (716) 692-7620
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

7/6/79

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION - REPUBLIC PLANT
SEMI-ANNUAL WELL MONITORING

Report Date: 12/27/79

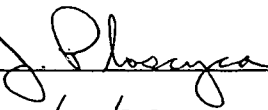
Sample Date: 11/21/79.

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		W-I	W-II	W-III
pH	Standard Units	8.52	7.91	7.93
Conductance	μ mhos/cm	1,310	3,120	1,340
Total Coliform	MPN/100 mls	2	< 2	2
Biochemical Oxygen Demand (5day)	mg/l	22	8	5
Chemical Oxygen Demand	mg/l	160	174	30
Total Organic Carbon	mg/l	70	130	35
Ammonia	mgN/l	14.4	< 0.5	0.5
Total Kjeldahl Nitrogen	mgN/l	24.0	2.8	2.0
Total Phosphorus	mgP/l	0.62	0.56	0.06
Nitrate	mgN/l	< 0.2	0.3	< 0.2
Nitrite	mgN/l	< 0.01	< 0.01	< 0.01
Chloride	mg/l	145	121	14
Total Residue (103°C)	mg/l	1,500	2,480	952
Total Recoverable Phenolics	mg/l	0.080	0.040	< 0.010
Sulfate	mg/l	6.0	750	400
Alkalinity (pH 4.5)	mg/l as CaCO ₃	898	804	260
Total Hardness	mg/l as CaCO ₃	775	1,750	540
Color	Pt-Co Color Units	---	---	---

COMMENTS: Samples were collected by Recra personnel on 11/21/79. Comments pertain to data on one or both pages of this report. Values reported as "less than" indicate the working detection limit for the particular sample or parameter. The above samples could not be quantified for color since their colors were not comparable to the platinum-cobalt standards. All analyses were performed according to U. S. Environmental Protection Agency methodology with the exception of Carbon Chloroform Extraction (CCE).

FOR RECRA RESEARCH, INC.

DATE


 12/28/79

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION - REPUBLIC PLANT
SEMI-ANNUAL WELL MONITORING

Report Date: 12/27/79

Sample Date: 11/21/79

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		W-I	W-II	W-III
Carbon Chloroform Extract	mg/l	2.0	1.6	< 1.0
Methylene Blue Active Substances	mg LAS/l	< 0.4	< 0.4	< 0.4
Total Aluminum	mg/l	56	0.6	< 0.1
Total Arsenic	µg/l	5.3	< 1.4	< 1.4
Total Chromium	mg/l	0.090	< 0.002	< 0.002
Hexavalent Chromium	mg/l	0.090	< 0.002	< 0.002
Total Copper	mg/l	0.783	< 0.003	< 0.003
Total Calcium	mg/l	99	275	14
Total Iron	mg/l	280	11.7	0.27
Total Lead	mg/l	0.72	0.03	< 0.02
Total Mercury	µg/l	13	< 0.4	< 1.0
Total Potassium	mg/l	66	6.4	4.2
Total Silver	mg/l	0.052	< 0.005	< 0.005
Total Sodium	mg/l	180	85	75
Halogenated Organic Scan	µg/l as Chlorine; Lindane Standard	1.80	1.47	1.54

COMMENTS: The CCE procedure employed, is a modification of the procedure found in Standard Methods for the Examination of Water and Wastewater, 14th Edition. Specific modifications to the procedure were submitted previously with the original proposal. Differences in detectability for a given parameter are a function of varying sample volumes taken for analysis. Halogenated organic scan results are used for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the response factor of Lindane but do not imply either the presence or absence of Lindane itself. Halogenated organic scan results do not include volatile organic constituents.

FOR RECRA RESEARCH, INC. DATE 12/28/79

7/31/80

LEL
8/5/80

file

July 31, 1980

Mr. James Foreman
Union Carbide Corporation
Republic Plant
3501 Hyde Park Boulevard
Niagara Falls, NY

RECEIVED
ENGINEERING DEPT.
AUG 5 1980
U.C.C.-C.P.D.
NIAGARA PLANT

Re: Semi-Annual Well Monitoring

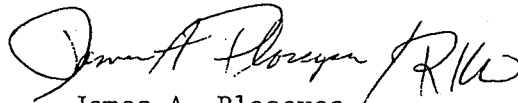
Dear Mr. Foreman:

Please find enclosed Recra Research, Inc.'s results of the analyses of well samples received at our laboratories on May 28, 1980 and June 9, 1980.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

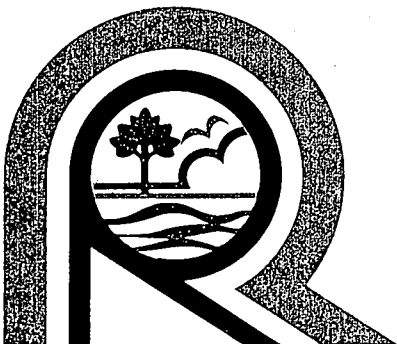
Sincerely,

RECRA RESEARCH, INC.


James A. Ploscyca
Laboratory Manager

KDM/JAP/skb
Enclosure

I.D.#517
578



RECRA RESEARCH, INC. P.O. Box 448 / Tonawanda, New York 14150 / (716) 838-6200
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION - REPUBLIC PLANT
SEMI-ANNUAL WELL MONITORINGReport Date: 7/31/80
Dates Received: 5/28/80 and 6/9/80

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		W-I	W-II	W-III
pH	Standard Units	8.10	7.61	7.94
Conductance	μ mhos/cm	1,520	2,200	890
Total Coliform	MPN/100 mls	<2	<2	<2
Biochemical Oxygen Demand (5-day)	mg/l	110	140	<2
Chemical Oxygen Demand	mg/l	67	180	<10
Total Organic Carbon	mg/l	19	72	24
Ammonia	mg N/l	9.1	<1	<0.5
Total Kjeldahl Nitrogen	mg N/l	-	<1	<0.50
Total Phosphorus	mg P/l	<0.02	<0.02	0.03
Nitrate	mg N/l	0.45	4.1	0.17
Nitrite	mg N/l	<0.01	<0.01	<0.01
Chloride	mg/l	103	109	9.3
Total Residue (103°C)	mg/l	1,400	4,600	700
Total Recoverable Phenolics	mg/l	0.025	0.26	0.053
Sulfate	mg/l	11	830	260
Alkalinity (pH 4.5)	mg/l as CaCO ₃	770	560	280

COMMENTS: Sample W-III was collected by Recra personnel on 5/28/80. W-I and W-II were not collected until 6/9/80 due to their slow recharging rate. Comments pertain to data on one or both pages of this report. Values reported as "less than" (<) indicate the working detection limit for the particular sample or parameter. Differences in detectability for a specific parameter are due to varying sample volumes taken for analysis.

FOR RECRA RESEARCH, INC. Karen D. MarcheseDATE 7/31/80

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION - REPUBLIC PLANT
SEMI-ANNUAL WELL MONITORINGReport Date: 7/31/80
Dates Received: 5/28/80 and 6/9/80

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		W-I	W-II	W-III
Total Hardness	mg/l as CaCO ₃	560	1,680	480
True Color	Pt-Co Color Units	27	50	0
Carbon Chloroform Extract	mg/l	3.1	8.0	5.2
Methylene Blue Active Substances	mg LAS/l	<0.1	<0.2	<0.1
Total Aluminum	mg/l	4.6	3.1	1.4
Total Arsenic	µg/l	10	<2	<1
Total Chromium	mg/l	0.008	<0.003	<0.003
Hexavalent Chromium	mg/l	-	-	-
Total Copper	mg/l	0.043	0.008	0.007
Total Calcium	mg/l	28	100	39
Total Iron	mg/l	27	80	6.4
Total Lead	mg/l	0.07	<0.02	<0.02
Total Mercury	µg/l	3.0	2.9	<1
Total Potassium	mg/l	64	7.9	4.1
Total Silver	mg/l	<0.005	<0.005	<0.005
Total Sodium	mg/l	200	100	66
Halogenated Organic Scan	µg/l as Chlorine; Lindane Standard	4.6	8.8	0.81

COMMENTS: All analyses were performed according to U.S. Environmental Protection Agency methodology with the exception of Carbon Chloroform Extraction (CCE). The CCE procedure employed is a modification of the procedure found in Standard Methods for the Examination of Water and Wastewater, 14th Edition. Total Kjeldahl Nitrogen could not be determined on Sample W-I due to interfering substances. Hexavalent chromium analysis was not determined on these samples due to their low total chromium concentration.

Halogenated Organic Scan (ECD) analyses were performed using an electron capture detector. Results of these scans are for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the chlorine content and response factor of Lindane, but do not imply either the presence or absence of Lindane itself. Halogenated Organic Scan (ECD) results generally do not include volatile organic constituents.

FOR RECRA RESEARCH, INC. Karen O. MarcheseDATE 7/31/80

1/23/81



UNION CARBIDE CORPORATION

CARBON PRODUCTS DIVISION

P.O. BOX 887, NIAGARA FALLS, NEW YORK 14302

January 23, 1981

Mr. John C. McMahon, P.E.
New York State
Department of Environmental Conservation
Region Nine Office
584 Delaware Avenue
Buffalo, New York 14202

Dear Mr. McMahon:

As requested under "Special Condition #5" of New York State Department of Environmental Conservation permit #2020 for our Republic Solid Waste Facility, please find enclosed a copy of Recra Research's semi-annual well monitoring report (2 pages) dated 1/2/81, showing the analytical results of samples taken on 11/17/80.

The analytical results were reported for only well #1. The remaining wells (#2 and #3) were dry on three separate attempts to obtain samples. The results of the sampling seems to be constant with previous reports, but if any complications with the results arise, please contact us as soon as possible.

Very truly yours,

/s/ M. G. Steffan

M.G. Steffan
baf

Engineering Department

Attach.

January 2, 1981

Mr. Michael Steffan
Union Carbide Corporation
3625 Highland Avenue
Niagara Falls, NY 14305

Re: Analytical Results (Semi-Annual Monitoring)

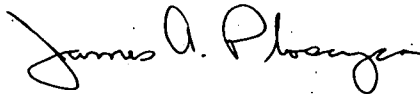
Dear Mr. Steffan:

Please find enclosed Recra Research, Inc.'s results of the analyses of a monitoring sample (W-I) collected by Recra personnel on November 17, 1980. The two remaining wells (W-2 and W-3) were visited on three separate occasions but were dry during each sampling attempt.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

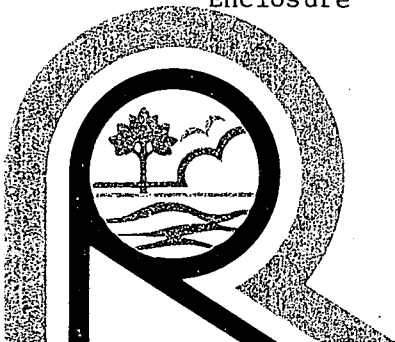
RECRA RESEARCH, INC.



James A. Ploscyca
Laboratory Manager

RVF/JAP/pcb
Enclosure

I.D. #1083



RECRA RESEARCH, INC. P.O. Box 448 / Tonawanda, New York 14150 / (716) 838-6200
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION
SEMI-ANNUAL WELL MONITORINGReport Date: 1/2/81
Sample Date: 11/17/80

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION
		W-I
Groundwater Elevation	Feet Below Top of Casing	12'7"
pH	Standard Units	8.33
Conductance (25°C)	µmhos/cm	2,150
Total Coliform	Colonies/100 mls	0
Biochemical Oxygen Demand (5 day)	mg/l	6
Chemical Oxygen Demand	mg/l	48
Total Organic Carbon	mg/l	210
Ammonia	mg N/l	28
Total Kjeldahl Nitrogen	mg N/l	-
Total Phosphorus	mg P/l	0.45
Nitrate	mg N/l	0.32
Nitrite	mg N/l	<0.01
Chloride	mg/l	85
Total Residue (103°C)	mg/l	1,200
Total Recoverable Phenolics	mg/l	0.03
Sulfate	mg/l	3.0
Alkalinity (pH 4.5)	mg/l as CaCO ₃	850
Total Hardness	mg/l as CaCO ₃	540
Color	Pt-Co Color Units	35

COMMENTS: Sample was collected by Recra personnel on 11/17/80. Comments pertain to data on one or both pages of this report. Values reported as "less than" (<) indicate the working detection limit for the particular sample or parameter. Analyses were performed according to U.S. Environmental Protection Agency methodologies where applicable. Total Kjeldahl Nitrogen could not be determined due to the suspected presence of interfering substances. Wells W-2 and W-3 were 20'2" and 15'2", respectively, to the bottom of each well from the top of casing.

FOR RECRA RESEARCH, INC.

DATE

R. V. Finn
 11/9/81

RECRA RESEARCH, INC.

I.D. #1083

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION
SEMI-ANNUAL WELL MONITORING

Report Date: 12/31/80

Sample Date: 11/17/80

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION
		W-I
Carbon		
Chloroform Extract	mg/l	<1
Methylene Blue		
Active Substances	mg/l	<0.1
Total Aluminum	mg/l	0.3
Total Arsenic	µg/l	8.0
Total Chromium	mg/l	<0.005
Hexavalent Chromium	mg/l	-
Total Copper	mg/l	0.006
Total Calcium	mg/l	110
Total Iron	mg/l	1.9
Total Lead	mg/l	0.03
Total Mercury	µg/l	<2
Total Potassium	mg/l	330
Total Silver	mg/l	<0.005
Total Sodium	mg/l	3,500
Halogenated	µg/l as Chlorine;	
Organic Scan (ECD)	Lindane Standard	0.91

COMMENTS: Halogenated Organic Scan (ECD) analyses were performed using an electron capture detector. Results of these scans are for screening purposes only and are not designed for quantification or qualification of any specific organic compound. Results are calculated based upon the chlorine content and response factor of Lindane, but do not imply either the presence or absence of Lindane itself. Halogenated Organic Scan (ECD) results generally do not include volatile organic constituents.

FOR RECRA RESEARCH, INC.

DATE

*R. V. Finn**1/9/81*

7/23/81



UNION CARBIDE CORPORATION
CARBON PRODUCTS DIVISION

P. O. BOX 887, NIAGARA FALLS, N. Y. 14302

July 23, 1981

Mr. John C. McMahon, P.E.
New York State
Dept. of Environmental Conservation
Region 9 Office
600 Delaware Avenue
Buffalo, New York 14202

Dear Mr. McMahon:

As requested under "Special Condition #5" of New York State Department of Environmental Conservation Permit #2020 for our Republic Solid Waste Facility, please find enclosed a copy of Recra Research's semi-annual well monitoring report (2 pages) dated 7/6/81, showing the analytical results of samples taken on 6/9/81.

The results of the sampling seem to be consistent with previous reports, but if there are any complications with the results, please contact me as soon as possible.

Very truly yours,

/s/ M. G. Steffan

M.G.Steffan
baf

Engineering Department

Attach.

July 6, 1981

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

Re: Semi-Annual Well Monitoring

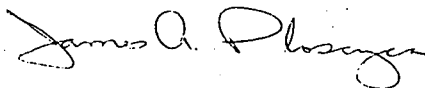
Dear Mr. Steffan:

Please find enclosed Recra Research, Inc.'s results of the analyses of well samples received at our laboratories on June 9, 1981.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

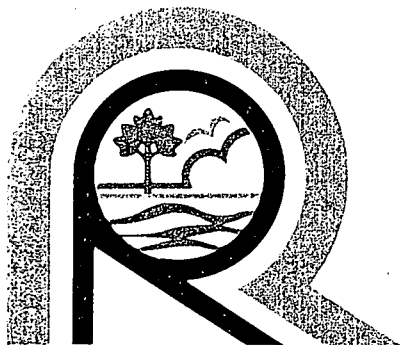
RECRA RESEARCH, INC.



James A. Ploscyca
Laboratory Manager

KDM/JAP/skb
Enclosure

I.D. #81-452



RECRA RESEARCH, INC.
TOTAL CHEMICAL WASTE MANAGEMENT THROUGH APPLIED RESEARCH

P.O. Box 448 / Tonawanda, New York 14150 / (716) 838-6200

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION
SEMI-ANNUAL WELL MONITORING

Report Date: 7/6/81

Sample Date: 6/9/81

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		W-I	W-II	W-III
Groundwater Elevation	Feet Below Top of Casing	9'4"	18'10"	9'7"
pH	Standard Units	7.77	7.13	7.90
Specific Conductance (25°C)	µmhos/cm	1,730	1,050	540
Total Coliform	Colonies/100 ml	<3	9	15
Biochemical Oxygen Demand (5 day)	mg/l	<5	<5	<5
Chemical Oxygen Demand	mg/l	41	32	6.8
Total Organic Carbon	mg/l	16	13	3.1
Ammonia	mg N/l	-	<0.5	<0.5
Total Kjeldahl Nitrogen	mg N/l	2.4	<0.5	<0.5
Total Phosphorus	mg P/l	<0.02	<0.02	<0.02
Nitrate	mg N/l	<0.1	<0.1	<0.1
Nitrite	mg N/l	0.016	<0.01	<0.01
Chloride	mg/l	87	83	5.8
Total Residue (103°C)	mg/l	1,100	960	440
Total Recoverable Phenolics	mg/l	<0.01	<0.01	<0.01
Sulfate	mg/l	35	330	120
Alkalinity (pH 4.5)	mg/l as CaCO ₃	890	170	240
Total Hardness	mg/l as CaCO ₃	630	550	270
Color	Pt-Co Color Units	40	17.5	30
Carbon Chloroform Extraction	mg/l	14	<2	<1
Methylene Blue Active Substances	mg/l	<0.03	0.058	<0.2

(Continued)

ANALYTICAL RESULTS (cont'd.)

UNION CARBIDE CORPORATION
SEMI-ANNUAL WELL MONITORING

Report Date: 7/6/81

Sample Date: 6/9/81

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		W-I	W-II	W-III
Total Aluminum	mg/l	<0.2	<0.2	<0.2
Total Arsenic	µg/l	6.1	<5	<5
Total Chromium	mg/l	<0.005	<0.005	<0.005
Hexavalent Chromium	mg/l	<0.005	<0.005	<0.005
Total Copper	mg/l	0.054	0.050	0.042
Total Calcium	mg/l	32	70	42
Total Iron	mg/l	16	9.3	70
Total Lead	mg/l	<0.03	<0.03	<0.03
Total Mercury	µg/l	<3	<3	<3
Total Potassium	mg/l	2.2	54	6.0
Total Silver	mg/l	0.015	0.016	<0.005
Total Sodium	mg/l	47	51	14
Halogenated Organic Scan (ECD)	µg/l as Chlorine; Lindane Standard	21	-	22

COMMENTS: Samples were collected by Recra personnel on 6/9/81. Comments pertain to data on one or both pages of this report. Values reported as "less than" (<) indicate the working detection limit for the particular sample or parameter. Analyses were performed according to U.S. Environmental Protection Agency methodologies where applicable. Halogenated Organic Scan (ECD) analysis for Sample W-II could not be performed due to insufficient sample volume. Halogenated Organic Scan (ECD) analyses were performed using an electron capture detector. Results of these scans are for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the chlorine content and response factor of Lindane, but do not imply either the presence or absence of Lindane itself. Halogenated Organic Scan (ECD) results generally do not include volatile organic constituents. Results of the Halogenated Organic Scan (ECD) analyses indicated that the major contribution to the high values was from peaks (compounds) with gas chromatographic retention times of less than two minutes. The ammonia value for W-I could not be determined due to suspected interferences.

FOR RECRA RESEARCH, INC.

DATE

7/14/82



UNION CARBIDE CORPORATION
CARBON PRODUCTS DIVISION

P. O. BOX 887, NIAGARA FALLS, N. Y. 14302

January 14, 1982

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

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

Re: Republic Solid Waste Management
Facility

Dear Mr. Mitrey:

Transmitted as stipulated under "Special Conditions #3 and #4" of our approved Permit #2586, for the Republic Solid Waste Management Facility, are the Operation Reports requested. These reports will bring you up-to-date with the types of wastes deposited, areas of active operation, intermediate cover and final cover. In addition, are the results of the semi-annual ground water monitoring program.

Enclosed in this package you will find the 1981 Operations Report with the following attachments:

1. One copy of the revised topographical map entitled "Operations and Topographical Report - Union Carbide Corporation, Carbon Products Division, Republic Solid Waste Management Facility, for the year 1981". The Plan includes updated topography by Mr. Ivan R. Klettke, L.L.S., a licensed land surveyor, location of active operations and notes on intermediate and final cover.
2. One copy of the results of the semi-annual Ground Water Monitoring, certified sampling and analytical results performed by Recra Research Inc.
3. One copy of the 1981 report of the Types and Quantities of Wastes Deposited at the Facility. (Note - future reports will be submitted quarterly).

Future operations reports regarding types and quantities of wastes deposited at the Facility will be submitted on a quarterly basis in the months of April, July and October of 1982. If you have any further questions regarding this report, please call me at 278-3718.

Very truly yours,

Engineering Department - Niagara

M.G. Steffan/baf
Attach.

CC: Messrs. J.F. Bavlus. M.A. Balent

RECRA RESEARCH, INC.

Hazardous Waste And Toxic Substance Control

January 7, 1982

RECEIVED
ENGINEERING DEPT.

JAN 8 1982

U.C.C.-C.P.D.
Hazardous Waste

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

Re: Semi-Annual Well Monitoring

Dear Mr. Steffan:

Please find enclosed Recra Research, Inc.'s results of the analyses of well samples received at our laboratories on December 9, 1981.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA RESEARCH, INC.



James A. Ploscyca
Laboratory Manager

RVF/JAP/skb
Enclosure

I.D. #81-1130
81-1130A
81-1130B

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION
SEMI-ANNUAL WELL MONITORINGReport Date: 1/7/82
Sample Date: 12/9/81

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		W-1	W-2	W-3
Groundwater Elevation	Feet Below Top of Casing	9'7"	18'10"	5'6"
pH	Standard Units	8.63	7.32	8.23
Specific Conductance (25°C)	µmhos/cm	1,250	580	560
Total Coliform	Organisms/100 ml	3.6	43	9.1
Biochemical Oxygen Demand (5 day)	mg/l	<2	-	<2
Chemical Oxygen Demand	mg/l	33	-	8
Total Organic Carbon	mg/l	11	-	<1
Ammonia	mg N/l	10	-	<0.1
Total Kjeldahl Nitrogen	mg N/l	9	-	0.2
Total Phosphorus	mg P/l	0.16	-	<0.02
Nitrate	mg N/l	0.47	2.7	2.7
Nitrite	mg N/l	0.19	0.19	<0.01
Chloride	mg/l	75	45	7.5
Total Residue (103°C)	mg/l	1,100	-	600
Total Recoverable Phenolics	mg/l	0.012	<0.01	<0.01
Sulfate	mg/l	3.9	130	110
Alkalinity (pH 4.5)	mg/l as CaCO ₃	660	190	240
Total Hardness	mg/l as CaCO ₃	410	-	270
True Color	Pt-Co Color Units	20	30	50
Carbon Chloroform Extraction	mg/l	-	-	-
Methylene Blue Active Substances	mg/l	<0.1	-	<0.1

(Continued)

R-5

ANALYTICAL RESULTS (cont'd.)

UNION CARBIDE CORPORATION
SEMI-ANNUAL WELL MONITORINGReport Date: 1/7/82
Sample Date: 12/9/81

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		W-1	W-2	W-3
Total Aluminum	mg/l	0.4	0.4	0.4
Total Arsenic	µg/l	<5	<5	<5
Total Chromium	mg/l	<0.005	<0.005	<0.005
Hexavalent Chromium	mg/l	<0.005	<0.005	<0.005
Total Copper	mg/l	0.010	<0.01	<0.01
Total Calcium	mg/l	10	50	28
Total Iron	mg/l	3.0	29	3.0
Total Lead	mg/l	0.05	<0.04	<0.04
Total Mercury	µg/l	<1	2.6	<1
Total Potassium	mg/l	59	4.5	3.8
Total Silver	mg/l	<0.005	<0.005	<0.005
Total Sodium	mg/l	170	17	61
Halogenated Organic Scan (ECD)	µg/l as Chlorine; Lindane Standard	1.3	-	1.1

COMMENTS: Samples were collected by Recra personnel on 12/9/81. Comments pertain to data on one or both pages of this report. Values reported as "less than" (<) indicate the working detection limit for the particular sample or parameter. Analyses were performed according to U.S. Environmental Protection Agency methodologies where applicable. Many analyses for Sample W-2 could not be performed due to insufficient sample volume. Halogenated Organic Scan (ECD) analyses were performed using an electron capture detector. Results of these scans are for screening purposes only and are not designed for qualification or quantification of any specific organic compound. Results are calculated based upon the chlorine content and response factor of Lindane, but do not imply either the presence or absence of Lindane itself. Halogenated Organic Scan (ECD) results generally do not include volatile organic constituents. Carbon Chloroform Extraction results will follow shortly.

FOR RECRA RESEARCH, INC.

R.V. Finn / JGF

DATE

1/3/82

RECRA RESEARCH, INC.

I.D. #81-1130



RECRA RESEARCH, INC.

Hazardous Waste And Toxic Substance Control

January 13, 1982

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

RECEIVED
ENGINEERING DEPT.

JAN 14 1982

U.C.C.-C.P.D.
RECEIVED

Re: Semi-Annual Well Monitoring

Dear Mr. Steffan:

Please find enclosed the completion of the results for the December semi-annual well monitoring. The samples were collected by Recra personnel on December 9, 1981.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA RESEARCH, INC.

James A. Ploscyca
Laboratory Manager

RVF/JAP/skb
Enclosure

I.D. #81-1130 - Additional
81-1130A
81-1130B

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION
SEMI-ANNUAL WELL MONITORINGReport Date: 1/13/82
Sample Date: 12/9/81

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION		
		W-1	W-2	W-3
Carbon Chloroform Extraction	mg/l	7.2	-	<2

COMMENTS: The Carbon Chloroform Extraction analysis for Sample W-2 could not be performed due to insufficient sample volume. The value reported as "less than" (<) indicates the working detection limit for the particular sample and/or parameter.

FOR RECRA RESEARCH, INC.

DATE

R. V. Zimm
1/13/82

RECRA RESEARCH, INC.

I.D. #81-1130

TYPES AND QUANTITIES OF WASTES DEPOSITED

Union Carbide Corporation
Carbon Products Division

REPUBLIC SOLID WASTE FACILITY

From: January 1, 1981 thru January 1, 1982*

** Thenceforth to be reported on a quarterly basis.*

<u>MATERIAL DEPOSITED</u>	<u>AMOUNT DEPOSITED (in lbs.)</u>
Carbonaceous Material	5,644,000
Wood Scrap	903,000
Firebrick	<u>1,162,000</u>
Total =	7,709,000

M.G.Steffan/baf
1/14/82

28/6/82



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

July 9, 1982

Mr. Robert J. Mitrey, P.E.
New York State
Dept. of Environmental Conservation
Region 9 Office
600 Delaware Avenue
Buffalo, New York 14202

Re: Republic Solid Waste Management
Facility

Dear Mr. Mitrey:

Transmitted as stipulated under "Special Conditions #3 and #4" of our approved Permit #2586, for the Republic Solid Waste Management Facility, are the Operations Reports as requested. This report will bring you up-to-date with the types and quantities of wastes deposited and the semi-annual well sampling results during the second quarter of 1982.

Enclosed in this package you will find:

1. One copy of the Second Quarter 1982 Report of the types and Quantities of Wastes Deposited Quarterly at the Facility. (Note - future reports will be submitted quarterly.)
2. One copy of the results of the semi-annual ground water monitoring, certified sampling and analytical results performed by Recra Research Inc.

If you have any further questions regarding this report, please do not hesitate to call.

Very truly yours,

Michael G. Steffan

M.G. Steffan
baf

Engineering Department

Enc.

CC: Messrs. M. Vaughan/R. Abbott
Niagara County Health Dept.
Box 428
Niagara Falls, New York 14302

Messrs. M.A. Balent/W.J. Giambrone

TYPES AND QUANTITIES OF WASTES DEPOSITED

Union Carbide Corporation
Carbon Products Division

REPUBLIC SOLID WASTE FACILITY

Period: 3/31/82 thru 6/30/82

<u>MATERIAL DEPOSITED</u>	<u>AMOUNT DEPOSITED (In Lbs.) - 1982</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	1,411,000	956,000			2,367,000
Wood Scrap	225,750	162,750			388,500
Firebrick	290,500	187,750			478,250
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTALS	1,927,250	1,306,500			3,233,750

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION
CARBON PRODUCTS DIVISIONReport Date: 6/25/82
Dates Received: 5/28 & 6/3/82

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)		
		W-1 (5/28 & 6/3/82)	W-2 (5/28/82)	W-3 (5/28 & 6/3/82)
Total Recoverable Phenolics	mg/l	0.090	-	<0.1
Total Organic Carbon	mg/l	17	15	5

COMMENTS: Analyses were performed according to U.S. Environmental Protection Agency methodologies. Value reported as less than (<) indicates the working detection limit for the particular sample or parameter. Due to small volume available from Well-2 some analyses could not be performed. Wells W-1 and W-3 were sampled on two days to obtain enough volume for all parameters.

FOR RECRA RESEARCH, INC.

R. V. Finn

DATE

6/25/82



RECRA RESEARCH, INC.

Hazardous Waste And Toxic Substance Control

June 25, 1982

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

RECEIVED
ENGINEERING DEPT.

JUN 28 1982

U.C.C.-C.P.D.
NIAGARA FALLS

Re: Analytical Results

Dear Mr. Steffan:

Please find enclosed Recra Research, Inc. results of the analyses of samples collected by Recra personnel on May 28, and June 3, 1982.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA RESEARCH, INC.

James A. Ploscyca
Laboratory Manager

JAP/df
Enclosure

I.D. #82-558
82-558A Additional

7/12/83



RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

December 20, 1982

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

Re: Analytical Results

Dear Mr. Steffan:

Please find enclosed results of the analyses of water samples collected by Recra personnel on December 3 and 6, 1982.

These results were reported by telephone to you on December 17, 1982.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA ENVIRONMENTAL LABORATORIES

James A. Plöscyca
Laboratory Manager

RVF/JAP/skb
Enclosure

I.D. #82-1182
82-1182A

ANALYTICAL RESULTS

UNION CARBIDE CORPORATION

Report Date: 12/20/82

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		W-1 (12/3/82)	W-3 (12/6/82)
Total Recoverable Phenolics	mg/l	<0.01	<0.01
Total Organic Carbon	mg/l	15	4.0

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

FOR RECRA ENVIRONMENTAL LABORATORIES

R. V. Finner

DATE

12/21/82

RECRA ENVIRONMENTAL LABORATORIES

I.D. #82-1182



Waste Landfill
State Perm - Spec. Cond.

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

January 12, 1983

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

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION
PROPERTY OF UNION CARBIDE CORPORATION. IT IS
NOT TO BE DISCLOSED OR REPRODUCED WITHOUT THE
EXPRESSED WRITTEN PERMISSION OF U. C. C. AND IS
NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE
INTERESTS OF U. C. C.

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

Re: Republic Solid Waste Management
Facility

Dear Mr. Mitrey:

Transmitted as stipulated under "Special Conditions #3 and #4" of our approved Permit #2586, for the Republic Solid Waste Management Facility, are the Operation Reports requested. These reports will bring you up-to-date with the types of wastes deposited, areas of active operation, intermediate cover and final cover. In addition, are the results of the semi-annual ground water monitoring program.

Enclosed in this package you will find the 1982 Operations Report with the following attachments:

1. One copy of the revised topographical map entitled "Operations and Topographical Report - Union Carbide Corporation, Carbon Products Division, Republic Solid Waste Management Facility, for the year 1982". The Plan includes updated topography by The Bissell Company, licensed land surveyors, location of active operations and notes on intermediate and final cover.
2. One copy of the results of the semi-annual Ground Water Monitoring, certified sampling and analytical results performed by Recra Research Inc.
3. One copy of the 1982, 4th Quarter and Year to Date report of the Types and Quantities of Wastes Deposited at the Facility.

Future operations reports regarding types and quantities of wastes deposited at the Facility will be submitted on a quarterly basis in the months of April, July, October and December of 1983. If you have any further questions regarding this report, please call me at 278-3718.

Very truly yours,

Michael G. Steffan

M.G. Steffan/baf
Attach.

Engineering Department

CC: Messrs. J.F. Baylus
M.A. Balent

TYPES AND QUANTITIES OF WASTES DEPOSITED

Union Carbide Corporation
Carbon Products Division

REPUBLIC SOLID WASTE FACILITY

Report Quarterly Period: 10/1/82 thru 12/31/82

Report Yearly Period: 1982

<u>MATERIAL DEPOSITED</u>	<u>AMOUNT DEPOSITED (In Lbs.) - 1982</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	1,411,000	956,000	1,859,000*	1,270,250	5,496,250
Wood Scrap	225,750	162,750	251,000*	203,000	842,500
Firebrick	290,500	187,750	157,200	127,500	762,950
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTALS	1,927,250	1,306,500	2,267,200	1,600,750	7,101,700

* Increased due to Acheson Location closure to be completed 10/1/82.

7/8/83



Waste - Blue
Spec Cond.

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

July 8, 1983

Mr. Robert J. Mitrey, P.E.
New York State
Dept. of Environmental Conservation
Region 9 Office
600 Delaware Avenue
Buffalo, New York 14202

Re: Republic Solid Waste Management
Facility

Dear Mr. Mitrey:

Transmitted as stipulated under "Special Conditions #3 and #4" of our approved Permit #2586, for the Republic Solid Waste Management Facility, are the Operations Reports as requested. This report will bring you up-to-date with the types and quantities of wastes deposited and the semi-annual well sampling results during the second quarter of 1983.

Enclosed in this package you will find:

1. One copy of the Second Quarter 1983 Report of the types and Quantities of Wastes Deposited Quarterly at the Facility. (Note - future reports will be submitted quarterly.)
2. One copy of the results of the semi-annual ground water monitoring, certified sampling and analytical results performed by Recra Research Inc.

If you have any further questions regarding this report, please do not hesitate to call.

Very truly yours,

Michael G. Steffan

M.G. Steffan
baf

Engineering Department

Enc.

CC: Messrs. M. Vaughan/R. Abbott
Niagara County Health Dept.
Box 428
Niagara Falls, New York 14302

BC: Mr. M.A. Balent

TYPES AND QUANTITIES OF WASTES DEPOSITED

Union Carbide Corporation
Carbon Products Division

REPUBLIC SOLID WASTE FACILITY

Period: 4/1/83 thru 6/30/83

<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	1,612,000	1,575,000			3,187,000
Wood Scrap	200,000	205,000			405,000
Firebrick	225,000	237,000			462,000
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTALS	2,037,000	2,017,000			4,054,000

M.G. Steffan/baf
3/30/83



RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

June 29, 1983

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

RECEIVED
ENGINEERING DEPT.
JUL 1 1983
U.C.C.-C.P.D.
NIAGARA PLANT

Re: Analytical Results

Dear Mr. Steffan:

Please find enclosed results of the analyses of water samples collected by Recra personnel on June 14, 1983.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA ENVIRONMENTAL LABORATORIES

James A. Ploscyca
Laboratory Manager

RVF/JAP/jah
Enclosure

I.D. #83-518

ANALYTICAL RESULTS

UNION CARBIDE REPUBLIC PLANT

Report Date: 6/29/83
Date Received: 6/14/83

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		W-1 (6/14/83)	W-3 (6/14/83)
Water Level	Feet from top of well casing	9.00	10.25
Total Recoverable Phenolics	mg/l	<0.01	<0.01
Total Organic Carbon	mg/l	28	23

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

R. V. Finner
6/29/83



RECRA ENVIRONMENTAL LABORATORIES

I.D. #83-518

61717855



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

January 11, 1985

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

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

Re: Republic Solid Waste Management
Facility

Dear Mr. Mitrey:

Transmitted as stipulated under "Special Conditions #3 and #4" of our approved Permit #2586, for the Republic Solid Waste Management Facility, are the Operation Reports requested. These reports will bring you up-to-date with the types of wastes deposited, areas of active operation, intermediate cover and final cover. In addition, are the results of the semi-annual ground water monitoring program.

Enclosed in this package you will find the 1984 Operations Report with the following attachments:

1. One copy of the revised topographical map entitled "Operations and Topographical Report - Union Carbide Corporation, Carbon Products Division, Republic Solid Waste Management Facility, for the year 1984". The Plan includes updated topography by The Bissell Company, licensed land surveyors, location of active operations and notes on intermediate and final cover.
2. One copy of the results of the semi-annual Ground Water Monitoring, certified sampling and analytical results performed by Recra Research Inc.
3. One copy of the 1984, 4th Quarter and Year-to-Date report of the Types and Quantities of Wastes Deposited at the Facility.

Future operations reports regarding types and quantities of wastes deposited at the Facility will be submitted on a quarterly basis in the months of April, July, October and December of 1985. If you have any further questions regarding this report, please call me at 278-3718.

Very truly yours,

/s/ M.G.Steffan

M.G.Steffan/baf
Enc. (*see map in Town file*)

Environmental Coordinator

CC: Mr. M.A.Balent



RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

December 21, 1984

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

RECEIVED
ENGINEERING DEPT.

JAN 7 1985

U.C.C.-C.P.D.
NIAGARA PLANT

Re: Analytical Results

Dear Mr. Steffan:

Please find enclosed results of the analyses of the samples collected by Recra personnel on December 4 & 5, 1984.

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 Manager

RVF/JAP/mdc
Enclosure

I.D. #84-1212 (1)
1212A

ANALYTICAL RESULTS

UNION CARBIDE-REPUBLIC PLANT

Report Date: 12/21/84
Date Received: 12/4-5/84

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		W-1 (12/5/84)	W-3 (12/4/84)
Total Organic Carbon	mg/l	15	1.0
Total Recoverable Phenolics	mg/l	<0.01	<0.01

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. Total Organic Carbon results may not include volatile organics since the samples are purged with an inert gas prior to analysis.

FOR RECRA ENVIRONMENTAL LABORATORIES

DATE

D. V. Finner
12/21/84

RECRA ENVIRONMENTAL LABORATORIES

I.D. #84-1212

TYPES AND QUANTITIES OF WASTES DEPOSITED

Union Carbide Corporation
Carbon Products Division

REPUBLIC SOLID WASTE FACILITY

Period: 10/1/84 thru 12/31/84

<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	828,000	975,000	1,150,000	725,000	3,678,000
Wood Scrap	182,000	189,000	185,000	160,000	716,000
Firebrick	197,000	170,000	162,000	150,000	679,000
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTALS	1,207,000	1,334,000	1,497,000	1,035,000	5,073,000

M.G.Steffan/baf
1/11/85

7/15/85



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

July 15, 1985

Mr. Robert J. Mitrey, P.E.
New York State
Dept. of Environmental Conservation
Region 9 Office
600 Delaware Avenue
Buffalo, New York 14202

Re: Republic Solid Waste Management
Facility

Dear Mr. Mitrey:

Transmitted as stipulated under "Special Conditions #3 and #4" of our approved Permit #2586, for the Republic Solid Waste Management Facility, are the Operations Reports as requested. This report will bring you up-to-date with the types and quantities of wastes deposited and the semi-annual well sampling results during the second quarter of 1985.

Enclosed in this package you will find:

1. One copy of the Second Quarter 1985 Report of the types and Quantities of Wastes Deposited Quarterly at the Facility. (Note - future reports will be submitted quarterly.)
2. One copy of the results of the semi-annual ground water monitoring, certified sampling and analytical results performed by Recra Research Inc.

If you have any further questions regarding this report, please do not hesitate to call.

Very truly yours,

A handwritten signature in cursive script that reads "Michael G. Steffan".

M.G.Steffan
baf

Engineering Department

Enc.

CC: Messrs. M.Vaughan/R.Abbott
Niagara County Health Dept.
Box 428, Niagara Falls, N.Y.

TYPES AND QUANTITIES OF WASTES DEPOSITED

Union Carbide Corporation
Carbon Products Division

REPUBLIC SOLID WASTE FACILITY

Period: 3/31/85 thru 6/30/85

<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	805,000	775,000			1,580,000
Wood Scrap	175,000	125,000			300,000
Firebrick	161,000	100,000			261,000
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTALS	1,141,000	1,000,000			2,141,000

M.G.Steffan/baf
7/15/85



RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

July 3, 1985

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

RECEIVED
ENGINEERING DEPT.

JUL 10 1985

U.C.C.-C.P.D.
NIAGARA PLANT

Re: Analytical Results

Dear Mr. Steffan:

Please find enclosed results of the analyses of the samples received at our laboratories on June 14, 1985.

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 Operations Manager

Richard V. Finn
Inorganic Coordinator

RVF/JAP/dmf
Enclosure

I.D. #85-618 (1)

ANALYTICAL RESULTS
UNION CARBIDE-REPUBLIC PLANT

Report Date: 7/3/85
Date Received: 6/14/85

PARAMETER	DATE OF ANALYSIS	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
			W-1 (6/14/85)	W-3 (6/14/85)
Total Organic Carbon	6/19/85	mg/l	12	2.3
Total Recoverable Phenolics	6/19/85	mg/l	<0.01	<0.01

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. Total Organic Carbon results may not include volatile organics since the samples are purged with an inert gas prior to analysis.

FOR RECRA ENVIRONMENTAL LABORATORIES

DATE

D. V. Finner
7/3/85



I.D. #85-618

RECRA ENVIRONMENTAL LABORATORIES

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

June 13-14, 1985

Prepared For:

Union Carbide Republic Plant
Hyde Park Boulevard
Niagara Falls, NY 14303

Prepared By:

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

Written By: Robert P. Bauer

Reviewed By: George C. Moretti

Date: 6 - 27 - 85



FIELD REPORT
UNION CARBIDE REPUBLIC

1.0 INTRODUCTION

The following field report describes the quarterly groundwater monitoring conducted at Union Carbide Republic Plant located in Niagara Falls, New York. This field event was performed on June 13-14, 1985 by Recra personnel Robert P. Bauer.

2.0 METHODOLOGIES

Collection of samples was performed in accordance with accepted EPA methodologies. Chain of Custody was maintained from the time of collection until arrival at Recra Environmental Laboratory located in Tonawanda, New York.

3.0 FIELD OBSERVATIONS

Information concerning well evacuation and sampling procedures can be found in Table I. Measurements for specific conductance and temperature were made in the field using calibrated and EPA approved methods. A summary of this data can be found in Table II.



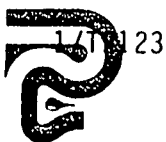


TABLE I
WELL INFORMATION
UNION CARBIDE REPUBLIC PLANT

SAMPLING DATE 6-14-85

WELL I.D.	DATE	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	6-14-85	1230	2" steel	9.45	21.0	1.85	To Dryness	Peristaltic Pump	Peristaltic Pump	Rapid
W-2	NO SAMPLE -- DRY WELL									
W-3	6-14-85	1330	2" steel	12.12	20.0	1.26	To Dryness	Peristaltic Pump	Peristaltic Pump	Rapid

- * 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 RESEARCH, INC.

George J. Innett

DATE 6-27-85



1/T2123

TABLE II
FIELD MEASUREMENTS

SAMPLING DATE 6-14-85

SAMPLE I.D.	DATE	TIME	CONDUCTIVITY (uMHOS/CM)	TEMP (°C)	COMMENTS
W-1	6-14-85	1230	760	13.0	
W-2	6-14-85	1330	-	-	DRY -- NO SAMPLE
W-3	6-14-85	1300	1860	13.5	

FOR RECRA RESEARCH, INC.

George C. Newell

DATE

6-27-85

RECRA RESEARCH, INC.	<i>CHAIN OF CUSTODY RECORD</i>
-----------------------------	--------------------------------

RECRA RESEARCH, INC.	<i>CHAIN OF CUSTODY RECORD</i>
-----------------------------	--------------------------------

[illegible]

27/27/84



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

February 27, 1984

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

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION
PROPERTY OF UNION CARBIDE CORPORATION. IT IS
NOT TO BE DISCLOSED OR REPRODUCED WITHOUT THE
EXPRESSED WRITTEN PERMISSION OF U. C. C. AND IS
NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE
INTERESTS OF U. C. C.

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

Re: Republic Solid Waste Management
Facility

Dear Mr. Mitrey:

Transmitted as stipulated under "Special Conditions #3 and #4" of our approved Permit #2586, for the Republic Solid Waste Management Facility, are the Operation Reports requested. These reports will bring you up-to-date with the types of wastes deposited, areas of active operation, intermediate cover and final cover. In addition, are the results of the semi-annual ground water monitoring program.

Enclosed in this package you will find the 1983 Operations Report with the following attachments:

1. One copy of the revised topographical map entitled "Operations and Topographical Report - Union Carbide Corporation, Carbon Products Division, Republic Solid Waste Management Facility, for the year 1983". The Plan includes updated topography by The Bissell Company, licensed land surveyors, location of active operations and notes on intermediate and final cover.
2. One copy of the results of the semi-annual Ground Water Monitoring, certified sampling and analytical results performed by Recra Research Inc.
3. One copy of the 1983, 4th Quarter and Year to Date report of the Types and Quantities of Wastes Deposited at the Facility.

Future operations reports regarding types and quantities of wastes deposited at the Facility will be submitted on a quarterly basis in the months of April, July, October and December of 1984. If you have any further questions regarding this report, please call me at 278-3718.

Very truly yours,

/s/ M.G. Steffan

M.G. Steffan/baf
Enc.

Environmental Coordinator

CC: Mr. M.A. Balent



RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

December 16, 1983

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

Re: Analytical Results

Dear Mr. Steffan:

Please find enclosed results of the analyses of a water sample collected by Recra personnel on December 2, 1983.

If you have any questions concerning these data, do not hesitate to contact the undersigned.

Sincerely,

RECRA ENVIRONMENTAL LABORATORIES

James A. Ploscyca
Laboratory Manager

RVF/JAP/jah
Enclosure

I.D. #83-1278 (2)

ENGINEERING DEPT.
DEC 27 1983
U.C.C.-C.P.D.
NIAGARA FALLS

ANALYTICAL RESULTS
UNION CARBIDE REPUBLIC PLANT

Report Date: 12/16/83
Date Received: 12/2/83

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		W-1 (12/2/83)	W-3 (12/2/83)
Water Level	Feet from top of well casing	12.66	2.75
Total Recoverable Phenolics	mg/l	0.011	0.050
Total Organic Carbon	mg/l	13	2.5

COMMENTS: Analyses were performed according to U.S. Environmental Protection Agency methodologies. Well W-2 was dry and could not be sampled.

FOR RECRA ENVIRONMENTAL LABORATORIES

DATE

R. V. Finner
12/16/83



RECRA ENVIRONMENTAL LABORATORIES

I.D. #83-1278

TYPES AND QUANTITIES OF WASTES DEPOSITED

Union Carbide Corporation
Carbon Products Division

REPUBLIC SOLID WASTE FACILITY

Report Quarterly Period: 10/1/83 thru 12/31/83

Report Yearly Period: 1983

<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	1,612,000	1,575,000	1,225,000	1,075,000	5,487,000
Wood Scrap	200,000	205,000	120,000	135,000	660,000
Firebrick	225,000	237,000	232,000	227,000	921,000
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTALS	2,037,000	2,017,000	1,577,000	1,437,000	7,068,000

M.G.Steffan/baf
2/27/84

05/17/84



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

July 17, 1984

Mr. Robert J. Mitrey, P.E.
New York State
Dept. of Environmental Conservation
Region 9 Office
600 Delaware Avenue
Buffalo, New York 14202

Re: Republic Solid Waste Management
Facility

Dear Mr. Mitrey:

Transmitted as stipulated under "Special Conditions #3 and #4" of our approved Permit #2586 for the Republic Solid Waste Management Facility, are the Operations Reports as requested. This report will bring you up-to-date with the types and quantities of wastes deposited and the semi-annual well sampling results during the second quarter of 1984.

Enclosed in this package you will find:

1. One copy of the Second Quarter 1984 Report of the types and Quantities of Wastes Deposited Quarterly at the Facility. (Note - future reports will be submitted quarterly.)
2. One copy of the results of the semi-annual ground water monitoring, certified sampling and analytical results performed by Recra Research Inc.

Our Operations Permit is due to expire November 30, 1984. Our intentions would be to continue our Solid Waste Management Program at Union Carbide. I would like to request any information which is required to initiate continuation of our permit.

If you have any further questions regarding this report, please do not hesitate to call me at 278-3718.

Very truly yours,

Environmental Coordinator

M.G. Steffan
baf

Enc.

CC: Messrs. M. Vaughan/R. Abbott
Niagara County Health Dept.
Box 428
Niagara Falls, New York 14302

Mr. M.A. Balent

TYPES AND QUANTITIES OF WASTES DEPOSITED

Union Carbide Corporation
Carbon Products Division

REPUBLIC SOLID WASTE FACILITY

Period: 4/1/84 thru 6/30/84

<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	828,000	975,000			1,803,000
Wood Scrap	182,000	189,000			371,000
Firebrick	197,000	170,000			367,000
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTALS	1,207,000	1,334,000			2,541,000

M.G.Steffan/baf
7/17/84



RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

June 22, 1984

ENGINEERING DEPT.
JUN 27 1984

U.C.C.-C.P.D.
NIAGARA PLANT

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

Re: Analytical Results

Dear Mr. Steffan:

Please find enclosed results of the analyses of the samples collected by Recra personnel on June 8, 1984.

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 Manager

RVF/JAP/dmf
Enclosure

I.D. #84-584

ANALYTICAL RESULTS

UNION CARBIDE - REPUBLIC PLANT

Report Date: 6/22/84
Date Received: 6/8/84

PARAMETER	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
		W-1 (6/8/84)	W-3 (6/8/84)
Water Level	feet from top of well casing	8.00	7.25
Total Organic Carbon	mg/l	23	9.0
Total Recoverable Phenolics	mg/l	<0.01	<0.01

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. Total Organic Carbon results may not include volatile organics since the samples are purged with an inert gas prior to analysis.

FOR RECRA ENVIRONMENTAL LABORATORIES

DATE

D. V. Finn
6/22/84

RECRA ENVIRONMENTAL LABORATORIES

I.D. #84-584

7/10/86



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

January 10, 1986

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

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

Re: Republic Solid Waste Management
Facility

Dear Mr. Mitrey:

Transmitted as stipulated under "Special Conditions #3 and #4" of our approved Permit #2586, for the Republic Solid Waste Management Facility, are the Operation Reports requested. These reports will bring you up-to-date with the types of wastes deposited, areas of active operation, intermediate cover and final cover. In addition, are the results of the semi-annual ground water monitoring program.

Enclosed in this package you will find the 1983 Operations Report with the following attachments:

1. One copy of the revised topographical map entitled "Operations and Topographical Report - Union Carbide Corporation, Carbon Products Division, Republic Solid Waste Management Facility, for the year 1985". The Plan includes updated topography by The Bissell Company, licensed land surveyors, location of active operations and notes on intermediate and final cover.
2. One copy of the results of the semi-annual Ground Water Monitoring, certified sampling and analytical results performed by Recra Research Inc.
3. One copy of the 1985, 4th Quarter and Year-to-Date report of the Types and Quantities of Wastes Deposited at the Facility.

Future operations reports regarding types and quantities of wastes deposited at the Facility will be submitted on a quarterly basis in the months of April, July, October and December of 1986. If you have any further questions regarding this report, please call me at 278-3541.

Very truly yours,

Michael A. Balent

M.A. Balent, P.E.
baf

Chief Plant Engineer

Enc. (for map - see Town file)

ANALYTICAL RESULTS
UNION CARBIDE-REPUBLIC PLANT

Report Date: 1/10/86
Date Received: 12/5/85

PARAMETER	DATE OF ANALYSIS	UNITS OF MEASURE	SAMPLE IDENTIFICATION (DATE)	
			W-1 (12/5/85)	W-3 (12/5/85)
Total Organic Carbon	12/9/85	mg/l	111	44
Total Recoverable Phenolics	12/27/85	mg/l	1.69	0.085

COMMENTS:

Analyses were performed according to U.S. Environmental Protection Agency methodologies. Well W-2 was dry and could not be sampled. Total Organic Carbon results may not include volatile organics since the samples are purged with an inert gas prior to analysis.

FOR RECRA ENVIRONMENTAL LABORATORIES

DATE

D. V. Fain

1/10/86



I.D. #85-1495

RECRA ENVIRONMENTAL LABORATORIES

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RECRA RESEARCH, INC.

Hazardous Waste And Toxic Substance Control

FIELD REPORT

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

December 1985

Prepared For:

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

Prepared By:

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5C057307

Written By: Jerome L. Miller

Reviewed By: John A. Miller

Date: 12/31/85

1.0 INTRODUCTION

This report describes the quarterly groundwater monitoring sampling conducted at the Union Carbide Republic Plant located in Niagara Falls. Field Work was performed on December 4 and 5 by Recra Research, Inc. personnel Don Johnson and Jerry Miller.

2.0 METHODOLOGIES

Collection and preservation of samples was performed in accordance with accepted EPA methodologies. Chain of Custody was maintained from the time of collection through arrival at Recra Environmental Laboratories located in Tonawanda, New York.

3.0 FIELD OBSERVATIONS

Information regarding well evacuation and sampling procedures are presented in Table 1. Measurements of pH, specific conductance, and temperature were made in the field using calibrated instrumentation and EPA approved methods. A summary of these data can be found in Table II.





TABLE I

 UNION CARBIDE REPUBLIC PLANT
 NIAGARA FALLS, NEW YORK

 WELL INFORMATION
 December 4, 1985

WELL I.D.	DATE/ 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	12/4/85	2" Steel	7.73	21.00	2.12	7.0	Peristaltic Pump	Peristaltic Pump	Very Slow
W-2	12/4/85	4" Steel	Dry	20.16	-----	-----	Dry	-----	-----
W-3	12/4/85	2" Steel	2.40	10.00	2.82	9.0	Peristaltic Pump	Peristaltic Pump	Very Slow

* 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

12-30-85

TABLE II

UNION CARBIDE REPUBLIC PLANT
NIAGARA FALLS, NEW YORKFIELD MEASUREMENTS
December 4-5, 1985

SAMPLE I.D.	DATE	TIME	pH (STANDARD UNITS)	CONDUCTIVITY (uMHOS/CM)	TEMP (°C)	COMMENTS
W-1	12/5/85	11:03	7.63	1600	7°	
W-2	12/4/85	11:30	-----	-----	-----	Dry
W-3	12/5/85	11:50	7.70	520	7°	

FOR RECRA RESEARCH, INC.

Jerome L. Miller

DATE

12-30-85

RECRA RESEARCH, INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.: SC057307					SITE NAME: Union Carbide					NO. OF CON- TAINERS	<div>4oz plastic</div> <div>8oz plastic</div> <div>1/2 gal plastic</div> <div>16oz glass</div> <div>20 A</div>	REMARKS
SAMPLERS (SIGNATURE): <i>Jimmy Miller</i>												
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION							
W-1	12/5					4	1	1	1	1	-	
W-23	↓					8	2	2	2	2	-	
Field Blank						1	-	-	-	-	1	
W-2												
						13	3	3	3	3	1	
RELINQUISHED BY (SIGNATURE): <i>Jimmy Miller</i>			DATE/TIME: 12-5-85 1640		RECEIVED BY (SIGNATURE): <i>John A. [Signature]</i>			RELINQUISHED BY (SIGNATURE):			DATE/TIME:	
RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED BY (SIGNATURE):			RELINQUISHED BY (SIGNATURE):			DATE/TIME:	
RELINQUISHED BY (SIGNATURE):			DATE/TIME:		RECEIVED FOR LABORATORY BY (SIGNATURE):			DATE/TIME:		REMARKS:		

Distribution: Original accompanies shipment; copy to coordinator field files