Title V Operating Permit Revision

For Administrative Amendment Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Action Number: AA01  SIC: 2869
Name of Permittee: Union Carbide Corporation
Facility Name/Location: Institute Facility
County: Kanawha
Permittee Mailing Address: P.O. Box 8361, South Charleston, WV 25303

Description of Permit Revision: Separation of the EO distribution and the barge operations processes into two different Title V Permits. This Group 3 of 8 Permit will contain only the EO distribution process requirements. The barge operations will be covered under a new Group 3A of 8 Title V Permit.

Title V Permit Information:
Permit Number: R30-03900005-2017 (Group 3 of 8)
Issued Date: August 1, 2017
Effective Date: August 15, 2017
Expiration Date: August 1, 2022

Directions To Facility: From I-64, take the Institute exit, turn right onto State route 25. Plant entrance is located about 1/4 mile west on Route 25.

THIS PERMIT REVISION IS ISSUED IN ACCORDANCE WITH THE WEST VIRGINIA AIR POLLUTION CONTROL ACT (W.VA. CODE §§ 22-5-1 ET SEQ.) AND 45CSR30 - "REQUIREMENTS FOR OPERATING PERMITS." THE PERMITTEE IDENTIFIED AT THE FACILITY ABOVE IS AUTHORIZED TO OPERATE THE STATIONARY SOURCES OF AIR POLLUTANTS IDENTIFIED HEREIN IN ACCORDANCE WITH ALL TERMS AND CONDITIONS OF THIS PERMIT.

Laura M. Crowder
Director, Division of Air Quality

September 26, 2019
Date Issued
Permit Number: **R30-03900005-2017**
Permittee: **Union Carbide Corporation**
Facility Name: **Institute Facility**
Business Unit: **Logistics (Group 3 of 8)**
Permittee Mailing Address: **P. O. Box 8361, South Charleston, WV 25303**

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*This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45CSR30 — Requirements for Operating Permits. The permittee identified at the above-referenced facility is authorized to operate the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.*

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Facility Location: Institute, Kanawha County, West Virginia
Telephone Number: (304) 747-7000
Type of Business Entity: Corporation
Facility Description: Supply and services group includes for the EO distribution process, air separation process, barge operations process, tank truck and rail car operations process, and the plant lab.
SIC Codes: 2869
UTM Coordinates: 432.189 km Easting • 4,248.754 km Northing • Zone 17

Permit Writer: Mike Egnor

*Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.*

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*Issuance of this Title V Operating Permit does not supersede or invalidate any existing permits under 45CSR13, 14 or 19, although all applicable requirements from such permits governing the facility's operation and compliance have been incorporated into the Title V Operating Permit.*

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*West Virginia Department of Environmental Protection • Division of Air Quality*
Approved: August 1, 2017 • Modified: September 26, 2019
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Appendix A ........................................ Consent Order CO-R21-97-41 ATTACHMENTS A and B
1.0 Emission Units and Active R13, R14, and R19 Permits

1.1. Emission Units

<table>
<thead>
<tr>
<th>Emission Unit ID</th>
<th>Emission Point ID</th>
<th>Emission Unit Description</th>
<th>Year Installed</th>
<th>Control Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>C9704</td>
<td>410 B or 410A</td>
<td>Tank 9704</td>
<td>1969</td>
<td>Primary Flare B410 or Secondary Flare A410</td>
</tr>
<tr>
<td>C9705</td>
<td>410B or 410A</td>
<td>Tank 9705</td>
<td>1969</td>
<td>Primary Flare B410 or Secondary Flare A410</td>
</tr>
<tr>
<td>C9745</td>
<td>410A</td>
<td>Flare Knock out Pot C9745</td>
<td>1989</td>
<td>Secondary Flare A410</td>
</tr>
<tr>
<td>C9746</td>
<td>410B</td>
<td>Flare Seal Pot C9746</td>
<td>1991</td>
<td>Primary Flare B410</td>
</tr>
<tr>
<td>C9747</td>
<td>410B</td>
<td>Flare Knock out Pot C9747</td>
<td>1990</td>
<td>Primary Flare B410</td>
</tr>
<tr>
<td>PMP</td>
<td>410B or 410A</td>
<td>Priming Pot</td>
<td>1990</td>
<td>Primary Flare B410 or Secondary Flare A410</td>
</tr>
<tr>
<td>EOTC</td>
<td>410B or 410A</td>
<td>EO Tank Car Rack</td>
<td>1988</td>
<td>Primary Flare B410 or Secondary Flare A410</td>
</tr>
<tr>
<td>L1B</td>
<td>B1L</td>
<td>Barge-Loading</td>
<td>1940s</td>
<td>None</td>
</tr>
<tr>
<td>L1B1</td>
<td>2B1L</td>
<td>Barge-Unloading-includes West Suction Pot</td>
<td>1981</td>
<td>None</td>
</tr>
<tr>
<td>L1B2</td>
<td>2B1L</td>
<td>Barge-Unloading-includes West Knockout Pot</td>
<td>1981</td>
<td>None</td>
</tr>
<tr>
<td>TTL4</td>
<td>L4TT3</td>
<td>East-Rack Tank-Truck-Loading</td>
<td>1940s</td>
<td>None</td>
</tr>
<tr>
<td>RCL4 (aka TCL4)</td>
<td>L4RC (aka L4TC)</td>
<td>East-Rack Rail Car-Loading</td>
<td>1940s</td>
<td>None or Scrubber F040³</td>
</tr>
<tr>
<td>L6TT</td>
<td>L6TT</td>
<td>West Rack-Truck Raek</td>
<td>1950s</td>
<td>None</td>
</tr>
<tr>
<td>L5RC (aka L5TC)2</td>
<td>L5RC (aka L5TC) or 163A²</td>
<td>West Rail-Car Raek</td>
<td>1950s</td>
<td>None or Flare-A163⁴</td>
</tr>
</tbody>
</table>

¹ Requirements for Emission Units TTL4 and RCL4 (aka TCL4) are addressed in R30-03900005-2017 (Group 2 of 8).

³ Requirements for Emission Unit L5RC (aka L5TC) are addressed in R30-03900005-2017 (Group 4 of 8).
1.2. Active R13, R14, and R19 Permits

The underlying authority for any conditions from R13, R14, and/or R19 permits contained in this operating permit is cited using the original permit number (e.g. R13-1234). The current applicable version of such permit(s) is listed below.

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Date of Issuance</th>
</tr>
</thead>
<tbody>
<tr>
<td>R13-2646A</td>
<td>August 8, 2006</td>
</tr>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>
5.0 — Barge/Tank Truck/Rail Car Operations

5.1. — Limitations and Standards

5.1.1. — VOC emissions, which include HAPs, released to the atmosphere through emission point B1L as the result of loading operations as noted in 5.1.3 of this permit shall not exceed 9.6 pounds per hour and 1.3 tons per year. Loading operations shall include activities associated with line cleaning/line flushing. [45CSR13, R13-2646, 4.1.1]

5.1.2. — Emissions of Methyl-Isobutyl Ketone (MIBK) and ethylene glycol as the result of barge loading operations shall not exceed 1.1 and 0.01 tons per year respectively. [45CSR13, R13-2646, 4.1.2]

5.1.3. — The permittee shall not exceed an hourly loading rate of 17,100 gallon per hour of any product or material that has the potential to emit regulated air pollutant and shall not exceed the following annual limits for the corresponding chemical or non-HAP materials listed in Table 5.1.3.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Loading Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual-Throughput</td>
<td>Methyl-Isobutyl</td>
</tr>
<tr>
<td></td>
<td>Ketone</td>
</tr>
<tr>
<td>gal/year</td>
<td>10,000,000</td>
</tr>
</tbody>
</table>

*Compliance shall be determined using a 12 month rolling total.

Non-HAP Materials shall mean volatile organic compounds that do not contain any HAPs except for methyl-isobutyl ketone that may be present at a concentration not to exceed 0.5 % by weight.

[45CSR13, R13-2646, 4.1.3]

5.1.4. — VOC and total-HAP emissions, which include ethylene glycol and methanol, released to the atmosphere through emission point B1L as the result of unloading operations which requires the operation of the vacuum pump shall not exceed 26.2 pounds per hour on an hourly basis and 2.0 tons per year on an annual basis. Unloading operations shall include line clean/line flushing activities. Compliance with this limit shall be established by limiting the number of barges that undergo unloading activities to no more than 121 per year. Compliance with this limit shall be determined using a 12 month rolling total. [45CSR13, R13-2646, 4.1.4]

5.1.5. — The permittee shall install, operate and maintain a nitrogen blanketing system when unloading barges containing flammable organic liquids (organic liquid with a flash point less than 140 °F) that contain VOCs in the vapor space of the storage compartment. The permittee is prohibited from purging empty barges that contain VOC-laden vapors that would result in the release of the discharge of VOCs into the atmosphere. [45CSR13, R13-2646, 4.1.5]

5.1.6. — Compliance with all annual emission limits stated in 5.1.1, 5.1.2, and 5.1.4 shall be determined using a 12 month rolling total. A rolling 12 month total shall mean the sum of the emissions by pollutant for the previous twelve consecutive calendar months. [45CSR13, R13-2646, 4.1.6]

5.2. — Monitoring Requirements

5.2.1. — None.
5.3. — Testing Requirements

5.3.1. — None

5.4. — Recordkeeping Requirements

5.4.1. — For the purposes of demonstrating compliance with the emission limits and other limitations stated in Section 5.1 of this permit, the permittee shall record the following information and maintain it in accordance with 3.4.2 of this permit:

a. Loading Activities:
   i. Date;
   ii. Amount; and
   iii. Name of chemical/material that was loaded.

b. Unloading Activities:
   i. Date;
   ii. Number of barges by chemical that was unloaded; and
   iii. Name of chemical/material that was unloaded.

[45CSR13, R13-2646, 4.4.4]

5.4.2. — For the purposes of determining compliance with all of the annual emission limits stated in Section 5.1 of this permit, the permittee shall review and determine that the actual number of activities are within the stated limits as defined in 5.1.3 and 5.1.4 of this permit. The permittee shall conduct these determinations on a monthly basis. All records and calculations shall be maintained in accordance with Section 3.4.2. [45CSR13, R13-2646, 4.4.5; 45CSR§30-5.1.e]

5.5. — Reporting Requirements

5.5.1. — None.

5.6. — Compliance Plan

5.6.1. — None.