



west virginia department of environmental protection

Division of Water and Waste Management
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0470
Fax: (304) 926-0488

Harold D. Ward, Cabinet Secretary
dep.wv.gov

**CONSENT ORDER
ISSUED UNDER THE
ABOVEGROUND STORAGE TANK ACT
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 30**

TO: Union Carbide Corporation
Attn.: Ana G. Marino
437 MacCorkle Avenue SW
South Charleston, WV 25303

DATE: October 22, 2024

ORDER NO.: AST-25-002

INTRODUCTION

This Consent Order is issued by the Director of the Division of Water and Waste Management (hereinafter “Director”), under the authority of West Virginia Code, Chapter 22, Article 30, Section 1 et seq. to Union Carbide Corporation (hereinafter “Union Carbide”).

FINDINGS OF FACT

In support of this Order, the Director hereby finds the following:

1. On September 30, 2014, Union Carbide registered Aboveground Storage Tanks (ASTs) on property which is currently owned by Altivia Services, LLC (hereinafter, “Altivia”) and is located in Institute, Kanawha County, West Virginia. The ASTs were registered under WV Reference Identification No. 2019-000061. On December 19, 2014, Union Carbide submitted annual inspection certifications to WVDEP. On the forms, Union Carbide certified that the AST Systems for Tanks 1601 (WV ID No. 020-00001013) and 1602 (WV ID No. 020-00001007) had been evaluated by a representative of Union Carbide and were found to be Fit for Service.
2. On January 4, 2017, Union Carbide deregistered the aforementioned ASTs due to the sale of the ASTs to Recovery Solutions & Technologies, Inc.

Promoting a healthy environment.

3. On July 25, 2017, Recovery Solutions & Technologies, Inc. registered the aforementioned ASTs. On January 18, 2018, Recovery Solutions & Technologies, Inc. submitted annual inspection certifications to WVDEP. On the forms, Recovery Solutions & Technologies, Inc. certified that the AST Systems for Tanks 1601 and 1602 had been evaluated by a representative of Recovery Solutions & Technologies, Inc. and were found to be Fit for Service.
4. On January 28, 2019, Recovery Solutions & Technologies became Glyeco West Virginia (hereinafter, "Glyeco"). At that time, AST registrations were modified to reflect the change in ownership, and Glyeco became the owner of the thirty-six (36) ASTs located at the Institute facility. On March 29, 2019, January 31, 2020, and January 15, 2021, Glyeco submitted annual inspection certifications to WVDEP. On the forms, Glyeco certified that the AST Systems for Tanks 1601 and 1602 had been evaluated by a representative of Glyeco and were found to be Fit for Service.
5. WVDEP has conducted multiple inspections (May 30, 2017, February 21, 2019, March 2, 2021, and November 11, 2021) of the ASTs at the facility. During these inspections WVDEP has observed and document numerous concerns and issued violations of the AST Act and associated rules including, but not limited to, tank integrity and secondary containment issues for tanks 1601 and 1602. During the aforementioned inspections, violations of the following sections of WV Legislative Rules were observed and documented:
 - a. 47CSR63 Section 10.2.a - The owner or operator failed to ensure that the regulated ASTs had a secondary containment system.
 - b. 47CSR63 Section 10.2.i.4 - The owner or operator failed to ensure that dikes were kept free of woody or other deep-rooted vegetation, debris, and any other material not necessary to the operation of the facility.
 - c. 47CSR63 Section 12.1.a - The owner or operator failed to demonstrate financial responsibility.
 - d. 47CSR63 Section 5.2.b.1 - The owner or operator failed to conduct a subsequent inspection every 3 years for a Level 1 AST.
 - e. 47CSR63 Section 5.3.b - The owner or operator failed to perform formal internal inspections of the regulated ASTs in general accordance with requirements of STI SP001 or API 653.
 - f. 47CSR63 Section 5.5 - The owner or operator failed to submit an updated Spill Prevention Response Plan.
 - g. 47CSR63 Section 5.6 - The owner or operator failed to label ASTs in accordance with the AST Act and Rule.
 - h. 47CSR63 Section 9.1.a - The owner or operator failed to ensure that all regulated ASTs are maintained with corrosion protection.

As a result of the aforementioned violations, Notices of Violation (NOVs) were written to Glyeco after each inspection. Glyeco failed to correct these violations.

6. On July 8, 2020, and August 4, 2020, WVDEP met jointly with Glyeco and Altivia representatives to discuss the aforementioned concerns and violations.

7. On June 24, 2021, WVDEP issued Order No. AST-21-006 to Glyeco. The Order required Glyeco to submit an approvable plan of corrective action (POCA) and schedule outlining how Glyeco would achieve compliance with all pertinent laws and rules. An approvable POCA was never received.
8. On August 9, 2021, Glyeco notified WVDEP that Glyeco's Board of Directors resigned at the end of 2019 and Glyeco stopped doing business as of January 2020.
9. On September 3, 2021, WVDEP filed a complaint against Glyeco in the Circuit Court of Kanawha County seeking injunctive relief to require Glyeco to take actions to come into compliance with the AST Act and Rule. This civil action is still pending.
10. On November 1, 2021, WVDEP received notice that Glyeco had filed Chapter 7 bankruptcy. WVDEP personnel determined that NFS Leasing, Inc., Beverly, MA, is a secured lender of Glyeco and has not waived or released any rights or interests it may have to the tanks.
11. On June 21, 2024, Union Carbide provided to WVDEP its inspection reports from November 10, 2011 and engineering drawings for Tanks 1601 and 1602. In addition, Union Carbide provided its inspection report from May 30, 2014 for Tank 1601. While Union Carbide's 2011 inspection report for Tank 1601 concluded that the tank was "Acceptable for Continued Use," Union Carbide's 2014 inspection report for Tank 1601 documented the lack of required internal inspections and noted internal and external tank corrosion issues, tank roof and shell damage, and tank foundation/settlement concerns, which resulted in Union Carbide's inspector concluding that the tank was "Not Acceptable for Continued Use." Union Carbide's 2011 inspection report for Tank 1602 made no reference to the existence of any internal inspections of the tank and noted external corrosion issues and possible tank foundation/settlement concerns. Union Carbide's inspector noted the tank "Appears to be in Satisfactory Condition" and is "Acceptable for Continued Use."
12. Although there are multiple tanks at the idled Institute facility, Tanks 1601 and 1602 are the subject of this order, due to the significant concern associated with the volume (1,545,657 and 806,400 gallons, respectively) and nature of the material in the tanks and integrity issues related to the tanks and their secondary containment. Material described as an "off-grade glycol/water mixture" remains stored in the aforementioned ASTs. The equipment at the facility was previously owned by Union Carbide, and a significant amount of the materials stored in the tanks was generated by Union Carbide. Union Carbide has indicated its willingness to work with WVDEP to address potential environmental issues regarding tanks 1601 and 1602. As the owner of the land where the equipment is located, Altivia has also indicated its willingness to work with WVDEP to address potential environmental issues regarding tanks 1601 and 1602, although there has been extensive discussion surrounding Altivia's reluctance to allow Union Carbide's access to the site. WVDEP has been in contact periodically with Glyeco, Altivia, and Union Carbide representatives to address the aforementioned concerns and violations. WVDEP, Altivia, and Union Carbide representatives have had numerous meetings and maintained frequent communications related to the removal of materials from tanks 1601 and 1602 and the upgrade of the secondary containment. Due to the large quantities of

fluids stored in the tanks and the potential for harm to human health, water resources, and the environment, WVDEP has agreed to allow action to be taken to upgrade the secondary containment and empty tanks 1601 and 1602.

13. On October 15, 2024, as the result of extensive discussion with WVDEP personnel, Union Carbide provided the attached schedule for repairs of the secondary containment and transfer of the contents out of tanks 1601 and 1602 to other tanks located at the facility until such time as the material can be sent for disposal. WVDEP reviewed the submission and found the schedule to be approvable.

ORDER FOR COMPLIANCE

Now, therefore, in accordance with Chapter 22, Article 30, Section 1 et seq. of the West Virginia Code, it is hereby agreed between the parties, and ORDERED by the Director:

1. Union Carbide shall immediately take all measures to initiate compliance with all pertinent laws and rules subject to the provisions of this Order.
2. Upon the effective date of this Order, the aforementioned approved schedule, dated October 15, 2024, shall be incorporated into the terms and conditions of this Order. Failure to adhere to the attached approved schedule, or an extended schedule approved by WVDEP, is a violation of this Order.
3. Upon the effective date of this Order, the bi-weekly reports referenced in the aforementioned approved schedule shall be emailed to the WVDEP Environmental Enforcement Chief Inspector at the following address: brad.m.wright@wv.gov. Reports shall include, but shall not be limited to, copies of all required inspections, analytical reports for samples taken, and detailed descriptions of actions that have been taken to correct all deficiencies identified during the inspections.

OTHER PROVISIONS

1. Union Carbide hereby waives its right to appeal this Order under the provisions of Chapter 22, Article 30, Section 18 of the Code of West Virginia. Under this Order, Union Carbide agrees to take all actions required by the terms and conditions of this Order and consents to and will not contest the Director's jurisdiction regarding this Order. However, Union Carbide does not admit to any factual and legal determinations made by the Director and reserves all rights and defenses available regarding liability or responsibility in any proceedings regarding Union Carbide other than proceedings, administrative or civil, to enforce this Order.
2. The Director reserves the right to take further action if compliance with the terms and conditions of this Order does not adequately address the violations noted herein and reserves all rights and defenses which he may have pursuant to any legal authority, as well as the right to raise, as a basis for supporting such legal authority or defenses, facts other than those contained in the Findings of Fact.
3. If any event occurs which causes delay in the achievement of the requirements of this Order, Union Carbide shall have the burden of proving that the delay was caused by circumstances beyond its reasonable control which could not have been overcome by due diligence (i.e., force majeure). Force majeure shall not include delays caused or contributed to by the lack of sufficient funding. Within three (3) working days after Union Carbide becomes aware of such a delay, notification shall be provided to the Director/Chief Inspector and shall, within ten (10) working days of initial notification, submit a detailed written explanation of the anticipated length and cause of the delay, the measures taken and/or to be taken to prevent or minimize the delay, and a timetable by which Union Carbide intends to implement these measures. If the Director agrees that the delay has been or will be caused by circumstances beyond the reasonable control of Union Carbide (i.e., force majeure), the time for performance hereunder shall be extended for a period of time equal to the delay resulting from such circumstances. A force majeure amendment granted by the Director shall be considered a binding extension of this Order and of the requirements herein. The determination of the Director shall be final and not subject to appeal.
4. Should Union Carbide be denied access to the facility in such a manner that prevents Union Carbide from completing the action items described in the aforementioned approved schedule, WVDEP will exercise its authority under WV State Code 22-30-1 et seq. to ensure that the project is completed.
5. Compliance with the terms and conditions of this Order shall not in any way be construed as relieving Union Carbide of the obligation to comply with any applicable law, permit, other order, or any other requirement otherwise applicable. Violations of the terms and conditions of this Order may subject Union Carbide to additional penalties and injunctive relief in accordance with the applicable law.

6. The provisions of this Order are severable and should a court or board of competent jurisdiction declare any provisions to be invalid or unenforceable, all other provisions shall remain in full force and effect.
7. This Order is binding on Union Carbide, its successors and assigns.
8. This Order shall terminate upon Union Carbide's notification of full compliance with the "Order for Compliance" and verification of this notification by WVDEP.

Ana Marino

Ana G. Marino, Responsible Care Director
Union Carbide Corporation

10-23-24

Date

Public Notice begin:

Date

Public Notice end:

Date

Jeremy W. Bandy, Director
Division of Water and Waste Management

Date



Union Carbide Corporation
P. O. Box 8361
437 MacCorkle Avenue, SW
South Charleston, WV 25303

Mr. Jeremy Bandy
Division of Water and Waste Management
WV Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

October 15, 2024

RE: Plan of Corrective Action
Union Carbide Corporation (UCC)
47 CSR 36 - The Above Ground Storage Tank Rule
GlyEco Tanks at Altivia Services, LLC (Altivia) Institute Facility

Dear Mr. Bandy:

Based upon recent discussions with the WV Division of Environmental Protection, UCC is submitting this Plan of Corrective Action (POCA) to address concerns regarding Tanks 020-00001013 and 020-00001007, located at the Altivia Institute Facility pursuant to 47 CSR 63 - The Above Ground Storage Tank Rule.

Table 1

WVDEP ID	Owner Tank ID	Capacity (gal)	Estimated Total Contents (gal)	Estimated Amount of Liquid	Estimated Amount of Solids in Heel
020-00001013	1601	2,400,000	1,545,657	1,313,500	232,157
020-00001007	1602	2,400,000	806,400	672,000	134,400

INTRODUCTION

UCC owned the above referenced tanks until December 28, 2016, at which time full ownership, operational and regulatory control of the tanks was transferred to Resource Solutions & Technology (later became GlyEco). On approximately November 1, 2019, UCC sold the Institute site to Altivia Services, LLC. GlyEco subsequently declared bankruptcy and abandoned the tanks at the Altivia site.

The two referenced tanks are 2.4-million-gallon capacity tanks, registered with the WVDEP as Level 1-regulated tanks, containing off-grade glycol/water mixture material. As shown in the above table UCC has estimated that the two tanks contain a combined amount of approximately 1.3-million gallons of liquid and 732,000 gallons of solids in the tank heels. These are estimated amounts based on best available data from Altviva and an IR scan of the tanks showing the solid heel to be 6 ft. As samples are collected during the week of September 9/September 16, UCC will gauge to confirm this information. This data will be provided to the WVDEP in our meetings and bi-weekly reports.

The WVDEP has expressed concern over the structural integrity of the tanks and the secondary containment. UCC has agreed to work with the WVDEP to resolve concerns with the tanks by removing the material, without taking ownership of the tanks.

As part of that effort UCC planned to move the liquid portion of the material from those two tanks into five other available tanks in the same area to allow sufficient time for shipment and disposal of such a large amount of material. The five other tanks would require internal inspections prior to use. Upon investigation, UCC found that approximately 800,000 gallons of additional material must be removed from those tanks prior to the internal inspections/repairs and subsequent transfer of material.

Table 2

WVDEP ID	Owner Tank ID	Capacity (gal)	Estimated Contents
020-00000996	1615	500,000	29,800
020-00000959	1616	500,000	87,900 (13,500 liquid; 74,400 solid)
020-00000845	1617	500,000	297,649
020-00000820	1618	280,000	9,400
020-00001010	1619	280,000	8,575

SECONDARY CONTAINMENT

All the tanks are in earthen dikes. Rather than testing the dikes for permeability, UCC will have liners installed for the entire secondary containment/dike areas per the timeline provided in this POCA. By lining the entire diked areas including spillways, the secondary containment is sufficient to meet AST requirements. UCC will be using ATARFIL geomembrane liners with welded seams, that have permeability certification and material compatibility testing evaluations. UCC has provided detailed liner information and containment calculations to the WVDEP for review.

INTERNAL INSPECTIONS

UCC proposes to have internal inspections completed by a certified API inspector and provide documentation to the WVDEP for the five tanks pursuant to Section 47 CSR 63 Section 5.3 per the schedule provided in this POCA.

This will require removal of the material and cleaning of the tanks prior to inspection. Any deficiencies noted in the inspections will either be repaired to meet API structural integrity requirements, or the tank will not be used for storage of material.

Piping and internal inspections and actions to correct any deficiencies/repair plans will be provided to WVDEP as part of the Bi-Weekly written status reports.

VISUAL INSPECTIONS

As an interim measure for spill and release detection per requirements listed in 47 CSR 63-5, UCC will visually inspect all piping, tanks and secondary containment daily throughout this project. These inspections will be documented and available for review by the WVDEP. Any deficiencies will be discussed with the WVDEP and documented in the Bi-Weekly written status reports.

SPILL PROTECTION AND REPOSE PLAN

A Spill Prevention and Response Plan per 57 CFR 63-5.5 will be provided to the WVDEP by October 31, 2024, prior to the transfer of any material. High level alarms and loading/unloading procedures will be implemented for all material transfers. In compliance with 47 CSR 58.4.4, railcar and tank truck loading areas will have high level alarms and secondary containment to ensure protection of groundwater from any overfills or accidental releases.

CATHODIC PROTECTION, OVERFILL AND LEAK DETECTION REQUIREMENTS

UCC requests that the requirements for installation of cathodic protection, leak detection, and overfill equipment for a return of service of tanks 1615-1619 be extended by the WVDEP, based on the results of internal inspections (not to exceed 18 months from the effective date of the order without review and approval from the WVDEP). UCC bases this request on allowances within the AST rule related to good cause shown.

UCC does not own the tanks and will not use them after completion of this project. These tanks will only be in service to facilitate removal of material from tanks 1601 and 1602 until disposal of material can be completed.

As an interim measure for leak detection per requirements listed in 47 CSR 63-10.3, UCC will visually inspect all piping, tanks and secondary containment daily throughout this project. These inspections will be documented and available for review by the WVDEP. Any deficiencies will be discussed with the WVDEP and documented in the Bi-Weekly written status reports.

Additionally, all transfers of materials will have high level alarms and written procedures to control overfill releases during transfers.

WASTE CHARACTERIZATION/PROFILE FOR DISPOSAL

UCC has completed the waste characterization for the material in Tanks 1601 and 1602 and received approval for disposal at Dow's kiln in Midland, MI. Additional third-party disposal facilities are being contacted for additional disposal options. The unexpected additional material found in tanks 1615-1619 that are to be used in the transfer/storage of material from tanks 1601/1602 must be sampled and analyzed to create the waste profile.

The material in tanks 1615-1619, as well as tanks 1601/1602, was sampled during the week of September 9/September 16, 2024. ALS, a certified third-party laboratory, was used to complete the analysis of all material. Analytical reports from ALS laboratories for samples of material in tanks 1601, 1602, 1615, 1616, 1617, 1618, and 1619 will be provided to WVDEP in the Bi-weekly written reports.

UCC will complete the waste characterization for all material and create/update the waste profile notifications for each tank prior to material shipment.

Disposal options for the additional material will be provided to WVDEP in the Bi-weekly written reports.

Plan of Corrective Action with Timeline (POCA)

Because UCC is dealing with equipment that it does not own and material composition that is currently unknown, we are providing this timeline for completion of the project but may need to work with the WVDEP during our meetings to adjust the dates based on issues that may be found as we work toward completion. This can be addressed via revised POCA's as needed. It is UCC's goal to move the material from Tanks 1601/1602 to structurally sound containment until material can be sent for disposal, with as few material transfers as possible. Railcars for storage will be used, when necessary, but will be based on availability of suitable railcars for the material.

The sequence of tank cleaning and inspection of Tanks 1615 – 1619 is UCC's current plan. If UCC determines that material can be moved more quickly and efficiently by changing the order of these transfer tanks, we will revise the plan and update WVDEP via our meetings and bi-weekly reports. Please refer to the Owner's tank numbers in Table 2 as needed for the timeline presented.

By October 31, 2024

- Dike Liners for all secondary containment will be in place

By December 31, 2024

- Loading of material begins for shipment/disposal for Tanks 1615, 1618 and 1619
- Tanks 1615, 1618 and 1619 emptied, cleaned and inspected/repaired

By January 31, 2025

- Tank 1617 emptied, cleaned, inspected/repaired
- Movement of liquid from tanks 1601/1602 beginning as space becomes available into 1615-1619

By February 28, 2025

- Tank 1616 emptied, cleaned, inspected/repaired

By March 31, 2025

- Transfer of liquid material complete from Tanks 1601 and 1602 to Tanks 1615-1619

By December 31, 2025

- All liquid and solids removed from the site

UCC will meet with the WVDEP representatives on a weekly basis to provide activity status/progress updates and discuss issues, as well as provide WVDEP Bi-Weekly written reports and associated documentation as needed.

UCC will work with the WV Division of Air Quality on a consent order for any emissions resulting from this project as needed, separate from this POCA.

UCC appreciates your time and consideration with this plan of corrective action. If you have any questions, or need additional information, please call Iris Songer at (304) 747-2090.

Sincerely



John A. Hebert

Senior Site Manufacturing Director for WVO

