GRAFTech International

GrafTech International Holdings Inc.
12900 Snow Road • Parma, Ohio 44130

Juanita Bursley
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February 28, 2011

Mr. Brian Sadowski
Project Manager
New York State Department of Environmental Conservation
270 Michigan Ave.
Buffalo, NY 14203-2915

Subject: GrafTech International Holdings Inc. closed landfill site, SWMF #32N03 (formerly Site #932035)

Dear Mr. Sadowski:

Please find attached the requisite Periodic Review Report (PRR) for the subject GrafTech International Holdings Inc. (GTIH) closed landfill site, SWMF #32N03 (formerly Union Carbide Corp., Carbon Products Division and UCAR Republic Site #932035), as requested in your 45-Day Reminder Notice, dated January 21, 2011. This Landfill was closed and capped in 1987, and classified by the state as a Class 4 Inactive Hazardous Waste Site in 1997. There is no required Remedial Program or remedial objectives established for this site. As requested by the state in March 2009, a proposed Operation, Maintenance and Monitoring (OM&M) Plan was submitted to New York State Department of Environmental Conservation (NYSDEC) Region 9 on September 30, 2009, which was subsequently approved on November 4, 2009. This is the second PRR submitted for this site, the purpose of which is to document GTIH's implementation and full compliance with the OM&M Plan. This report and enclosed certification cover the period of time between January 1, 2010 and December 31, 2010. An electronic copy was also provided to you by email on February 28, 2010.

Please contact me should you have any questions or need additional information regarding the PRR. My contact information is provided above in the letter header.

Sincerely,

Juanita M. Bursley

Juanita M. Bursley
Senior Manager, Corporate Environmental Risk Management
GrafTech International Holdings Inc.

Enclosures

cc: (Hard Copies Only - Cover Letter, Periodic Review/OM&M Report and PRR IC/EC Certification):

Mr. Steven Bates
New York State Department of Health
Flanigan Square
547 River Street
Troy, NY 12180

Mr. Robert Bucci
3344 Wildwood Dr.
Niagara Falls, NY 14304

Mr. Michael Cruden
Director, Remedial Bureau E
NYS DEC
Environmental Remediation
625 Broadway
Albany, NY 12233-7012

Mr. Marty Doster
Hazardous Waste Remediation Engineer, Region 9
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999

Mr. Michael Hinton
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
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Mr. Greg Sutton
Hazardous Waste Remediation Engineer, Region 9
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999

GRAFTECH INTERNATIONAL HOLDINGS INC.

(formerly UCAR Carbon Company, Republic Site)

PERIODIC REVIEW REPORT AND ANNUAL OPERATION, MAINTENANCE AND MONITORING REPORT FOR THE CLOSED LANDFILL SITE SWMF #32N03

(Formerly UCAR Republic Site Registry No. 932035)

PER THE SITE OM&M PLAN

February 28, 2011

PERIODIC REVIEW REPORT AND OPERATION, MAINTENANCE AND MONITORING REPORT

For SWMF #32N03

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ENCLOSURES

1.0 INTRODUCTION AND SITE OVERVIEW

This Periodic Review Report (PRR) is being submitted for the GrafTech International Holdings Inc. (GTIH) (formerly UCAR Carbon Company Inc.) closed landfill facility, SWMF #32N03 (Registry No. 932035) ("Landfill"), under the provisions of the Division of Environmental Remediation (DER) Inactive Hazardous Waste Site Program. The Landfill is located in the Town of Niagara, Niagara County, State of New York, on Parcel # 130.20-1.1. The Landfill is located off of Hyde Blvd. behind the former UCAR Republic Plant. The Landfill was closed and capped in 1987. The Landfill property, which is 61.80 acres, of which 16.48 acres make up the cap, is secured by a metal fence with two (2) locked entrance gates. In 1997, the Landfill was reclassified by the state from Class 2a to a Class 4 Inactive Hazardous Waste Site. **There is no required Remedial Program or remedial objectives for this site**. The purpose of this PRR is to document GTIH's full implementation and compliance with the post-closure care procedures and institutional/engineering controls contained in the Operation, Monitoring and Maintenance (OM&M) Plan, which was approved by the state on November 4, 2009. The OM&M Plan specifies the routine inspection, maintenance, and groundwater monitor programs, and also describes the requirement for an approved Soil Management Plan (SMP) in the event that GTIH has future plans to excavate soil from the areas outside the footprint of the landfill. This PRR covers the period of January 1, 2010 through December 31, 2010.

2.0 SITE MANAGEMENT

For the report period specified above, GTIH has designated the Sr. Manager, Corporate Environmental Risk Management, to be responsible for managing the Landfill. This position is currently filled by Ms. Juanita M. Bursley, who is located at the Corporate Headquarters at 12900 Snow Road, Parma, Ohio 44130. In addition, GTIH has also contracted the services of Mr. Robert Bucci, a retired former UCAR Carbon manager, to act as the local point-of-contact for the Landfill. Mr Bucci lives in the local Niagara Falls community, and has the responsibility for managing the day-to-day operations at the Landfill, including conducting the scheduled inspections, managing contractors to perform routine sampling and any needed maintenance and/or repairs at the site, responding to neighborhood requests, etc. Mr. Bucci is also responsible for communicating to Ms. Bursley whenever any significant issue arises that could possibly prevent full conformance with the OM&M Plan, or any other important matters concerning the Landfill outside the scope of this Plan. Ms. Bursley has been granted the authority by GTIH to requisition the necessary resources, so that appropriate corrective actions can be promptly implemented to adequately address the identified deficiency and ensure full conformance with the provisions of the OM&M Plan.

3.0 INSPECTION AND MAINTENANCE

The following inspection and maintenance program requirements are included in the state-approved OM&M Plan. In agreement with Mr. Michael Hinton, NYSDEC Division of Environmental Remediation, Region 9, the annual OM&M compliance report is incorporated with this annual PRR.

1. Weekly Inspections

   Weekly visual inspections of the Landfill's security equipment (perimeter fence, gates and locks), cap, monitoring wells, and surrounding areas were conducted, as scheduled, and a record maintained on the standard inspection form, which documents the date and time of the inspection, the inspector's name, and the condition of these facilities, specifically noting any identified deficiency. The inspection record also documented any corrective action(s) taken. Any fence areas that were found damaged were also duly noted on the inspection map.

2. Required New York State Department of Environmental Conservation (NYSDEC) Annual Inspections

   Annual visual inspections of the Landfill's monitoring well system (condition of the outer casings, concrete seals and security locks), and the condition of the cap were conducted, as scheduled, and a record maintained on the standard inspection form, which documents the date and time of the inspection, the inspector's name, and the condition of these facilities, specifically noting any identified deficiency. Copies of the annual inspection forms are provided in Enclosure 1.

3. Routine Maintenance and Repairs

   The following maintenance and repair activities were conducted per the OM&M Plan:

   a. Repairs were scheduled, as needed, with outside contractor(s) to timely correct any deficiencies discovered during the routine weekly and annual inspections. These included numerous repairs to the perimeter security fencing.

   b. Mowing of the vegetative cover on the Landfill cap and the perimeter lawn of the Landfill and other general care were scheduled, as needed. The cap was mowed a minimum of once per year, starting after September 1.

   c. General clean-ups of any debris found along the fence line, etc. were performed, as needed, to keep the Landfill area clear of any objectionable or unsightly materials.

4. Recordkeeping

   All inspection records are being retained for a minimum period of three (3) years and copies will be made available to the state upon written request.

5. NYSDEC Inspection

The NYSDEC conducted an on-site inspection of the Landfill on May 27, 2010. A visual inspection of the integrity of the cap, monitoring wells, perimeter security fencing and access gate was conducted, and no violations were found. GTIH was requested, however, to confirm that concrete seals were in place on several groundwater monitoring well casings, which could not be observed during the inspection, and to repair or replace the seals, as needed. This work was completed and GTIH subsequently provided the NYSDEC with documentation on June 22, 2010, that the seals on these well casings were in place.

In addition, during the site inspection, GTIH requested confirmation from NYSDEC that it was not responsible for monitoring wells GW-10A and GW-10B, which are located outside the perimeter security fencing on neighboring property not owned by GTIH. A records search subsequently conducted by NYSDEC verified that the Department owns and is responsible for these two wells, which were installed for the Preliminary Site Assessment. Therefore, this review confirmed that GTIH is not responsible to monitor or maintain these wells, and also that these wells should not be part of the long-term groundwater quality or water level monitoring program covered under the current Site Management Plan (OM&M Plan) for this site.

4.0 GROUNDWATER MONITORING PROGRAM

The Landfill was capped and closed in 1987. The groundwater monitoring well network at the Landfill site consists of eleven (11) on-site wells. The history of the groundwater monitoring requirements is as follows. Between 1987 and 2000, groundwater monitoring was conducted quarterly. Following their review of the collected groundwater quality data, the New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Remediation and the Division of Solid and Hazardous Materials approved a modified semi-annual sampling program, in a letter dated January 18, 2000, in accordance with the requirements of 6 NYCRR Section 360 to monitor the effectiveness of the solid waste landfill closure in protecting groundwater quality. This new monitoring program was implemented from April 2000 to November 2005. Following a subsequent review of the post-closure groundwater monitoring program and historical groundwater quality data, the NYSDEC Division of Environmental Remediation and the Division of Solid and Hazardous Materials agreed to a modified annual post-closure groundwater monitoring program, which was first implemented in the autumn of 2006. Since that time, the new monitoring program consists of sampling a network of seven (7) of the eleven (11) groundwater on-site wells at the Landfill (specifically, BW-1, BW-2, BW-3, BW-4, MW-3, GW-8B and GW-9B); testing the collected samples by the specified EPA Methodologies for five (5) parameters (Volatile Organic Compounds (VOCs), Total and Dissolved Iron, Potassium and Zinc, Ammonia, Nitrite and Total Kjeldahl Nitrogen (TKN)); and conducting four (4) field measurements for Turbidity, Specific Conductance, pH and temperature. A map of the Landfill showing the locations of the groundwater monitoring wells is provided in Enclosure 2. One sampling event must occur in every calendar year, but scheduling of the sampling collection is rotated every year between spring (every odd year) and autumn (every even year). Groundwater elevation measurements are also recorded during each annual sampling campaign.

An annual groundwater sampling campaign was conducted on September 7, 2010. Analytical test results were compared to the New York State Class GA water criteria and to the results of the historical monitoring data for the Landfill; **no discernible negative trend in groundwater quality was observed**. The Annual Monitoring Report, including a written summary of the groundwater sampling results, the laboratory data reports, quality assurance/quality control procedures and field logs were prepared by GTIH's environmental consultant, Conestoga-Rovers & Associates, and submitted by GTIH's representative, Mr. Robert Bucci, on November 15, 2010 to Ms. Mary McIntosh, Engineering Geologist II, NYSDEC, Division of Solid and Hazardous Materials, and to other state and local authorities. An electronic copy is provided in Enclosure 3.

5.0 SOIL MANAGEMENT PLAN (SMP)

The state has agreed that there is no requirement for a written soil management plan for this Landfill, because there are no immediate plans or anticipation of any future plans to excavate and/or remove soils from the property surrounding the Landfill footprint. However, should this situation change at any time in the future, GTIH must prepare and submit to the NYDEC for approval a written Soil Management Plan a minimum of thirty (30) days prior to commencing such excavation activities. This plan would address the particulars of the planned project. In the event of an unlikely and unforeseen emergency event requiring that GTIH disturb the soils on-site, GTIH would follow all applicable OSHA regulations to protect the workers, would stage the removed soils as close to the excavation site as safely possible, and would contact the NYDEC within forty-eight (48) hours of this event.

6.0 SOIL VAPOR MANAGEMENT

On February 8, 2007, NYDEC approved a modified Work Plan specifying the installation of four (4) soil vapor implants along the south fence line of the Landfill property in order to collect soil gas samples near the residences along Rhode Island Street. These implants were installed on March 8, 2007. On March 26 - 27, 2007, these implants were purged and sampled in accordance with the sample collection criteria in the approved Work Plan. The volume of collected soil vapor at each sampling location was insufficient to analyze the contents in the laboratory. The inability to draw soil vapor from any of the implants suggested that the clay soils are too tight to allow migration of vapors. In May 2007, GTIH submitted a Soil Intrusion Evaluation Report to NYSDEC, which concluded that there is no threat to neighboring residential properties, based on the results of the attempted March 2007 soil vapor sampling event, and recommended that no further action concerning vapor studies was warranted.

On December 28, 2008, the NYSDEC and the New York State Department of Health (NYS DOH) informed GTIH, in writing, that they had reviewed the submitted Soil Intrusion Evaluation Report for the Landfill and determined that the potential for soil vapor intrusion into neighboring homes and businesses had been satisfactorily evaluated. Furthermore, the agencies concurred with GTIH's recommendation that no further action is needed at this site regarding soil vapor intrusion. Therefore, no vapor intrusion monitoring program is required at this Landfill.

7.0 CONCLUSIONS AND RECOMMENDATIONS

All site inspections, monitoring and maintenance activities, and reporting requirements were implemented as required in the OM&M Plan for the Landfill during the certification period. The analytical data from the annual groundwater monitoring event are consistent with the historical data. Engineering controls and associated institutional controls are in place, are performing properly and remain effective. There were no identified deficiencies in the approved institutional/engineering controls (IC/EC) at this site during the certification period, or any recommended improvements that would require changes to the OM&M Plan. There are currently no required treatment or mitigation systems at this site, and no indication that any changes are needed. Based on this review, the remedy in place continues to be protective of public health and the environment. The completed IC/EC Certification form is attached (Enclosure 4).

Due to the facts that 1) this Landfill is a Class 4 Inactive Hazardous Waste Site; 2) there is no required Remedial Program or remedial objectives; and 3) the groundwater monitoring program for the past twenty-three (23) years since closure has identified no negative trends in the water quality, GTIH therefore recommends that compliance be maintained with the OM&M Plan until thirty (30) years post-closure. At that time, an assessment and determination should be made as to whether the Site Management can be discontinued.

ENCLOSURE 1
ANNUAL INSPECTION

APPENDIX A

INSPECTION OF LANDFILL FENCE, CAP & SURROUNDING AREA

Date	Time	Inspector
9-17-10	2:00 P.m.	

AREA	OK	DAMAGED	DATE REPAIRED	REMARKS
A	✓			
B	✓			
C	✓			
D	✓			
E	✓			
F	✓			
G	✓			
H	✓			
I	✓			
J	✓			

GATE	OK	DAMAGED	DATE REPAIRED	REMARKS
1	✓			
2	✓			
3	✓			

COMMENTS:

CAP CONDITION COMMENTS: **(Checking for erosion and vegetation)**

No Erosion, normal vegetation.

SUROUNDING AREA:

Area still remains natural and untouched, no soil has been disturbed

APPENDIX B

ANNUAL MONITORING WELL INSPECTION

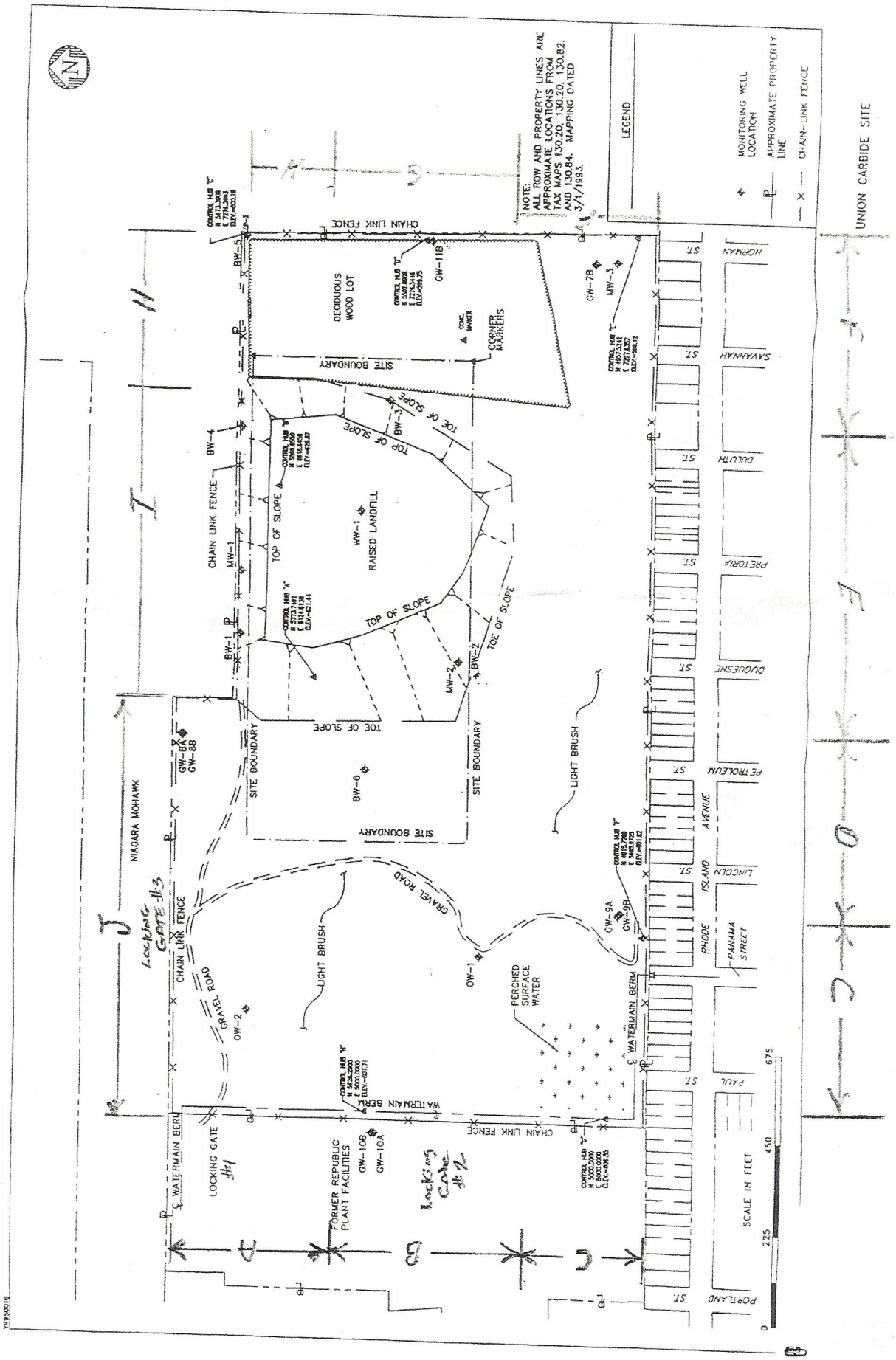
ID WELL NUMBER	WELL ID TAG INTACT YES/NO	LOCK CONDITION	OUTER CASING CONDITION	CONCRETE SEAL CONDITION	COMMENTS
MW1-78	Yes	Good	Good	Good	
MW2-78	Yes	Good	Good	Good	
MW3-79	Yes	Good	Good	Good	
BW1-86	Yes	Good	Good	Good	
BW2-86	Yes	Good	Good	Good	
BW3-86	Yes	Good	Good	Good	
BW4-86	Yes	Good	Good	Good	
BW5-86	Yes	Good	Good	Good	
BW6-86	Yes	Good	Good	Good	
WW1-86	Yes	Good	Good	Good	
OW1-88	Yes	Good	Good	Good	
OW2-88	Yes	Good	Good	Good	

NYSDEC WELLS

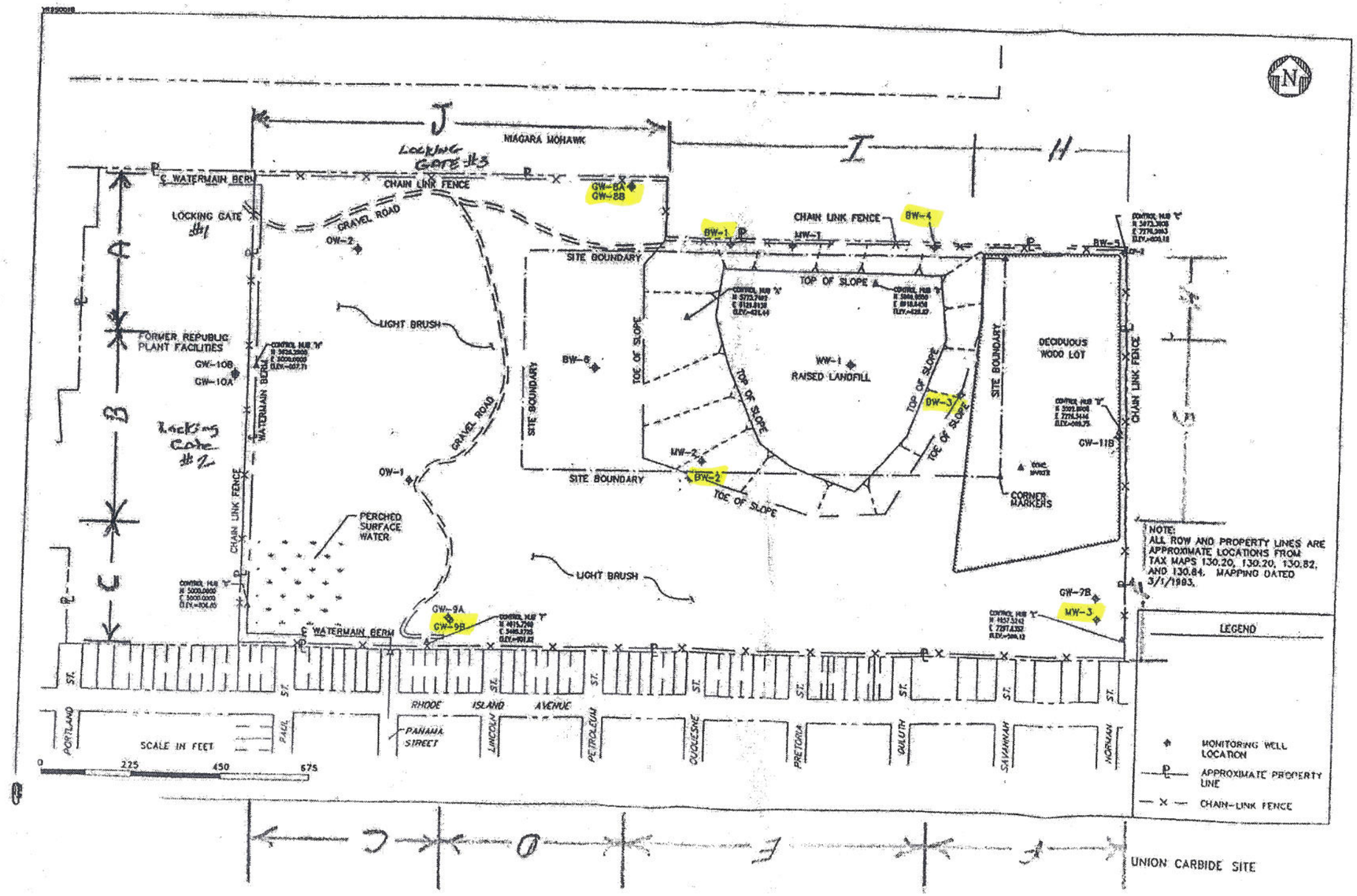
(INSTALLED SEPT/OCT 93)

ID WELL NUMBER	WELL ID TAG INTACT YES/NO	LOCK CONDITION	OUTER CASING CONDITION	CONCRETE SEAL CONDITION	COMMENTS
GW7B-93	Yes	Good	Good	Good	
GW8A-93	Yes	Good	Good	Good	
GW8B-93	Yes	Good	Good	Good	
GW9A-93	Yes	Good	Good	Good	
GW9B-93	Yes	Good	Good	Good	
GW11B-93	Yes	Good	Good	Good	

ENTIRE CAP MOWED: CAP mowed STARTED LAST WEEK OF August completed 1ST week OF Sept.


N
NOTE:
ALL ROW AND PROPERTY LINES ARE APPROXIMATE LOCATIONS FROM TAX MAPS 130.20, 130.20, 130.82, AND 130.84. MAPPING DATED 3/1/1993.
LEGEND
MONITORING WELL LOCATION
APPROXIMATE PROPERTY LINE
CHAIN-LINK FENCE
UNION CARBIDE SITE
CHAIN LINK FENCE
DECIDUOUS WOOD LOT
CORNER MARKERS
SITE BOUNDARY
TOP OF SLOPE
TOE OF SLOPE
RAISED LANDFILL
LIGHT BRUSH
GRAVEL ROAD
PERCHED SURFACE WATER
WATERMAIN BERM
LOCKING GATE #1
LOCKING GATE #2
LOCKING GATE #3
FORMER REPUBLIC PLANT FACILITIES
NIAGARA MOHAWK
NORMAN ST.
SAVANNAH ST.
DULUTH ST.
PRETORIA ST.
DUQUESNE ST.
PETROLEUM AVENUE
LINCOLN ISLAND
RHODE
PANAMA STREET
PAUL ST.
PORTLAND ST.
SCALE IN FEET
0
225
450
675

ENCLOSURE 2
MAP



LANDFILL OPERATION MONITORING AND MAINTENACE MANUALFOR SWMF #32N03

ENCLOSURE 3
SAMPLING REPORT

Robert Bucci, Consultant
3344 Wildwood Dr.
Niagara Falls, New York 14304
Phone 716 297-6772 Cell & 716 628-8208
Email: nia3344@verizon.net

November 15, 2010

Reference No. 005513

Ms. Mary F. McIntosh
Engineering Geologist II
NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
270 Michigan Avenue
Buffalo, NY 14203-2999

Dear Ms. McIntosh:

Re: Annual Monitoring Event ~~2009~~ 2010
UCAR Republic SWMF #32N03

The annual monitoring event for the above-referenced Site was conducted on Sept. 07, 2010. The Site groundwater monitoring program was modified in November 2005 and currently consists of the following (excerpt from letter from C. Barron (CRA) to M. McIntosh (NYSDEC) dated November 4, 2005.):

> Annual sampling of seven wells (BW-1, BW-2, BW-3, BW-4, MW-3, GW-8B, and GW-9B) with analysis of the samples for Part 360 volatiles, ammonia, iron (total and soluble), potassium (total and soluble), zinc (total and soluble), nitrite, total kjeldahl nitrogen (TKN), turbidity, groundwater elevation, pH, specific conductance, and temperature. Monitoring is rotated between the spring and fall seasons such that one year sampling is conducted in the spring and the next year it will be conducted in the fall. Sampling is conducted once in each calendar year and reporting is submitted annually following receipt and review of the groundwater analytical data.

The sample collection and analyses were performed in accordance with the program outlined in the letters from M. McIntosh (NYSDEC) to R. Bucci (UCAR), dated January 18, 2000 and February 23, 2000. A sample collection and analysis summary is presented in Table 1 and water level elevations measured prior to well purging are presented in Table 2. The analytical laboratory report for this sampling event is enclosed and the data are summarized in Table 3.

November 15, 2010 Reference No. 005513

The analytical data from this monitoring event are consistent with the historical data.

The next groundwater monitoring event at the Site will be conducted in March of 2011. Should you have any questions or require additional information, please do not hesitate to contact the undersigned at 716-628-8208.

Yours truly,

Robert Bucci
Site Consultant

Encl.

c.c.: M. Hans
M. Hinton
J. M. Bursley

CONESTOGA-ROVERS & ASSOCIATES

2055 Niagara Falls Blvd., Suite #3
Niagara Falls, New York 14304
Telephone: (716) 297-6150 Fax: (716) 297-2265
www.CRAworld.com

MEMORANDUM

TO: Jim Kay

REF. NO.: 005513

FROM: Sheri Finn/bjw/3

DATE: October 22, 2010

E-Mail and Hard Copy If Requested

RE: **Analytical Results and QA/QC Review**
Annual Groundwater Monitoring Program
UCAR Carbon Company, Inc.
Niagara Falls, New York
September 2010

INTRODUCTION

Eight groundwater samples, including one field duplicate sample were collected during September 2010 in support of the annual monitoring program at the UCAR Carbon Site in Niagara Falls, New York (Site). The samples were submitted to Columbia Analytical Services (CAS), located in Rochester, New York, and analyzed for the following:

Parameter	*Methodology*
Volatile Organic Compounds (VOCs)	SW-846 8260B[1]
Total & Dissolved Iron, Potassium, and Zinc	SW-846 6010B[1]
Ammonia	USEPA 350.1[2]
Nitrite	USEPA 353.2[2]
Total Kjeldahl Nitrogen (TKN)	USEPA 351.2[2]

A sampling and analysis summary is presented in Table 1. The analytical results are summarized in Table 2. The quality assurance/quality control (QA/QC) criteria by which the data have been assessed are outlined in the respective methods and the following documents:

i) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", October 1999, United States Environmental Protection Agency (USEPA) 540/R-99/008

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", February 1994, USEPA 540/R-94/013

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1 "Test Methods for Solid Waste Physical/Chemical Methods", SW-846, 3rd Edition, September 1986 (with all subsequent revisions).

2 "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency (USEPA) 600/4-79-220, March 1983 (with all subsequent revisions).

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. The data quality assessment and validation presented in the following subsections were performed based on the sample results, supporting QA/QC and raw data provided.

HOLDING TIME PERIOD AND SAMPLE ANALYSIS

The holding time periods are presented in the analytical methods. All samples were properly preserved and cooled to 4°C (±2°C) after collection. All samples were prepared and analyzed within the method-required holding times with the exception of nitrite analysis, which has a 48 hour holding time. The samples were received at the laboratory 2 days after collection. All associated nitrite results were qualified as estimated (see Table 3).

GAS CHROMATOGRAPHY/MASS SPECTROMETER (GC/MS) MASS CALIBRATION

Prior to analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, the volatile organic compound (VOC) method requires the analysis of the specific tuning compound bromofluorobenzene (BFB). The resulting spectra must meet the criteria cited in the method before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Instrument tuning data were reviewed. The tuning compound was analyzed at the required frequency throughout the VOC analysis periods. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

INITIAL CALIBRATION - GC/MS ANALYSES

To quantify compounds of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a minimum of a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range.

Calibration data were reviewed for all samples. Linearity of the calibration curve and instrument sensitivity were evaluated against the following criteria:

i) All relative response factors (RRFs) for the GC/MS must be greater than or equal to 0.05.

ii) Percent relative standard deviation (%RSD) values for the GC/MS must not exceed 30 percent, or if linear regression is used, the correlation coefficient (R^2) value must be at least 0.990.

Initial calibration standards were analyzed as required and the data showed acceptable sensitivity and linearity.

INITIAL CALIBRATION - METALS ANALYSES

To calibrate the inductively coupled plasma (ICP), a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve. After calibration, an initial calibration

verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves within a method-specific percent recovery of the accepted or true value. A Contract Required Detection Limit (CRDL) standard is analyzed before and after sample analyses to verify instrument sensitivity.

A review of the data showed that all metals calibration curves, ICVs and CRDL were analyzed at the proper frequencies and were within the acceptance criteria.

INITIAL CALIBRATION - GENERAL CHEMISTRY ANALYSES

The general chemistry analyses of ammonia, nitrite, and TKN were calibrated in accordance with the methods and all calibration criteria were met.

CONTINUING CALIBRATION - GC/MS

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

i) All RRF values for the GC/MS must be greater than or equal to 0.05.

ii) Percent difference (%D) values must not exceed 25 percent.

Continuing calibration standards were analyzed at the required frequency and the results met the above criteria for instrument sensitivity and linearity of response.

CONTINUING CALIBRATION - INORGANICS

Continuing calibration criteria for inorganic analyses were the same criteria as used for assessing the initial calibration data. All continuing calibration verification data were within the acceptance criteria.

SURROGATE COMPOUND RECOVERIES

Surrogates were added to all samples, blanks, and QC samples prior to analysis of VOCs. All recoveries met the method criteria.

METHOD BLANK SAMPLES

Method blanks were analyzed for all parameters. All results were non-detect, indicating that contamination during analysis was not a concern.

LABORATORY CONTROL SAMPLE (LCS) ANALYSIS

The LCS serves as a measure of overall analytical performance. LCSs are prepared with all analytes of interest and analyzed with each sample batch.

LCSs were prepared and analyzed for all parameters at the proper frequency. The LCS recoveries were within the control limits for all analytes of interest, indicating acceptable analytical accuracy.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES

The recoveries of MS analyses are used to assess the analytical accuracy achieved on individual sample matrices. MS/MSD analyses were performed on the sample submitted for metals and VOC analysis. All MS/MSD recoveries and relative percent differences (RPDs) were within laboratory control limits for all analytes of interest, indicating good analytical accuracy and precision.

LABORATORY DUPLICATE ANALYSES

Laboratory duplicates were performed for inorganic analyses. All results were within laboratory control limits showing acceptable analytical precision with the exception of dissolved iron analysis. The associated sample results were qualified as estimated (see Table 4).

INDUCTIVELY COUPLED PLASMA (ICP) INTERFERENCE CHECK SAMPLE (ICS) ANALYSIS

To verify that proper inter-element and background correction factors have been established by the laboratory, ICSs are analyzed. These samples contain high concentrations of aluminum, calcium, magnesium, and iron and are analyzed at the beginning and end of each sample analysis period.

ICS analysis results were evaluated for all samples. All ICS recoveries were within the established control limits of 80 to 120 percent.

SERIAL DILUTION - METALS ANALYSES

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of one per 20 investigative samples is analyzed at a five-fold dilution. For samples with sufficient analyte concentrations, the serial dilution results must agree within 10 percent of the original results.

Serial dilution analyses were performed and all results were within the method criteria.

INTERNAL STANDARD (IS) SUMMARIES

To correct for changes in GC/MS response and sensitivity, IS compounds are added to investigative samples and QC samples prior to VOC analyses. All results are calculated as a ratio of the IS response. The criteria by which the IS results are assessed are as follows:

i) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard.

ii) The retention time of the IS must not vary more than ±30 seconds from the associated calibration standard.

All sample IS results met the above criteria and were correctly used to calculate sample results.

TRIP BLANKS - VOCS

Trip blanks are transported, stored, and analyzed with the investigative samples to identify potential cross-contamination of VOCs. A trip blank was collected as shown on Table 1. All results were non-detect for the analytes of interest, indicating that contamination during transport and storage was not an issue.

FIELD DUPLICATES

Samples were collected in duplicate as summarized in Table 1 and submitted "blind" to the laboratory for analysis. All sample results outside of estimated ranges of detection showed acceptable sampling and analytical precision.

CONCLUSION

Based on the preceding assessment, the data were acceptable for use with the qualifications noted.

CONESTOGA-ROVERS & ASSOCIATES

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Niagara Falls, New York 14304
Telephone: (716) 297-6150 Fax: (716) 297-2265
www.CRAworld.com

MEMORANDUM

Sent via email

TO:	Jim Kay	REF. NO.:	005513
FROM:	Dave Tyran/adh/2	DATE:	September 8, 2010
RE:	**Annual Groundwater Sampling**		

INTRODUCTION

In accordance with Conestoga-Rovers & Associates (CRA) Field Sampling Plan (FSP) Post-Closure Monitoring Program for UCAR Carbon's Solid Waste Management Unit (SWMU) No. 32NO3, the Annual groundwater sampling event was performed on September 7, 2010. Activities associated with this sampling event are described in this memo.

HYDRAULIC MONITORING

Prior to sampling, a complete round of water level measurements and well soundings were taken. Table 1 presents the water level information in addition to comparing the sounded depths to the installed depths.

GROUNDWATER MONITORING

A total of seven monitoring wells were visited during this sampling round. All seven wells had sufficient recharge to purge three to five well volumes.

Purging of wells was accomplished by the use of either a battery operated submersible pump or Teflon bailer. Samples were obtained with a dedicated bottom loading Teflon bailer. Table 2 provides the pertinent groundwater data.

WELL INSPECTIONS

Well inspections were performed at each of the monitoring wells. No problems were noted during this round.

FUTURE MONITORING

The next scheduled groundwater sampling round will be performed in March 2011.

(122)

DAILY LOG

9-7-10 Calibrate YSI NF 04441

	Before	After
pH (4)		
pH (7)		
Cond (1.413)	559	
Turb (0)		
Turb (100)		

Calibrate Horiba NF 05036
w/ Auto cal Solution pH 4.00
Cond 4.49 Turb 0

0755 DJT on-site meet Bob
Buoy get keys Mostly sunny
70-85 very windy
0825 start w/L Round
0920 Complete w/L Round
Dry out MW-3
Purge & Sample BW-2, GW8B
Trip Blank = TB-5513-090710
BW1, BW4, BW3, Sample MW3
Purge & Sample GW9B
Clean up
1515 Off-site

HYDRAULIC MONITORING

DATE CREW

WELL #	TIME	W/L	SOUNDED DEPTH
MW 3	0848	12.62	15.25
BW 1	0826	~~18.44~~ 15.44	25.93
BW 2	0921	14.13	24.76
BW 3	0836	13.96	23.48
BW 4	0833	13.36	21.49
GW 8B	0822	11.07	29.53
GW 9B	0909	14.51	32.03
MW 1	0830	11.86	23.44
MW 2	0918	17.59	24.73
BW 5	0844	10.44	26.00
BW 6	0912	17.16	26.23

INST. CONTROL #

NF 04308

David Tyson

MW-3

DATE 9-7-10 CREW DJT
PROJECT 5513
CONDITION Good
DEPTH 2" 0-15.25
INITIAL W/L 12.62
VOL CALC. 15.25-12.62 = 2.63 x .16 = 0.4
METHOD Dedicated Teflon Bailer

PURGE RECORD

TIME	VOL	PH	COND	TEMP	TURB
0852	0.4	5.48	0.513	16.71	535
0856	0.8	6.05	0.487	14.68	800
0858	1.2	6.20	0.477	14.11	OR
0900	1.6	6.21	0.473	13.52	OR

INITIAL W/P Cloudy Dark Brown

FINAL W/P Same

FINAL W/L 14.51

SAMPLE RECORD

DATE 9-7-10
CREW DJT
METHOD dedicated Teflon Bailer

VOL/ANALYSIS See pg 28©

SAMPLE TIME: 1350
SAMPLE ID: WG-5513-090710-007

W/P Cloudy Brown

PH	COND	TEMP	TURB
6.99	0.488	17.45	736

CofC# 24518

INST CONTROL #S
W/L METER NF04308
Horiba NF05036

OR over range

Dave J Tyson

BW-1

DATE 9-7-10 CREW DJT
PROJECT# 5513
CONDITION Good
DEPTH 4" 0 - 20.9 3" 20.9 - 35.9
INITIAL W/L 18.44
VOL CALC. 20.9 - 18.44 = 2.46 x .65 = 1.6 + 5.6
METHOD Monsoon Pump 7.2

PURGE RECORD

TIME	VOL	PH	COND	TEMP	TURB
1140	7.2	6.88	1.42	16.10	118
1144	14.4	6.80	1.44	14.72	51.8
1148	21.6	6.59	1.46	12.67	26.3

INITIAL W/Q Cloudy Dark gray
FINAL W/L Clear, Colorless
FINAL W/Q 20.11

SAMPLE RECORD

DATE 9-7-10
CREW DJT
METHOD Dedicated Teflon Bailer
VOL/ANALYSIS See pg 28 (C)

SAMPLE TIME 1155
SAMPLE ID: WG-5513-090710-004

W/Q Cloudy Light Brown

PH	COND	TEMP	TURB
6.82	1.47	14.05	1.79

COC# 24518

INST. CONTROLLED
W/L METER - NF04308
Horiba NF05036

35.9 - 20.9 = 15 x .37 = 5.6

Dave J Tyson

BW-2

DATE 9.7.10 CREW DJT
PROJECT # 5513
CONDITION Good
DEPTH 4" 0 - 21.1 3" 21.1 - 37.1
INITIAL W/L 14.13
VOL CALC. 21.1 - 14.13 = 6.97 x .65 = 4.5 + 5.9 =
METHOD Monsoon Pump 10.4

PURGE RECORD

TIME	VOL	PH	COND	TEMP	TURB
0934	10.4	6.23	2.24	13.71	19.9
0939	20.8	6.20	2.33	12.52	0.0
0944	31.2	6.21	2.34	11.72	0.0

INITIAL W/Q Cloudy Dark Brown
FINAL W/Q Clear, Light Green Tint
FINAL W/L 14.50

DUP

SAMPLE RECORD

DATE 9.7.10
CREW DJT
METHOD Dedicated Teflon Bailer

VOL/ANALYSIS Pg 28 (C) x 2

SAMPLE TIME: 1000
SAMPLE ID: WG-5513 090710-001
Blind Dup WG 5513-090710-002
(1200)

W/Q Cloudy green/Brown

PH	COND	TEMP	TURB
6.29	2.34	13.52	152

COFC # 24518

INST. CONTROL #S
W/L METER NF04308
Horiba NF0-5036

37.1 - 21.1 = 16 x .37 = 5.9

Dave J Tyler

BW-3

DATE: 9-7-10 CREW DJT
PROJECT # 5513
CONDITION Good
DEPTH 4" 0-9.7 3" 9.7-23.45
INITIAL W/L 13.96
VOL CALC 23.45 - 13.96 = 9.49 x 6 .37 = 3.5
METHOD Monsoon Pump

PURGE RECORD

TIME	VOL	PH	COND	TEMP	TURB
1307	3.5	7.11	1.49	14.02	0.0
1309	7.0	6.77	1.53	12.56	0.0
1310	10.5	6.64	1.55	11.74	0.0

INITIAL W/Q Clear, Colorless

FINAL W/Q Same

FINAL W/L 13.83

SAMPLE RECORD

DATE 9-7-10
CREW DJT
METHOD Dedicated Teflon Bailer

VOL/ANALYSIS See pg 28 ©

SAMPLE TIME: 1330
SAMPLE ID: WG-5513-090710-006

W/Q Clear, colorless

PH	COND	TEMP	TURB
6.61	1.53	14.47	0.0

COC# 24518

INST. CONTROL #S
W/L Meter NF041308
Horiba NF 05036

Dave J Tyler

BW-4

DATE 9.7.10 CREW DJT
PROJECT# 5513
CONDITION Good
DEPTH 4" 0 - 13.9 3" 13.9 - 27.5
INITIAL W/L 13.36
VOL CALC 13.9 - 13.36 = 0.54 x .65 = .4 x 5
METHOD Monsoon Pump 5.4

PURGE RECORD

TIME	VOL	PH	COND	TEMP	TURB
1222	5.4	6.75	1.66	14.63	77.7
1225	10.8	6.39	1.68	12.84	5.2
1228	16.2	6.39	1.64	12.30	0.6

INITIAL W/P cloudy Dark gray

~~INITIAL~~ (2) FINAL W/P

FINAL W/L 14.66

SAMPLE RECORD

DATE 9.7.10
CREW DJT
METHOD Dedicated Teflon Bailer

VOL/ANALYSIS See pg 28 (C)

SAMPLE TIME: 1240
SAMPLE ID: WG-5513-090710-005

W/P Cloudy Light Brown

PH	COND.	TEMP	TURB
6.32	1.61	13.60	64.9

COFC# 24518

INST CONTROL #S
W/L METER: NF043C8
Horiba NF05036

27.5 - 13.9 = 13.6 x .37 = 5

Dave Tyler

GW-8B

DATE 9-7-10 CREW DJT
PROJECT# 5513
CONDITION Good
DEPTH 3" ⌀ - 29.5
INITIAL W/L 11.07
VOL CALC 29.5 - 11.07 = 18.43 x .37 = 6.8
METHOD Monsoon Pump

PURGE RECORD

TIME	VOL	PH	COND	TEMP	TURB
1041	6.8	7.02	1.61	14.25	140
1045	13.6	6.64	1.61	12.85	342
1050	20.4	6.51	1.63	12.48	266

INITIAL W/D Clear, colorless

FINAL W/D Cloudy Dark gray

FINAL W/L 28.60

MS/MSD

SAMPLE RECORD

DATE 9-7-10
CREW DJT
METHOD Dedicated Teflon Bailer

VOL/ANALYSIS See pg 28 (C) x 3

SAMPLE TIME WG-5513-090710-003
SAMPLE ID: 1100

W/D Clear, colorless

PH	COND	TEMP	TURB
6.45	1.62	18.30	10.4

COC# 24518

INST. CONTROL #3
W/L METER

Dave J Tyler

GW-9B

DATE 9-7-10 CREW DJT
PROJECT# 5513
CONDITION Good
DEPTH 3" 0-31.7
INITIAL W/L 14.51
VOL CALC. 31.7 - 14.51 = 17.19 x .37 = 6.4
METHOD Monsoon Pump

PURGE RECORD

TIME	VOL	PH	COND	TEMP	TURB
1414	6.4	6.80	2.18	14.18	17.8
1417	12.8	6.42	2.27	12.78	0.0
1421	19.2	6.31	2.32	12.06	0.0

INITIAL W/P Clear, Colorless

FINAL W/P Same

FINAL W/L 23.78

SAMPLE RECORD

DATE 9-7-10
CREW DJT
METHOD Dedicated Teflon Bailer

VOL/ANALYSIS See pg 28©

SAMPLE TIME 1430
SAMPLE ID: WG-5513-090710-008

W/P Clear, Colorless

PH	COND	TEMP	TURB
6.42	2.31	13.95	9.2

CofC# 24518

INST. CONTROL #3
W/L METER. NF04308
Horiba NF05036

Dave J Tyson

TABLE 1

HYDRAULIC MONITORING
POST-CLOSURE MONITORING PROGRAM
UCAR REPUBLIC SWMU #32NO3
NIAGARA FALLS, NEW YORK
SEPTEMBER 2010

Well I.D.	*TOC Elevation (Ft. AMSL)*	*Depth to Water (Ft. BTOC)*	*Water Level Elevation (Ft. AMSL)*	*Sounded Depth (Ft. BTOC)*	*Installed Depth (Ft. BTOC)*
MW-3	601.89	12.62	589.27	15.25	14.4
BW-1	610.72	15.44	595.28	25.93	35.9
BW-2	608.43	14.13	594.30	24.76	37.1
BW-3	604.72	13.96	590.76	23.48	22.7
BW-4	607.08	13.36	593.72	21.49	27.5
GW-8B	603.90	11.07	592.83	29.53	29.5
GW-9B	603.40	14.51	588.89	32.03	31.7

Notes:

AMSL	Above Mean Sea Level.
BTOC	Below Top of Casing.
Ft.	Feet.
NM	Not Measured.

TABLE 2

SAMPLE COLLECTION AND ANALYSIS SUMMARY
POST-CLOSURE MONITORING PROGRAM
UCAR REPUBLIC SWMU #32NO3
NIAGARA FALLS, NEW YORK
SEPTEMBER 2010

Well I.D.	Purge Date	Sample Date	One Well Volume (Gallons)	Total Volume Purged (Gallons)	Turbidity (NTU)	Analytical Parameters			Misc. (1) Parameters	Comments
						VOCs	Total Metals	Dissolved Metals		
MW-3	09/07/10	09/07/10	0.4	1.6	736	x	x	x	x	
BW-1	09/07/10	09/07/10	7.2	21.6	179	x	x	x	x	
BW-2	09/07/10	09/07/10	10.4	31.2	152	x	x	x	x	
BW-3	09/07/10	09/07/10	3.5	10.5	0.0	x	x	x	x	
BW-4	09/07/10	09/07/10	5.4	16.2	64.9	x	x	x	x	
GW-8B	09/07/10	09/07/10	6.8	20.4	10.4	x	x	x	x	MS/MSD
GW-9B	09/07/10	09/07/10	6.4	19.2	9.2	x	x	x	x	

Notes:

(1) Nitrite, nitrogen, NO_2, ammonia, total kjeldahl nitrogen.

MS Matrix Spike.

MSD Matrix Spike Duplicate.

NM Not measured, insufficient volume for final reading.

NTU Nephelometric Turbidity Unit.

VOCs Volatile Organic Compounds.

TABLE 3

ANALYTICAL RESULTS SUMMARY
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2010

	Location ID:	*BW-2*	*BW-2*	*GW-8B*	*BW-1*	*BW-4*	*BW-3*	*MW-3*	*GW-9B*
	Sample Date:	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*
Parameters	*Units*								
Volatile Organic Compounds									
1,1,1-TRICHLOROETHANE (TCA)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2,2-TETRACHLOROETHANE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	2.9 J	5.0 U	5.0 U	5.0 U
1,1,2-TRICHLOROETHANE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-DICHLOROETHANE (1,1-DCA)	µg/L	5.0 U	5.0 U	5.0 U	0.20 J	5.0 U	5.0 U	5.0 U	5.0 U
1,1-DICHLOROETHENE (1,1-DCE)	µg/L	5.0 U	5.0 U	0.41 J	5.0 U	4.1 J	5.0 U	5.0 U	5.0 U
1,2-DICHLOROETHANE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-DICHLOROETHENE, TOTAL	µg/L	10 U	10 U	20	0.94 J	740	2.2 J	10 U	10 U
1,2-DICHLOROPROPANE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-BUTANONE (MEK)	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-HEXANONE	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ACETONE	µg/L	20 U	20 U	20 U	2.9 J	3.2 J	20 U	20 U	20 U
BENZENE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	0.48 J	5.0 U	5.0 U	5.0 U
BROMODICHLOROMETHANE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
BROMOFORM	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
BROMOMETHANE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
CARBON DISULFIDE	µg/L	0.60 J	0.74 J	10 U	10 U	0.66 J	10 U	10 U	10 U
CARBON TETRACHLORIDE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
CHLOROBENZENE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
CHLOROETHANE	µg/L	5.0 U	5.0 U	5.0 U	6.8	5.0 U	5.0 U	5.0 U	5.0 U
CHLOROFORM	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	9.6	5.0 U	5.0 U	5.0 U
CHLOROMETHANE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
CIS-1,3-DICHLOROPROPENE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
DIBROMOCHLOROMETHANE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
ETHYLBENZENE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
METHYLENE CHLORIDE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
STYRENE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
TETRACHLOROETHENE (PCE)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	97	5.0 U	5.0 U	5.0 U

TABLE 3

ANALYTICAL RESULTS SUMMARY
ANNUAL GROUNDWATER MONITORING
UCAR CARBON COMPANY, INC.
NIAGARA FALLS, NEW YORK
SEPTEMBER 2010

	Location ID:	*BW-2*	*BW-2*	*GW-8B*	*BW-1*	*BW-4*	*BW-3*	*MW-3*	*GW-9B*
	Sample Date:	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*	*09/07/10*
Parameters	*Units*								
Volatile Organic Compounds (Cont'd.)									
TOLUENE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	0.51 J	5.0 U	5.0 U	5.0 U
TRANS-1,3-DICHLOROPROPENE	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
TRICHLOROETHENE (TCE)	µg/L	5.0 U	5.0 U	8.8	5.0 U	300	5.0 U	5.0 U	5.0 U
VINYL CHLORIDE	µg/L	5.0 U	5.0 U	3.5 J	1.6 J	170	6.4	5.0 U	5.0 U
XYLENES, TOTAL	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
IRON	µg/L	6240	8930	272	10000	8480	982	35800	199
POTASSIUM	µg/L	5720	5640	5400	5650	18200	3360	7710	3580
ZINC	µg/L	2900	3850	1350	30600	3340	66.8	221	9.7 J
Metals (Dissolved)									
IRON (Diss.)	µg/L	1140 J	1410 J	265 J	1700 J	4350 J	806 J	6350 J	133 J
POTASSIUM (Diss.)	µg/L	5560	5590	5680	5780	19300	3420	2930	3680
ZINC (Diss.)	µg/L	135	163	303	1400	143	8.1 J	33.4	5.0 J
Wet Chemistry									
AMMONIA AS NITROGEN	mg/L	0.522	0.529	0.050 U	0.927	3.32	0.482	0.099	0.461
NITRITE AS NITROGEN	mg/L	0.010 UJ	0.010 UJ	0.010 UJ	0.010 UJ	0.010 UJ	0.010 UJ	0.015 J	0.010 UJ
NITROGEN, TOTAL KJELDAHL (TKN)	mg/L	1.26	1.20	0.41	1.76	4.24	0.80	1.46	0.89

ENCLOSURE 4
CERTIFICATION FORM

Enclosure 1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. 932035

Site Name Union Carbide Corp., Carbon Prod. Div. Current owner: GrafTech International Holdings Inc.

Site Address: Hyde Park Boulevard Zip Code: 14303
City/Town: Niagara
County: Niagara
Site Acreage: 61.8

Reporting Period: January 01, 2010 to January 29, 2011

Owner Address: 12900 Snow Road
Parma, OH 44130
c/o Juanita M. Bursley

	YES	NO
1. Is the information above correct?	☐	☒
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Industrial	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. 932035

Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
130.20-1-1	GrafTech International Holdings Inc.	Monitoring Plan O&M Plan

Box 4

Description of Engineering Controls

Parcel	Engineering Control
130.20-1-1	Cover System

Control Description for Site No. 932035

Parcel: 130.20-1-1

Per the revised OM&M Plan dated November 4, 2009, groundwater monitoring and landfill cap maintenance is required.

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the ~~Site Management~~ OM&M Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 932035

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Tom R. Jacques (print name) at 12900 Snow Road, Parma OH 44130 (print business address),

am certifying as owner (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

T. R. Jacques
Signature of Owner or Remedial Party Rendering Certification

02/28/11
Date

IC/EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Juanita M. Bursley (print name) at 12900 Snow Road, Parma OH 44130 (print business address),

am certifying as a Qualified Environmental Professional for the owner (Owner or Remedial Party)

Juanita M. Bursley
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification

N/A
Stamp (Required for PE)

2/28/11
Date