



Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	09/23/24 – 9/25/2024	
Media Program:	Air (CAA), RCRA	
Regulatory Program(s)	NESHAP, NSPS, Title V, SIP	
Company Name:	Union Carbide Corporation	
Facility Name:	St. Charles Operations	
Facility Physical Location:	355 LA HWY 3142	
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FRS Number:	110018861793	
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Lolita Tillery-Grant	Dow	EHS Delivery Leader
Gus Becnel	Dow	Environmental Technician
Thomas Nichols	Dow	Leveraged Air Specialist
Van LeGaux	Dow	Olefins 1 Technical Advisor
Ed Walden	Dow	EH&S Technologist Lead
Jay Swart	Dow	Olefins 1 Furnace Operator
Lesly Holbrooks	Dow	Olefins 1 Acid Gas Operator
Reid Pichon	Dow	Olefins 1 Quench Operator
Brett Motherne	Dow	Environmental Delivery Specialist
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Union Carbide Corporation / St. Charles Operations
Inspection Date 09/23-25/2024

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Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

EPA Region 6 inspectors Kara Allen, Sophia Ong, Benjamin Rosenthal, and Colleen McCarthy (“I”), and EPA Region 5 inspectors Karina Kuc, Constantinos Loukeris, and Victoria Nelson (“we” or the “inspection team”) arrived at the Union Carbide Corporation (“Union Carbide” or “UCC”) St. Charles Operations (“SCO” or the “Facility”) at 13:20 on September 23, 2024 for an unannounced inspection. Louisiana Department of Environmental Quality (“LDEQ”) inspector Nathan Ward also participated in the inspection. We met with Lolita Tillery-Grant, EHS Delivery Leader; Philip Speyrer, Environmental Leverage Specialist; Jamie Williams, Senior Environmental Regional Delivery Leader; and Gus Becnel, Environmental Technician. I presented my credentials to Ms. Grant and informed them that this was an EPA inspection to determine compliance with the facility’s Title V Air Permits and the Clean Air Act (“CAA”). The scope of the inspection is a partial compliance evaluation (“PCE”) and includes evaluation of the facility’s compliance with its Title V Operating Permits, Louisiana State Implementation Plan (“SIP”), and applicable CAA regulations listed under Parts 60, 61, and 63 of Title 40 of the Code of Federal Regulations (“CFR”). This inspection specifically focuses on the National Emission Standard for Benzene Waste Operations, 40 CFR Part 61 Subpart FF (“Subpart FF” or “BWON”).

On September 24, 2024, EPA Region 6 inspector John Penland joined the inspection team. Inspector Penland conducted an unannounced inspection at the Facility for compliance with the Resource Conservation and Recovery Act (“RCRA”). This inspection focused on the generation and management of wastewater generated by operations at the Facility and was conducted in conjunction with the CAA inspection. Inspector Penland presented credentials to Mr. Philip Speyrer and informed Mr. Speyrer that he was on-site to conduct an inspection of the facility under the authority of Section 3007 of RCRA.

FACILITY DESCRIPTION

Union Carbide Corporation, a wholly owned subsidiary of the Dow Chemical Company, owns and operates the St. Charles Operations chemical manufacturing complex in Hahnville, Louisiana. It consists of over 15 different process units and operates 24 hours a day, 365 days a year. The Facility produces a range of products including, but not limited to, acrylic acid, acrolein, various amines, butanol products, alkyloxylates, various glycols, low-pressure polyethylene, ethylene, propylene, and ethylene oxide.

Olefins Plant

The Olefins Plant operates under Title V Permit No. 2422-V11 issued by LDEQ on February 27, 2024. The Plant contains two ethylene production units, Olefins 1 and Olefins 2, which are subject to the ethylene maximum allowable control technology (“EMACT”) standards under 40 CFR Part 63 Subpart YY. Each unit utilizes furnaces to crack raw material (ethane, propane, or naphtha) into ethylene and other byproducts. The raw material is introduced to the furnaces as feedstock where it combines with process steam as a diluent. The combined stream passes through a preheater in the flue of the furnace and then enters the radiant side of the firebox, where the thermal reaction cracks the feed into ethylene, propylene, and other alkenes. The reaction products are then quenched in a quench tower to generate

high pressure steam and cool the furnace gas. The furnace gas is sent to the fractionator and quench areas for cooling and product separation.

In fractionation, the hot furnace gas is cooled with a quench oil cycle and the heavy pyrolysis fuel oil (C10+) is removed. The furnace gas then continues through a quench section where a quench water cycle further cools the gas, and dripolene (pyrolysis gasoline) is removed in a decanting operation. The dripolene removed is pumped to dripolene storage tanks owned and operated by Vopak. Some of the process streams from the decanter can be recovered in the tar pot and returned to the quench oil cycles. The water generated in the decanter goes through an oil-water separator before being treated in a process water stripper or is routed directly to a process water stripper. The effluent from the process water stripper can supply the dilution steam generator ("DSG") which then supplies dilution steam back to the furnaces. The DSG generated steam can also be routed to the wastewater treatment plant.

The remaining furnace gas (C5 and lighter materials) is routed to suction drums and a compression system. Compression occurs in five stages. After the third stage suction drum, the compressed furnace gas goes through an acid gas system to remove carbon dioxide and neutralize any acid present in the gas. Wastewater generated in the acid gas systems, from spent caustic, is collected in process sewer sumps and routed to wastewater tanks 1311 or 1321. The wastewater in tanks 1311 and 1321 feeds the East and West wastewater strippers for treatment before the effluent is routed to the wastewater treatment plant.

Following the acid gas system, the furnace gas continues compression in the fourth and fifth stages. After compression, the gas is dried, sent to cold separators, and routed through multiple distillation columns to recover ethylene, propylene, and other products. Many products from the Olefins Plant supply feed to other process units at the Facility or can be sent off-site.

Wastewater Treatment Plant

The wastewater treatment plant ("Environmental Operations" or "EOB") is located on-site at SCO. EOB handles and treats SCO's stormwater and individual plant-produced wastewater streams, and wastewater from Amerchol's Greensburg, Louisiana facility. EOB was owned and operated by Union Carbide until November 11, 2023. Since November 11, 2023, Dow Hydrocarbons and Resources, LLC owns the infrastructure assets at EOB. Dow InfraCo LLC operates the assets at EOB. Both Dow Hydrocarbons and Resources, LLC and Dow InfraCo LLC are sub-entities of the Dow Chemical Company. EOB operates under Title V Permit No. 2104-V6 issued by LDEQ on November 11, 2023.

Section II – OBSERVATIONS

September 23, 2024

The inspection team met with Union Carbide representatives, including Charles Cuti, Leveraged Air Specialist; Thomas Nichols, Leveraged Air Specialist; and Van LeGaux, Olefins 1 Technical Advisor who joined the opening conference virtually, in Union Carbide's conference room (see **Appendix 3** for

opening conference sign-in sheets). After presenting my credentials to Ms. Grant, I explained the scope of the inspection and planned inspection activities. We shared our intent to tour of the facility and conduct interviews with facility personnel throughout the inspection.

I stated we would inspect the facility's wastewater systems, primarily focused on benzene-containing wastewater and the wastewater treatment plant. I explained that we would use flame ionization detectors ("FID") and optical gas imaging cameras ("OGIC") to monitor for emissions from equipment. Logs of photographs and videos taken during the inspection are found in **Appendices 1 and 2**, respectively. I also stated we would collect evacuated canister air samples for analysis of chemical species using EPA Method TO-15 ("Summa Samples"). EPA's Summa Sample results are found in **Appendix 8**. Union Carbide's Summa Sample results are found in **Appendix 9**.

According to Union Carbide representatives, the only process unit at the Facility known to have benzene-containing wastewater is the Olefins Plant. The Olefins Plant is comprised of two Olefins units, referred to throughout this inspection report and by facility personnel as Olefins 1 and Olefins 2. The Olefins units are ethylene production units subject to the EMACT and generate waste required to comply with the requirements of 40 CFR Part 63 Subpart XX ("Subpart XX"). Subpart XX requires affected sources to comply with BWON. Union Carbide has reported that its aqueous waste is more than 10 megagrams ("Mg") of benzene per year; therefore, it is required to implement a strategy to control benzene emissions from the facility waste operations. Union Carbide elects to follow the BWON compliance option as described in 40 CFR 61.342(c), also known as the "2 Mg" option.

Olefins Units Wastewater Overview

During the opening conference, Mr. Cuti presented process flow diagrams ("PFDs") showing the general flow of streams through the Olefins units. According to the PFDs, many of the benzene-containing waste streams at the Facility are collected in drain hubs in Olefins 1 and Olefins 2 and drain to the respective unit's process sewer. Most of the drain hubs in the Olefins 1 and 2 are open to atmosphere. From the process sewers, the wastewater is routed to external floating roof tanks 1301, 1331, 1311, or 1321 ("wastewater tanks"). Benzene-containing waste streams from various sumps located at the docks and storage tanks are also routed to the wastewater tanks.

The wastewater tanks are external floating roof tanks owned and operated by Vopak Industrial Infrastructure America St. Charles, LLC ("Vopak"). Vopak stores the benzene-containing wastewater and sends it back to Union Carbide where it is routed to one of three wastewater strippers ("WWS"). Union Carbide claims the waste streams from the wastewater tanks as controlled for benzene under BWON. Union Carbide owned and operated the wastewater tanks prior to their sale to Vopak in December 2020. When Union Carbide was operating the tanks, they were used as wastewater holding tanks to control the wastewater flow to the strippers.

Mr. Cuti explained that Union Carbide communicates with Vopak about operations and does not coordinate or communicate about environmental compliance efforts. Union Carbide and Vopak have

integrated personnel for operations at the site. Mr. Cuti also stated that Vopak does not certify compliance with Subpart FF regarding the management and operations of the wastewater tanks. I asked Union Carbide personnel if Union Carbide was aware that Vopak submitted a letter to LDEQ claiming non-applicability to Subpart FF and a permit application removing Subpart FF applicability from their permit. Mr. Cuti stated that Union Carbide was not aware of Vopak's letter or permit application removing Subpart FF applicability. [Area of concern ("AOC") 1 and 24]

The wastewater stored in tanks 1301 and 1331 goes to the #3 WWS. Mr. Cuti stated the #3 WWS is a steam stripper that was installed in the plant around 1998 and that the #3 WWS was certified for use as a Subpart FF WWS in 2015 for treatment of benzene-containing wastewater. The effluent of the #3 WWS is monitored with a benzene analyzer that automatically controls flow direction. If the effluent of the #3 WWS measures greater than 475 parts per billion ("ppb") benzene, the stream is routed back to tanks 1301 and 1331. If the effluent of the #3 WWS measures less than 475 ppb benzene, the stream is routed to EOB for treatment.

The PFDs presented by Mr. Cuti indicated the wastewater stored in tanks 1311 and 1321 is generated from the acid gas systems at the Olefins units. Olefins 1 and 2 have separate acid gas systems. In the acid gas systems, Union Carbide identified wastewater streams subject to BWON from the MEA sumps, NaOH sumps, and caustic decanters that are routed to tanks 1311 and 1321. From tanks 1311 and 1321, the wastewater is routed to the East and West WWSs. The East and West WWSs were installed approximately in 1998. They operate similarly to the #3 WWS and have continuous benzene analyzers measuring the effluent concentration to determine if flow should be directed back to wastewater tanks or to EOB.

The inspection team also inquired about the stormwater system. Union Carbide representatives described the stormwater system which collects stormwater and routes it to one of three stormwater skimmers. From the skimmers, the stormwater is pumped to stormwater tank T-702. T-702 acts as a storage tank for the stormwater in the Olefins units prior to being routed to EOB through a stormwater header. Prior to making it to EOB, the stormwater is analyzed for benzene. If the benzene analyzer detects greater than 475 ppb benzene, it is diverted to the wastewater tanks. [AOC 2]

We also discussed the DSGs in the Olefins units. According to Mr. LeGaux, use of the DSG varies by unit and the Olefins 1 DSG has not been used in approximately two years. Olefins 2 runs the DSG intermittently. When the DSGs run, quench water is routed through the process water stripper and the tails can be routed to the DSG or directly to EOB. According to Mr. LeGaux, approximately two thirds of the process water stripper steam is converted to dilution steam and routed back to the furnaces. Excess dilution steam is sent to EOB. The blowdown steam from the DSG is monitored with a continuous benzene analyzer. If the analyzer measures greater than 475 ppb benzene, the blowdown steam is routed to wastewater tanks through the process sewers. If the analyzer measures less than 475 ppb benzene, the blowdown steam can be routed directly to EOB [AOC 5]. Union Carbide identified the stream from the process water strippers to the DSGs as points of waste generation ("POG") as defined by 40 CFR 61.341. [AOC 6]

Total Annual Benzene ("TAB")

During the opening conference, the inspection team and Union Carbide personnel also discussed how the TAB quantity for the Facility is determined. Mr. Cuti displayed two Microsoft Excel spreadsheets and a previously submitted TAB report for EPA inspectors to review. One spreadsheet was a TAB report workbook with sampling data and analyses used to generate the TAB report for compliance with the reporting requirements in 40 CFR 61.357. The second spreadsheet identified POGs, as determined by Union Carbide, and PFDs for the Olefins units.

Upon initial review of the TAB report Mr. Cuti shared, we noted Union Carbide reported a total of 17 POG locations (See **Appendix 4: Previous TAB Reports**). EPA evaluated the reported streams and noted that many of the POGs included points downstream of where the waste would have exited the process or a waste management unit ("WMU"). Union Carbide identifies multiple streams feeding into drain hubs, process sewers, and sumps as a POG. As confirmed by Mr. Cuti, Union Carbide considers these POGs at the point in which they are combined. [AOCs 2, 6] Mr. Cuti told EPA inspectors that Union Carbide bases the TAB report off characteristics of the process sewers determined in 1999. The 1999 evaluation of the process sewer claims no stream was greater than 10 parts per million ("ppm") benzene in the individual drain systems ("IDS"). Ms. Grant and Mr. Cuti indicated that, to their knowledge, the Facility has not conducted any re-evaluations or sampling of the IDS streams since the late 1990s. [AOCs 2, 6, 7]

According to TAB reports, the only streams Union Carbide considers controlled for benzene emissions are the East, West, and #3 WWS feeds, and wastes sent off-site for disposal. The streams feeding each WWS come from the wastewater tanks at Vopak [AOC 1, 6, 8, 24]. Mr. Cuti presented PFDs that included labels identifying where Union Carbide claims POG locations. We noted that Union Carbide identified POGs at the Olefins 1 and 2 hubs prior to entering the process water sewers and at various sumps before combining at the wastewater tanks. I described that based on the PFDs, the POGs are being counted multiple times and Mr. Cuti agreed with that description. Mr. Cuti was unsure how the POG locations were identified. [AOCs 2, 6, 7]

A column on the TAB report is labeled "Will stream be controlled for benzene?" and I asked Mr. Cuti how the values (yes or no) in the column were determined. Mr. Cuti indicated that the column is intended to show which streams Union Carbide claims as controlled or uncontrolled to calculate the TAB quantity and demonstrate compliance with the 2 Mg option. Mr. Cuti also described how UCC calculates the TAB quantity by using historic sampling data, monthly sampling data, or continuous benzene analyzer data at POGs. Mr. Cuti stated that the determination for whether the stream is controlled is based on the sampling data and not based on how the stream was managed throughout the reporting year. [AOCs 8, 24, 25]

Following the discussions about the facility operations, I explained our planned inspection activities for the following day, including our intent to inspect the Olefins units and conduct monitoring with FIDs and

OGICs. EPA inspectors requested information on ethylene oxide (“EtO”) industrial hygiene (“IH”) monitoring and the respective data. Mr. Cuti indicated he would communicate with UCC staff responsible for IH monitoring and records and provide the data to us for our review before entering process units the next day. I also summarized records we requested throughout the opening conference (See **Appendix 5** for Inspection Document Requests).

At 16:48, EPA inspectors watched the Facility’s safety video. At 17:00, EPA inspectors departed the Facility.

September 24, 2024

On September 24, 2024, we arrived at the Facility at 08:40 and met Mr. Cuti. John Penland, EPA Region 6 RCRA inspector, joined the inspection team. We discussed our intent to conduct a tour of the Olefins 1 and 2 units and conduct EPA Method 21 monitoring with FIDs and utilize OGICs to screen for emissions. Calibration gas information and FID calibration information for the inspection is found in **Appendix 6**. FID field measurement data is found in **Appendix 7**.

Mr. Cuti escorted us to the conference room where we met with Ed Walden, EH&S Technologist Lead. Mr. Walden told EPA inspectors that Union Carbide maintains EtO industrial hygiene data from badges in process areas. EPA inspectors requested the EtO industrial hygiene data for a second time on September 24, 2024, and Mr. Walden indicated that Union Carbide would provide the badge data including all lab analyses, analytical methods, locations of industrial hygiene monitors, and chain of custody forms to EPA.

While in the conference room, Union Carbide provided a blank Subpart FF visual inspection form as requested during our discussion during the opening conference. Mr. Cuti stated all visual inspections the Facility completes for Subpart FF are identified on the form. The form only identified inspections for the three WWSs and associated closed vent systems. The forms did not identify any other waste management units. [AOCs 2, 3]

Olefins 1 Control Room

At 09:50, we arrived at the Olefins 1 control room. We met Jay Swart, Olefins 1 Furnace Operator, who showed us the Olefins 1 control board he monitors. Mr. Swart explained that Olefins 1 receives propane or ethane as raw material to feed the furnaces. Olefins 1 has a total of 11 furnaces: seven Lummus furnaces, two carbide furnaces, and two SWEC furnaces. The SWEC furnaces are twin cells and can also use naphtha as a feedstock. The furnaces crack the feed gas which produces steam. Steam is sent to the superheater which turns the turbines. The cracked gas from the Lummus and carbide furnaces is then sent to the North quench system and the cracked gas from the SWEC furnaces is sent to the South quench system.

Mr. Swart indicated that Olefins 1 routes process water to a DSG but it is used intermittently. At the time of inspection, Olefins 1 was not running the DSG. Mr. Swart stated the four reboilers operate at the DSG drum where dilution steam is generated and subsequently fed back to the furnaces. Condensate is sent to two deaerators which feed boilers and ultimately feeds back to the furnaces. When the DSG is running, the DSG blowdown is cooled and is hard piped to EOB if the benzene analyzer measures that the blowdown meets specification ("on-spec"). If the blowdown from DSG does not meet specification ("off-spec"), the stream is directed to the #3 WWS via tanks 1301 or 1331. [AOC 5]

After reviewing the furnace control board, inspectors met Reid Pichon, Olefins 1 Quench Operator, to review the quench systems control board. Mr. Pichon showed the inspection team that gas from the Lummus and carbide furnaces goes to the north quench tower (DA-1445). The quench water from DA-1445 is routed to a decanter (FA-1449) where the oil is decanted, routed to the tar pot (FA-1446), and then sent to the fractionator (DA-101) in the south quench system. Mr. Pichon and Mr. Cuti confirmed that the tar pot receives pyrolysis gas. The water separated in the decanter is sent to an oil water separator (FA-1456) which has a dripolene weir. The dripolene is pumped to storage at Vopak and the water is routed to the process water stripper (DA-1463).

The south quench system receives gas from the SWEC furnaces at the fractionator (DA-101). The fractionator assists in the removal of heavy pyrolysis fuel oil. The stream of heavy pyrolysis fuel oil is sent to a fuel oil stripper (FA-102). From FA-102, fuel oil is routed to a fuel oil storage tank and a stream is routed back to the fractionator. The main furnace gas line off the fractionator goes to the south quench tower (DA-103). The quench water from DA-103 is routed to a decanter (FA-119) to separate out any oils including dripolene. The oil from the decanter is pumped to dripolene storage tanks at Vopak or used in the unit. The water from FA-119 is sent to the process water stripper (DA-1463). Mr. Pichon indicated the tails of DA-1463 are monitored with continuous benzene and total organic carbon ("TOC") analyzers. At the time of inspection, the tails of DA-1463 were directed to EOB. At 10:11, the analyzers were reading 51.39 ppm TOC and 140 ppb benzene. Mr. Cuti noted that the process water stripper tails will divert to wastewater tanks 1301 or 1331 if the analyzers measure 475 ppb benzene or 500 ppm TOC.

Following the north and south quench towers, the furnace gas continues through compression. Mr. Pichon displayed the stages of compression on the control board and noted that the furnace gas goes through five stages of compression in a total of eight suction drums. After the third stage of compression, the compressed gas is sent to the acid gas system.

We met Lesly Holbrooks, Acid Gas Operator, to review the acid gas system control board. Mr. Holbrooks described the process in which the compressed gas is received from the third stage discharge separator and can go through the MEA cycle or caustic tower. Mr. Holbrooks indicated that the MEA cycle was down at the time of inspection, so the system was running the caustic tower. Blowdowns from the caustic tower are captured in a knock-out pot ("KO pot"), FA-126. The KO pot knocks out caustic and dripolene and is routed to the decanter (FA-163). Dripolene decanted is routed to the south quench system and water is routed to tank 1321. Gas from the KO pot is routed to the Olefins 1 flare. After the

acid gas system, the furnace gas continues compression in the fourth stage and then fifth stage before continuing to distillation columns.

We also noticed that the control board in Olefins 1 included the stormwater skimmers and stormwater tank, T-702. Operators stated drains in the Olefins 1 unit collect at skimmers. Olefins 1 has two skimmers, East and West. The oil from the skimmers is directed to wastewater tanks 1301 and 1331. The stormwater is pumped to T-702. From T-702, water is routed to EOB for treatment. At the time of inspection, we observed the analyzer reading 0 ppb benzene from T-702.

While in the control room, we discussed with Union Carbide personnel that various pieces of equipment that may be generating and discharging benzene-containing wastewater were not included in the TAB reports or POGs identified as reviewed the previous day. [AOC 6]

Olefins 1 Field Observations

At 10:30, EPA inspectors departed from the Olefins 1 control room to enter the Olefins 1 unit for field observations. Two Think Environmental Leak Detection and Repair ("LDAR") technicians, Dennis Fleming and Donald Lyons, joined to conduct concurrent monitoring with EPA inspectors. Union Carbide contracts Think Environmental ("Think") to conduct LDAR monitoring throughout the Facility. FID field measurement data for September 24, 2024, is included in Table 1 of **Appendix 7**.

EPA inspectors monitored various stage suction drums in the gas compression system. Inspector Ong climbed FA-1477, a third stage suction drum, and conducted Method 21 monitoring on the accessible components at the platform. I also climbed FA-1477 with an OGIC and observed that the closed vent system was not accessible for complete visual inspection from the existing platform. [AOC 4] Inspector Ong monitored the equipment at the platform which appeared to be regulators and pressure gauges (Photos 2, 3, and 4). Inspector Ong's FID flamed out twice while monitoring at the gauges. [AOC 9] Mr. Lyons told Inspector Ong that Think does not monitor the instrumentation on suction drums.

Inspector Nelson conducted Method 21 monitoring at FA-1476, a second stage suction drum, and detected greater than 10,000 ppm VOC on regulators and gauges at the platform at the top of the drum. [AOC 9] Mr. LeGaux observed Inspector Nelson's FID measurements during the monitoring event. Mr. LeGaux indicated that he believed the gauges on the first through third stage suction drums were methane blowback lines and our FID were reading methane only. While monitoring the components on the second stage suction drum, Inspector Nelson observed New Source Performance Standard ("NSPS") tags 3Y56275 and 3Y56276.

North of suction drums FA-1476 and FA-1477, inspectors observed a dimethyl sulfide ("DMS") sump and noted strong odors.

At 11:46, EPA Inspectors Ong and Rosenthal climbed a 5th stage suction drum, FA-1479, to conduct Method 21 monitoring (Photo 9 and 10). I was told by Mr. LeGaux that the 4th and 5th stage suction

drums had blowback lines like the first through third stages, except the 4th and 5th stages were ethylene blowback. [AOC 9]

While on the platform of FA-1479, Inspector Rosenthal observed a plug hanging from a potential open-ended line on an overhead line north of the suction drum (Photo 8). [AOC 10] The origin of the line could not be determined.

Inspector Loukeris conducted Method 21 monitoring near the south quench decanter, FA-119. Inspector Loukeris detected emissions greater than 500 ppm VOC at various decanter drains to the Olefins 1 process sewer (Photo 1 and Videos 1, 2, and 3). Mr. Fleming was unable to confirm those readings with Think's FID. However, Inspector Nelson monitored the same locations and confirmed Inspector Loukeris's observations.

Inspector Loukeris also conducted Method 21 monitoring at the Old Tar Pot, FA-1446, and detected above 3,000 ppm VOC at various locations. Inspectors Loukeris and Allen noted that the oil-water separator, FA-1456, was not accessible for monitoring by platform, roof, or ladder (Photo 6). [AOC 4]

Throughout the Olefins 1 unit, EPA inspectors observed various process sewer drain hubs open to the atmosphere (Photos 5, 11, 12, 13, 17, 18, and 21). Several drains were observed with multiple lines leading into them and with FID detections above 500 ppm VOC [AOCs 1, 2, 6, 12]. The drain of condensate stripper DA-107 was observed with two lines, one of which was feeding into the drain hub and one that was leading directly to the ground. Inspectors observed that the line feeding the drain hub was not leaking but the line outside the drain hub was observed dripping directly on the ground [AOC 11].

In the afternoon, we continued our field observations in the Olefins 1 unit. I continued Method 21 monitoring at a fourth stage suction drum, FA-1478. I observed regulators and pressure gauges at the platform on top of FA-1478 and detected up to 12,500 ppm VOC. An Olefins 1 Operator stated that each stage of furnace gas compression has a knock-out, or suction drum, associated. The operator stated the 4th and 5th stages of compression have ethylene blowback as stated by Mr. LeGaux previously.

EPA inspectors continued to the flare KO drums, FA-1490 and FA-115. Inspectors observed that the KO drums were elevated and did not have accessible monitoring points to conduct monitoring or visual inspections. An Olefins Operator indicated that Think monitors flanges and valves at the top of the flare KO drums with very long extender poles for their FID probes. We also observed a drain line from FA-1490 that leads to an open drain (Photo 14). [AOC 2] I monitored the pump area around the flare KO drums and did not observe elevated measurements. The pumps were not running at the time of monitoring.

I then monitored the KO pot, FA-126, off the caustic tower. To conduct Method 21 at the overhead piping of the KO drums, I had to climb the scaffolding around the caustic tower and reach through the platform grating and cage spindles with the FID probe. [AOCs 3, 4]

EPA inspectors observed the three skimmers servicing stormwater from the Olefins units. No emissions were detected with the FID and no emissions were observed with the OGIC from the east and west skimmers. The Olefins 2 skimmer was observed receiving a hot steam stream from Olefins 2 (Photo 15 and 16, Video 7) [AOC 13].

At 16:45, we returned the conference room. I reviewed the inspection activities conducted during the day and reviewed records requests. Charles Cuti, Lolita Tillery-Grant, Jamie Williams, Brett Motherne, Environmental Delivery Specialist, Thomas Nichols, Gus Becnel, and Michelle White, Regulatory Affairs Leader for Louisiana, and the inspection team were present for the debrief.

I requested the analyzer data for each TOC and benzene analyzer at the facility for the last five years, the valve position and flow data for T-702, the valve position at the DSGs, a process sewer diagram, no detectable emissions testing data for Subpart FF monitored components, the location of field water decanter, BWON manual and/or training documentation, completed Subpart FF visual inspections, preventative maintenance records for TOC and benzene analyzers, and analyzer specification sheets.

I provided notice to Mr. Cuti that EPA would be collecting Summa Samples on September 25, 2024. Email correspondence between Mr. Cuti and I regarding the sampling analysis plan is included in **Appendix 5**.

We departed the facility at 17:35 on September 24, 2024.

September 25, 2024.

EPA inspectors arrived at the Facility at 08:30 on September 25, 2024, and met with Mr. Cuti. EPA inspectors calibrated equipment prior to going to the Olefins 2 control room at 09:30.

Olefins 2 Control Room

At the Olefins 2 Control Room, we met with Kurt Bitre, Technical Advisor, and Jason Lirette, Operator. According to Mr. Lirette, Olefins 2 has ten furnaces: nine are the same size, and one is smaller. At the time of inspection, Olefins 2 was operating nine furnaces. One furnace was going through a decoking operation and not receiving feed. Mr. Lirette explained that the furnaces typically receive ethane or propane as feed. Furnace gas then goes to the fractionator, DA-3101. The bottoms of the fractionator go through the quench oil recycle and the overheads go to the quench tower and then compressors.

Next, we met with Renell Gales, Operator, to discuss the gas compression stage. The gas goes through five stages of compression. FA-3201 is the first stage compressor, or suction drum. Liquid from the first stage suction drum goes back to the quench tower. The second stage suction drum is FA-3202. Liquids from the second stage compressor go back to the first stage. This process continues through the third stage of compression. The liquids from Stages 4 and 5 are routed to the third stage to repeat the third stage compression. The suction drums can drain to the wet flare KO pot, FA-3901, if they reach capacity

or if operations identify issues with the first stage suction drum. Liquids from the wet flare KO pot are routed to the quench tower.

The quench tower, DA-3104, supports dripolene and water separation. Dripolene from the quench tower returns to the fractionator and process water is sent to the process water stripper, DA-3106. The effluent of the process water stripper usually goes to the DSG, FA-3111, and is also equipped with TOC and benzene analyzers. If the bottoms of the process water stripper or DSG are on-spec, the stream is routed to EOB. If the bottoms are off-spec, the stream is routed to the wastewater tanks 1301 or 1331. At the time of inspection, the stream was being routed to EOB. If the DSG is running too high, the feed will trip and route to EOB or the wastewater tanks. The DSG blowdown is normally routed to the process water stripper or to the hot water sump.

Olefins 2 also has an acid gas system that can run an MEA or caustic cycle. Furnace gas is fed through the cycle and carbon dioxide is extracted and acid gases neutralized. The caustic tower, DA-3204, tails go to a spent caustic drum, FA-3212. According to UCC the spent caustic pot is routed to wastewater tanks 1321 or 1311. From the MEA still, DA-3203, tails are routed to a reflux drum, FA-3205. The reflux drum is routed to the spent caustic drum.

EPA inspectors departed from the Olefins 2 control room at 10:15. EPA inspectors split into two teams. One team inspected the Olefins 2 unit and the other team returned to Olefins 1 to collect Summa Samples and continue monitoring.

Olefins 2 Unit

Inspectors Kuc, Loukeris, Nelson, and Ong (“they”) entered the Olefins 2 unit at 10:40. They conducted Method 21 monitoring throughout the unit. Field measurement data collected on September 25, 2024, can be found in Table 2 of **Appendix 7**.

Throughout Olefins 2, EPA inspectors observed open process sewer drain hubs and a roll off box labeled VB27168 with elevated VOC measurements.

EPA inspectors also noted that access to various equipment was limited or not available. Inspector Loukeris observed a small blowdown drum, FA-3805, with no access to monitor a valve and a pressure safety vent. Another blowdown drum, FA-3806, was observed with an open stem venting to atmosphere with no access to monitor. The wet flare drum, FA-3904, was observed with a pressure safety vent that vents to atmosphere but with no platform access to monitor. [AOC 3, 4]

Inspector Nelson monitored suction drums FA-3201, FA-3202, FA-3203, and FA-3207. On FA-3201, elevated VOC readings were detected on a valve stem. Barry Bradham, Senior Technician, tightened bolts on the valve stem and the FID measurement was 4.8 ppm VOC following the repair. Inspector Nelson observed visible signs of leaks on FA-3202 and at a drill and tap plug on FA-3203. Mr. Bradham observed the leaks at FA-3202 and FA-3203.

Olefins 1 Summa Sample Collection

Inspectors Allen, Rosenthal, and I (“we”) returned to Olefins 1 at 10:30 to collect Summa Samples. Mr. Cuti and Mr. Lyons joined the EPA inspectors while collecting the samples.

At 10:38, we arrived at the Old Tar Pot, FA-1446. On September 24, 2024, EPA monitoring recorded a measurement of 3,300 ppm VOC at a regulator near the component tagged PCV-1446F-10. On September 25, 2024, EPA remonitored the regulator and detected 14,000 ppm VOC. Mr. Lyons confirmed EPA’s reading with Think’s FID at 50,000 ppm VOC. EPA inspectors noted that no leak tag was placed on the component the previous day or upon remonitoring. [AOC 14] At 10:56, I collected a Summa Sample (canister 11606) at the western side of the regulator gasket where the FID measurements were taken (Photo 20). This was collected as an approximately 25-second grab sample. This sample contained 597 ppb benzene. Inspector Rosenthal operated an OGIC and observed hydrocarbon emissions from the regulator (Video 8).

Mr. Cuti witnessed the sample collection and told EPA inspectors that Union Carbide would be collecting 24-hour summa samples on September 26, 2024 at the same location EPA collected samples.

At 11:09, we arrived at the #3 WWS. Inspectors Allen and Rosenthal climbed several platforms up the #3 WWS (DA-116-R). No emissions were detected with the FID and no emissions were observed with the OGIC. Inspectors noted that there appeared to be a blind flange at the top of the stripper that was not accessible by platform or scaffolding. It is unclear if Union Carbide is able to complete visual inspection or monitoring at this location. [AOCs 3, 4] Mr. Cuti stated that Think conducts quarterly Method 21 monitoring at the #3 WWS.

At 11:40, we returned to the base of suction drum FA-1481 where we observed one line from the suction drum feeding the process sewer drain. Upon remonitoring, EPA detected 1,400 ppm VOC. Think confirmed the reading at 2,300 ppm VOC. I collected a Summa Sample (canister 11612) from the drain (Photo 21). This was collected as an approximately 15-second grab sample. Mr. Cuti witnessed the sample collection. This sample contained 23.7 ppm benzene and 461 ppb ethylene oxide. [AOCs 7, 12, 24]

At 12:10, we arrived at stormwater tank T-702. I asked Mr. Cuti about the tank’s applicability and vapor pressure determinations. Mr. Cuti indicated he was unaware of any applicable regulations to the tank as it only stores stormwater. EPA inspectors climbed to the platform at the top of the stormwater tank. T-702 is an external floating roof tank. EPA inspectors observed 26 hatches around the perimeter on the floating roof. I noted 7 hatches visibly open (Photos 22 and 23, Video 11). [AOC 15] Mr. Cuti was unable to confirm if the hatches were pontoon covers.

EOB Control Room

At 14:05, EPA inspectors reconvened and arrived at the EOB control room. We met with Domingo Miller, Process Engineer; Eric Killian, Run Plant Engineer; and Lonnie Pitre, Environmental Operations Technical Advisor.

Mr. Miller explained the wastewater treatment plant ("WWTP") operations. EOB receives process wastewater from all process units at the Facility and stormwater. Each process unit has process sewer sumps located within the process unit that are pumped and hard piped through wastewater headers to EOB. Union Carbide has five process wastewater headers: stainless steel, old carbon steel, new carbon steel, transite header, and EA2/3 sump. Each header has a TOC analyzer. Mr. Miller stated that if EOB is receiving high TOC material, EOB operators are unable to determine the origin of the material without calling individual process units that feed the header as the TOC analyzer is not located at the individual process units generating the wastewater. [AOC 16]

All five headers merge at the D1 header before entering any treatment process at EOB. The D1 header feeds two open top stainless-steel pH tanks, North and South, for pH adjustment. The pH tanks lower pH with sulfuric acid or raise pH with caustic. At the time of inspection, the pH tanks were feeding caustic.

From the pH tanks, wastewater is fed through the equalization ("EQ") sump tank and then the EQ tank. If the EQ tank is at a high level or a diversion is needed, wastewater can be diverted to the surge sump tank which feeds the surge tank. All fixed roof tanks (EQ, surge, surge sump tank, and EQ sump tank) share a common header that vent to a scrubber.

From the EQ tank, the wastewater is gravity fed to the north and south aeration basins. From the aeration basins, the water goes to the secondary clarifiers, where the top is discharged to the river and the bottoms are recycled to the digesters. Union Carbide stated there is no temperature control regarding the material going into the digesters. At the time of inspection, the temperature of the feed going to the digesters was 47 degrees Celsius.

Union Carbide stated the TOC concentration at the final outfall is between 80 and 100 ppm TOC. At the time of inspection, the analyzer at the inlet of the aeration basins was measuring between 1,700 and 2,600 ppm TOC. Union Carbide stated they conduct periodic grab samples at the outfall.

Wastewater from the Olefins units is primarily pumped through the new carbon steel header with the ability to also use the old carbon steel header. Prior to the headers, Olefins 1 wastewater is collected in sump E-1, and Olefins 2 wastewater is collected in sump E-20.

Environmental Operations Plant Field Observations

At 15:00, the inspection team arrived at the wastewater treatment plant near the D1 header and the North and South pH adjustment tanks. Upon arriving at the pH tanks, I observed the top of the tanks and

the splitter box on the North tank with the OGIC and observed hydrocarbon emissions (see Videos 13 and 18). [AOC 17] EPA inspectors requested access to the top of the pH tanks for monitoring and observation and were told that no one could climb the staircase to the pH tanks without self-contained breathing apparatuses ("SCBA"). I inquired about the decision to require SCBA at the pH tanks and Mr. Pitre and Mr. Cuti stated that SCBA is required due to potential exposure to benzene and ethylene oxide. Inspector Rosenthal inquired about the group status of waste streams entering the pH tanks. Mr. Killian stated that the wastewater treatment plant does not receive any Group 1 waste streams and any treatment required for compliance under Part 63 for Group 1 and Group 2 streams is completed at the individual process units generating the wastewater. [AOC 17, 19] Mr. Cuti stated group status has not been assessed for the comingled streams at the D1 header.

After observing the pH tanks, the inspection team observed the grit chamber sump. According to Union Carbide, the grit chamber sump is the location where vacuum truck discharges are fed to the pH tanks. The grit chamber sump was observed open to atmosphere. While we were nearby, we observed a vacuum truck discharge directly into the sump (Video 15). Mr. Cuti was unsure of the contents of the vacuum truck but later determined that the truck was discharging domestic sewage. Mr. Cuti indicated that process waste collected in a vacuum truck would be discharged through a hose connection directly into the pH adjust tanks and would bypass the grit chamber. [AOC 26]

At 15:20, the inspection team observed the EQ sump tank and surge sump tank. Inspectors Loukeris and Rosenthal climbed the ladders to the EQ sump tank and surge sump tank, respectively, to monitor with the FID. Prior to climbing the tanks, Mr. Killian asked the inspectors what components they would be monitoring and how long the monitoring would take. Inspectors Loukeris and Rosenthal indicated they would be monitoring around hatches and pressure relief devices. Mr. Killian urged the inspectors to monitor quickly.

Inspector Loukeris noted strong odors on top of the EQ sump tank and detected 420 ppm VOC around the tank hatch. No emissions were detected from the pressure relief device.

Inspector Rosenthal climbed the ladder to the top of the surge sump tank and immediately noted strong odors. He was only able to monitor the hatch briefly and detected 1,000 ppm VOC before halting monitoring to descend from the tank due to the odor. From the ground, I observed the surge sump tank with the OGIC and observed hydrocarbon emissions from the hatch.

Inspector Rosenthal and I returned to the top of the surge sump tank wearing full-face respirators to continue monitoring. Inspector Rosenthal continued Method 21 monitoring along the hatch and detected over 500 ppm VOC around most of the hatch and then experienced an instrument flameout along the east side of the hatch. The east side of the hatch was observed by inspectors with a visible liquid leak and audible hissing leak (Photo 26 and Videos 16, 19, and 20). [AOC 18] Mr. Lyons climbed the surge sump tank to conduct monitoring with Think's FID and experienced a flameout approximately one foot away from the hatch. While Mr. Lyons was climbing down from the surge sump tank, Mr. Cuti asked him what a flameout meant.

At 15:55, I collected a Summa Sample at the east side of the surge sump tank underneath the flange of the hatch (canister 16930). This was an approximately 25-second grab sample. Mr. Cuti witnessed the sample collection. This sample contained 143 ppm ethylene oxide. [AOC 19]

Inspector Loukeris climbed the EQ tank to conduct monitoring and detected up to 2,700 ppm VOC at various locations on the tank. At 16:25, I collected a Summa Sample (canister 16927) along the east side of PSV-4701-30 (Photos 31 and 32). This was an approximately 20-second grab sample. This sample contained 6.59 ppm ethylene oxide. [AOCs 19, 20]

Inspectors Nelson and Kuc climbed the surge tank to conduct monitoring and detected up to 2,000 ppm at various locations on the tank. EPA inspectors also noted visible defects on the seals of various pressure vacuum relief valves (Photos 27-30 and Video 21). [AOC 21]

Inspector Kuc observed the UNox scrubber with the OGIC and observed hydrocarbon emissions from the stack (Video 17). [AOC 22]

We arrived at the aeration basins at 16:30. Inspectors observed a visible haze over the basins. At 16:38, I collected a Summa Sample (canister 11610) between the north and south aeration basins at approximately the third bollard from the western side of the basins. Wind direction was from the north. At 16:56, I collected a Summa Sample (canister 16708) upwind of the aeration basins. The sample was collected north of the north aeration basin and south of equalization tank. Both Summa Samples near the aeration basins were each approximately 30-second grab samples.

Before leaving the aeration basin area, EPA inspectors observed the ethylene oxide flare pulsing and with no visible flame. [AOC 23] This flare is located near the ethylene oxide storage tank area.

We returned to the conference room at 17:10.

Section III – AREAS OF CONCERN

I conducted a closing conference at Union Carbide Corporation – St. Charles Operations at 17:20 on September 25, 2024, for the inspection. During the closing conference, I reviewed most of the Areas of Concern noted below. Additionally, AOCs marked with an asterisk were determined after the conclusion of the inspection and were not included in the closing conference.

1) Union Carbide may not be managing benzene waste in compliant waste management units.

Union Carbide elects to follow the 2 Mg compliance option as described in 40 CFR 61.342(c), which requires either the management and treatment of all benzene-containing waste streams such that 99% of the benzene is removed or destroyed in the waste stream or the waste stream is treated such that the benzene concentration is less than 10 parts per million by weight (“ppmw”). Waste streams with benzene concentrations less than 10 ppmw are exempt from this control requirement, and Union

Carbide may exempt streams containing a total (cumulative) annual benzene quantity less than or equal to 2.0 Mg/yr.

Union Carbide must manage each benzene-containing waste stream in waste management units complying with the applicable requirements in 40 CFR 61.343-61.347. Union Carbide sends benzene-containing wastewater for storage in wastewater tanks owned and operated by Vopak. Union Carbide personnel indicated during the inspection that they do not communicate with Vopak regarding any environmental compliance. Union Carbide does not receive certifications from Vopak stating Vopak has managed the waste as required by the applicable standards for tanks in 40 CFR 61.343 or the alternative in 40 CFR 61.351. EPA inspectors also identified a letter from Vopak to LDEQ claiming that Vopak is not applicable to Subpart FF and a permit application removed Subpart FF applicability.

In the Facility's TAB report from 2023, Union Carbide reported the #3 WWS feed and East & West WWS feeds as containing 26.956 Mg of benzene and 11.269 Mg of benzene, respectively. These feeds originate from the wastewater tanks at Vopak and Union Carbide reported those streams as controlled. Union Carbide may not be able to consider these streams controlled as Union Carbide does not certify the waste streams have been managed in compliant waste management units. Based on the 2023 TAB reported by Union Carbide, these streams accounted for 38.225 Mg of uncontrolled benzene.

2) Union Carbide may not have identified all waste management units at the Facility that receive or manage benzene-containing waste streams prior to and during treatment.

According to 40 CFR 61.341, waste management unit "means a piece of equipment, structure, or transport mechanism used in handling, storage, treatment, or disposal of waste. Examples of a waste management unit include a tank, surface impoundment, container, oil-water separator, individual drain system, steam stripping unit, thin-film evaporation unit, waste incinerator, and landfill."

Union Carbide has an integrated sewer system in which stormwater is collected and sent to skimmers. Oil in the skimmers is pumped back to the Olefins units and water is pumped to stormwater tank T-702. Union Carbide does not measure the concentration of benzene managed in the stormwater tank until the contents of the tank have been released. Union Carbide measures benzene in the effluent of the T-702 by analyzer. T-702 can manage benzene-containing waste streams that may exceed 10 ppmw at the point of generation. Union Carbide currently does not consider T-702 applicable to Subpart FF.

During the inspection, EPA requested quarterly inspection records required by Subpart FF, including WMUs. In response, Union Carbide provided quarterly closed vent system and control device records that identified the #3, East, and West WWSs as equipment inspected. Union Carbide's inspection records did not identify any other waste management unit.

During the opening conference and throughout field observations in the Olefins units, EPA inspectors identified potential waste management units including, but not limited to, oil-water separators, decanters, individual drain systems, suction drums, and KO pots. These potential waste management

units have not been identified by Union Carbide and are not being considered subject to the requirements under Subpart FF.

3) Union Carbide may not be conducting required inspections and monitoring of benzene waste management units.

WMUs have inspection and monitoring requirements, which depend on the type of unit managing benzene waste. As identified in AOC 2, Union Carbide has not identified all waste management units at the Facility and has not provided inspection or monitoring records that indicate the Facility is completing the applicable inspection and monitoring requirements in 40 CFR 61.343-61.347.

During the closing conference, Mr. Cuti told EPA inspectors that Union Carbide's LDAR database does not identify any components as subject to NDE testing for Subpart FF. Union Carbide may not be conducting any NDE testing of applicable equipment.

4) Union Carbide may not be able to perform effective visual inspections of various equipment that may be subject to BWON.

EPA inspectors observed equipment in the Olefins 1 and 2 units that were not accessible. It is not possible to conduct visual inspections and make assessments of the condition of components without visual access. Inspectors noted inadequate access to components on the flare KO drums, the caustic tower knockout, the #3 WWS, an oil water separator, a decanter, and various blowdown drums.

*5) The analyzer measuring the concentration of benzene in the DSG blowdown steam may not provide accurate measurements.

Union Carbide explained that excess steam from the DSG can be sent to EOB if the benzene analyzer for the blowdown steam measures less than 475 ppm benzene. The steam generated is at high temperature which may affect the accuracy of the analyzer, biasing the benzene concentration low. Union Carbide may be diverting benzene containing wastewater from the DSG to EOB without treatment to the required standard.

6) Union Carbide may not be identifying and reporting all points of benzene waste generation and may not be identifying and reporting all points in the correct locations.

40 CFR 61.341 Definitions.

"Point of waste generation means the location where the waste stream exits the process unit component or storage tank prior to handling or treatment in an operation that is not an integral part of the production process, or in the case of waste management units that generate new wastes after treatment, the location where the waste stream exits the waste management unit component."

“Waste stream means the waste generated by a particular process unit, product tank, or waste management unit. The characteristics of the waste stream (e.g., flow rate, benzene concentration, water content) are determined at the point of waste generation. Examples of a waste stream include process wastewater, product tank drawdown, sludge and slop oil removed from waste management units, and landfill leachate.”

“Waste means any material resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, thermally, or biologically treated prior to being discarded, recycled, or discharged.”

40 CFR 63.1082

“Dilution steam blowdown waste stream means any continuously flowing process wastewater stream resulting from the quench and compression of cracked gas (the cracking furnace effluent) at an ethylene production unit and is discharged from the unit. This stream typically includes the aqueous or oily-water stream that results from condensation of dilution steam (in the cracking furnace quench system), blowdown from dilution steam generation systems, and aqueous streams separated from the process between the cracking furnace and the cracked gas dehydrators. The dilution steam blowdown waste stream does not include blowdown that has not contacted HAP-containing process materials...”

“Spent caustic waste stream means the continuously flowing process wastewater stream that results from the use of a caustic wash system in an ethylene production unit. A caustic wash system is commonly used at ethylene production units to remove acid gases and sulfur compounds from process streams, typically cracked gas...”

Under 40 CFR 61.357, Union Carbide must annually report the total annual benzene quantity from facility waste. Through review of the processes in the Olefins units, PFDs, and on-site inspection observations, Union Carbide may not have identified all points of waste generation.

In review of the Facility’s TAB reports, the following are examples of waste streams reported in which the points of generation were reported in potentially incorrect locations:

- *“Ol-1 & Ol-2 Process Sewers, Dist. A & B-sumps, Ol-2 DSG B/D & PWS Tails (also includes all quench oil sumps), Ole-1 PWS Tails & DSG B/D”*: Union Carbide explained this stream includes all benzene-containing waste from the Olefins 1 & 2 process sewers, the A & B sumps, the Olefins 1 and 2 DSG blowdown and process water stripper tails, and all quench oil sumps. Many individual points of generation may be contributing to this waste stream described in the TAB. Inspectors noted that the process sewers, the sumps, the blowdowns, and the process water stripper tails are not the point at which the waste exits the process unit component prior to handling or treatment that is not an integral part of the production process. During the inspection of the process units, inspectors observed multiple drain lines feeding the process sewer hubs.
- *“East & West Waste Water Stripper Feed (including Ole-2 MEA & Caustic Sumps)”*: Union Carbide explained this stream as the wastewater that is routed to the East and West WWSs and the wastewater collected in the MEA and caustic sumps. The East and West WWSs are fed primarily and directly by streams from wastewater tanks 1311 and 1321. Tanks 1311 and 1321 store wastewater that is generated by the acid gas systems for the Olefins 1 and 2 units. This

wastewater stream may include many individual POGs that exit process unit components prior to storage in the storage tanks and wastewater sumps and before treatment by the East and West WWSs.

- “#3 WWS Feed”: Union Carbide explained this stream as the wastewater that is routed to the #3 WWS. The #3 WWS is fed primarily and directly from wastewater tanks 1301 and 1331. Tanks 1301 and 1331 receive and store wastewater from the majority of the Olefins units including all waste streams referenced in the first bullet point. This wastewater stream may include many individual POGs that exit process unit components prior to storage in the storage tanks and before treatment at the #3 WWS.

The examples referenced above also indicate the points of generation may not have been reported in the correct location. The “OI-1 & OI-2 Process Sewers, Dist. A & B-sumps, OI-2 DSG B/D & PWS Tails (also includes all quench oil sumps), Ole-1 PWS Tails & DSG B/D” is routed to the wastewater tanks for storage before feeding the #3 WWS. Union Carbide may have accounted for the wastewater multiple times by misidentifying the location of the point of generation.

Many instances in which the point of generation reported may not have been in the correct location were identified on the TAB report and Union Carbide may have failed to identify and report a significant number of points of generation. This may include the complete and accurate identification and reporting of dilution steam blowdown waste streams and spent caustic waste streams.

*7) Union Carbide may not have determined the total annual benzene quantity from the facility in accordance with 61.355.

Inspectors reviewed and inspected processes, sampling results, PFDs, and TAB reports which may not reflect the total annual benzene quantity that the facility has determined. As discussed in previous AOCs, Union Carbide may not have identified the appropriate POGs or WMUs. In their TAB reports, Union Carbide relies on sampling data at points where multiple POGs have already combined. Under 40 CFR 61.355(b), Union Carbide shall determine the annual waste quantity at the point of waste generation and determine the flow-weighted annual average benzene concentration at the point of generation (40 CFR 61.355(c)(1)(i)). Union Carbide may not be able to determine the total annual benzene quantity from facility waste as prescribed by 61.355(a) because they may not have determined the annual waste quantity or the flow-weighted annual average benzene concentration at each point of generation. Union Carbide may not be able to report the actual total annual benzene quantity without determining the value in accordance with 61.355(a).

During the inspection, Union Carbide indicated that the Facility has not reevaluated waste streams since the initial evaluation in the 1990s. The information required to be included in the TAB report should represent the waste stream characteristics based on current configuration and operating conditions (61.357(a)(4)). Union Carbide may not be reviewing the configuration and operating conditions to determine accurate TAB reports annually.

In documentation provided by Union Carbide, the benzene concentration range for the streams from the Olefins 1 and 2 sewers, various sumps, the DSG blowdown, and process water stripper tails was reported based on the maximum concentration that can be sent to EOB. The maximum concentration

used in the calculation for determining the annual benzene quantity is 0.475 ppm benzene which is the concentration measured after treatment in the WWSs. This is not representative of the concentration of benzene in the waste streams prior to treatment. These streams may be uncontrolled for benzene emissions prior to treatment.

8) Union Carbide may not be accurately reporting the control status for waste streams reported in their TAB reports.

EPA inspectors observed Union Carbide's previous TAB reports with a column labeled, "Will Stream Be Controlled for Benzene?" Union Carbide explained that this column determines if the stream is required to be controlled based on the benzene concentration and the stream's contribution to the 2 Mg compliance option. This stream designation in the column does not reflect the actual management of the stream as the column designation is the determination for requiring control of the stream and not how the stream was managed in the reporting year.

9) EPA inspectors detected emissions above 1,000 ppm VOC at every monitored suction drum in Olefins 1.

As described in the process description and the narrative, cracked gas from the furnaces go through five stages of compression, each with corresponding suction drums. EPA inspectors detected above 1,000 ppm VOC at the instrumentation such as regulators and pressure gauges and the lines feeding them at the following suction drums: FA-1476, FA-1477, FA-1478, and FA-1479. According to Union Carbide, the instrumentation monitored at FA-1476 and FA-1477 were methane blowback lines from the suction drums and the instrumentation monitored at FA-1478 and FA-1479 were ethylene blowback lines from the suction drums. Union Carbide and Think stated that the components EPA monitored on the suction drums are not monitored by the Facility. The emissions detected at the suction drums may result in excess emissions and indicate the components may not be operated and maintained as intended.

10) EPA inspectors observed a potential open-ended line in Olefins 1.

While on the platform at the top of FA-1479, EPA inspectors observed a plug discharged or removed from a line north of the suction drum (Photo 8). Union Carbide was unable to identify the line during the inspection. The potential open-ended line may be acting as a bypass or releasing material to atmosphere.

11) EPA inspectors observed a drain line discharging directly onto the ground and not into a process sewer hub or catch basin.

EPA inspectors observed a drain near condensate stripper DA-107 with two lines feeding it. One of the lines was feeding into the drain hub and the other was leading directly to the ground. Inspectors observed that the line feeding into the drain hub was not leaking but the line outside the drain hub was observed discharging directly on the ground. Union Carbide may not be capturing all process waste in the process sewer.

12) Detectable emissions were observed from open process sewer drain hubs throughout the Olefins 1 and 2 units.

EPA inspectors monitored open process sewer drains and detected emissions greater than 500 ppm in several locations (see **Appendix 7**). EPA also collected a Summa Sample from the process sewer drain at FA-1481. This Summa Sample (canister 11612) contained 23.7 ppm benzene, 461 ppb ethylene oxide, 7.47 ppm toluene, and other VOCs. As mentioned in other AOCs, Union Carbide may not be accurately identifying the total annual benzene from POGs, applying the applicable control requirements, and conducting applicable monitoring and inspections.

In records provided by Union Carbide, wastewater characterizations from 1999 were used to calculate the annual average benzene concentration in the process water sewers. This information was used in the calculation of the 2023 TAB which claims the process water sewers contained less than 10 ppm benzene. The analytical results for the Summa Sample collected at the process sewer at FA-1481 suggests the 1999 data may not be accurate.

The process sewer system observed on-site is an IDS and may not meet the standards required in 40 CFR 61.346.

*13) EPA inspectors observed the Olefins 2 skimmer receiving a hot stream.

EPA inspectors observed a stream discharged to the Olefins 2 skimmer accompanied by steam. Union Carbide may not be accounting for the volatilization of VOCs received at the Olefins skimmers.

14) EPA inspectors observed no monitoring tags or leak tags at components monitored with detectable emissions.

EPA inspectors conducted Method 21 monitoring in the Olefins 1 and 2 units and EOB. Inspectors observed few monitoring tags on components with regulated material subject to Method 21 monitoring. Union Carbide's LDAR technicians did not place leak tags on any components observed with detectable emissions. On September 25, 2024, EPA inspectors returned to locations observed with detectable emissions on September 24, 2024. No monitoring or leak tags were observed in these locations and the components were monitored on September 25, 2024, and were observed with detectable emissions again.

Union Carbide may not be recording instances of detectable emissions, maintaining records of each test of no detectable emissions or leaking components, and complying with repair timelines. The lack of monitoring tags suggests Union Carbide may not be conducting Method 21 at all required components.

15) EPA Inspectors observed at least seven open covers/hatches on Tank T-702.

Tank T-702 is an external floating roof tank used for stormwater storage. Inspectors observed the floating roof from the tank platform and identified at least seven openings on the tank roof. The openings observed suggest Union Carbide is not operating T-702 in conformance with the applicable design, operational and maintenance standards.

*16) Union Carbide may not be able to effectively manage all process unit wastewater received at EOB.

EOB receives wastewater generated by individual process units at the Facility and from off-site. Union Carbide explained that all process wastewater is routed to EOB through five wastewater headers that eventually comeingle at one header named D1. Each of the five wastewater headers have TOC analyzers. Union Carbide explained that if a TOC analyzer spikes and wastewater must be diverted at EOB, Union Carbide is unable to immediately determine which process unit is causing the spike. EOB personnel must call each unit to ask if they have any issues with the process that may be affecting the wastewater in sumps leading to the wastewater header. This may not be an effective practice to identify potential exceedances and manage wastewater.

17) Union Carbide may not be sufficiently controlling or minimizing air emissions from any wastewater received at EOB.

Union Carbide sends all wastewater received from the D1 header to two pH tanks prior to storage in fixed roof tanks. The pH tanks are open top stainless-steel tanks that vent directly to atmosphere. EPA inspectors observed hydrocarbon emissions from the pH tanks and the splitter boxes at the tanks. During the inspection, Union Carbide personnel stated no person could access the platform at the top of the pH tanks without SCBA. In records provided following the inspection, Union Carbide stated that personnel who need access to the walkways on top of the pH tanks need fresh air masks "due to the potential of abnormally high levels of some chemicals in the wastewater."

18) EPA inspectors detected emissions and observed hydrocarbon emissions from the surge sump tank.

EPA inspectors monitored on the roof of the surge sump tank and detected emissions with the FID, observed emissions with the OGIC, heard an audible leak, and visibly saw material leaking from the tank hatch. EPA inspectors also noted strong odors. The nature of the observations suggests the facility may not be operating or maintaining the surge sump tank in accordance with operating and design standards.

*19) EPA Inspectors collected Summa Samples at the surge sump tank and EQ tank that contained high concentrations of ethylene oxide and other HAPs.

I collected a Summa Sample at the hatch on the surge sump tank on September 25, 2024. The analytical results indicated the sample contained 143 ppm ethylene oxide.

I collected a Summa Sample at the hatch on the EQ tank on September 25, 2024. The analytical results indicated the sample contained 6.59 ppm ethylene oxide.

Union Carbide collected Summa Samples at the surge sump tank and EQ tank on September 26, 2024, after EPA inspectors concluded the inspection. Union Carbide's chain of custody forms noted "TO-15 No EO" on the analysis required column. Union Carbide's analytical results did not include analysis for ethylene oxide.

The concentration of ethylene oxide may be exceeding exposure threshold limits. The Recommended Exposure Limits ("REL") designated by the National Institute for Occupational Safety and Health ("NIOSH") and Permissible Exposure Limits ("PEL") designated by the Occupational Safety and Health Administration ("OSHA") for ethylene oxide are presented in Table 1 below.

Table 1. Established exposure limits for ethylene oxide.

Chemical	NIOSH REL (ppm)		OSHA PEL (ppm)		
	10-min Ceiling	Up to 10-hr TWA	15-min Ceiling	8-hr TWA	8-hr TWA action level
Ethylene Oxide	5	<0.1	5	1	0.5

20) EPA Inspectors detected emissions at the EQ tank.

EPA inspectors monitored components on the roof of the EQ tank and detected emissions at the tank hatch and pressure vacuum relief valves. The observations at the EQ tank suggest the tank may not be meeting applicable design, operational, and maintenance standards.

21) EPA Inspectors detected emissions at the surge tank.

EPA inspectors monitored components on the roof of the surge tank and detected emissions at the tank hatch and pressure vacuum relief valves. The pressure vacuum relief valves were also observed with broken seals. The observations at the surge tank suggest the tank may not be meeting applicable design, operational, and maintenance standards.

22) EPA Inspectors observed hydrocarbon emissions from the UNox scrubber.

EPA inspectors observed emissions from the UNox scrubber located at EOB with the OGIC. According to Union Carbide, this scrubber has not been performance tested and is the vent point for the common header shared by the EQ and Surge tanks. The scrubber may not be operating as designed.

*23) EPA Inspectors observed the ethylene oxide flare pulsing and without a visible flame.

While departing from EOB, EPA inspectors observed the ethylene oxide flare pulsing and without a visible flame for several minutes. This may indicate that the ethylene oxide flare may not be operating in accordance with the applicable requirements resulting in excess emissions.

24) Union Carbide may have exceeded the allowable 2 Mg uncontrolled benzene in facility waste streams with greater than 10 ppm benzene.

As described in previous AOCs, Union Carbide may not have identified all POGs, determined the concentration of benzene at each POG, managed waste streams in compliant WMUs, or accurately determined the contribution of each waste stream to the facility's TAB.

Union Carbide accounts for more than 2 Mg of benzene waste in wastewater storage tanks at Vopak and does not communicate with Vopak or receive certifications that Vopak is operating the storage tanks per the control requirements in Subpart FF. Union Carbide currently reports these waste streams as controlled but may need to consider them uncontrolled and count the TAB from the stream against the 2 Mg allowance.

Union Carbide considers the process sewers and various sumps as POGs and has used the concentration of benzene in the wastewater at those locations to calculate their TAB. The concentration of benzene for each stream contributing to the process sewers and sumps has not been determined. Union Carbide may not be able to exempt all benzene waste streams contributing to the process sewers from the control requirements of Subpart FF because the concentration may not be less than 10 ppm benzene at the POG. Union Carbide samples of the process sewer are diluted downstream of the POGs and may not comply with the control requirements of Subpart FF.

The process sewer system in the Olefins 1 and 2 units consist of drain hubs that are open to atmosphere. Any streams greater than 10 ppm benzene that are routed to the process sewer system may not be considered controlled. Union Carbide submitted an operating procedure document for SCO Olefins titled "Non Routine – Olefins 1 & 2 – Maintaining Compliance with Governmental Regulations Concerning Benzene in Wastewater" which included the statement, "Environmental regulations such as NESHAP FF and MACT state that waste water streams containing more than 10ppm Benzene must not be processed in an open air system."

25) Union Carbide may be underestimating the actual benzene quantity at the facility.

Union Carbide is required to determine the total annual benzene quantity from facility waste by the test methods and procedures under 40 CFR 61.355. Based on the information provided by Union Carbide and interviews with Union Carbide personnel, the calculation of total annual benzene has not been calculated using the annual waste quantity at the POGs. Since Union Carbide has not identified all POGs,

as noted by other AOCs, Union Carbide may not be accurately calculating the actual benzene quantity and accurately submitting reports required by 40 CFR 61.357.

**26) Union Carbide does not maintain records of vacuum truck movements throughout the facility.*

EPA inspectors observed a vacuum truck discharging into the grit chamber sump at EOB during the inspection. Following the observation, EPA Inspectors requested vacuum truck movement logs identifying specific streams collected by each truck and the destination. Union Carbide stated the Facility does not maintain vacuum truck records but did provide EPA an excel spreadsheet identifying routine vacuum truck jobs. This spreadsheet identified situations in which vacuum trucks are used in specific areas of the Facility, including the Olefins units. The material collected in the Olefins units may contain benzene wastes and may be required to be managed appropriately. Vacuum truck wastes may be required to be reported in the TAB reports and records of location, disposal, control status, and benzene quantity would be necessary to calculate the waste stream contributions.

Section IV – FOLLOW UP

I requested records and information from the facility during and after the inspection (see **Appendix 5**). EPA received some of the requested records on September 24 and 25, and October 16, 18, and 30, 2024. Union Carbide did not provide all requested information including the ethylene oxide industrial hygiene data requested on September 23 and 24 while inspectors were on-site and again on September 30, 2024.

On October 1, 2024, John Penland requested that UCC provide records documenting the hazardous waste determinations made for wastewaters treated in the wastewater strippers at the facility (See **Appendix 10** for RCRA records requests). UCC began providing those records on October 17, 2024 and continues to maintain a dialog with the RCRA Enforcement Section concerning their review. These records will be used to determine the facility's compliance with 40 CFR 262.11.

Section V – LIST OF APPENDICES

- Appendix 1 – Photo Log – 32 photos
- Appendix 2 – Video Log – 21 FLIR videos
- Appendix 3 – Opening Conference Sign-in Sheet
- Appendix 4 – TAB Reports
- Appendix 5 – Inspection Document Request
- Appendix 6 – FID Calibration Records
- Appendix 7 – FID Field Measurement Data
- Appendix 8 – Analytical Results of Summa Samples Collected by EPA on September 25, 2024
- Appendix 9 – Analytical Results of Summa Samples Collected by Union Carbide on September 26, 2024
- Appendix 10 – RCRA Records Request

Appendix 1

Photograph Log



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 1

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0001.jpg

Date of Photo: 9/24/2024

Time of Photo: 10:53

Photographer: Karina Kuc

Description: Decanter drain hub B2-35 from FA-119.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 2

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana

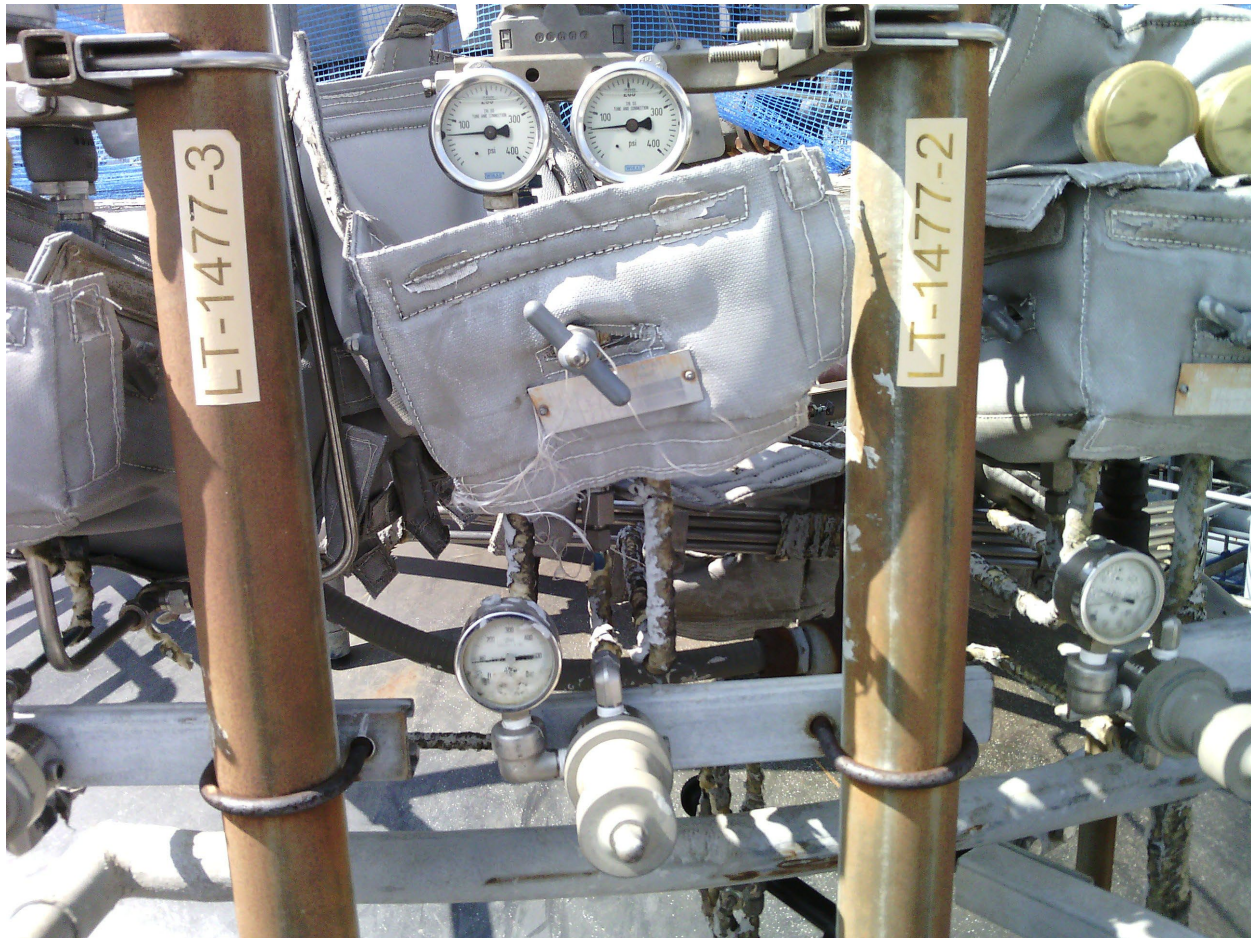


Photo File Name: FLIR0184.jpg

Date of Photo: 9/24/2024

Time of Photo: 11:06

Photographer: Colleen McCarthy

Description: Gauges and components monitored at suction drum FA-1477.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 3

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0185.jpg

Date of Photo: 9/24/2024

Time of Photo: 11:11

Photographer: Colleen McCarthy

Description: Line feeding gauges at suction drum FA-1477.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 4

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0186.jpg

Date of Photo: 9/24/2024

Time of Photo: 11:11

Photographer: Colleen McCarthy

Description: Incidental duplicate of FLIR0185.jpg.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 5

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0187.jpg

Date of Photo: 9/24/2024

Time of Photo: 11:36

Photographer: Colleen McCarthy

Description: Open process sewer drain hub painted yellow under the Old Tar Pot.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 6

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0188.jpg

Date of Photo: 9/24/2024

Time of Photo: 11:41

Photographer: Colleen McCarthy

Description: Overview of FA-1456.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 7

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0189.jpg

Date of Photo: 9/24/2024

Time of Photo: 11:45

Photographer: Colleen McCarthy

Description: Process sewer cleanout located under the Tar Drum, FA-1462. Inspectors observed cleanout painted yellow and with opening in cover.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 8

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0190.jpg

Date of Photo: 9/24/2024

Time of Photo: 11:55

Photographer: Benjamin Rosenthal

Description: Open-ended line observed from platform of suction drum, FA-1479.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 9

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana

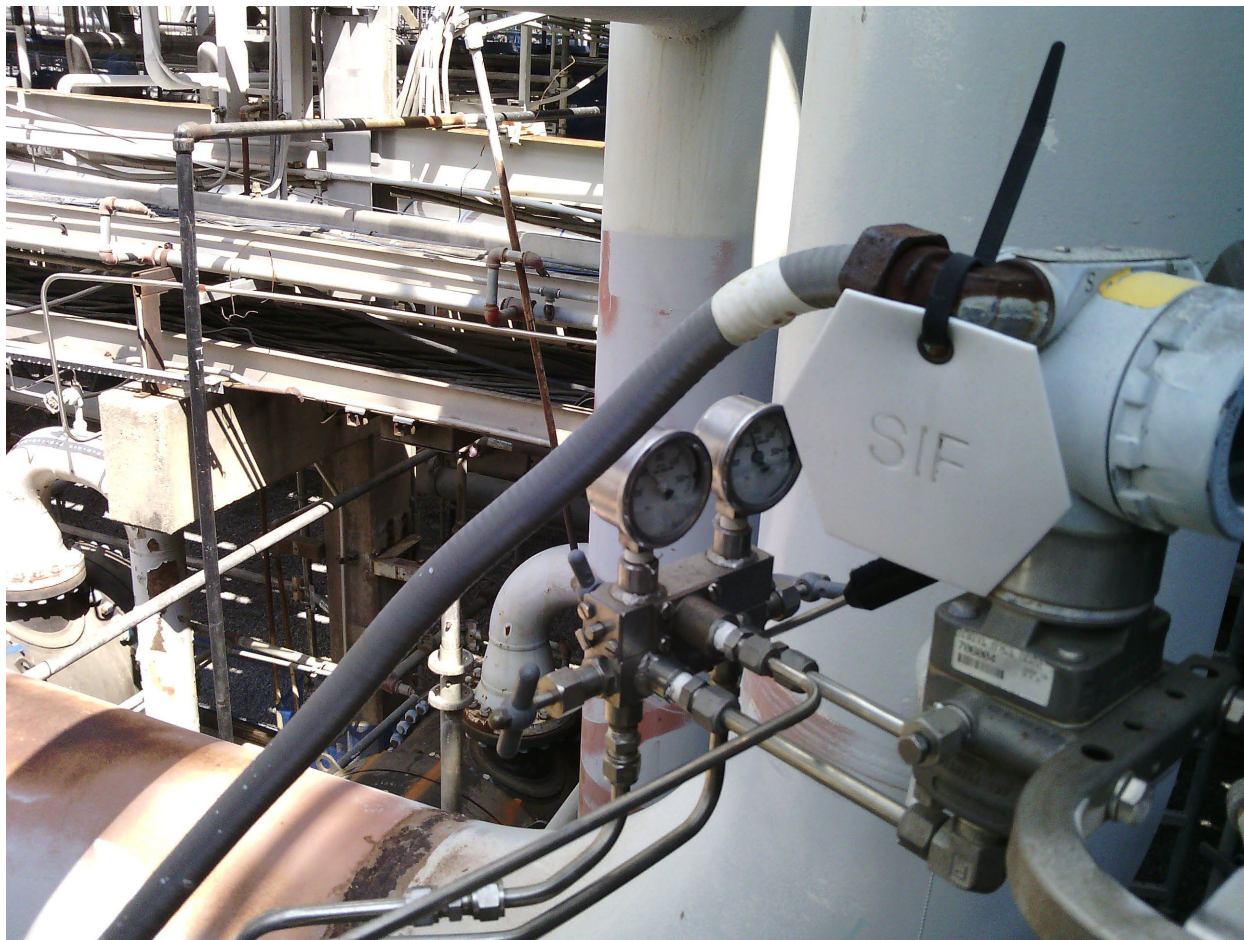


Photo File Name: FLIR0191.jpg

Date of Photo: 9/24/2024

Time of Photo: 11:57

Photographer: Benjamin Rosenthal

Description: Gauges and components monitored on suction drum, FA-1479.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 10

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana

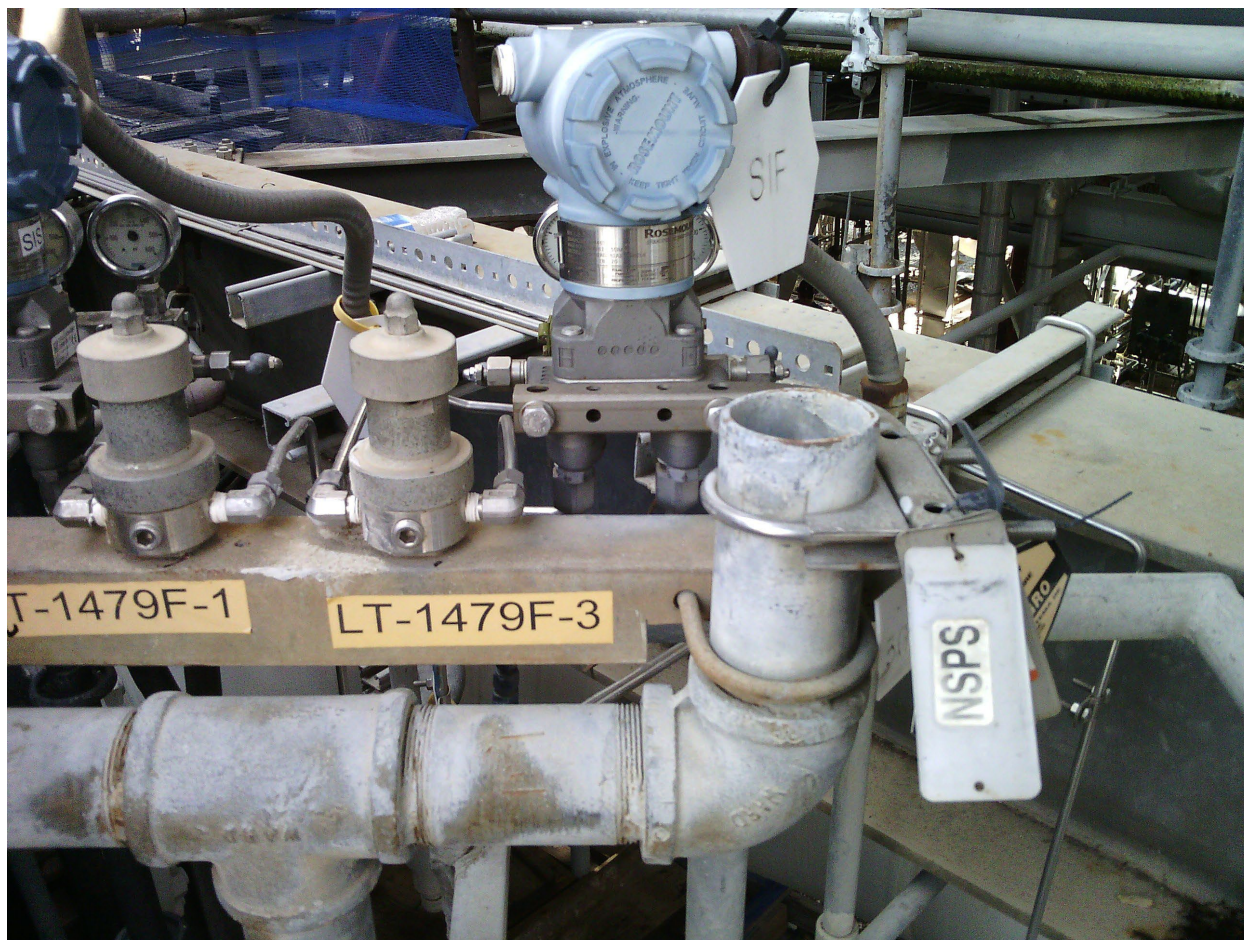


Photo File Name: FLIR0195.jpg

Date of Photo: 9/24/2024

Time of Photo: 12:06

Photographer: Benjamin Rosenthal

Description: Components and NSPS tags at suction drum FA-1479.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 11

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0005.jpg

Date of Photo: 9/24/2024

Time of Photo: 15:17

Photographer: Victoria Nelson

Description: Olefins 1. Open process water sewer drain hub at base of decanter FA-1449.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 12

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0006.jpg

Date of Photo: 9/24/2024

Time of Photo: 15:18

Photographer: Victoria Nelson

Description: Olefins 1. Open process water drain hub with three lines running into it at base of pump at quench tower DA-1445.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 13

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0007.jpg

Date of Photo: 9/24/2024

Time of Photo: 15:19

Photographer: Victoria Nelson

Description: Olefins 1. Open drain hub at base of quench tower DA-1445.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 14

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0008.jpg

Date of Photo: 9/24/2024

Time of Photo: 15:28

Photographer: Victoria Nelson

Description: Olefins 1 Flare. Drain line observed to open drain from flare KO FA-1490.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 15

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0009.jpg

Date of Photo: 9/24/2024

Time of Photo: 15:37

Photographer: Victoria Nelson

Description: Olefins 2 skimmer.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 16

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0010.jpg

Date of Photo: 9/24/2024

Time of Photo: 15:39

Photographer: Victoria Nelson

Description: Inlet to Olefins 2 skimmer.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 17

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana

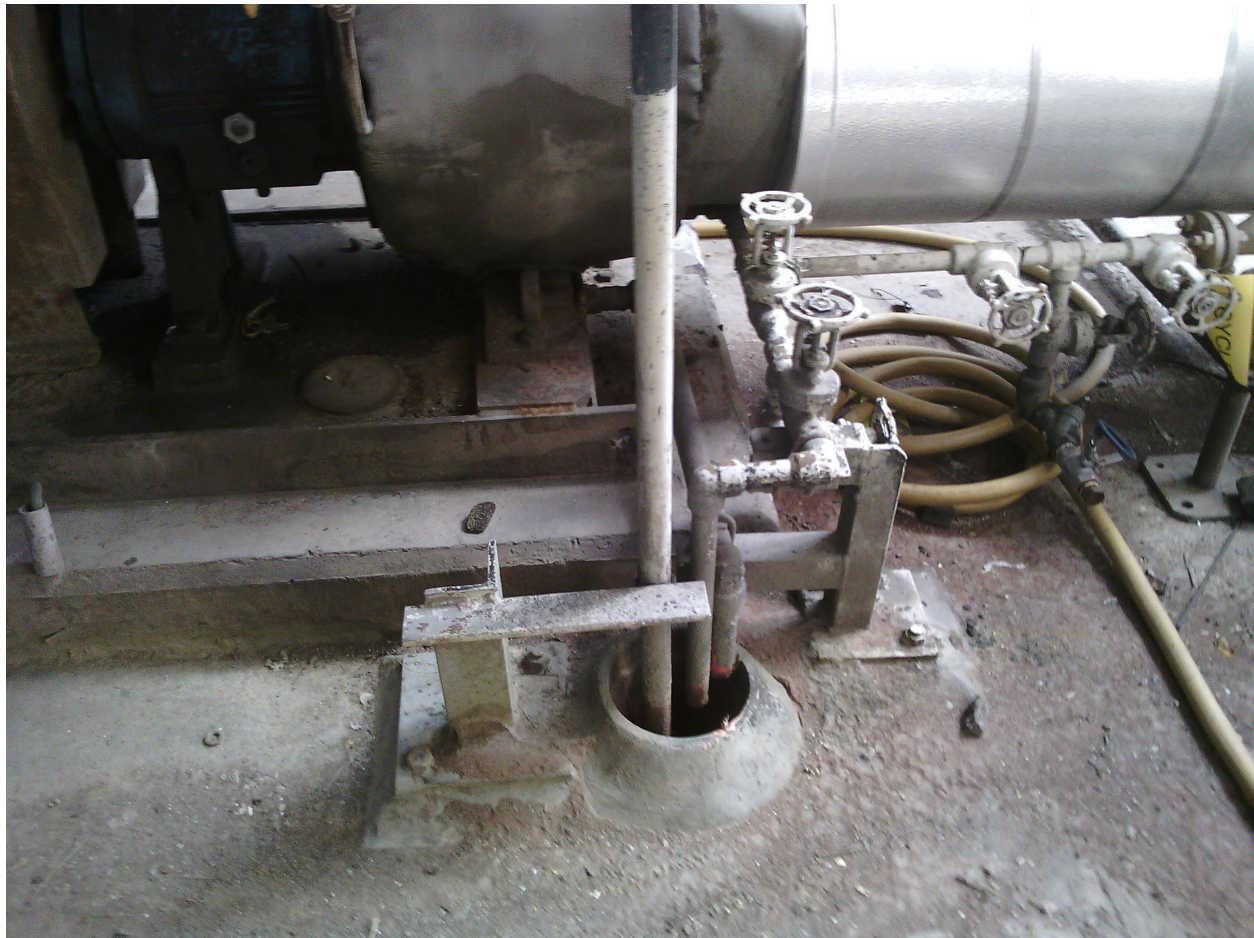


Photo File Name: FLIR0012.jpg

Date of Photo: 9/24/2024

Time of Photo: 16:03

Photographer: Victoria Nelson

Description: Open process sewer drain hub with multiple lines feeding to it at GM-14585.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 18

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana

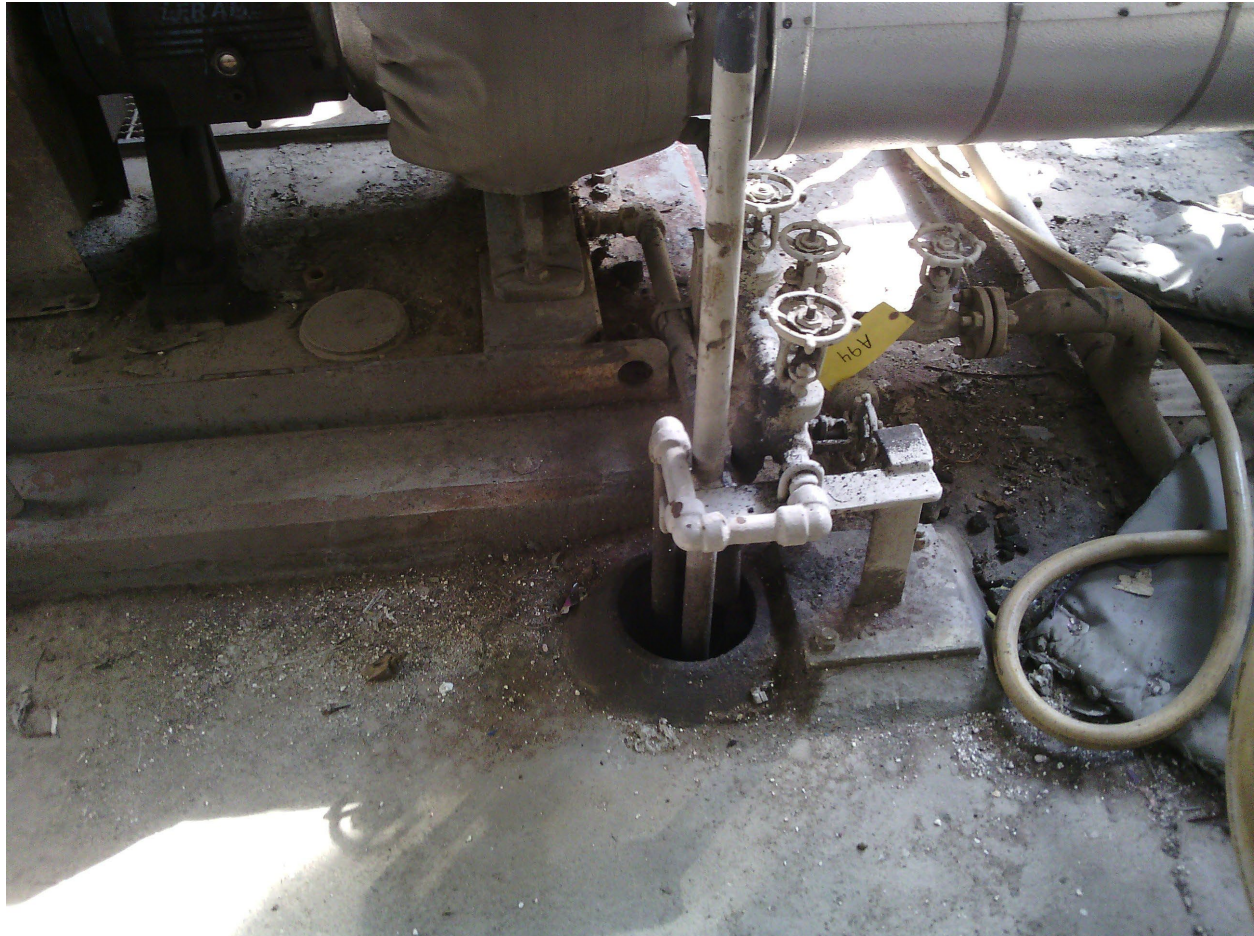


Photo File Name: FLIR0013.jpg

Date of Photo: 9/24/2024

Time of Photo: 16:03

Photographer: Victoria Nelson

Description: Open process sewer drain hub with multiple lines feeding to it at pump GA1458.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 19

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0014.jpg

Date of Photo: 9/24/2024

Time of Photo: 16:07

Photographer: Victoria Nelson

Description: Incidental photo in Olefins 1.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 20

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0016.jpg

Date of Photo: 9/25/2024

Time of Photo: 10:57

Photographer: Benjamin Rosenthal

Description: Olefins 1. Regulator at Old Tar Pot, FA-1446. The location of EPA's highest FID measurement and Summa Sample location is marked with pen on the regulator. Summa Sample 11606.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 21

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0017.jpg

Date of Photo: 9/25/2024

Time of Photo: 11:42

Photographer: Benjamin Rosenthal

Description: Open process sewer drain hub with line from suction drum FA-1481. Summa Sample 11612.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 22

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0018.jpg

Date of Photo: 9/25/2024

Time of Photo: 12:12

Photographer: Colleen McCarthy

Description: Tank 702. Open pontoon covers.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 23

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0020.jpg

Date of Photo: 9/25/2024

Time of Photo: 12:22

Photographer: Benjamin Rosenthal.

Description: Tank 702. Open pontoon covers.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 24

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0023.jpg

Date of Photo: 9/25/2024

Time of Photo: 15:14

Photographer: Colleen McCarthy

Description: Grit sump chamber.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 25

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0024.jpg

Date of Photo: 9/25/2024

Time of Photo: 15:27

Photographer: Colleen McCarthy

Description: Surge Sump Tank 1401.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 26

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0029.jpg

Date of Photo: 9/25/2024

Time of Photo: 15:56

Photographer: Colleen McCarthy

Description: Surge Sump Tank 1401. Visible leaks along east side of hatch. Summa sample 16930.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 27

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0204.jpg

Date of Photo: 9/25/2024

Time of Photo: 16:03

Photographer: Karina Kuc

Description: Surge Tank 8301. PSV-4702-32 at center of roof on tank. Seal observed with defects.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 28

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0205.jpg

Date of Photo: 9/25/2024

Time of Photo: 16:03

Photographer: Karina Kuc

Description: Surge Tank 8301. Bottom of PSV-4702-33 at center of tank roof. Seal and gasket observed with defects.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 29

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0207.jpg

Date of Photo: 9/25/2024

Time of Photo: 16:05

Photographer: Karina Kuc

Description: Surge Tank 8301. Top seal and gasket of PSV04702-33 observed with defects.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 30

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0208.jpg

Date of Photo: 9/25/2024

Time of Photo: 16:12

Photographer: Karina Kuc

Description: Surge Tank 8301. Varec manway.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 31

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0030.jpg

Date of Photo: 9/25/2024

Time of Photo: 16:25

Photographer: Colleen McCarthy

Description: Equalization Tank 8302. East side of Varec manway. Summa Sample 16927.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 32

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Photo File Name: FLIR0031.jpg

Date of Photo: 9/25/2024

Time of Photo: 16:26

Photographer: Colleen McCarthy

Description: Equalization Tank 8302. Varec manway.

Appendix 2

Video Log



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

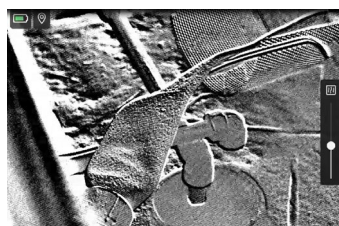
Video Log

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Video 1

Video File Name: [FLIR0002.mp4](#)
 Date of Video: 9/24/2024
 Time of Video: 10:53
 Videographer: Karina Kuc
 Description: Decanter FA-119 drain B2-35



Video 2

Video File Name: [FLIR0003.mp4](#)
 Date of Video: 9/24/2024
 Time of Video: 10:57
 Videographer: Karina Kuc
 Description: Drain south of FA-119



Video 3

Video File Name: [FLIR0004.mp4](#)
 Date of Video: 9/24/2024
 Time of Video: 11:10
 Videographer: Karina Kuc
 Description: Drain west of FA-119



Video 4

Video File Name: [FLIR0192.mp4](#)
 Date of Video: 9/24/2024
 Time of Video: 12:05
 Videographer: Colleen McCarthy
 Description: Incidental Video at FA-1479.



Video 5

Video File Name: [FLIR00193.mp4](#)
 Date of Video: 9/24/2024
 Time of Video: 12:05
 Videographer: Colleen McCarthy
 Description: Incidental Video at FA-1479.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Video Log

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Video 6

Video File Name: FLIR0194.mp4
 Date of Video: 9/24/2024
 Time of Video: 12:05
 Videographer: Colleen McCarthy
 Description: Incidental Video at FA-1479.



Video 7

Video File Name: [FLIR0011.mp4](#)
 Date of Video: 9/24/2024
 Time of Video: 15:39
 Videographer: Victoria Nelson
 Description: Inlet stream to Olefins 2 skimmer observed with steam



Video 8

Video File Name: [FLIR0015.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 10:49
 Videographer: Benjamin Rosenthal
 Description: Emissions observed from regulator at Old Tar Pot. Summa Sample 11606.



Video 9

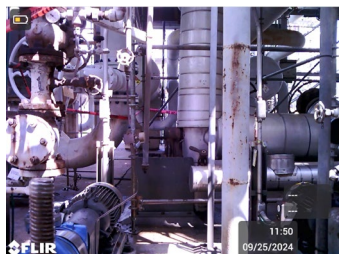
Video File Name: [FLIR0199.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 11:01
 Videographer: Karina Kuc
 Description: Incidental Video.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

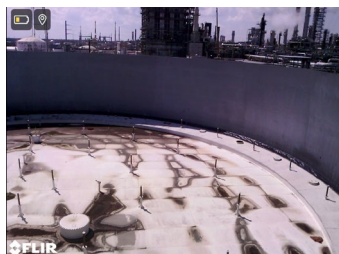
Video Log

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



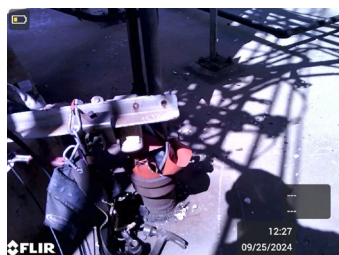
Video 10

Video File Name: [FLIR0200.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 11:50
 Videographer: Karina Kuc
 Description: Olefins 2 restricted steam/condensate area near FA 3203.



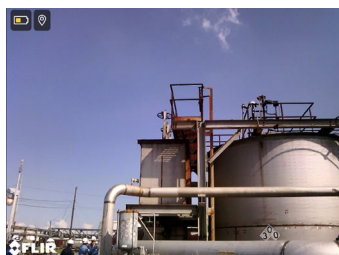
Video 11

Video File Name: [FLIR0019.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 12:22
 Videographer: Colleen McCarthy
 Description: Floating roof observed with open hatch/pontoon covers on Tank 702.



Video 12

Video File Name: [FLIR0201.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 12:27
 Videographer: Karina Kuc
 Description: Open drain hub observed near FA 3207 with visible steam.



Video 13

Video File Name: [FLIR0021.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 15:07
 Videographer: Colleen McCarthy
 Description: North pH tank and north splitter box observed with emissions.



Video 14

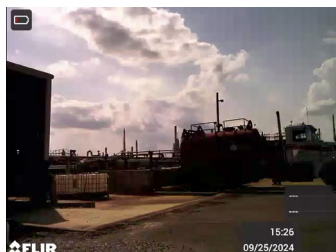
Video File Name: [FLIR0022.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 15:14
 Videographer: Colleen McCarthy
 Description: Incidental Video of Grit chamber



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Video Log

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



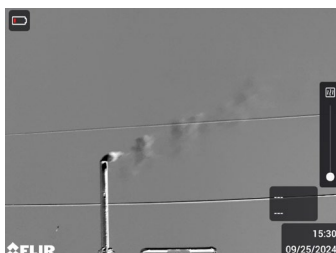
Video 15

Video File Name: [FLIR0202.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 15:26
 Videographer: Karina Kuc
 Description: Discharge of vacuum truck directly into grit chamber at EOB.



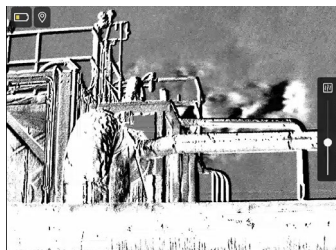
Video 16

Video File Name: [FLIR0025.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 15:27
 Videographer: Colleen McCarthy
 Description: Surge Sump Tank 1401 hatch observed with emissions from the ground.



Video 17

Video File Name: [FLIR0203.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 15:29
 Videographer: Karina Kuc
 Description: Vent stack of scrubber observed with emissions.



Video 18

Video File Name: [FLIR0026.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 15:35
 Videographer: Colleen McCarthy
 Description: South pH tank and south splitter box observed with emissions.



Video 19

Video File Name: [FLIR0027.mp4](#)
 Date of Video: 9/25/2024
 Time of Video: 15:50
 Videographer: Colleen McCarthy
 Description: Emissions observed from hatch on Surge Sump Tank 1401.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Video Log

Location: Union Carbide Corporation – St. Charles Operations		
City: Hahnville	County/Parish: St. Charles	State: Louisiana



Video 20

Video File Name: [FLIR0028.mp4](#)
Date of Video: 9/25/2024
Time of Video: 15:56
Videographer: Colleen McCarthy
Description: Visible leaking of material from Surge Sump Tank 1401 hatch. Summa Sample 16930.



Video 21

Video File Name: [FLIR0206.mp4](#)
Date of Video: 9/25/2024
Time of Video: 16:04
Videographer: Karina Kuc
Description: PSV-4702-33 on Surge Tank 8301 observed with break in seal.

Appendix 3

Opening conference sign-in sheet

Agency Visit Attendance List

Agency Visit Attendance List

Return to Agency Visit Protocol**Agency Visit Attendance List**

DAY 1 PAGE 1

Purpose: BZ NESHADate: 9/23/2024

Time:

2:00 pm

Location:

SCO / 131 / CONF 103

Name	Address	Organization	Title	Telephone	Fax	E-mail address
Constantinos Loukeros	Chicago, IL	U.S. EPA	Env. Engineer	312-353-6198	—	loukeros@constantinos@epa.gov
Colleen McCarthy	Dallas, TX	U.S. EPA	Life Scientist	214-665-7334	—	mccarthy.colleen01@epa.gov
Victoria Nelson	Chicago, IL	U.S. EP	Env. Engineer	312-886-9481	—	wilson.victoria@epa.gov
Ben Rosenthal	Dallas TX	USEPA	Physical Scientist	214-665-6546	—	rosenthal.benjamin@epa.gov
PHILIP SPEYER	SCO	DOW	ENV. LEVERAGE SPECIALIST	(985) 783-4534		PSpeyren@Dow.com
JAMIE WILLIAMS	SCO/LAO	DOW	SR ENVIRONMENT REGIONAL DELIVERY LEADER	.		jwilliams48@Dow.com

Charles Cuti (via ~~TEAMS~~ telephone) SCO DOW

LEVERAGED AIR SPECIALIST

CRCuti@Dow.com

Created 1/29/2015

Tom Nichols (via TEAMS) SCO DOW

Leveraged Air Specialist

Page 1 of 1

VAN LEGAUX (via Teams) DOW RESTRICTED SCO DOW

OLEFINS 1 Technical Advisor

Agency Visit Attendance List

Agency Visit Attendance List

Return to Agency Visit Protocol

DAY 1 PAGE 2

Agency Visit Attendance List

Purpose:

B₂ NESHAAP

Date:

9/23/2024

Time:

2⁰⁰pm

Location:

SCO/731 / CONF 103

Name	Address	Organization	Title	Telephone	Fax	E-mail address
Karina Kuc	Chicago IL	US EPA	Environmental Engineer	312 888-5090	na	kuc.karina@epa.gov
Sophia Ong	Dallas, TX	US EPA	Physical Scientist	214.665. 2778	N/A	ong.sophia@epa.gov
Kara Allen	Dallas, TX	US EPA	Life Scientist	214-665- 7255	N/A	allen.kara.m@epa.gov
Nathan Ward	Lockport, LA	LDEA	Env. Scientist	985-832 3520	NA	Nathan.Ward@la.gov
Gus Beemel	SCO	Dow	E Tech	985 783 5910	N/A	beemel63@Dow.com
Lolita Grant	SCO	Dow	Environmental	985 783 4268	N/A	lntillerygrant@dow.com

Appendix 4

TAB Reports



Union Carbide Corporation
A Subsidiary of The Dow Chemical Company
P.O. Box 50
355 Hwy. 3142
Hahnville, LA 70057
USA

March 28, 2024

CERTIFIED MAIL RETURN - RECEIPT REQUESTED

7014 3490 0000 8713 0227

Assistant Secretary
Louisiana Department of Environmental Quality
Office of Environmental Compliance
P.O. Box 4312
Baton Rouge, Louisiana 70821-4312

RECEIVED
APR 01 2024
LDEQ/OEC
ENFORCEMENT DIVISION

RE: Annual Report for NESHAP FF
Union Carbide Corporation, St. Charles Operations
Agency Interest No. 2083

Dear Assistant Secretary:

Per 40 CFR §61.357, enclosed is the annual NESHAP Subpart FF Report for 2023. The Olefins I & II Units are subject to the control requirements of the standard since the Total Annual Benzene (TAB) is greater than 10 Mg/yr. For the Union Carbide Corporation, St. Charles Operations, the TAB exceeded 10 Mg/yr. Also enclosed is the annual certification document for the Olefins I & II Units.

Please contact me at (985) 783-3729 if you have any questions or need additional information. All written correspondence should be sent directly to Nattaya Boonsombat, Responsible Care Leader at P. O. Box 50, Hahnville, LA 70057.

Sincerely,

A handwritten signature in blue ink, appearing to read "Cuti", followed by a long horizontal line.

Charles Cuti
Air Specialist

NB/CRC

Enclosures

bcc: Albert Holliday *
Nattaya Boonsombat*
Charles Cuti*
Brett Matherne*

EH&S -- Pollution Prevention/Air Quality/Site Reporting/NESHAP FF Reports
*electronic copy of cover letter

ANNUAL CERTIFICATION OF COMPLIANCE

**Annual
certification for
plants with only
exempt streams**

That the _____ (plant) located in _____
(block)

- is correctly represented on the registration information previously submitted on Form 2, or has been updated with this submittal, **and**
- it continues to be exempt from the control and treatment requirements of Benzene Waste Operations NESHAPS based on the current Table 2 information (updated with this submittal if needed) and Dow's continuing compliance with Dow's Environmental Management of Change process.

The following exemptions are utilized at this plant:

- ☐ Aqueous or non-aqueous waste with an annual average benzene concentration less than 10 ppm at the point of generation.
- ☐ Process wastewater streams with annual average benzene concentrations of 10 ppm or more but which are individually less than 22,000 lb./yr. of total flow.
- ☐ Aqueous or non-aqueous waste with an annual average benzene concentration greater than 10 ppm at the point of generation but only stored in containers smaller than 26.4 gallon capacity.

The total annual benzene is _____

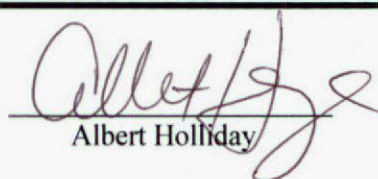
**Annual
certification for
plants with non-
exempt waste
streams**

That the Olefins I & II Units located in St. Charles Operations the registration information previously submitted on Forms 2, 3, 4, and 5.

- ☐ Has not changed, or
- ☒ Has been updated with this submittal.

The total annual benzene is 39.01 Megagrams

Olefins Production Director
Name:


Albert Holliday

Date: March 28, 2024

nion Carbide Corporation
he Dow Chemical Company
P. O. Box 50
355 Hwy 3142
Hahnville, LA 70057

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stamps
and/or



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Louisiana Department of Environmental Quality
Office of Environmental Compliance
Enforcement Division
P. O. Box 4312
Baton Rouge, LA 70821-4312

Total Annual Benzene for 2023 - 40 CFR 61.357 (a)(2)

40 CFR 61.357 (a)(3)(ii) 40 CFR 61.357 (a)(3)(iii) 40 CFR 61.357 (a)(3)(iv) 40 CFR 61.357 (a)(3)(v) 40 CFR 61.357 (a)(3)(vi) 40 CFR 61.357 (a)(3)(1) 40 CFR 61.357 (a)(3)(1)

Stream Description	Waste Water, LBs	Avg. Benzene Conc., ppm	Benzene Conc. Range, ppm	Benzene, LBs	Mega-Grams of Benzene	Will Stream Be Controlled for Benzene?	If No, Does Stream Contain > 10% Water?
Ol-1 & Ol-2 Process Sewers, Dist. A & B-sumps, Ol-2 DSG B/D & PWS Tails (also includes all quench oil sumps), Ole-1 PWS Tails & DSG B/D	1,986,172,404.02	0.016	0 to 0.475	32.57	0.015	No	Yes
East & West Waste Water Stripper Feed (including Ole-2 MEA & Caustic Sumps)	71,285,977.40	347.78	77 to 650	24,791.68	11.269	Yes	
#3 WWS Feed	561,374,777.17	105.64	19 to 480	59,303.01	26.956	Yes	
Benzene Leaked to Cooling Water Return Lateral	876,700,800,000	0.0001840	0.00 to 0.009	161.34	0.073	No	Yes
Wastes Sent off-Site for Disposal (Includes Tank Truck Trailers of MEA Cycle Purge and oils collected out of sumps)				1,512.52	0.688	Yes	
Shell Ethane Pipeline Water Collection Tank	16680	0.00	0 to 0	0.00000	0.00000	No	Yes
Waste Water from North 1300 Area Tank Farm Sump	0	0.00	0	0	0.00	No	Yes
Benzene in Oil Phase of Ol-1 Oily Sump *	6.80	0.02	0.01 to 0.04	0.000000136	0.00	No	Yes ***
Benzene in Oil Phase of Ol-2 Quench Oil Sump	137.56	2.03	0.001 to 4.9	0.00028	0.0000001	No	Yes ***
Benzene in Oil Phase of Ol-1 Process Sewer Sump *	868.38	34,029.00	57 to 87000	29.55010	1.34E-02	No	Yes ***
Benzene in Oil Phase of Ol-2 Process Sewer Sump	4,056.17	0.56	0.001 to 1.7	0.002271455	1.03E-06	No	Yes ***
Benzene in Oil Phase of North 1300 Area Tank Farm Sump *	0	0.00	0	0	0.00	No	Yes ***
Benzene in Oil Phase of Field Area A-Sump *	0	0.00	0	0	0	No	Yes ***
Benzene in Oil Phase of Field Area B-Sump *	0	0.00	0	0	0	No	Yes ***
Benzene in Oil Phase of Ol-2 MEA Sump *	820.76	125.11	96 to 150	0.102685075	4.6675E-05	No	Yes ***
Benzene in Oil Phase of Ol-2 Caustic Sump *	703.51	242.24	0.04 to 610	0.17041757	7.74625E-05	No	Yes ***
Benzene in Oil Phase of Ol-1 Quench Oil Filter Sump *	4.125	0.010	0.00 to 0.02	4.125E-08	1.875E-11	No	Yes ***
SCO Hydrocarbons Plant Total Annual Benzene				85,830.95	39.01		



Union Carbide Corporation
A Subsidiary of The Dow Chemical Company
P.O. Box 50
355 Hwy. 3142
Hahnville, LA 70057
USA

March 25, 2023

CERTIFIED MAIL RETURN - RECEIPT REQUESTED
7018-3090-0000-0035-4037

Assistant Secretary
Louisiana Department of Environmental Quality
Office of Environmental Compliance
P.O. Box 4312
Baton Rouge, Louisiana 70821-4312

RECEIVED
APR 04 2023
LDEQ/OEC
ENFORCEMENT DIVISION

**RE: Annual Report for NESHAP FF
Union Carbide Corporation, St. Charles Operations
Agency Interest No. 2083**

Dear Assistant Secretary:

Per 40 CFR §61.357, enclosed is the annual NESHAP Subpart FF Report for 2022. The Olefins I & II Units are subject to the control requirements of the standard since the Total Annual Benzene (TAB) is greater than 10 Mg/yr. For the Union Carbide Corporation, St. Charles Operations, the TAB exceeded 10 Mg/yr. Also enclosed is the annual certification document for the Olefins I & II Units.

Please contact me at (985) 783-3729 if you have any questions or need additional information. All written correspondence should be sent directly to Nattaya Boonsombat, Responsible Care Leader at P. O. Box 50, Hahnville, LA 70057.

Sincerely,

A handwritten signature in blue ink, appearing to read "Cuti".

Charles Cuti
Air Specialist

NB/CRC

Enclosures

bcc: Albert Holliday *
Nattaya Boonsombat*
Gini Igram*
Charles Cuti*
Brett Matherne*
Don Knuppel

EH&S -- Pollution Prevention/Air Quality/Site Reporting/NESHAP FF Reports
*electronic copy of cover letter

ANNUAL CERTIFICATION OF COMPLIANCE

Annual certification for plants with only exempt streams

That the _____ (plant) located in _____ (block)

- is correctly represented on the registration information previously submitted on Form 2, or has been updated with this submittal, **and**
- it continues to be exempt from the control and treatment requirements of Benzene Waste Operations NESHAPS based on the current Table 2 information (updated with this submittal if needed) and Dow's continuing compliance with Dow's Environmental Management of Change process.

The following exemptions are utilized at this plant:

- ☐ Aqueous or non-aqueous waste with an annual average benzene concentration less than 10 ppm at the point of generation.
- ☐ Process wastewater streams with annual average benzene concentrations of 10 ppm or more but which are individually less than 22,000 lb./yr. of total flow.
- ☐ Aqueous or non-aqueous waste with an annual average benzene concentration greater than 10 ppm at the point of generation but only stored in containers smaller than 26.4 gallon capacity.

The total annual benzene is _____ (from Form 2).

Annual certification for plants with non-exempt waste streams

That the Olefins I & II Units located in St. Charles Operations the registration information previously submitted on Forms 2, 3, 4, and 5.

- ☐ Has not changed, or
- ☒ Has been updated with this submittal.

The total annual benzene is 84.28 (from Form 2).

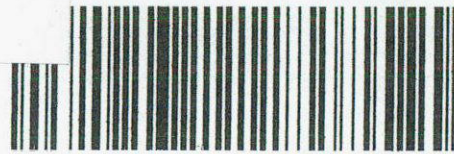
Olefins Production Director
Name:


Albert Holliday

Date: March 25, 2023



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CERTIFIED MAIL®



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nion Carbide Corporation
he Dow Chemical Company
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355 Hwy. 3142
Hahnville, LA 70057

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FROM 70057
03/29/2023
stamps.



062S0001443296

Assistant Secretary
Louisiana Department of Environmental Quality
Office of Environmental Compliance
P. O. Box 4312
Baton Rouge, Louisiana 70821-4312

Total Annual Benzene for 2022 - 40 CFR 61.357 (a)(2)

40 CFR 61.357 (a)(3)(ii)	40 CFR 61.357 (a)(3)(iii)	40 CFR 61.357 (a)(3)(iv)	40 CFR 61.357 (a)(3)(v)	40 CFR 61.357 (a)(3)(vi)	40 CFR 61.357 (a)(3)(1)	40 CFR 61.357 (a)(3)(1)	
Stream Description	Waste Water, LBs	Avg. Benzene Conc., ppm	Benzene Conc. Range, ppm	Benzene, LBs	Mega-Grams of Benzene	Will Stream Be Controlled for Benzene?	If No, Does Stream Contain > 10% Water?
Ol-1 & Ol-2 Process Sewers, Dist. A & B-sumps, Ol-2 DSG B/D & PWS Tails (also includes all quench oil sumps), Ole-1 PWS Tails & DSG B/D	1,986,382,873.61	0.057	0 to 0.475	114.14	0.052	No	Yes
East & West Waste Water Stripper Feed (including Ole-2 MEA & Caustic Sumps)	128,093,390.63	416.67	77 to 650	53,372.25	24.260	Yes	
#3 WWS Feed	1,019,569,049.88	129.03	19 to 480	131,552.73	59.797	Yes	
Benzene Leaked to Cooling Water Return Lateral	876,700,800,000	0.0001815	0.00 to 0.009	159.12	0.072	No	Yes
Wastes Sent off-Site for Disposal (Includes Tank Truck Trailers of MEA Cycle Purge and oils collected out of sumps)				187.29	0.085	Yes	
Shell Ethane Pipeline Water Collection Tank	16680	0.00	0 to 0	0.00000	0.00000	No	Yes
Waste Water from North 1300 Area Tank Farm Sump	0	0.00	0	0	0.00	No	Yes
Benzene in Oil Phase of Ol-1 Oily Sump	6.80	0.02	0.01 to 0.04	0.000000136	0.00	No	Yes
Benzene in Oil Phase of Ol-2 Quench Oil Sump	137.56	2.03	0.001 to 4.9	0.00028	0.0000001	No	Yes
Benzene in Oil Phase of Ol-1 Process Sewer Sump	868.38	34,029.00	57 to 87000	29.55010	1.34E-02	No	Yes
Benzene in Oil Phase of Ol-2 Process Sewer Sump	4,056.17	0.56	0.001 to 1.7	0.002271455	1.03E-06	No	Yes
Benzene in Oil Phase of North 1300 Area Tank Farm Sump	0	0.00	0	0	0.00	No	Yes
Benzene in Oil Phase of Field Area A-Sump	0	0.00	0	0	0	No	Yes
Benzene in Oil Phase of Field Area B-Sump	0	0.00	0	0	0	No	Yes
Benzene in Oil Phase of Ol-2 MEA Sump	820.76	125.11	96 to 150	0.102685075	4.6675E-05	No	Yes
Benzene in Oil Phase of Ol-2 Caustic Sump	703.51	242.24	0.04 to 610	0.17041757	7.74625E-05	No	Yes
Benzene in Oil Phase of Ol-1 Quench Oil Filter Sump	4.125	0.010	0.00 to 0.02	4.125E-08	1.875E-11	No	Yes
SCO Hydrocarbons Plant Total Annual Benzene - 40 CFR 61.357 (a)(1)				185,415.35	84.28		



Union Carbide Corporation
A Subsidiary of The Dow Chemical Company
P.O. Box 50
355 Hwy. 3142
Hahnville, LA 70057
USA

March 28, 2022

CERTIFIED MAIL RETURN - RECEIPT REQUESTED

7020-2450-0002-1819-4865

Assistant Secretary
Louisiana Department of Environmental Quality
Office of Environmental Compliance
P.O. Box 4312
Baton Rouge, Louisiana 70821-4312

RECEIVED

APR 06 2022

LDEQ/OEC
ENFORCEMENT DIVISION

**RE: Annual Report for NESHAP FF
Union Carbide Corporation, St. Charles Operations
Agency Interest No. 2083**

Dear Assistant Secretary:

Per 40 CFR §61.357, enclosed is the annual NESHAP Subpart FF Report for 2021. The Olefins I & II Units are subject to the control requirements of the standard since the Total Annual Benzene (TAB) is greater than 10 Mg/yr. For the Union Carbide Corporation, St. Charles Operations, the TAB exceeded 10 Mg/yr. Also enclosed is the annual certification document for the Olefins I & II Units.

Please contact me at (985) 783-3729 if you have any questions or need additional information. All written correspondence should be sent directly to Scott White, Responsible Care Leader at P. O. Box 50, Hahnville, LA 70057.

Sincerely,

A handwritten signature in blue ink, appearing to read "Cuti", with a long horizontal flourish extending to the right.

Charles Cuti
Leveraged Air Specialist

SW/CRC

Enclosures

ANNUAL CERTIFICATION OF COMPLIANCE

**Annual
certification for
plants with only
exempt streams**

That the _____ (plant) located in _____
(block)

- is correctly represented on the registration information previously submitted on Form 2, or has been updated with this submittal, **and**
- it continues to be exempt from the control and treatment requirements of Benzene Waste Operations NESHAPS based on the current Table 2 information (updated with this submittal if needed) and Dow's continuing compliance with Dow's Environmental Management of Change process.

The following exemptions are utilized at this plant:

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- ☐ Process wastewater streams with annual average benzene concentrations of 10 ppm or more but which are individually less than 22,000 lb./yr. of total flow.
- ☐ Aqueous or non-aqueous waste with an annual average benzene concentration greater than 10 ppm at the point of generation but only stored in containers smaller than 26.4 gallon capacity.

The total annual benzene is _____ (from Form 2).

**Annual
certification for
plants with non-
exempt waste
streams**

That the Olefins I & II Units located in St. Charles Operations the registration information previously submitted on Forms 2, 3, 4, and 5

- ☐ Has not changed, or
- ☒ Has been updated with this submittal.

The total annual benzene is 67.44 (from Form 2).

Olefins Production Director
Name:


Albert Holiday

Date: March 28, 2022

on Carbide Corporation
Dow Chemical Company
P. O. Box 50
355 Hwy. 3142
Hahnville, LA 70057



7020 2450 0002 1819 4865

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03/28/2022
stamps
endicia



062S0013913245

LDEQ
P.O. Box 4312
Baton Rouge, La 70821

Total Annual Benzene for 2021 - 40 CFR 61.357 (a)(2)

40 CFR 61.357 (a)(3)(ii)	40 CFR 61.357 (a)(3)(iii)		40 CFR 61.357 (a)(3)(iv)	40 CFR 61.357 (a)(3)(v)	40 CFR 61.357 (a)(3)(vi)	40 CFR 61.357 (a)(3)(1)	40 CFR 61.357 (a)(3)(1)
Stream Description	Waste Water, LBs	Avg. Benzene Conc., ppm	Benzene Conc. Range, ppm	Benzene, LBs	Mega-Grams of Benzene	Will Stream Be Controlled for Benzene?	If No, Does Stream Contain > 10% Water?
OI-1 & OI-2 Process Sewers, Dist. A & B-sumps, OI-2 DSG B/D & PWS Tails (also includes all quench oil sumps), Ole-1 PWS Tails & DSG B/D	1,507,004,780.86	0.029	0 to 0.475	43.05	0.020	No	Yes
East & West Waste Water Stripper Feed (including Ole-2 MEA & Caustic Sumps)	138,140,554.05	221.51	77 to 650	30,599.51	13.909	Yes	
#3 WWS Feed	1,185,018,256.80	99.17	19 to 480	117,518.26	53.417	Yes	
Benzene Leaked to Cooling Water Return Lateral	876,700,800.000	0.0002065	0.00 to 0.009	181.00	0.082	No	Yes
Wastes Sent off-Site for Disposal (Includes Tank Truck Trailers of MEA Cycle Purge and oils collected out of sumps)				18.54	0.008	Yes	
Shell Ethane Pipeline Water Collection Tank	16680	0.00	0 to 0	0.00000	0.00000	No	Yes
Waste Water from North 1300 Area Tank Farm Sump	0	0.00	0	0	0.00	No	Yes
Benzene in Oil Phase of OI-1 Oily Sump	6.80	0.47	0.01 to 0.04	3.16874E-06	0.00	No	Yes
Benzene in Oil Phase of OI-2 Quench Oil Sump	137.56	2,834.43	0.001 to 4.9	0.38990	0.0001772	No	Yes
Benzene in Oil Phase of OI-1 Process Sewer Sump	868.38	4.43	57 to 87000	0.00385	1.75E-06	No	Yes
Benzene in Oil Phase of OI-2 Process Sewer Sump	4,056.17	2.52	0.001 to 1.7	0.01020307	4.64E-06	No	Yes
Benzene in Oil Phase of North 1300 Area Tank Farm Sump	0	0.00	0	0	0.00	No	Yes
Benzene in Oil Phase of Field Area A-Sump	0	0.00	0	0	0	No	Yes
Benzene in Oil Phase of Field Area B-Sump	0	0.00	0	0	0	No	Yes
Benzene in Oil Phase of OI-2 MEA Sump	820.76	3.96	96 to 150	0.003247016	1.47592E-06	No	Yes
Benzene in Oil Phase of OI-2 Caustic Sump	703.51	4.90	0.04 to 610	0.003449237	1.56783E-06	No	Yes
Benzene in Oil Phase of OI-1 Quench Oil Filter Sump	4.125	0.749	0.00 to 0.02	3.08917E-06	1.40417E-09	No	Yes
SCO Hydrocarbons Plant Total Annual Benzene - 40 CFR 61.357 (a)(1)				148,360.78	67.44		

Appendix 5

Inspection Document Requests

From: [McCarthy, Colleen \(she/her/hers\)](#)
To: [Cuti, Charles \(CR\)](#)
Cc: [Nelson, Victoria \(she/her/hers\)](#); [Kuc, Karina \(she/her/hers\)](#); [Rosenthal, Benjamin](#); [Allen, KaraM](#); [Loukeris, Constantinos](#); [Ong, Sophia](#); pspevrer@dow.com; jwilliams48@dow.com; lmillervgrant@dow.com
Subject: RE: Union Carbide SCO: Inspection Document Request
Date: Monday, September 30, 2024 5:19:00 PM
Attachments: [image001.png](#)

Good Afternoon Charles,

Thank you again for your time and cooperation during the inspection last week. As promised, I am providing a list of requests discussed throughout the week in addition to what was requested in the initial email below. A few items were added to the request following the closing conference on September 25. Unless otherwise specified, we are requesting the last five years of data/records (October 1, 2019 to present). For continuous monitoring data (analyzer, temperature, flow, or other parametric data), please provide the data in an editable excel format.

1. BWON Manual/BWON training program;
2. Ethylene Oxide industrial hygiene data;
3. Industrial hygiene studies, MOC, and any determinations for requiring SCBA at the EOB pH tanks;
4. Process water sewer diagram identifying locations of all drains and sumps;
5. Location of the field water decanter;
6. All benzene and TOC analyzer specification sheets from the manufacturer(s);
7. Preventative maintenance for all benzene and TOC analyzers;
8. Benzene analyzer data for each benzene analyzer at the facility;
9. TOC analyzer data for each TOC analyzer at the facility;
10. Temperature data for material going to the digesters;
11. All monitoring data for bug activity/health at EOB;
12. Grab sample results for all internal outfalls and the final outfall at the wastewater treatment plant;
13. All monitoring data for the UNOX Vent Collection Scrubber (whatever parametric monitoring is conducted at the scrubber);
14. All UNOX Vent Collection Scrubber performance or emissions testing (if not available provide spec sheet or manufacturer's recommendations);
15. Vapor pressure determinations for Tank 702, Surge Tank, Surge Sump Tank, Equalization Tank, and Equalization Sump Tank;
16. Valve position and flow data from Tank 702 to EOB or wastewater tanks;
17. Records of vacuum truck movements throughout the facility including identification of specific streams in each truck and final destination;
18. Valve position for the process water stripper tails and corresponding benzene analysis results;
19. List of all NDE/Method 21 monitored components for Subpart FF – and repair records for detectable emissions and visual inspection deficiencies;
20. LDAR database .bak file;
21. Any follow-up action(s) taken by the company at locations with detectable emissions during the inspection (Olefins 1 suction drum gauges, old tar pot regulator (FA-1446), EQ Tank, Surge Tank, Surge Sump tank, etc).
22. Any updated NOCS submitted for the facility since May 15, 2023; and
23. Any permit applications submitted for the facility since May 15, 2023.

Please do not hesitate to reach out if you have any questions, concerns, or need any further clarification. **EPA is requesting this information be submitted by October 16, 2024.** You can upload the requested information to the following OneDrive Folder: [☐_Union Carbide SCO September2024_Inspection](#).

Sincerely,
Colleen McCarthy

Air Toxics Enforcement Section
U.S. Environmental Protection Agency, Region 6
1201 Elm Street, Suite #500
Dallas, Texas 75270
P: 214-665-7334
mccarthy.colleen01@epa.gov
(she/her/hers)

This email may contain material that is confidential, privileged and/or attorney work product and is for the sole use of the intended recipient. Any review, reliance, or distribution by others or forwarding without express permission is strictly prohibited. If you are not the intended recipient, please contact the sender and delete all copies.

From: McCarthy, Colleen (she/her/hers)
Sent: Monday, September 23, 2024 7:12 PM
To: Cuti, Charles (CR) <CRCuti@dow.com>
Cc: Nelson, Victoria (she/her/hers) <nelson.victoria@epa.gov>; Kuc, Karina (she/her/hers) <Kuc.Karina@epa.gov>; Rosenthal, Benjamin <Rosenthal.Benjamin@epa.gov>; Allen, KaraM <Allen.Kara.M@epa.gov>; Loukeris, Constantinos <loukeris.constantinos@epa.gov>; Ong, Sophia <Ong.Sophia@epa.gov>; pspeyrer@dow.com; jwilliams48@dow.com; lmtillerygrant@dow.com
Subject: Union Carbide SCO: Inspection Document Request

Charles,

As discussed today during the inspection, I am providing a list of follow-up documents. Please upload the requested records to this folder  [Union Carbide_SCO_September2024_Inspection](#)

1. Subpart FF Quarterly Reports and all supporting documents;
2. Wastewater/Process Flow Diagrams (PFD) presented during today's meeting in the original excel format with all tabs included;
3. TAB workbook presented during today's meeting in the original excel format with all tabs included;
4. Screenshots of the Olefins Units (Olefins 1 and Olefins 2) DCS presented by Van during our meeting;
5. NDE monitoring data for the last five years;
6. Engineering Design Documentation for each waste management unit and treatment process required by 40 C.F.R. § 61.356(d);
7. Quarterly visual inspection records for the last five years;
8. Dripolene data sheet; and
9. Blank visual inspection sheet/document used for Subpart FF visual inspections (several copies printed, if possible).

Please let me know if any other individuals will need access to the OneDrive folder.

Sincerely,

Colleen McCarthy
Air Toxics Enforcement Section
U.S. Environmental Protection Agency, Region 6
1201 Elm Street, Suite #500
Dallas, Texas 75270
P: 214-665-7334
mccarthy.colleen01@epa.gov
(she/her/hers)

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From: [Cuti, Charles \(CR\)](#)
To: [McCarthy, Colleen \(she/her/hers\)](#)
Subject: Re: Air Monitoring
Date: Wednesday, September 25, 2024 4:09:53 AM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Thanks!

Charles R Cuti
Leveraged Air Specialist

General Business

From: McCarthy, Colleen (she/her/hers) <McCarthy.Colleen01@epa.gov>
Sent: Tuesday, September 24, 2024 9:57:08 PM
To: Cuti, Charles (CR) <CRCuti@dow.com>
Subject: RE: Air Monitoring

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Charles,

Apologies for not seeing this until now. The canisters will be analyzed using TO-15 (all compounds).

Sincerely,
Colleen McCarthy
Air Toxics Enforcement Section
U.S. Environmental Protection Agency, Region 6
1201 Elm Street, Suite #500
Dallas, Texas 75270
P: 214-665-7334
mccarthy.colleen01@epa.gov
(she/her/hers)

This email may contain material that is confidential, privileged and/or attorney work product and is for the sole use of the intended recipient. Any review, reliance, or distribution by others or forwarding without express permission is strictly prohibited. If you are not the intended recipient, please contact the sender and delete all copies.

General Business

From: Cuti, Charles (CR) <CRCuti@dow.com>

Sent: Tuesday, September 24, 2024 7:25 PM

To: McCarthy, Colleen (she/her/hers) <McCarthy.Colleen01@epa.gov>

Subject: Air Monitoring

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Hi Colleen,

For the canister monitoring tomorrow, will the analysis include all TO-15 hydrocarbons or just EO?

We will plan to set up canisters for the same analysis.

Charles R Cuti
Leveraged Air Specialist

General Business

Appendix 6

FID Calibration Log

Calibration Gases

Gas Type	Lot Number	Expiration Date
Zero Air	269794	09/2025
500 parts per million (ppm) methane	304-40231127-1	12/23/2025
2,000 ppm methane	304-402415357-1	04/20/2026
10,000 ppm methane	304-402244727-1	10/04/2025

TVA Bump Checks on September 24, 2024

Calibration Gas (ppm methane)	TVA B37055	TVA H2	TVA H3	TVA SL1555
500	500	495	497	497
2,000	2,051	1,999	2,001	1,997
10,000	10,500	10,000	10,100	10,000

TVA Bump Checks on September 25, 2024

Calibration Gas (ppm methane)	TVA B37055	TVA H2	TVA SL1555
500	496	498	495
2,000	2,115	1,990	2,095
10,000	10,600	10,100	10,100

Appendix 7

FID Field Measurement Data

Table 1. September 24, 2024 Field Measurements

Unit Area	Equipment/Location	EPA Measurement in ppm VOC ¹	Facility Measurement in ppm VOC ²	Inspector, Notes, and Observations
Olefins 1	FA-1477. 3 rd Stage Suction Drum.	1,553	4,844	Ong. Near LT-1477-2. Photos 2 and 3.
Olefins 1	FA-1477. 3 rd Stage Suction Drum.	12,000	11,200	Ong. At base of fork in lines to pressure gauges. Photos 2 and 3.
Olefins 1	FA-1477. 3 rd Stage Suction Drum.	88,000 - flameout.	201,368 – flameout.	Ong. At bolt along gauge lines. Photos 2 and 3.
Olefins 1	FA-1477. 3 rd Stage Suction Drum.	4,050	5,600	Ong. Near pressure gauge.
Olefins 1	FA-1476. 2 nd Stage Suction Drum.	10,700	-	Nelson. Blowback regulator off pressure regulator. Mr. LeGaux observed reading.
Olefins 1	FA-1476. 2 nd Stage Suction Drum.	2,100	-	Nelson. At connector on LT-1476-3 near NSPS tags 3Y56275 and 3Y56276. Mr. LeGaux observed reading.
Olefins 1	FA-1476. 2 nd Stage Suction Drum.	1,100	-	Nelson. Connector off blowback line valve. Mr. LeGaux observed reading.
Olefins 1	DA-1463. East Process Water Stripper.	2,200	-	Nelson. Connector on sample line at second platform. Mr. LeGaux observed reading.
Olefins 1	FA-119.	850	30	Loukeris. Confirmed by Nelson at 1,390 ppm. Bottom decanter drain, B2-35. Observed with hose feeding drain. Photo 1. Video 1.
Olefins 1	Catch basin west of FA-119.	575	-	Loukeris. Confirmed by Nelson at 550 ppm. Observed with four lines feeding drain. Video 3.
Olefins 1	Drain south of FA-119.	75	-	Loukeris. Video 2.
Olefins 1	FA-1446. Old Tar Pot.	3,300	6,000	Loukeris. Near PCV-1446F-10.
Olefins 1	FA-1446. Old Tar Pot.	2,800	-	Loukeris. Near GA1911 plug.
Olefins 1	FA-1446. Old Tar Pot.	1,700	5,000	Loukeris. Connector near tag 3485493.
Olefins 1	FA-1446. Old Tar Pot.	350	-	Loukeris. Near tag 341004.
Olefins 1	FA-1479. 5 th Stage Suction Drum.	8,700	-	Ong. Near Tag 3666 on LT-1479F-3. Photos 9 and 10.

Olefins 1	FA-1479. 5 th Stage Suction Drum.	2,705	-	Ong. Near Tag 3665. Photos 9 and 10.
Olefins 1	FA-1478. 4 th Stage Suction Drum.	7,600	7,500	McCarthy. Along inlet to 3700 on LT1478F-3.
Olefins 1	FA-1478. 4 th Stage Suction Drum.	12,500	Flameout.	McCarthy. At bolt connecting line to pressure gauge.
Olefins 1	FA-1478. 4 th Stage Suction Drum.	6,600	5,600	McCarthy. LT-1478F-02.
Olefins 1	FA-1478. 4 th Stage Suction Drum.	5,900	5,900	McCarthy. LT-1478F-1.
Olefins 1	FA-1478. 4 th Stage Suction Drum.	560	-	McCarthy. Connector on LT-1478F-1.
Olefins 1	FA-129R. Dryer Feed Separator.	180	-	Kuc. Near chiller.
Olefins 1	EA-1493. Cold Flare Vaporizer.	5,000	13,000	Kuc. Bolt off pressure transmitter on line above valve with tag R9093. Transmitter feed from Flare KO FA-1491.
Olefins 1	FA-126. Caustic Tower KO drum.	210	200	McCarthy. Accessed by caustic tower scaffolding. Unlabeled valve along overheads piping.
Olefins 1	Process sewer drain near GA-1457.	1,800	1,416	Kuc. Process sewer observed with three lines feeding it. No water seal observed.
Olefins 1	Process sewer drain at base of FA-1481.	2,300	1,700	McCarthy. One line from FA-1481 observed feeding drain.

¹ Equipment: Thermo Scientific Toxic Vapor Analyzer 2020. EPA Region 6 ID Numbers: H2 and H3. EPA Region 5 ID Numbers: B37055 and SL1555. See Appendix 6 for EPA calibration data.

² A “-” indicates the Facility was not available for or did not provide a confirmation reading.

Table 2. September 25, 2024 Field Measurements

Unit Area	Component	EPA Measurement in ppm VOC ³	Facility Measurement in ppm VOC ⁴	Inspector, Notes, and Observations
Olefins 1	FA-1446. Old Tar Pot.	14,000	50,000	Allen. Regulator on third platform. SN 14336121. Highest measurement along west side of regulator. Summa Sample 11606. Photo 20. Video 8.
Olefins 1	Process sewer drain at base of FA-1481.	1,400	2,300	Allen. Summa Sample 11612. Photo 21.
Olefins 2	FA-3201.	400	-	Nelson. Along valve stem 6545. UCC tightened bolts on valve stem. 4.8ppm measurement after repair attempt.
Olefins 2	FA-3202.	4,000	-	Nelson. Open ended line under valve 6714. Visible signs of leak at plug and valve stem.
Olefins 2	Process sewer cleanout.	150	80	Ong. Near FA-3902, dry KO drum.
Olefins 2	Process sewer drain 78.	460	295	Ong. Next to process water stripper, DA-3106.
Olefins 2	DA-3106. Process water stripper.	390	-	Loukeris. Valve R1526 on second platform.
Olefins 2	Roll-off Box VB 27168.	1,090	1,000	Loukeris. Hatch on roll-off box.
EOB	Grit Chamber Sump	5	-	Nelson. Vacuum truck unloading. Video 15.
EOB	Equalization Sump Tank 1402.	420	-	Loukeris. Hatch. Noted odors.
EOB	Surge Sump Tank 1401.	1,000 then flameout.	1,040 then flameout.	Rosenthal. Hatch. Strong odor, visible and audible leak. Think Environmental flameout from approximately 1 foot away from hatch. Photos 25 and 26. Videos 16, 19, and 20. Summa Sample 16930.
EOB	Surge Tank 8301.	600	987	Nelson. Hatch. Strong odors and visible sign of leak. Photo 30.

Union Carbide Corporation / St. Charles Operations
Inspection Date 09/23-25/2024

EOB	Surge Tank 8301. PSV-4702-32.	1,034	1,145	Nelson. Along seal. Photo 27.
EOB	Surge Tank 8301. PSV-4702-33.	1,500	1,502	Nelson. Along top seal. Photo 29. Video 21.
EOB	Surge Tank 8301. PSV-4702-33.	2,090	2,046	Nelson. Along lower seal. Photo 28.
EOB	Equalization Tank 8302. PSV-4701-31	2,250	1,655	Loukeris. Visible material leaking.
EOB	Equalization Tank 8302. PSV-4701-30	2,700	2,900	Loukeris. East side of hatch. Summa Sample 16927. Photos 31 and 32.

³Equipment: Thermo Scientific Toxic Vapor Analyzer 2020. EPA Region 6 ID Number: H2. EPA Region 5 ID Numbers: B37055 and SL1555. See Appendix 6 for EPA calibration data.

⁴ A “—” indicates the Facility was not available for or did not provide a confirmation reading.

Appendix 8

Analytical Results of Summa Samples Collected by EPA on September 25, 2024



Eastern Research Group
601 Keystone Park Drive
Suite 700
Morrisville, NC 27560

November 20, 2024

Shaun Burke
TOCOR
2890 Woodbridge Avenue
Edison, NJ 08837
Project Name: Region 6 CAA inspection

Dear Shaun Burke,

This report contains the analytical results for the sample(s) received under chain(s) of custody by Eastern Research Group on 09/30/24 09:52.

Values below the MDL for QC results in this report are recorded as ND, however the actual values are reported in the accompanying Excel report with a "U" flag (Under the detection limit). The actual values are reported in AQS.

This test is accredited under the 2016 TNI Standard for Environmental Laboratories (FL DOH Certification # E87673). All analyses were performed as described in the US EPA-approved QAPP, under the contract for National Hazardous Air Pollutant Support (US EPA Contract No. 68HERH22D0002). This cover page is an integral part of this report, and any exceptions or comments are noted on the last page.

Release of the data contained in this data package and in the data submitted in the electronic data deliverable, has been authorized by the Program Manager, or the Program Manager's designee as verified by the following signature.

The issuance of the final Certificate of Analysis takes precedence over any previous Report. If you have any questions, please contact me at [REDACTED]

Sincerely,

Randolph Bower
Deputy Program Manager
[REDACTED]

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CERTIFICATE OF ANALYSIS

OECA

2890 Woodbridge Avenue

Edison, NJ 08837

ATTN: Shaun Burke

PHONE: (202) 564-1039 FAX: (732) 321-6616

FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

ANALYTICAL REPORT FOR SAMPLES

<u>SampleName</u>	<u>LabNumber</u>	<u>Matrix</u>	<u>Sampled</u>	<u>Received</u>
OECA Region 6 CAA Inspect	4093026-01	Air	09/25/24 10:56	09/30/24 09:52
OECA Region 6 CAA Inspect	4093026-02	Air	09/25/24 15:55	09/30/24 09:52
OECA Region 6 CAA Inspect	4093026-03	Air	09/25/24 16:25	09/30/24 09:52
OECA Region 6 CAA Inspect	4093026-04	Air	09/25/24 11:46	09/30/24 09:52
OECA Region 6 CAA Inspect	4093026-05	Air	09/25/24 16:38	09/30/24 09:52
OECA Region 6 CAA Inspect	4093026-06	Air	09/25/24 16:56	09/30/24 09:52



CERTIFICATE OF ANALYSIS

OECA

2890 Woodbridge Avenue

Edison, NJ 08837

ATTN: Shaun Burke

PHONE: (202) 564-1039 FAX: (732) 321-6616

FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection Lab ID: 4093026-01

Sampled: 09/25/24 10:56

Pressure @ Receipt: Canister #: 11606

Received: 09/30/24 09:52

Comments: Olefins 1-Old Tar Pot (FA-1446) FID 25000 PPM

Analyzed: 10/16/24 17:33

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Dichlorodifluoromethane	0.922	4.57	D, XC	0.255
Chloromethane	1.47	3.04	D, XC	0.409
Dichlorotetrafluoroethane	ND	ND	D, XC, U	0.222
Vinyl chloride	ND	ND	D, XC, U	0.216
1,3-Butadiene	3970	8,800.00	D, XC, E	111
Ethylene oxide	ND	ND	CE, D, XC, U	1.07
Bromomethane	ND	ND	D, XC, U	0.438
Chloroethane	ND	ND	D, XC, U	0.573
Acetonitrile	ND	ND	D, QB-03, XC, U	1.39
Acrolein	2.65	6.09	D, QB-01, QB-03, XC, U	3.48
Trichlorofluoromethane	0.481	2.71	D, XC	0.400
Acrylonitrile	ND	ND	D, XC, U	0.489
1,1-Dichloroethene	ND	ND	D, XC, U	0.666
Dichloromethane	4.82	16.80	D, QB-01, QB-03, XC	0.986
Carbon Disulfide	0.239	0.75	D, XC, U	1.65
Trichlorotrifluoroethane	0.138	1.06	D, XC, U	0.885
trans-1,2-Dichloroethylene	ND	ND	D, XC, U	0.410
1,1-Dichloroethane	ND	ND	D, XC, U	0.598
Methyl tert-Butyl Ether	ND	ND	D, XC, U	0.426
Chloroprene	ND	ND	D, XC, U	0.518
cis-1,2-Dichloroethylene	ND	ND	D, XC, U	0.552
Bromochloromethane	ND	ND	D, XC, U	0.381
Chloroform	ND	ND	D, XC, U	0.565
Ethyl tert-Butyl Ether	ND	ND	D, XC, U	0.376
1,2-Dichloroethane	0.392	1.59	D, XC, U	0.489
1,1,1-Trichloroethane	ND	ND	D, XC, U	0.401
Benzene	597	1,910.00	D, XC, E	51.1
Carbon Tetrachloride	ND	ND	D, XC, U	0.316
tert-Amyl Methyl Ether	ND	ND	D, XC, U	0.531
1,2-Dichloropropane	ND	ND	D, XC, U	0.906
Ethyl Acrylate	ND	ND	D, XC, U	0.329
Bromodichloromethane	ND	ND	D, XC, U	0.375
Trichloroethylene	0.120	0.65	D, XC, U	0.287
Methyl Methacrylate	ND	ND	D, XC, U	1.39
cis-1,3-Dichloropropene	ND	ND	D, XC, U	0.317
Methyl Isobutyl Ketone	ND	ND	D, XC, U	2.44
trans-1,3-Dichloropropene	ND	ND	D, XC, U	0.346
1,1,2-Trichloroethane	ND	ND	D, XC, U	0.169
Toluene	102	385.00	D, XC, E	1.60
Dibromochloromethane	ND	ND	D, XC, U	0.373

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



CERTIFICATE OF ANALYSIS

OECA

2890 Woodbridge Avenue

Edison, NJ 08837

ATTN: Shaun Burke

PHONE: (202) 564-1039 FAX: (732) 321-6616

FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection Lab ID: 4093026-01

Sampled: 09/25/24 10:56

Pressure @ Receipt: Canister #: 11606

Received: 09/30/24 09:52

Comments: Olefins 1-Old Tar Pot (FA-1446) FID 25000 PPM

Analyzed: 10/16/24 17:33

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
1,2-Dibromoethane	ND	ND	D, XC, U	0.278
n-Octane	5.25	24.60	D, XC	1.09
Tetrachloroethylene	0.228	1.55	D, XC, U	0.362
Chlorobenzene	ND	ND	D, XC, U	0.346
Ethylbenzene	8.31	36.20	D, XC	0.548
m,p-Xylene	9.14	39.80	D, XC	1.76
Bromoform	ND	ND	D, XC, U	0.455
Styrene	35.8	153.00	D, XC, E	1.15
1,1,2,2-Tetrachloroethane	ND	ND	D, XC, U	0.801
o-Xylene	3.82	16.60	D, XC	0.990
1,3,5-Trimethylbenzene	0.426	2.10	D, XC, U	1.33
1,2,4-Trimethylbenzene	1.16	5.71	D, XC, U	1.35
m-Dichlorobenzene	ND	ND	D, XC, U	0.729
p-Dichlorobenzene	ND	ND	D, XC, U	1.54
o-Dichlorobenzene	ND	ND	D, XC, U	1.53
1,2,4-Trichlorobenzene	ND	ND	D, XC, U	3.34
Hexachloro-1,3-butadiene	ND	ND	D, XC, U	1.53



CERTIFICATE OF ANALYSIS

OECA

2890 Woodbridge Avenue

Edison, NJ 08837

ATTN: Shaun Burke

PHONE: (202) 564-1039 FAX: (732) 321-6616

FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection Lab ID: 4093026-02

Sampled: 09/25/24 15:55

Pressure @ Receipt: 24.5

Canister #: 16930

Received: 09/30/24 09:52

Comments: Surge Tamk Sump 1401 >10,000 PPM VOC

Analyzed: 10/12/24 02:36

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Dichlorodifluoromethane	10.8	53.50	D, XC, U, E	21.4
Chloromethane	ND	ND	D, XC, U	34.3
Dichlorotetrafluoroethane	ND	ND	D, XC, U	18.6
Vinyl chloride	ND	ND	D, XC, U	18.2
1,3-Butadiene	69.9	155.00	D, XC, U, E	77.9
Ethylene oxide	143000	58,000.00	D, XC, E	451
Bromomethane	ND	ND	D, XC, U	36.8
Chloroethane	ND	ND	D, XC, U	48.1
Acetonitrile	310	522.00	D, QB-03, XC, E	117
Acrolein	480	1,100.00	D, QB-01, QB-03, XC, E	292
Trichlorofluoromethane	ND	ND	D, XC, U	33.6
Acrylonitrile	ND	ND	D, XC, U	41.1
1,1-Dichloroethene	ND	ND	D, XC, U	55.9
Dichloromethane	49.2	171.00	D, QB-01, QB-03, XC, U, E	82.8
Carbon Disulfide	4770	14,900.00	D, XC, E	139
Trichlorotrifluoroethane	ND	ND	D, XC, U	74.3
trans-1,2-Dichloroethylene	ND	ND	D, XC, U	34.4
1,1-Dichloroethane	ND	ND	D, XC, U	50.3
Methyl tert-Butyl Ether	ND	ND	D, XC, U	35.8
Chloroprene	ND	ND	D, XC, U	43.5
cis-1,2-Dichloroethylene	ND	ND	D, XC, U	46.4
Bromochloromethane	ND	ND	D, XC, U	32.0
Chloroform	ND	ND	D, XC, U	47.4
Ethyl tert-Butyl Ether	ND	ND	D, XC, U	31.6
1,2-Dichloroethane	ND	ND	D, XC, U	41.1
1,1,1-Trichloroethane	ND	ND	D, XC, U	33.7
Benzene	445	1,420.00	D, XC, E	35.8
Carbon Tetrachloride	ND	ND	D, XC, U	26.6
tert-Amyl Methyl Ether	ND	ND	D, XC, U	44.6
1,2-Dichloropropane	ND	ND	D, XC, U	76.1
Ethyl Acrylate	655	2,690.00	D, XC, E	27.6
Bromodichloromethane	14.4	96.70	D, XC, U, E	31.5
Trichloroethylene	10.1	54.40	D, XC, U	24.1
Methyl Methacrylate	ND	ND	D, XC, U	117
cis-1,3-Dichloropropene	ND	ND	D, XC, U	26.7
Methyl Isobutyl Ketone	28.7	118.00	D, XC, U, E	205
trans-1,3-Dichloropropene	ND	ND	D, XC, U	29.1
1,1,2-Trichloroethane	ND	ND	D, XC, U	14.2
Toluene	512	1,930.00	D, XC, E	135

Eastern Research Group

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CERTIFICATE OF ANALYSIS

OECA

2890 Woodbridge Avenue

Edison, NJ 08837

ATTN: Shaun Burke

PHONE: (202) 564-1039 FAX: (732) 321-6616

FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection Lab ID: 4093026-02

Sampled: 09/25/24 15:55

Pressure @ Receipt: 24.5

Canister #: 16930

Received: 09/30/24 09:52

Comments: Surge Tamk Sump 1401 >10,000 PPM VOC

Analyzed: 10/12/24 02:36

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Dibromochloromethane	ND	ND	D, XC, U	31.3
1,2-Dibromoethane	ND	ND	D, XC, U	23.4
n-Octane	ND	ND	D, XC, U	91.3
Tetrachloroethylene	ND	ND	D, XC, U	30.4
Chlorobenzene	ND	ND	D, XC, U	29.0
Ethylbenzene	566	2,460.00	D, XC, E	46.0
m,p-Xylene	477	2,080.00	D, XC, E	148
Bromoform	ND	ND	D, XC, U	38.2
Styrene	806	3,440.00	D, XC, E	96.6
1,1,2,2-Tetrachloroethane	ND	ND	D, XC, U	67.3
o-Xylene	182	792.00	D, XC, E	83.2
1,3,5-Trimethylbenzene	58.5	288.00	D, XC, U, E	112
1,2,4-Trimethylbenzene	190	936.00	D, XC, E	113
m-Dichlorobenzene	ND	ND	D, XC, U	61.2
p-Dichlorobenzene	ND	ND	D, XC, U	130
o-Dichlorobenzene	ND	ND	D, XC, U	129
1,2,4-Trichlorobenzene	ND	ND	D, XC, U	280
Hexachloro-1,3-butadiene	ND	ND	D, XC, U	129

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CERTIFICATE OF ANALYSIS

OECA

2890 Woodbridge Avenue

Edison, NJ 08837

ATTN: Shaun Burke

PHONE: (202) 564-1039 FAX: (732) 321-6616

FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection

Lab ID: 4093026-03

Sampled: 09/25/24 16:25

Pressure @ Receipt: 25.0

Canister #: 16927

Received: 09/30/24 09:52

Comments: EQ Tank, 2700 ppm VOC

Analyzed: 10/16/24 19:34

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Dichlorodifluoromethane	0.675	3.35	D, XC	0.198
Chloromethane	1.17	2.42	D, XC	0.318
Dichlorotetrafluoroethane	ND	ND	D, XC, U	0.172
Vinyl chloride	ND	ND	D, XC, U	0.168
1,3-Butadiene	2.01	4.46	D, XC	0.721
Ethylene oxide	6590	11,900.00	D, XC, E	100
Bromomethane	ND	ND	D, XC, U	0.341
Chloroethane	ND	ND	D, XC, U	0.446
Acetonitrile	11.2	18.80	D, QB-03, XC, E	1.08
Acrolein	7.64	17.60	D, QB-01, QB-03, XC, D, XC	2.71
Trichlorofluoromethane	0.797	4.49	D, XC	0.311
Acrylonitrile	ND	ND	D, XC, U	0.380
1,1-Dichloroethene	ND	ND	D, XC, U	0.518
Dichloromethane	1.14	3.97	D, QB-01, QB-03, XC, D, XC, E	0.767
Carbon Disulfide	159	496.00	D, XC, U	1.28
Trichlorotrifluoroethane	0.0997	0.77	D, XC, U	0.688
trans-1,2-Dichloroethylene	0.754	3.00	D, XC	0.319
1,1-Dichloroethane	ND	ND	D, XC, U	0.465
Methyl tert-Butyl Ether	ND	ND	D, XC, U	0.331
Chloroprene	ND	ND	D, XC, U	0.403
cis-1,2-Dichloroethylene	ND	ND	D, XC, U	0.429
Bromochloromethane	ND	ND	D, XC, U	0.297
Chloroform	ND	ND	CE, D, XC, U	0.439
Ethyl tert-Butyl Ether	ND	ND	D, XC, U	0.293
1,2-Dichloroethane	ND	ND	D, XC, U	0.380
1,1,1-Trichloroethane	ND	ND	D, XC, U	0.312
Benzene	18.2	58.30	D, XC, E	0.331
Carbon Tetrachloride	0.112	0.71	D, XC, U	0.246
tert-Amyl Methyl Ether	ND	ND	D, XC, U	0.413
1,2-Dichloropropane	ND	ND	D, XC, U	0.705
Ethyl Acrylate	26.9	110.00	D, XC, E	0.256
Bromodichloromethane	0.370	2.48	D, XC	0.291
Trichloroethylene	ND	ND	D, XC, U	0.223
Methyl Methacrylate	ND	ND	D, XC, U	1.08
cis-1,3-Dichloropropene	ND	ND	D, XC, U	0.247
Methyl Isobutyl Ketone	ND	ND	D, XC, U	1.89
trans-1,3-Dichloropropene	ND	ND	D, XC, U	0.269
1,1,2-Trichloroethane	ND	ND	D, XC, U	0.131
Toluene	23.9	90.30	D, XC, E	1.25
Dibromochloromethane	ND	ND	D, XC, U	0.290

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Edison, NJ 08837

ATTN: Shaun Burke

PHONE: (202) 564-1039 FAX: (732) 321-6616

FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection

Lab ID: 4093026-03

Sampled: 09/25/24 16:25

Pressure @ Receipt: 25.0

Canister #: 16927

Received: 09/30/24 09:52

Comments: EQ Tank, 2700 ppm VOC

Analyzed: 10/16/24 19:34

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
1,2-Dibromoethane	ND	ND	D, XC, U	0.216
n-Octane	ND	ND	D, XC, U	0.846
Tetrachloroethylene	0.312	2.12	D, XC	0.282
Chlorobenzene	ND	ND	D, XC, U	0.269
Ethylbenzene	24.6	107.00	D, XC, E	0.426
m,p-Xylene	20.4	88.80	D, XC	1.37
Bromoform	ND	ND	D, XC, U	0.354
Styrene	38.1	163.00	D, XC, E	0.895
1,1,2,2-Tetrachloroethane	ND	ND	D, XC, U	0.623
o-Xylene	8.55	37.20	D, XC	0.770
1,3,5-Trimethylbenzene	2.65	13.10	D, XC	1.04
1,2,4-Trimethylbenzene	9.08	44.70	D, XC	1.05
m-Dichlorobenzene	ND	ND	D, XC, U	0.567
p-Dichlorobenzene	ND	ND	D, XC, U	1.20
o-Dichlorobenzene	ND	ND	D, XC, U	1.19
1,2,4-Trichlorobenzene	0.0961	0.72	D, XC, U	2.60
Hexachloro-1,3-butadiene	0.100	1.07	D, XC, U	1.19

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FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection Lab ID: 4093026-04

Sampled: 09/25/24 11:46

Pressure @ Receipt: Canister #: 11612

Received: 09/30/24 09:52

Comments: FA 1481 process sewer, 1300 PPM

Analyzed: 10/12/24 04:37

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Dichlorodifluoromethane	14.9	73.80	D, XC, U, E	23.8
Chloromethane	ND	ND	D, XC, U	38.2
Dichlorotetrafluoroethane	ND	ND	D, XC, U	20.7
Vinyl chloride	ND	ND	D, XC, U	20.2
1,3-Butadiene	1350	2,990.00	D, XC, E	86.5
Ethylene oxide	461	832.00	D, XC, E	100
Bromomethane	ND	ND	D, XC, U	40.9
Chloroethane	ND	ND	D, XC, U	53.5
Acetonitrile	ND	ND	D, QB-03, XC, U	130
Acrolein	478	1,100.00	D, QB-01, QB-03, XC, E	325
Trichlorofluoromethane	9.13	51.40	D, XC, U	37.4
Acrylonitrile	ND	ND	D, XC, U	45.6
1,1-Dichloroethene	ND	ND	D, XC, U	62.1
Dichloromethane	58.9	205.00	D, QB-01, QB-03, XC, U, E	92.0
Carbon Disulfide	ND	ND	D, XC, U	154
Trichlorotrifluoroethane	ND	ND	D, XC, U	82.6
trans-1,2-Dichloroethylene	ND	ND	D, XC, U	38.2
1,1-Dichloroethane	ND	ND	D, XC, U	55.8
Methyl tert-Butyl Ether	ND	ND	D, XC, U	39.7
Chloroprene	ND	ND	D, XC, U	48.4
cis-1,2-Dichloroethylene	ND	ND	D, XC, U	51.5
Bromochloromethane	ND	ND	D, XC, U	35.6
Chloroform	ND	ND	D, XC, U	52.7
Ethyl tert-Butyl Ether	ND	ND	D, XC, U	35.1
1,2-Dichloroethane	ND	ND	D, XC, U	45.6
1,1,1-Trichloroethane	ND	ND	D, XC, U	37.4
Benzene	23700	75,900.00	D, XC, E	39.7
Carbon Tetrachloride	ND	ND	D, XC, U	29.5
tert-Amyl Methyl Ether	ND	ND	D, XC, U	49.6
1,2-Dichloropropane	ND	ND	D, XC, U	84.6
Ethyl Acrylate	ND	ND	D, XC, U	30.7
Bromodichloromethane	ND	ND	D, XC, U	35.0
Trichloroethylene	14.5	78.10	D, XC, U, E	26.7
Methyl Methacrylate	ND	ND	D, XC, U	130
cis-1,3-Dichloropropene	ND	ND	XC, D, U	29.6
Methyl Isobutyl Ketone	ND	ND	D, XC, U	227
trans-1,3-Dichloropropene	ND	ND	D, XC, U	32.3
1,1,2-Trichloroethane	ND	ND	D, XC, U	15.7
Toluene	7470	28,200.00	D, XC, E	149

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PHONE: (202) 564-1039 FAX: (732) 321-6616

FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection**Lab ID:** 4093026-04**Sampled:** 09/25/24 11:46**Pressure @ Receipt:****Canister #:** 11612**Received:** 09/30/24 09:52**Comments:** FA 1481 process sewer, 1300 PPM**Analyzed:** 10/12/24 04:37

Air Toxics by EPA Compendium Method TO-15

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Dibromochloromethane	ND	ND	D, XC, U	34.8
1,2-Dibromoethane	ND	ND	D, XC, U	26.0
n-Octane	ND	ND	D, XC, U	101
Tetrachloroethylene	ND	ND	D, XC, U	33.8
Chlorobenzene	ND	ND	D, XC, U	32.3
Ethylbenzene	798	3,470.00	D, XC, E	51.1
m,p-Xylene	543	2,360.00	D, XC, E	164
Bromoform	ND	ND	D, XC, U	42.5
Styrene	3330	14,200.00	D, XC, E	107
1,1,2,2-Tetrachloroethane	ND	ND	D, XC, U	74.7
o-Xylene	262	1,140.00	D, XC, E	92.4
1,3,5-Trimethylbenzene	ND	ND	D, XC, U	124
1,2,4-Trimethylbenzene	20.6	101.00	D, XC, U, E	126
m-Dichlorobenzene	ND	ND	D, XC, U	68.0
p-Dichlorobenzene	ND	ND	D, XC, U	144
o-Dichlorobenzene	ND	ND	D, XC, U	143
1,2,4-Trichlorobenzene	ND	ND	D, XC, U	311
Hexachloro-1,3-butadiene	ND	ND	D, XC, U	143

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FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection Lab ID: 4093026-05

Sampled: 09/25/24 16:38

Pressure @ Receipt: Canister #: 11610

Received: 09/30/24 09:52

Comments: North Aeration Basin, potential high VOC

Analyzed: 10/16/24 21:35

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Dichlorodifluoromethane	0.676	3.35	D	0.0324
Chloromethane	0.948	1.96	D	0.0520
Dichlorotetrafluoroethane	0.0282	0.20	D	0.0282
Vinyl chloride	ND	ND	D, U	0.0275
1,3-Butadiene	0.264	0.59	D, LL, CF	0.118
Ethylene oxide	129	233.00	CF, D, LK, E	0.684
Bromomethane	0.0255	0.10	D, U	0.0558
Chloroethane	ND	ND	D, U	0.0730
Acetonitrile	0.805	1.35	D, QB-03	0.177
Acrolein	1.17	2.69	CF, D, LK, QB-01, QB-03	0.443
Trichlorofluoromethane	0.460	2.59	D	0.0510
Acrylonitrile	ND	ND	D, U	0.0622
1,1-Dichloroethene	ND	ND	D, U	0.0848
Dichloromethane	0.570	1.98	D, QB-01, QB-03	0.126
Carbon Disulfide	4.33	13.50	CF, D, LK	0.210
Trichlorotrifluoroethane	0.0988	0.76	D, U	0.113
trans-1,2-Dichloroethylene	0.104	0.41	D	0.0521
1,1-Dichloroethane	ND	ND	D, U	0.0762
Methyl tert-Butyl Ether	ND	ND	D, U	0.0542
Chloroprene	ND	ND	D, U	0.0660
cis-1,2-Dichloroethylene	ND	ND	D, U	0.0703
Bromochloromethane	ND	ND	D, U	0.0485
Chloroform	ND	ND	CE, D, U	0.0719
Ethyl tert-Butyl Ether	ND	ND	D, U	0.0479
1,2-Dichloroethane	ND	ND	D, U	0.0622
1,1,1-Trichloroethane	ND	ND	D, U	0.0511
Benzene	1.70	5.44	D	0.0542
Carbon Tetrachloride	0.0994	0.63	D	0.0402
tert-Amyl Methyl Ether	ND	ND	D, U	0.0676
1,2-Dichloropropane	ND	ND	D, U	0.115
Ethyl Acrylate	0.849	3.48	D	0.0418
Bromodichloromethane	0.0270	0.18	D, U	0.0477
Trichloroethylene	ND	ND	D, U	0.0365
Methyl Methacrylate	ND	ND	D, U	0.177
cis-1,3-Dichloropropene	ND	ND	D, U	0.0404
Methyl Isobutyl Ketone	0.0906	0.37	D, U	0.310
trans-1,3-Dichloropropene	ND	ND	D, U	0.0441
1,1,2-Trichloroethane	ND	ND	D, U	0.0215
Toluene	2.25	8.50	D	0.204
Dibromochloromethane	ND	ND	D, U	0.0474

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REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection Lab ID: 4093026-05

Sampled: 09/25/24 16:38

Pressure @ Receipt: Canister #: 11610

Received: 09/30/24 09:52

Comments: North Aeration Basin, potential high VOC

Analyzed: 10/16/24 21:35

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
1,2-Dibromoethane	ND	ND	D, U	0.0354
n-Octane	0.339	1.59	D	0.138
Tetrachloroethylene	0.105	0.71	D	0.0461
Chlorobenzene	ND	ND	D, U	0.0440
Ethylbenzene	1.80	7.83	D	0.0697
m,p-Xylene	1.67	7.27	D	0.224
Bromoform	ND	ND	D, U	0.0579
Styrene	3.79	16.20	D	0.146
1,1,2,2-Tetrachloroethane	ND	ND	D, U	0.102
o-Xylene	0.779	3.39	D	0.126
1,3,5-Trimethylbenzene	0.257	1.27	D	0.170
1,2,4-Trimethylbenzene	0.940	4.63	D	0.172
m-Dichlorobenzene	ND	ND	D, U	0.0928
p-Dichlorobenzene	ND	ND	D, U	0.196
o-Dichlorobenzene	ND	ND	D, U	0.195
1,2,4-Trichlorobenzene	0.00810	0.06	D, U	0.425
Hexachloro-1,3-butadiene	ND	ND	D, U	0.195



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REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection

Lab ID: 4093026-06

Sampled: 09/25/24 16:56

Pressure @ Receipt:

Canister #: 16708

Received: 09/30/24 09:52

Comments: Upwind AB

Analyzed: 10/16/24 23:36

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Dichlorodifluoromethane	0.606	3.00	D, XC	0.0274
Chloromethane	0.835	1.73	D, XC	0.0440
Dichlorotetrafluoroethane	0.0240	0.17	D, XC	0.0239
Vinyl chloride	ND	ND	D, XC, U	0.0233
1,3-Butadiene	0.118	0.26	D, XC	0.0998
Ethylene oxide	13.2	23.80	D, XC, E	0.116
Bromomethane	ND	ND	D, XC, U	0.0472
Chloroethane	ND	ND	D, XC, U	0.0617
Acetonitrile	0.466	0.78	D, QB-03, XC	0.150
Acrolein	0.520	1.19	D, QB-01, QB-03, XC	0.375
Trichlorofluoromethane	0.266	1.50	D, XC	0.0431
Acrylonitrile	ND	ND	D, XC, U	0.0526
1,1-Dichloroethene	ND	ND	D, XC, U	0.0717
Dichloromethane	0.507	1.76	QB-03, XC, D, QB-01	0.106
Carbon Disulfide	0.413	1.29	D, XC	0.178
Trichlorotrifluoroethane	0.0950	0.73	D, XC, U	0.0953
trans-1,2-Dichloroethylene	ND	ND	D, XC, U	0.0441
1,1-Dichloroethane	ND	ND	D, XC, U	0.0644
Methyl tert-Butyl Ether	ND	ND	D, XC, U	0.0458
Chloroprene	ND	ND	D, XC, U	0.0558
cis-1,2-Dichloroethylene	ND	ND	D, XC, U	0.0594
Bromochloromethane	ND	ND	D, XC, U	0.0411
Chloroform	ND	ND	D, XC, U	0.0608
Ethyl tert-Butyl Ether	ND	ND	D, XC, U	0.0405
1,2-Dichloroethane	0.0425	0.17	D, XC, U	0.0526
1,1,1-Trichloroethane	ND	ND	D, XC, U	0.0432
Benzene	1.17	3.75	D, XC	0.0458
Carbon Tetrachloride	0.0874	0.55	D, XC	0.0340
tert-Amyl Methyl Ether	ND	ND	D, XC, U	0.0572
1,2-Dichloropropane	ND	ND	D, XC, U	0.0976
Ethyl Acrylate	ND	ND	D, XC, U	0.0354
Bromodichloromethane	ND	ND	D, XC, U	0.0403
Trichloroethylene	ND	ND	D, XC, U	0.0309
Methyl Methacrylate	ND	ND	D, XC, U	0.150
cis-1,3-Dichloropropene	ND	ND	D, XC, U	0.0342
Methyl Isobutyl Ketone	ND	ND	D, XC, U	0.262
trans-1,3-Dichloropropene	ND	ND	D, XC, U	0.0373
1,1,2-Trichloroethane	ND	ND	D, XC, U	0.0182
Toluene	5.04	19.00	D, XC	0.172
Dibromochloromethane	ND	ND	D, XC, U	0.0401

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REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Description: OECA Region 6 CAA Inspection

Lab ID: 4093026-06

Sampled: 09/25/24 16:56

Pressure @ Receipt:

Canister #: 16708

Received: 09/30/24 09:52

Comments: Upwind AB

Analyzed: 10/16/24 23:36

Air Toxics by EPA Compendium Method TO-15

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
1,2-Dibromoethane	ND	ND	D, XC, U	0.0300
n-Octane	0.689	3.23	D, XC	0.117
Tetrachloroethylene	0.0168	0.11	D, XC, U	0.0390
Chlorobenzene	ND	ND	D, XC, U	0.0372
Ethylbenzene	0.952	4.14	D, XC	0.0590
m,p-Xylene	5.69	24.80	D, XC	0.190
Bromoform	ND	ND	D, XC, U	0.0490
Styrene	0.814	3.47	D, XC	0.124
1,1,2,2-Tetrachloroethane	ND	ND	D, XC, U	0.0862
o-Xylene	2.42	10.50	D, XC	0.107
1,3,5-Trimethylbenzene	0.905	4.46	D, XC	0.143
1,2,4-Trimethylbenzene	2.20	10.80	D, XC	0.145
m-Dichlorobenzene	ND	ND	D, XC, U	0.0785
p-Dichlorobenzene	ND	ND	D, XC, U	0.166
o-Dichlorobenzene	ND	ND	D, XC, U	0.165
1,2,4-Trichlorobenzene	ND	ND	D, XC, U	0.359
Hexachloro-1,3-butadiene	ND	ND	D, XC, U	0.165



CERTIFICATE OF ANALYSIS

OECA

2890 Woodbridge Avenue

Edison, NJ 08837

ATTN: Shaun Burke

PHONE: (202) 564-1039 FAX: (732) 321-6616

FILE #: 0453.32.001.120

REPORTED: 11/20/24 13:47

SUBMITTED: 09/30/24

AQS SITE CODE:

SITE CODE: Region 6 CAA inspection

Analyte	Result	Units	Source Result	RPD	RPD Limit	Notes
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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Batch B4J2307 - Summa Canister Prep

Blank (B4J2307-BLK1)

Prepared & Analyzed: 10/11/24

Dichlorodifluoromethane	ND	ppbv				U
Chloromethane	ND	ppbv				U
Dichlorotetrafluoroethane	ND	ppbv				U
Vinyl chloride	ND	ppbv				U
1,3-Butadiene	ND	ppbv				U
Ethylene oxide	ND	ppbv				U
Bromomethane	ND	ppbv				U
Chloroethane	ND	ppbv				U
Acetonitrile	ND	ppbv				U
Acrolein	ND	ppbv				QB-01, U
Trichlorofluoromethane	ND	ppbv				U
Acrylonitrile	ND	ppbv				U
1,1-Dichloroethene	ND	ppbv				U
Dichloromethane	ND	ppbv				QB-01, U
Carbon Disulfide	ND	ppbv				U
Trichlorotrifluoroethane	ND	ppbv				U
trans-1,2-Dichloroethylene	ND	ppbv				U
1,1-Dichloroethane	ND	ppbv				U
Methyl tert-Butyl Ether	ND	ppbv				U
Chloroprene	ND	ppbv				U
cis-1,2-Dichloroethylene	ND	ppbv				U
Bromochloromethane	ND	ppbv				U
Chloroform	ND	ppbv				U
Ethyl tert-Butyl Ether	ND	ppbv				U
1,2-Dichloroethane	ND	ppbv				U
1,1,1-Trichloroethane	ND	ppbv				U
Benzene	ND	ppbv				U
Carbon Tetrachloride	ND	ppbv				U
tert-Amyl Methyl Ether	ND	ppbv				U
1,2-Dichloropropane	ND	ppbv				U
Ethyl Acrylate	ND	ppbv				U
Bromodichloromethane	ND	ppbv				U
Trichloroethylene	ND	ppbv				U
Methyl Methacrylate	ND	ppbv				U
cis-1,3-Dichloropropene	ND	ppbv				U
Methyl Isobutyl Ketone	ND	ppbv				U
trans-1,3-Dichloropropene	ND	ppbv				U

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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Batch B4J2307 - Summa Canister Prep

Blank (B4J2307-BLK1) Continued

Prepared & Analyzed: 10/11/24

1,1,2-Trichloroethane	ND	ppbv				U
Toluene	ND	ppbv				U
Dibromochloromethane	ND	ppbv				U
1,2-Dibromoethane	ND	ppbv				U
n-Octane	ND	ppbv				U
Tetrachloroethylene	ND	ppbv				U
Chlorobenzene	ND	ppbv				U
Ethylbenzene	ND	ppbv				U
m,p-Xylene	ND	ppbv				U
Bromoform	ND	ppbv				U
Styrene	ND	ppbv				U
1,1,2,2-Tetrachloroethane	ND	ppbv				U
o-Xylene	ND	ppbv				U
1,3,5-Trimethylbenzene	ND	ppbv				U
1,2,4-Trimethylbenzene	ND	ppbv				U
m-Dichlorobenzene	ND	ppbv				U
p-Dichlorobenzene	ND	ppbv				U
o-Dichlorobenzene	ND	ppbv				U
1,2,4-Trichlorobenzene	ND	ppbv				U
Hexachloro-1,3-butadiene	ND	ppbv				U

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Analyte	Result	Units	% Difference	Limit (%)	Notes
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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Sequence 2410045

Initial Cal Check (2410045-ICV1)

Prepared & Analyzed: 10/11/24

Dichlorodifluoromethane	2.70	ppbv	1.2	30.00
Chloromethane	2.61	ppbv	-1.5	30.00
Dichlorotetrafluoroethane	2.54	ppbv	2.2	30.00
Vinyl chloride	2.70	ppbv	1.1	30.00
1,3-Butadiene	2.64	ppbv	1.6	30.00
Ethylene oxide	2.29	ppbv	-8.8	30.00
Bromomethane	2.69	ppbv	-0.9	30.00
Chloroethane	2.74	ppbv	2.7	30.00
Acetonitrile	2.82	ppbv	4.6	30.00
Acrolein	2.46	ppbv	-8.6	30.00
Trichlorofluoromethane	2.67	ppbv	-3.9	30.00
Acrylonitrile	2.95	ppbv	3.1	30.00
1,1-Dichloroethene	2.91	ppbv	1.3	30.00
Dichloromethane	2.75	ppbv	-5.0	30.00
Carbon Disulfide	2.89	ppbv	2.3	30.00
Trichlorotrifluoroethane	2.82	ppbv	-0.6	30.00
trans-1,2-Dichloroethylene	2.87	ppbv	0.3	30.00
1,1-Dichloroethane	2.92	ppbv	2.1	30.00
Methyl tert-Butyl Ether	2.95	ppbv	4.4	30.00
cis-1,2-Dichloroethylene	2.81	ppbv	-0.03	30.00
Bromochloromethane	2.80	ppbv	-1.4	30.00
Chloroform	2.85	ppbv	-1.8	30.00
Ethyl tert-Butyl Ether	2.89	ppbv	2.9	30.00
1,2-Dichloroethane	2.78	ppbv	-2.3	30.00
1,1,1-Trichloroethane	2.71	ppbv	-5.2	30.00
Benzene	2.79	ppbv	-1.0	30.00
Carbon Tetrachloride	2.82	ppbv	-1.9	30.00
tert-Amyl Methyl Ether	2.79	ppbv	-2.4	30.00
1,2-Dichloropropane	2.85	ppbv	-0.8	30.00
Ethyl Acrylate	3.00	ppbv	6.6	30.00
Bromodichloromethane	2.90	ppbv	1.1	30.00
Trichloroethylene	2.81	ppbv	-1.4	30.00
Methyl Methacrylate	3.00	ppbv	5.7	30.00
cis-1,3-Dichloropropene	2.92	ppbv	11.1	30.00

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Analyte	Result	Units	% Difference	Limit (%)	Notes
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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Sequence 2410045

Initial Cal Check (2410045-ICV1) Continued

Prepared & Analyzed: 10/11/24

Methyl Isobutyl Ketone	2.94	ppbv	3.4	30.00
trans-1,3-Dichloropropene	2.96	ppbv	10.2	30.00
1,1,2-Trichloroethane	2.77	ppbv	-0.8	30.00
Toluene	2.79	ppbv	-2.1	30.00
Dibromochloromethane	2.87	ppbv	0.6	30.00
1,2-Dibromoethane	2.76	ppbv	-1.7	30.00
n-Octane	2.86	ppbv	0.0	30.00
Tetrachloroethylene	2.82	ppbv	-0.4	30.00
Chlorobenzene	2.82	ppbv	-0.9	30.00
Ethylbenzene	2.78	ppbv	-1.6	30.00
m,p-Xylene	2.92	ppbv	-0.7	30.00
Bromoform	2.74	ppbv	-1.5	30.00
Styrene	2.70	ppbv	-6.3	30.00
1,1,2,2-Tetrachloroethane	2.79	ppbv	-0.2	30.00
o-Xylene	2.81	ppbv	0.5	30.00
1,3,5-Trimethylbenzene	2.74	ppbv	-2.8	30.00
1,2,4-Trimethylbenzene	2.67	ppbv	-3.1	30.00
m-Dichlorobenzene	2.77	ppbv	-2.8	30.00
p-Dichlorobenzene	2.77	ppbv	0.3	30.00
o-Dichlorobenzene	2.72	ppbv	-1.3	30.00
1,2,4-Trichlorobenzene	2.58	ppbv	-5.2	30.00
Hexachloro-1,3-butadiene	2.52	ppbv	-9.3	30.00

Sequence 2410081

Calibration Check (2410081-CCV1)

Prepared & Analyzed: 10/11/24

Dichlorodifluoromethane	2.70	ppbv	1.2	30.00
Chloromethane	2.61	ppbv	-1.5	30.00
Dichlorotetrafluoroethane	2.54	ppbv	2.2	30.00
Vinyl chloride	2.70	ppbv	1.1	30.00
1,3-Butadiene	2.64	ppbv	1.6	30.00
Ethylene oxide	2.29	ppbv	-8.8	30.00
Bromomethane	2.69	ppbv	-0.9	30.00
Chloroethane	2.74	ppbv	2.7	30.00
Acetonitrile	2.82	ppbv	4.6	30.00
Acrolein	2.46	ppbv	-8.6	30.00

QB-01

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Analyte	Result	Units	% Difference	Limit (%)	Notes
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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Sequence 2410081

Calibration Check (2410081-CCV1) Continued

Prepared & Analyzed: 10/11/24

Trichlorofluoromethane	2.67	ppbv	-3.9	30.00	QB-01
Acrylonitrile	2.95	ppbv	3.1	30.00	
1,1-Dichloroethene	2.91	ppbv	1.3	30.00	
Dichloromethane	2.75	ppbv	-5.0	30.00	
Carbon Disulfide	2.89	ppbv	2.3	30.00	
Trichlorotrifluoroethane	2.82	ppbv	-0.6	30.00	
trans-1,2-Dichloroethylene	2.87	ppbv	0.3	30.00	
1,1-Dichloroethane	2.92	ppbv	2.1	30.00	
Methyl tert-Butyl Ether	2.95	ppbv	4.4	30.00	
cis-1,2-Dichloroethylene	2.81	ppbv	-0.03	30.00	
Bromochloromethane	2.80	ppbv	-1.4	30.00	
Chloroform	2.85	ppbv	-1.8	30.00	
Ethyl tert-Butyl Ether	2.89	ppbv	2.9	30.00	
1,2-Dichloroethane	2.78	ppbv	-2.3	30.00	
1,1,1-Trichloroethane	2.71	ppbv	-5.2	30.00	
Benzene	2.79	ppbv	-1.0	30.00	
Carbon Tetrachloride	2.82	ppbv	-1.9	30.00	
tert-Amyl Methyl Ether	2.79	ppbv	-2.4	30.00	
1,2-Dichloropropane	2.85	ppbv	-0.8	30.00	
Ethyl Acrylate	3.00	ppbv	6.6	30.00	
Bromodichloromethane	2.90	ppbv	1.1	30.00	
Trichloroethylene	2.81	ppbv	-1.4	30.00	
Methyl Methacrylate	3.00	ppbv	5.7	30.00	
cis-1,3-Dichloropropene	2.92	ppbv	11.1	30.00	
Methyl Isobutyl Ketone	2.94	ppbv	3.4	30.00	
trans-1,3-Dichloropropene	2.96	ppbv	10.2	30.00	
1,1,2-Trichloroethane	2.77	ppbv	-0.8	30.00	
Toluene	2.79	ppbv	-2.1	30.00	
Dibromochloromethane	2.87	ppbv	0.6	30.00	
1,2-Dibromoethane	2.76	ppbv	-1.7	30.00	
n-Octane	2.86	ppbv	0.0	30.00	
Tetrachloroethylene	2.82	ppbv	-0.4	30.00	
Chlorobenzene	2.82	ppbv	-0.9	30.00	
Ethylbenzene	2.78	ppbv	-1.6	30.00	

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Analyte	Result	Units	% Difference	Limit (%)	Notes
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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Sequence 2410081

Calibration Check (2410081-CCV1) Continued

Prepared & Analyzed: 10/11/24

m,p-Xylene	2.92	ppbv	-0.7	30.00
Bromoform	2.74	ppbv	-1.5	30.00
Styrene	2.70	ppbv	-6.3	30.00
1,1,2,2-Tetrachloroethane	2.79	ppbv	-0.2	30.00
o-Xylene	2.81	ppbv	0.5	30.00
1,3,5-Trimethylbenzene	2.74	ppbv	-2.8	30.00
1,2,4-Trimethylbenzene	2.67	ppbv	-3.1	30.00
m-Dichlorobenzene	2.77	ppbv	-2.8	30.00
p-Dichlorobenzene	2.77	ppbv	0.3	30.00
o-Dichlorobenzene	2.72	ppbv	-1.3	30.00
1,2,4-Trichlorobenzene	2.58	ppbv	-5.2	30.00
Hexachloro-1,3-butadiene	2.52	ppbv	-9.3	30.00

Calibration Check (2410081-CCV2)

Prepared: 10/11/24 Analyzed: 10/12/24

Dichlorodifluoromethane	1.06	ppbv	2.9	30.00
Chloromethane	1.04	ppbv	2.4	30.00
Dichlorotetrafluoroethane	1.07	ppbv	3.5	30.00
Vinyl chloride	1.07	ppbv	3.9	30.00
1,3-Butadiene	1.09	ppbv	4.5	30.00
Ethylene oxide	0.825	ppbv	-13.7	30.00
Bromomethane	1.06	ppbv	2.7	30.00
Chloroethane	1.07	ppbv	3.2	30.00
Acetonitrile	1.14	ppbv	9.3	30.00
Acrolein	1.05	ppbv	2.9	30.00
Trichlorofluoromethane	1.04	ppbv	0.04	30.00
Acrylonitrile	1.18	ppbv	5.9	30.00
1,1-Dichloroethene	1.08	ppbv	3.5	30.00
Dichloromethane	1.11	ppbv	7.2	30.00
Carbon Disulfide	1.12	ppbv	2.3	30.00
Trichlorotrifluoroethane	1.03	ppbv	-0.03	30.00
trans-1,2-Dichloroethylene	1.04	ppbv	-0.3	30.00
1,1-Dichloroethane	1.04	ppbv	0.04	30.00
Methyl tert-Butyl Ether	1.04	ppbv	0.6	30.00
Chloroprene	1.07	ppbv	2.3	30.00
cis-1,2-Dichloroethylene	1.03	ppbv	-1.0	30.00

QB-01

QB-01

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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Sequence 2410081

Calibration Check (2410081-CCV2) Continued

Prepared: 10/11/24 Analyzed: 10/12/24

Bromochloromethane	1.01	ppbv	-2.4	30.00
Chloroform	1.03	ppbv	-2.0	30.00
Ethyl tert-Butyl Ether	0.996	ppbv	-4.0	30.00
1,2-Dichloroethane	1.00	ppbv	-3.4	30.00
1,1,1-Trichloroethane	1.02	ppbv	-1.8	30.00
Benzene	1.04	ppbv	-0.7	30.00
Carbon Tetrachloride	1.03	ppbv	-1.3	30.00
tert-Amyl Methyl Ether	0.996	ppbv	-4.1	30.00
1,2-Dichloropropane	1.05	ppbv	0.7	30.00
Ethyl Acrylate	1.05	ppbv	0.4	30.00
Bromodichloromethane	1.05	ppbv	1.0	30.00
Trichloroethylene	1.05	ppbv	0.8	30.00
Methyl Methacrylate	1.07	ppbv	2.1	30.00
cis-1,3-Dichloropropene	1.03	ppbv	-2.1	30.00
Methyl Isobutyl Ketone	1.05	ppbv	0.4	30.00
trans-1,3-Dichloropropene	1.01	ppbv	-4.1	30.00
1,1,2-Trichloroethane	1.05	ppbv	0.6	30.00
Toluene	1.14	ppbv	9.5	30.00
Dibromochloromethane	1.11	ppbv	6.4	30.00
1,2-Dibromoethane	1.13	ppbv	9.2	30.00
n-Octane	1.17	ppbv	12.5	30.00
Tetrachloroethylene	1.15	ppbv	10.0	30.00
Chlorobenzene	1.15	ppbv	10.4	30.00
Ethylbenzene	1.15	ppbv	11.0	30.00
m,p-Xylene	2.29	ppbv	10.4	30.00
Bromoform	1.12	ppbv	7.6	30.00
Styrene	1.18	ppbv	12.6	30.00
1,1,2,2-Tetrachloroethane	1.15	ppbv	10.3	30.00
o-Xylene	1.16	ppbv	11.1	30.00
1,3,5-Trimethylbenzene	1.18	ppbv	12.6	30.00
1,2,4-Trimethylbenzene	1.18	ppbv	12.7	30.00
m-Dichlorobenzene	1.16	ppbv	11.6	30.00
p-Dichlorobenzene	1.16	ppbv	10.8	30.00
o-Dichlorobenzene	1.17	ppbv	11.5	30.00

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Analyte	Result	Units	% Difference	Limit (%)	Notes
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Air Toxics by EPA Compendium Method TO-15 - Quality Control

Sequence 2410081

Calibration Check (2410081-CCV2) Continued

Prepared: 10/11/24 Analyzed: 10/12/24

1,2,4-Trichlorobenzene	1.21	ppbv	12.4	30.00	
Hexachloro-1,3-butadiene	1.23	ppbv	13.8	30.00	

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Notes and Definitions

XC	Canister certification expired.
U	Under Detection Limit
QB-03	Analyte exceeds sampling media lot blank criteria.
QB-01	Analyte exceeds method blank criteria
LL	Analyte identified; Reported value may be biased low.
LK	Analyte identified; Reported value may be biased high.
E	The concentration for this analyte is an estimated value above the calibration range of the instrument.
D	This result obtained by dilution.
CF	Canister bias: NATTS/UATMP data for compounds that have failed certification for the canister
CE	Not reportable due to a co-eluting compound.
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

Note: This test is accredited under the 2016 TNI Standard; however the following analytes are not accredited: acetylene, bromodichloroethane, dichlorotetrafluoromethane, ethyl tert butyl ether, n-octane, tert amyl methyl ether, trichlorofluoroethane, and bromochloromethane.

Appendix 9

Analytical Results of Summa Samples Collected by Union Carbide on September 26, 2024

Dow Chemical Company

East End Building
715 E. Main Street
Midland, Michigan 48674

Dole SCO – St. Charles, LA
Client Project # PROJ-046250

Analytical Report
(0924-208)

EPA Method TO-15 Analysis
TO-15 Target Compound List



Enthalpy Analytical, LLC

Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / www.enthalpy.com
800-1 Capitola Drive Durham, NC 27713-4385

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s)

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AM Cross

Report Issued: 10/17/24



Results

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
 Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #1 South of North Pond
 Sample Info. 0924-208; 500mL load; Can #C78284
 Sampling Date 2024-09-27 10:15
 Received Date 2024-10-03 00:00
 Sample Type Sample
 Batch Xavier_X100324A_0924-208.v4
 Data File X2404420.D
 Dilution 1.000
 Pressurization Factor 1.748
 Acquisition Date 2024-10-03 18:00
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Analyst TDD
 Instrument Xavier
 Enthalpy ID 0924-208.#1 South of North Pond.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m ³)	RL (ug/m ³)	MDL (ug/m ³)	Flags
Propylene	2.31	0.0675	0.0612	3.97	0.116	0.105	
Freon 12 (CCl ₂ F ₂)	0.488	0.0684	0.0612	2.41	0.338	0.302	m
Freon 114 (C ₂ Cl ₂ F ₄)	ND	0.701	0.0612	ND	4.89	0.427	
Chloromethane	1.05	0.0691	0.0612	2.16	0.143	0.126	
Chloroethene (Vinyl chloride)	ND	0.0698	0.0612	ND	0.178	0.156	
1,3-Butadiene	0.456	0.0680	0.0612	1.01	0.150	0.135	
Bromomethane	ND	0.0686	0.0612	ND	0.266	0.237	
Chloroethane	ND	0.0710	0.0612	ND	0.187	0.161	
Bromoethene (Vinyl bromide)	ND	0.0684	0.0612	ND	0.299	0.267	
Freon 11 (CCl ₃ F)	0.225	0.0738	0.0612	1.26	0.414	0.344	
Ethanol	1.14	0.0693	0.0693	2.14	0.130	0.130	m
Acrolein	0.257	0.0689	0.0612	0.588	0.158	0.140	m
Freon 113 (C ₂ Cl ₃ F ₃)	0.0659	0.0710	0.0612	0.505	0.544	0.469	J, m
1,1-Dichloroethene	ND	0.0703	0.0612	ND	0.279	0.242	
Acetone	3.82	0.0701	0.0612	9.06	0.166	0.145	
Carbon disulfide	0.0622	0.0697	0.0612	0.193	0.217	0.190	J, m
Isopropyl alcohol	1.03	0.0697	0.0612	2.52	0.171	0.150	m
Allyl chloride (3-chloropropene)	ND	0.0755	0.0612	ND	0.236	0.191	
Acetonitrile	0.276	0.0697	0.0612	0.464	0.117	0.103	m
Methylene chloride	0.115	0.0716	0.0612	0.399	0.249	0.212	
trans-1,2-Dichloroethene	ND	0.0713	0.0612	ND	0.283	0.242	
Methyl tert-butyl ether	ND	0.0719	0.0612	ND	0.259	0.220	
Acrylonitrile	ND	0.0712	0.0612	ND	0.154	0.133	
Hexane	0.449	0.0710	0.0612	1.58	0.250	0.216	m
1,1-Dichloroethane	ND	0.0694	0.0612	ND	0.281	0.247	
Vinyl acetate	ND	0.0715	0.0612	ND	0.252	0.215	
cis-1,2-Dichloroethene	ND	0.0706	0.0612	ND	0.280	0.242	
Methyl ethyl ketone (2-Butanone)	0.226	0.0723	0.0612	0.667	0.213	0.180	m
Ethyl acetate	1.43	0.0698	0.0612	5.15	0.251	0.220	m
Chloroform	0.0619	0.0701	0.0612	0.302	0.342	0.299	J

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #1 South of North Pond
Sample Info. 0924-208; 500mL load; Can #C78284
Sampling Date 2024-09-27 10:15
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404420.D
Dilution 1.000
Pressurization Factor 1.748
Acquisition Date 2024-10-03 18:00
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#1 South of North Pond.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Tetrahydrofuran	0.0819	0.0708	0.0612	0.242	0.209	0.180	m
1,1,1-Trichloroethane	ND	0.0706	0.0612	ND	0.385	0.334	
Cyclohexane	0.231	0.0717	0.0612	0.796	0.247	0.210	m
Carbon tetrachloride	0.0743	0.0704	0.0612	0.467	0.443	0.385	m
Benzene	2.09	0.0703	0.0612	6.68	0.225	0.195	m
2,2,4-trimethylpentane	ND	0.0723	0.0612	ND	0.338	0.286	
1,2-Dichloroethane	0.0641	0.0719	0.0612	0.259	0.291	0.247	J
Heptane	0.393	0.0708	0.0612	1.61	0.290	0.251	
Trichloroethene	ND	0.0707	0.0612	ND	0.380	0.329	
1,2-Dichloropropane	ND	0.0704	0.0612	ND	0.325	0.283	
Methyl methacrylate	ND	0.0732	0.0612	ND	0.300	0.250	
1,4-Dioxane	6.14	0.0701	0.0612	22.1	0.253	0.220	
Bromodichloromethane	ND	0.0706	0.0612	ND	0.473	0.410	
cis-1,3-Dichloropropene	ND	0.0694	0.0612	ND	0.315	0.277	
Methyl isobutyl ketone	ND	0.0726	0.0612	ND	0.297	0.250	
Toluene	0.327	0.0712	0.0612	1.23	0.268	0.230	
trans-1,3-Dichloropropene	ND	0.0722	0.0612	ND	0.327	0.277	
1,1,2-Trichloroethane	ND	0.0711	0.0612	ND	0.388	0.334	
Tetrachloroethene	ND	0.0715	0.0612	ND	0.485	0.415	
2-Hexanone (Methyl butyl ketone)	ND	0.0715	0.0612	ND	0.293	0.250	
Dibromochloromethane	ND	0.0705	0.0612	ND	0.600	0.521	
1,2-Dibromoethane	ND	0.0715	0.0612	ND	0.549	0.470	
Chlorobenzene	ND	0.0720	0.0612	ND	0.331	0.281	
Ethylbenzene	ND	0.0694	0.0612	ND	0.301	0.265	
1,1,1,2-Tetrachloroethane	ND	0.0705	0.0612	ND	0.484	0.420	
m-/p-Xylenes	0.0676	0.0709	0.0612	0.293	0.308	0.265	J
o-Xylene	ND	0.0701	0.0612	ND	0.304	0.265	
Styrene	ND	0.0685	0.0612	ND	0.292	0.260	
Bromoform	ND	0.0701	0.0612	ND	0.724	0.632	
1,1,2,2-Tetrachloroethane	ND	0.0707	0.0612	ND	0.485	0.420	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #1 South of North Pond
Sample Info. 0924-208; 500mL load; Can #C78284
Sampling Date 2024-09-27 10:15
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404420.D
Dilution 1.000
Pressurization Factor 1.748
Acquisition Date 2024-10-03 18:00
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#1 South of North Pond.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
4-Ethyltoluene	ND	0.0711	0.0612	ND	0.349	0.301	
2-Chlorotoluene	ND	0.0705	0.0612	ND	0.365	0.317	
1,3,5-Trimethylbenzene	ND	0.0709	0.0612	ND	0.348	0.301	
1,2,4-Trimethylbenzene	ND	0.0700	0.0612	ND	0.344	0.301	
1,3-Dichlorobenzene	ND	0.0710	0.0612	ND	0.427	0.368	
1,4-Dichlorobenzene	ND	0.0703	0.0612	ND	0.422	0.368	
Benzyl chloride	ND	0.0703	0.0612	ND	0.364	0.317	
1,2-Dichlorobenzene	ND	0.0708	0.0612	ND	0.426	0.368	
1,2,4-Trichlorobenzene	ND	0.0696	0.0612	ND	0.516	0.454	
Hexachlorobutadiene	ND	0.0691	0.0612	ND	0.736	0.652	
Naphthalene	ND	0.0704	0.0612	ND	0.369	0.321	
1-Bromopropane	ND	0.0694	0.0612	ND	0.349	0.308	
1-Octene	ND	0.0690	0.0612	ND	0.317	0.281	
n-Octane	ND	0.0720	0.0612	ND	0.336	0.286	
Isopropylbenzene	ND	0.0710	0.0612	ND	0.349	0.301	
n-Propylbenzene	ND	0.0717	0.0612	ND	0.352	0.301	

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	857,070	10.99	5.21	pass, m
1,4-Difluorobenzene (IS)	3,144,420	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,535,544	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #2 North of North Pond
Sample Info. 0924-208; 500mL load; Can #C78012
Sampling Date 2024-09-27 08:30
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404422.D
Dilution 1.000
Pressurization Factor 1.777
Acquisition Date 2024-10-03 19:50
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#2 North of North Pond.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Propylene	2.75	0.0686	0.0622	4.73	0.118	0.107	
Freon 12 (CCl ₂ F ₂)	0.470	0.0696	0.0622	2.32	0.344	0.307	
Freon 114 (C ₂ Cl ₂ F ₄)	ND	0.712	0.0622	ND	4.97	0.434	
Chloromethane	1.41	0.0703	0.0622	2.90	0.145	0.128	
Chloroethene (Vinyl chloride)	ND	0.0710	0.0622	ND	0.181	0.159	
1,3-Butadiene	0.346	0.0691	0.0622	0.766	0.153	0.137	
Bromomethane	ND	0.0697	0.0622	ND	0.271	0.241	
Chloroethane	ND	0.0722	0.0622	ND	0.190	0.164	
Bromoethene (Vinyl bromide)	ND	0.0695	0.0622	ND	0.304	0.272	
Freon 11 (CCl ₃ F)	0.231	0.0750	0.0622	1.30	0.421	0.349	
Ethanol	1.33	0.0704	0.0704	2.50	0.133	0.133	m
Acrolein	0.200	0.0700	0.0622	0.458	0.160	0.142	
Freon 113 (C ₂ Cl ₃ F ₃)	0.0662	0.0721	0.0622	0.507	0.552	0.476	J, m
1,1-Dichloroethene	ND	0.0715	0.0622	ND	0.283	0.246	
Acetone	5.36	0.0712	0.0622	12.7	0.169	0.148	
Carbon disulfide	ND	0.0709	0.0622	ND	0.221	0.194	
Isopropyl alcohol	0.720	0.0709	0.0622	1.77	0.174	0.153	m
Allyl chloride (3-chloropropene)	ND	0.0768	0.0622	ND	0.240	0.194	
Acetonitrile	0.333	0.0709	0.0622	0.558	0.119	0.104	
Methylene chloride	0.113	0.0728	0.0622	0.393	0.253	0.216	
trans-1,2-Dichloroethene	ND	0.0725	0.0622	ND	0.287	0.246	
Methyl tert-butyl ether	ND	0.0731	0.0622	ND	0.263	0.224	
Acrylonitrile	ND	0.0723	0.0622	ND	0.157	0.135	
Hexane	0.485	0.0722	0.0622	1.71	0.254	0.219	m
1,1-Dichloroethane	ND	0.0706	0.0622	ND	0.285	0.252	
Vinyl acetate	ND	0.0727	0.0622	ND	0.256	0.219	
cis-1,2-Dichloroethene	ND	0.0718	0.0622	ND	0.284	0.246	
Methyl ethyl ketone (2-Butanone)	0.297	0.0735	0.0622	0.877	0.217	0.183	m
Ethyl acetate	1.37	0.0709	0.0622	4.94	0.255	0.224	m
Chloroform	ND	0.0713	0.0622	ND	0.348	0.303	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
 Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #2 North of North Pond
 Sample Info. 0924-208; 500mL load; Can #C78012
 Sampling Date 2024-09-27 08:30
 Received Date 2024-10-03 00:00
 Sample Type Sample
 Batch Xavier_X100324A_0924-208.v4
 Data File X2404422.D
 Dilution 1.000
 Pressurization Factor 1.777
 Acquisition Date 2024-10-03 19:50
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Analyst TDD
 Instrument Xavier
 Enthalpy ID 0924-208.#2 North of North Pond.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Tetrahydrofuran	0.0818	0.0719	0.0622	0.241	0.212	0.183	
1,1,1-Trichloroethane	ND	0.0718	0.0622	ND	0.391	0.339	
Cyclohexane	0.235	0.0728	0.0622	0.809	0.251	0.214	m
Carbon tetrachloride	0.0785	0.0716	0.0622	0.493	0.450	0.391	m
Benzene	1.32	0.0715	0.0622	4.22	0.228	0.199	
2,2,4-trimethylpentane	ND	0.0735	0.0622	ND	0.343	0.290	
1,2-Dichloroethane	0.0722	0.0731	0.0622	0.292	0.296	0.252	J
Heptane	0.405	0.0720	0.0622	1.66	0.295	0.255	
Trichloroethene	ND	0.0718	0.0622	ND	0.386	0.334	
1,2-Dichloropropane	ND	0.0716	0.0622	ND	0.331	0.287	
Methyl methacrylate	ND	0.0744	0.0622	ND	0.304	0.254	
1,4-Dioxane	0.886	0.0713	0.0622	3.19	0.257	0.224	m
Bromodichloromethane	ND	0.0718	0.0622	ND	0.481	0.416	
cis-1,3-Dichloropropene	ND	0.0706	0.0622	ND	0.320	0.282	
Methyl isobutyl ketone	ND	0.0738	0.0622	ND	0.302	0.255	
Toluene	0.286	0.0723	0.0622	1.08	0.272	0.234	
trans-1,3-Dichloropropene	ND	0.0733	0.0622	ND	0.333	0.282	
1,1,2-Trichloroethane	ND	0.0723	0.0622	ND	0.394	0.339	
Tetrachloroethene	ND	0.0727	0.0622	ND	0.493	0.421	
2-Hexanone (Methyl butyl ketone)	ND	0.0727	0.0622	ND	0.298	0.255	
Dibromochloromethane	ND	0.0716	0.0622	ND	0.610	0.529	
1,2-Dibromoethane	ND	0.0727	0.0622	ND	0.558	0.477	
Chlorobenzene	ND	0.0732	0.0622	ND	0.337	0.286	
Ethylbenzene	ND	0.0706	0.0622	ND	0.306	0.270	
1,1,1,2-Tetrachloroethane	ND	0.0716	0.0622	ND	0.491	0.427	
m-/p-Xylenes	0.0829	0.0721	0.0622	0.360	0.313	0.270	
o-Xylene	ND	0.0712	0.0622	ND	0.309	0.270	
Styrene	ND	0.0696	0.0622	ND	0.296	0.265	
Bromoform	ND	0.0713	0.0622	ND	0.736	0.642	
1,1,2,2-Tetrachloroethane	ND	0.0718	0.0622	ND	0.493	0.427	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #2 North of North Pond
Sample Info. 0924-208; 500mL load; Can #C78012
Sampling Date 2024-09-27 08:30
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404422.D
Dilution 1.000
Pressurization Factor 1.777
Acquisition Date 2024-10-03 19:50
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#2 North of North Pond.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
4-Ethyltoluene	ND	0.0723	0.0622	ND	0.355	0.305	
2-Chlorotoluene	ND	0.0717	0.0622	ND	0.371	0.322	
1,3,5-Trimethylbenzene	ND	0.0721	0.0622	ND	0.354	0.305	
1,2,4-Trimethylbenzene	ND	0.0711	0.0622	ND	0.349	0.305	
1,3-Dichlorobenzene	ND	0.0722	0.0622	ND	0.434	0.374	
1,4-Dichlorobenzene	ND	0.0714	0.0622	ND	0.429	0.374	
Benzyl chloride	ND	0.0715	0.0622	ND	0.370	0.322	
1,2-Dichlorobenzene	ND	0.0720	0.0622	ND	0.433	0.374	
1,2,4-Trichlorobenzene	ND	0.0708	0.0622	ND	0.525	0.461	
Hexachlorobutadiene	ND	0.0702	0.0622	ND	0.748	0.663	
Naphthalene	ND	0.0716	0.0622	ND	0.375	0.326	
1-Bromopropane	ND	0.0705	0.0622	ND	0.354	0.313	
1-Octene	ND	0.0701	0.0622	ND	0.322	0.285	
n-Octane	0.0752	0.0732	0.0622	0.351	0.342	0.290	m
Isopropylbenzene	ND	0.0722	0.0622	ND	0.355	0.305	
n-Propylbenzene	ND	0.0729	0.0622	ND	0.358	0.305	

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	867,621	10.99	5.21	pass, m
1,4-Difluorobenzene (IS)	3,120,911	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,572,229	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #3 T-8302
Sample Info. 0924-208; 500mL load; Can #C78066
Sampling Date 2024-09-27 10:45
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404424.D
Dilution 1.000
Pressurization Factor 1.759
Acquisition Date 2024-10-03 21:33
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#3 T-8302.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Propylene	4.84	0.0680	0.0616	8.32	0.117	0.106	
Freon 12 (CCl ₂ F ₂)	0.488	0.0689	0.0616	2.41	0.340	0.304	
Freon 114 (C ₂ Cl ₂ F ₄)	ND	0.705	0.0616	ND	4.92	0.430	
Chloromethane	2.22	0.0696	0.0616	4.59	0.144	0.127	m
Chloroethene (Vinyl chloride)	ND	0.0703	0.0616	ND	0.180	0.157	
1,3-Butadiene	0.329	0.0685	0.0616	0.728	0.151	0.136	
Bromomethane	ND	0.0690	0.0616	ND	0.268	0.239	
Chloroethane	ND	0.0715	0.0616	ND	0.188	0.162	
Bromoethene (Vinyl bromide)	ND	0.0688	0.0616	ND	0.301	0.269	
Freon 11 (CCl ₃ F)	0.228	0.0742	0.0616	1.28	0.417	0.346	
Ethanol	1.26	0.0697	0.0697	2.38	0.131	0.131	m
Acrolein	0.168	0.0693	0.0616	0.385	0.159	0.141	m
Freon 113 (C ₂ Cl ₃ F ₃)	0.0637	0.0714	0.0616	0.488	0.547	0.471	J
1,1-Dichloroethene	ND	0.0708	0.0616	ND	0.280	0.244	
Acetone	3.85	0.0705	0.0616	9.15	0.167	0.146	m
Carbon disulfide	ND	0.0701	0.0616	ND	0.218	0.192	
Isopropyl alcohol	0.343	0.0701	0.0616	0.842	0.172	0.151	m
Allyl chloride (3-chloropropene)	ND	0.0760	0.0616	ND	0.238	0.193	
Acetonitrile	0.249	0.0701	0.0616	0.417	0.118	0.103	
Methylene chloride	0.104	0.0720	0.0616	0.360	0.250	0.214	
trans-1,2-Dichloroethene	ND	0.0718	0.0616	ND	0.284	0.244	
Methyl tert-butyl ether	ND	0.0723	0.0616	ND	0.261	0.222	
Acrylonitrile	ND	0.0716	0.0616	ND	0.155	0.134	
Hexane	0.432	0.0715	0.0616	1.52	0.252	0.217	m
1,1-Dichloroethane	ND	0.0699	0.0616	ND	0.283	0.249	
Vinyl acetate	ND	0.0720	0.0616	ND	0.253	0.217	
cis-1,2-Dichloroethene	ND	0.0711	0.0616	ND	0.282	0.244	
Methyl ethyl ketone (2-Butanone)	0.304	0.0727	0.0616	0.896	0.214	0.181	m
Ethyl acetate	0.739	0.0702	0.0616	2.66	0.253	0.222	m
Chloroform	ND	0.0706	0.0616	ND	0.344	0.300	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #3 T-8302
Sample Info. 0924-208; 500mL load; Can #C78066
Sampling Date 2024-09-27 10:45
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404424.D
Dilution 1.000
Pressurization Factor 1.759
Acquisition Date 2024-10-03 21:33
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#3 T-8302.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Tetrahydrofuran	0.0789	0.0712	0.0616	0.232	0.210	0.181	m
1,1,1-Trichloroethane	ND	0.0711	0.0616	ND	0.387	0.336	
Cyclohexane	0.220	0.0721	0.0616	0.756	0.248	0.212	m
Carbon tetrachloride	0.0785	0.0708	0.0616	0.494	0.445	0.387	
Benzene	0.868	0.0708	0.0616	2.77	0.226	0.197	m
2,2,4-trimethylpentane	ND	0.0727	0.0616	ND	0.340	0.287	
1,2-Dichloroethane	0.0728	0.0724	0.0616	0.294	0.293	0.249	m
Heptane	0.270	0.0713	0.0616	1.11	0.292	0.252	m
Trichloroethene	ND	0.0711	0.0616	ND	0.382	0.331	
1,2-Dichloropropane	ND	0.0708	0.0616	ND	0.327	0.284	
Methyl methacrylate	ND	0.0737	0.0616	ND	0.301	0.252	
1,4-Dioxane	ND	0.0706	0.0616	ND	0.254	0.222	
Bromodichloromethane	ND	0.0711	0.0616	ND	0.476	0.412	
cis-1,3-Dichloropropene	ND	0.0699	0.0616	ND	0.317	0.279	
Methyl isobutyl ketone	ND	0.0731	0.0616	ND	0.299	0.252	
Toluene	0.232	0.0716	0.0616	0.874	0.270	0.232	m
trans-1,3-Dichloropropene	ND	0.0726	0.0616	ND	0.329	0.279	
1,1,2-Trichloroethane	ND	0.0716	0.0616	ND	0.390	0.336	
Tetrachloroethene	ND	0.0720	0.0616	ND	0.488	0.417	
2-Hexanone (Methyl butyl ketone)	ND	0.0720	0.0616	ND	0.295	0.252	
Dibromochloromethane	ND	0.0709	0.0616	ND	0.604	0.524	
1,2-Dibromoethane	ND	0.0720	0.0616	ND	0.553	0.473	
Chlorobenzene	ND	0.0725	0.0616	ND	0.333	0.283	
Ethylbenzene	ND	0.0699	0.0616	ND	0.303	0.267	
1,1,1,2-Tetrachloroethane	ND	0.0709	0.0616	ND	0.487	0.422	
m-/p-Xylenes	0.0773	0.0713	0.0616	0.335	0.310	0.267	
o-Xylene	ND	0.0705	0.0616	ND	0.306	0.267	
Styrene	ND	0.0689	0.0616	ND	0.294	0.262	
Bromoform	ND	0.0706	0.0616	ND	0.729	0.636	
1,1,2,2-Tetrachloroethane	ND	0.0711	0.0616	ND	0.488	0.422	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #3 T-8302
Sample Info. 0924-208; 500mL load; Can #C78066
Sampling Date 2024-09-27 10:45
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404424.D
Dilution 1.000
Pressurization Factor 1.759
Acquisition Date 2024-10-03 21:33
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#3 T-8302.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
4-Ethyltoluene	ND	0.0716	0.0616	ND	0.352	0.302	
2-Chlorotoluene	ND	0.0710	0.0616	ND	0.367	0.319	
1,3,5-Trimethylbenzene	ND	0.0713	0.0616	ND	0.350	0.302	
1,2,4-Trimethylbenzene	ND	0.0704	0.0616	ND	0.346	0.302	
1,3-Dichlorobenzene	ND	0.0715	0.0616	ND	0.429	0.370	
1,4-Dichlorobenzene	ND	0.0707	0.0616	ND	0.425	0.370	
Benzyl chloride	ND	0.0708	0.0616	ND	0.366	0.319	
1,2-Dichlorobenzene	ND	0.0713	0.0616	ND	0.428	0.370	
1,2,4-Trichlorobenzene	ND	0.0701	0.0616	ND	0.520	0.457	
Hexachlorobutadiene	ND	0.0695	0.0616	ND	0.741	0.656	
Naphthalene	ND	0.0708	0.0616	ND	0.371	0.323	
1-Bromopropane	ND	0.0698	0.0616	ND	0.351	0.309	
1-Octene	ND	0.0694	0.0616	ND	0.318	0.282	
n-Octane	0.0656	0.0725	0.0616	0.306	0.338	0.287	J, m
Isopropylbenzene	ND	0.0715	0.0616	ND	0.351	0.302	
n-Propylbenzene	ND	0.0722	0.0616	ND	0.355	0.302	

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	859,466	10.99	5.21	pass
1,4-Difluorobenzene (IS)	3,134,958	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,594,837	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #4 T-1401
Sample Info. 0924-208; 500mL load; Can #C78079
Sampling Date 2024-09-27 11:00
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404426.D
Dilution 1.000
Pressurization Factor 1.759
Acquisition Date 2024-10-03 23:15
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#4 T-1401.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Propylene	6.27	0.0680	0.0616	10.8	0.117	0.106	
Freon 12 (CCl ₂ F ₂)	0.444	0.0689	0.0616	2.19	0.341	0.304	
Freon 114 (C ₂ Cl ₂ F ₄)	ND	0.705	0.0616	ND	4.93	0.430	
Chloromethane	2.51	0.0696	0.0616	5.18	0.144	0.127	
Chloroethene (Vinyl chloride)	0.0840	0.0703	0.0616	0.214	0.180	0.157	m
1,3-Butadiene	1.10	0.0685	0.0616	2.42	0.151	0.136	
Bromomethane	ND	0.0690	0.0616	ND	0.268	0.239	
Chloroethane	ND	0.0715	0.0616	ND	0.189	0.162	
Bromoethene (Vinyl bromide)	ND	0.0688	0.0616	ND	0.301	0.269	
Freon 11 (CCl ₃ F)	0.218	0.0742	0.0616	1.22	0.417	0.346	
Ethanol	8.10	0.0697	0.0697	15.3	0.131	0.131	m
Acrolein	0.463	0.0693	0.0616	1.06	0.159	0.141	m
Freon 113 (C ₂ Cl ₃ F ₃)	0.0633	0.0714	0.0616	0.484	0.547	0.472	J
1,1-Dichloroethene	ND	0.0708	0.0616	ND	0.281	0.244	
Acetone	9.64	0.0705	0.0616	22.9	0.167	0.146	
Carbon disulfide	10.7	0.0702	0.0616	33.4	0.218	0.192	
Isopropyl alcohol	8.60	0.0702	0.0616	21.1	0.172	0.151	m
Allyl chloride (3-chloropropene)	ND	0.0760	0.0616	ND	0.238	0.193	
Acetonitrile	1.69	0.0702	0.0616	2.83	0.118	0.103	m
Methylene chloride	0.103	0.0721	0.0616	0.356	0.250	0.214	m
trans-1,2-Dichloroethene	ND	0.0718	0.0616	ND	0.284	0.244	
Methyl tert-butyl ether	ND	0.0723	0.0616	ND	0.261	0.222	
Acrylonitrile	ND	0.0716	0.0616	ND	0.155	0.134	
Hexane	0.582	0.0715	0.0616	2.05	0.252	0.217	m
1,1-Dichloroethane	ND	0.0699	0.0616	ND	0.283	0.249	
Vinyl acetate	ND	0.0720	0.0616	ND	0.253	0.217	
cis-1,2-Dichloroethene	ND	0.0711	0.0616	ND	0.282	0.244	
Methyl ethyl ketone (2-Butanone)	0.400	0.0728	0.0616	1.18	0.214	0.182	m
Ethyl acetate	1.27	0.0702	0.0616	4.57	0.253	0.222	m
Chloroform	1.66	0.0706	0.0616	8.09	0.344	0.300	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #4 T-1401
Sample Info. 0924-208; 500mL load; Can #C78079
Sampling Date 2024-09-27 11:00
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404426.D
Dilution 1.000
Pressurization Factor 1.759
Acquisition Date 2024-10-03 23:15
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#4 T-1401.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Tetrahydrofuran	0.168	0.0712	0.0616	0.495	0.210	0.182	m
1,1,1-Trichloroethane	ND	0.0711	0.0616	ND	0.388	0.336	
Cyclohexane	2.14	0.0721	0.0616	7.35	0.248	0.212	m
Carbon tetrachloride	0.0762	0.0709	0.0616	0.479	0.446	0.387	
Benzene	7.68	0.0708	0.0616	24.5	0.226	0.197	
2,2,4-trimethylpentane	ND	0.0728	0.0616	ND	0.340	0.288	
1,2-Dichloroethane	0.0866	0.0724	0.0616	0.350	0.293	0.249	
Heptane	0.727	0.0713	0.0616	2.98	0.292	0.252	m
Trichloroethene	ND	0.0712	0.0616	ND	0.382	0.331	
1,2-Dichloropropane	ND	0.0709	0.0616	ND	0.327	0.284	
Methyl methacrylate	ND	0.0737	0.0616	ND	0.302	0.252	
1,4-Dioxane	0.424	0.0706	0.0616	1.53	0.254	0.222	m
Bromodichloromethane	ND	0.0711	0.0616	ND	0.476	0.412	
cis-1,3-Dichloropropene	ND	0.0699	0.0616	ND	0.317	0.279	
Methyl isobutyl ketone	ND	0.0731	0.0616	ND	0.299	0.252	
Toluene	1.91	0.0716	0.0616	7.18	0.270	0.232	
trans-1,3-Dichloropropene	ND	0.0726	0.0616	ND	0.329	0.279	
1,1,2-Trichloroethane	ND	0.0716	0.0616	ND	0.390	0.336	
Tetrachloroethene	ND	0.0720	0.0616	ND	0.488	0.417	
2-Hexanone (Methyl butyl ketone)	ND	0.0720	0.0616	ND	0.295	0.252	
Dibromochloromethane	ND	0.0709	0.0616	ND	0.604	0.524	
1,2-Dibromoethane	ND	0.0720	0.0616	ND	0.553	0.473	
Chlorobenzene	ND	0.0725	0.0616	ND	0.334	0.283	
Ethylbenzene	1.08	0.0699	0.0616	4.69	0.303	0.267	
1,1,1,2-Tetrachloroethane	ND	0.0709	0.0616	ND	0.487	0.422	
m-/p-Xylenes	1.04	0.0714	0.0616	4.52	0.310	0.267	
o-Xylene	0.891	0.0705	0.0616	3.87	0.306	0.267	m
Styrene	2.05	0.0690	0.0616	8.71	0.294	0.262	m
Bromoform	ND	0.0706	0.0616	ND	0.729	0.636	
1,1,2,2-Tetrachloroethane	ND	0.0712	0.0616	ND	0.488	0.422	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
 Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #4 T-1401
 Sample Info. 0924-208; 500mL load; Can #C78079
 Sampling Date 2024-09-27 11:00
 Received Date 2024-10-03 00:00
 Sample Type Sample
 Batch Xavier_X100324A_0924-208.v4
 Data File X2404426.D
 Dilution 1.000
 Pressurization Factor 1.759
 Acquisition Date 2024-10-03 23:15
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Analyst TDD
 Instrument Xavier
 Enthalpy ID 0924-208.#4 T-1401.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
4-Ethyltoluene	0.498	0.0716	0.0616	2.45	0.352	0.303	m
2-Chlorotoluene	ND	0.0710	0.0616	ND	0.367	0.319	
1,3,5-Trimethylbenzene	0.114	0.0714	0.0616	0.559	0.351	0.303	m
1,2,4-Trimethylbenzene	0.404	0.0704	0.0616	1.99	0.346	0.303	
1,3-Dichlorobenzene	ND	0.0715	0.0616	ND	0.430	0.370	
1,4-Dichlorobenzene	ND	0.0707	0.0616	ND	0.425	0.370	
Benzyl chloride	ND	0.0708	0.0616	ND	0.366	0.319	
1,2-Dichlorobenzene	ND	0.0713	0.0616	ND	0.428	0.370	
1,2,4-Trichlorobenzene	ND	0.0701	0.0616	ND	0.520	0.457	
Hexachlorobutadiene	ND	0.0695	0.0616	ND	0.741	0.656	
Naphthalene	1.53	0.0709	0.0616	7.99	0.371	0.323	
1-Bromopropane	ND	0.0698	0.0616	ND	0.351	0.310	
1-Octene	6.05	0.0695	0.0616	27.7	0.319	0.282	m
n-Octane	0.216	0.0725	0.0616	1.01	0.338	0.288	m
Isopropylbenzene	0.119	0.0715	0.0616	0.583	0.351	0.303	
n-Propylbenzene	2.38	0.0722	0.0616	11.7	0.355	0.303	

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	919,997	10.99	5.21	pass
1,4-Difluorobenzene (IS)	3,386,263	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,921,057	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #5 FGC Discharge Drum
Sample Info. 0924-208; 500mL load; Can #C78255
Sampling Date 2024-09-27 11:45
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404428.D
Dilution 1.000
Pressurization Factor 1.753
Acquisition Date 2024-10-04 00:59
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#5 FGC Discharge Drum.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Propylene	42.5	0.0678	0.0614	73.1	0.117	0.106	
Freon 12 (CCl ₂ F ₂)	0.476	0.0687	0.0614	2.35	0.339	0.303	
Freon 114 (C ₂ Cl ₂ F ₄)	ND	0.703	0.0614	ND	4.91	0.429	
Chloromethane	0.566	0.0694	0.0614	1.17	0.143	0.127	
Chloroethene (Vinyl chloride)	ND	0.0701	0.0614	ND	0.179	0.157	
1,3-Butadiene	1.35	0.0682	0.0614	2.98	0.151	0.136	m
Bromomethane	ND	0.0688	0.0614	ND	0.267	0.238	
Chloroethane	ND	0.0713	0.0614	ND	0.188	0.162	
Bromoethene (Vinyl bromide)	ND	0.0686	0.0614	ND	0.300	0.268	
Freon 11 (CCl ₃ F)	0.240	0.0740	0.0614	1.35	0.415	0.345	m
Ethanol	1.26	0.0695	0.0695	2.38	0.131	0.131	m
Acrolein	0.192	0.0691	0.0614	0.439	0.158	0.141	
Freon 113 (C ₂ Cl ₃ F ₃)	0.0635	0.0712	0.0614	0.486	0.545	0.470	J, m
1,1-Dichloroethene	ND	0.0706	0.0614	ND	0.280	0.243	
Acetone	3.14	0.0703	0.0614	7.46	0.167	0.146	m
Carbon disulfide	ND	0.0699	0.0614	ND	0.218	0.191	
Isopropyl alcohol	0.364	0.0699	0.0614	0.895	0.172	0.151	m
Allyl chloride (3-chloropropene)	ND	0.0757	0.0614	ND	0.237	0.192	
Acetonitrile	0.281	0.0699	0.0614	0.471	0.117	0.103	m
Methylene chloride	0.105	0.0718	0.0614	0.365	0.249	0.213	
trans-1,2-Dichloroethene	ND	0.0715	0.0614	ND	0.283	0.243	
Methyl tert-butyl ether	ND	0.0721	0.0614	ND	0.260	0.221	
Acrylonitrile	ND	0.0714	0.0614	ND	0.155	0.133	
Hexane	0.316	0.0713	0.0614	1.11	0.251	0.216	m
1,1-Dichloroethane	ND	0.0696	0.0614	ND	0.282	0.248	
Vinyl acetate	ND	0.0718	0.0614	ND	0.252	0.216	
cis-1,2-Dichloroethene	ND	0.0708	0.0614	ND	0.281	0.243	
Methyl ethyl ketone (2-Butanone)	0.234	0.0725	0.0614	0.691	0.214	0.181	m
Ethyl acetate	1.57	0.0700	0.0614	5.66	0.252	0.221	m
Chloroform	ND	0.0703	0.0614	ND	0.343	0.299	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #5 FGC Discharge Drum
Sample Info. 0924-208; 500mL load; Can #C78255
Sampling Date 2024-09-27 11:45
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404428.D
Dilution 1.000
Pressurization Factor 1.753
Acquisition Date 2024-10-04 00:59
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#5 FGC Discharge Drum.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Tetrahydrofuran	ND	0.0710	0.0614	ND	0.209	0.181	
1,1,1-Trichloroethane	ND	0.0708	0.0614	ND	0.386	0.335	
Cyclohexane	0.144	0.0719	0.0614	0.495	0.247	0.211	m
Carbon tetrachloride	0.0776	0.0706	0.0614	0.488	0.444	0.386	
Benzene	3.84	0.0706	0.0614	12.2	0.225	0.196	m
2,2,4-trimethylpentane	ND	0.0725	0.0614	ND	0.339	0.287	
1,2-Dichloroethane	0.0995	0.0722	0.0614	0.403	0.292	0.248	
Heptane	ND	0.0710	0.0614	ND	0.291	0.251	
Trichloroethene	ND	0.0709	0.0614	ND	0.381	0.330	
1,2-Dichloropropane	ND	0.0706	0.0614	ND	0.326	0.283	
Methyl methacrylate	ND	0.0734	0.0614	ND	0.301	0.251	
1,4-Dioxane	ND	0.0703	0.0614	ND	0.253	0.221	
Bromodichloromethane	ND	0.0708	0.0614	ND	0.474	0.411	
cis-1,3-Dichloropropene	ND	0.0696	0.0614	ND	0.316	0.278	
Methyl isobutyl ketone	ND	0.0729	0.0614	ND	0.298	0.251	
Toluene	0.944	0.0714	0.0614	3.55	0.269	0.231	
trans-1,3-Dichloropropene	ND	0.0724	0.0614	ND	0.328	0.278	
1,1,2-Trichloroethane	ND	0.0713	0.0614	ND	0.389	0.335	
Tetrachloroethene	ND	0.0718	0.0614	ND	0.486	0.416	
2-Hexanone (Methyl butyl ketone)	ND	0.0718	0.0614	ND	0.294	0.251	
Dibromochloromethane	ND	0.0707	0.0614	ND	0.602	0.522	
1,2-Dibromoethane	ND	0.0718	0.0614	ND	0.551	0.471	
Chlorobenzene	ND	0.0722	0.0614	ND	0.332	0.282	
Ethylbenzene	0.0896	0.0696	0.0614	0.389	0.302	0.266	
1,1,1,2-Tetrachloroethane	ND	0.0707	0.0614	ND	0.485	0.421	
m-/p-Xylenes	0.0932	0.0711	0.0614	0.405	0.309	0.266	m
o-Xylene	ND	0.0703	0.0614	ND	0.305	0.266	
Styrene	0.217	0.0687	0.0614	0.922	0.293	0.261	
Bromoform	ND	0.0703	0.0614	ND	0.727	0.634	
1,1,2,2-Tetrachloroethane	ND	0.0709	0.0614	ND	0.486	0.421	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #5 FGC Discharge Drum
Sample Info. 0924-208; 500mL load; Can #C78255
Sampling Date 2024-09-27 11:45
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404428.D
Dilution 1.000
Pressurization Factor 1.753
Acquisition Date 2024-10-04 00:59
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#5 FGC Discharge Drum.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
4-Ethyltoluene	ND	0.0713	0.0614	ND	0.350	0.301	
2-Chlorotoluene	ND	0.0708	0.0614	ND	0.366	0.318	
1,3,5-Trimethylbenzene	ND	0.0711	0.0614	ND	0.349	0.301	
1,2,4-Trimethylbenzene	ND	0.0702	0.0614	ND	0.345	0.301	
1,3-Dichlorobenzene	ND	0.0713	0.0614	ND	0.428	0.369	
1,4-Dichlorobenzene	ND	0.0705	0.0614	ND	0.424	0.369	
Benzyl chloride	ND	0.0706	0.0614	ND	0.365	0.318	
1,2-Dichlorobenzene	ND	0.0710	0.0614	ND	0.427	0.369	
1,2,4-Trichlorobenzene	ND	0.0699	0.0614	ND	0.518	0.455	
Hexachlorobutadiene	ND	0.0693	0.0614	ND	0.739	0.654	
Naphthalene	ND	0.0706	0.0614	ND	0.370	0.322	
1-Bromopropane	ND	0.0696	0.0614	ND	0.350	0.309	
1-Octene	ND	0.0692	0.0614	ND	0.318	0.281	
n-Octane	ND	0.0722	0.0614	ND	0.337	0.287	
Isopropylbenzene	ND	0.0713	0.0614	ND	0.350	0.301	
n-Propylbenzene	ND	0.0720	0.0614	ND	0.354	0.301	

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	910,259	10.99	5.21	pass
1,4-Difluorobenzene (IS)	3,322,388	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,769,423	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #6 OldTar Pot Lvl3
Sample Info. 0924-208; 500mL load; Can #C78405
Sampling Date 2024-09-27 12:00
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404430.D
Dilution 1.000
Pressurization Factor 1.756
Acquisition Date 2024-10-04 02:42
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#6 OldTar Pot Lvl3.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Freon 12 (CCl ₂ F ₂)	0.455	0.0688	0.0615	2.25	0.340	0.304	
Freon 114 (C ₂ Cl ₂ F ₄)	ND	0.704	0.0615	ND	4.92	0.429	
Chloromethane	0.564	0.0695	0.0615	1.16	0.143	0.127	
Chloroethene (Vinyl chloride)	ND	0.0702	0.0615	ND	0.179	0.157	
Bromomethane	ND	0.0689	0.0615	ND	0.267	0.238	
Chloroethane	ND	0.0714	0.0615	ND	0.188	0.162	
Bromoethene (Vinyl bromide)	ND	0.0687	0.0615	ND	0.300	0.269	
Freon 11 (CCl ₃ F)	0.225	0.0741	0.0615	1.26	0.416	0.345	
Ethanol	1.54	0.0696	0.0696	2.91	0.131	0.131	m
Acrolein	0.709	0.0692	0.0615	1.62	0.159	0.141	m
Freon 113 (C ₂ Cl ₃ F ₃)	0.0692	0.0713	0.0615	0.530	0.546	0.471	J
1,1-Dichloroethene	ND	0.0707	0.0615	ND	0.280	0.243	
Acetone	5.71	0.0704	0.0615	13.6	0.167	0.146	m
Carbon disulfide	0.0664	0.0700	0.0615	0.207	0.218	0.191	J, m
Isopropyl alcohol	0.433	0.0700	0.0615	1.06	0.172	0.151	m
Allyl chloride (3-chloropropene)	ND	0.0759	0.0615	ND	0.237	0.192	
Acetonitrile	ND	0.0700	0.0615	ND	0.117	0.103	
Methylene chloride	0.149	0.0719	0.0615	0.519	0.250	0.213	
trans-1,2-Dichloroethene	ND	0.0716	0.0615	ND	0.284	0.243	
Methyl tert-butyl ether	ND	0.0722	0.0615	ND	0.260	0.221	
Acrylonitrile	1.61	0.0715	0.0615	3.50	0.155	0.133	
Hexane	1.30	0.0714	0.0615	4.58	0.251	0.216	
1,1-Dichloroethane	ND	0.0697	0.0615	ND	0.282	0.249	
Vinyl acetate	ND	0.0718	0.0615	ND	0.253	0.216	
cis-1,2-Dichloroethene	ND	0.0709	0.0615	ND	0.281	0.243	
Methyl ethyl ketone (2-Butanone)	0.363	0.0726	0.0615	1.07	0.214	0.181	m
Ethyl acetate	2.23	0.0701	0.0615	8.03	0.252	0.221	m
Chloroform	ND	0.0704	0.0615	ND	0.344	0.300	
Tetrahydrofuran	ND	0.0711	0.0615	ND	0.209	0.181	
1,1,1-Trichloroethane	ND	0.0709	0.0615	ND	0.387	0.335	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #6 OldTar Pot Lvl3
Sample Info. 0924-208; 500mL load; Can #C78405
Sampling Date 2024-09-27 12:00
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404430.D
Dilution 1.000
Pressurization Factor 1.756
Acquisition Date 2024-10-04 02:42
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#6 OldTar Pot Lvl3.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Flags
Cyclohexane	0.561	0.0720	0.0615	1.93	0.248	0.211	m
Carbon tetrachloride	0.0791	0.0707	0.0615	0.498	0.445	0.386	
2,2,4-trimethylpentane	ND	0.0726	0.0615	ND	0.339	0.287	
1,2-Dichloroethane	ND	0.0723	0.0615	ND	0.292	0.249	
Heptane	0.289	0.0711	0.0615	1.18	0.291	0.252	m
Trichloroethene	ND	0.0710	0.0615	ND	0.381	0.330	
1,2-Dichloropropane	ND	0.0707	0.0615	ND	0.327	0.284	
Methyl methacrylate	ND	0.0735	0.0615	ND	0.301	0.251	
1,4-Dioxane	ND	0.0704	0.0615	ND	0.254	0.221	
Bromodichloromethane	ND	0.0709	0.0615	ND	0.475	0.412	
cis-1,3-Dichloropropene	ND	0.0697	0.0615	ND	0.316	0.279	
Methyl isobutyl ketone	ND	0.0730	0.0615	ND	0.299	0.252	
Toluene	27.7	0.0715	0.0615	104	0.269	0.231	
trans-1,3-Dichloropropene	ND	0.0725	0.0615	ND	0.329	0.279	
1,1,2-Trichloroethane	ND	0.0714	0.0615	ND	0.389	0.335	
Tetrachloroethene	ND	0.0718	0.0615	ND	0.487	0.417	
2-Hexanone (Methyl butyl ketone)	ND	0.0718	0.0615	ND	0.294	0.252	
Dibromochloromethane	ND	0.0708	0.0615	ND	0.603	0.523	
1,2-Dibromoethane	ND	0.0718	0.0615	ND	0.552	0.472	
Chlorobenzene	ND	0.0723	0.0615	ND	0.333	0.283	
Ethylbenzene	0.545	0.0697	0.0615	2.36	0.303	0.267	
1,1,1,2-Tetrachloroethane	ND	0.0708	0.0615	ND	0.486	0.422	
m-/p-Xylenes	0.426	0.0712	0.0615	1.85	0.309	0.267	
o-Xylene	0.138	0.0704	0.0615	0.597	0.305	0.267	m
Styrene	0.983	0.0688	0.0615	4.18	0.293	0.262	
Bromoform	ND	0.0704	0.0615	ND	0.728	0.635	
1,1,2,2-Tetrachloroethane	ND	0.0710	0.0615	ND	0.487	0.422	
4-Ethyltoluene	ND	0.0714	0.0615	ND	0.351	0.302	
2-Chlorotoluene	ND	0.0709	0.0615	ND	0.367	0.318	
1,3,5-Trimethylbenzene	ND	0.0712	0.0615	ND	0.350	0.302	

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #6 OldTar Pot Lvl3
Sample Info. 0924-208; 500mL load; Can #C78405
Sampling Date 2024-09-27 12:00
Received Date 2024-10-03 00:00
Sample Type Sample
Batch Xavier_X100324A_0924-208.v4
Data File X2404430.D
Dilution 1.000
Pressurization Factor 1.756
Acquisition Date 2024-10-04 02:42
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID 0924-208.#6 OldTar Pot Lvl3.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m ³)	RL (ug/m ³)	MDL (ug/m ³)	Flags
1,2,4-Trimethylbenzene	ND	0.0703	0.0615	ND	0.345	0.302	
1,3-Dichlorobenzene	ND	0.0714	0.0615	ND	0.429	0.369	
1,4-Dichlorobenzene	ND	0.0706	0.0615	ND	0.424	0.369	
Benzyl chloride	ND	0.0707	0.0615	ND	0.366	0.318	
1,2-Dichlorobenzene	ND	0.0711	0.0615	ND	0.427	0.369	
1,2,4-Trichlorobenzene	ND	0.0700	0.0615	ND	0.519	0.456	
Hexachlorobutadiene	ND	0.0694	0.0615	ND	0.740	0.655	
Naphthalene	ND	0.0707	0.0615	ND	0.371	0.322	
1-Bromopropane	ND	0.0697	0.0615	ND	0.350	0.309	
1-Octene	ND	0.0693	0.0615	ND	0.318	0.282	
n-Octane	0.102	0.0723	0.0615	0.477	0.338	0.287	m
Isopropylbenzene	ND	0.0714	0.0615	ND	0.351	0.302	
n-Propylbenzene	ND	0.0721	0.0615	ND	0.354	0.302	

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	968,162	10.99	5.21	pass
1,4-Difluorobenzene (IS)	3,686,668	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,948,333	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
 Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name #6 OldTar Pot Lvl3
 Sample Info. 0924-208; *20=25mL load; Can #C78405
 Sampling Date 2024-09-27 12:00
 Received Date 2024-10-03 00:00
 Sample Type Sample
 Batch Xavier_X100324A_0924-208.v4
 Data File X2404431.D
 Dilution 20.000
 Pressurization Factor 1.756
 Acquisition Date 2024-10-04 03:29
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Analyst TDD
 Instrument Xavier
 Enthalpy ID 0924-208.#6 OldTar Pot Lvl3.Can

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m ³)	RL (ug/m ³)	MDL (ug/m ³)	Flags
Propylene	174	1.36	1.23	299	2.33	2.11	m
1,3-Butadiene	175	1.37	1.23	386	3.02	2.72	
Benzene	663	1.41	1.23	2,116	4.51	3.92	

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	886,830	10.99	5.21	pass
1,4-Difluorobenzene (IS)	3,316,242	12.41	5.16	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical -- Canister Pressurization

Job No. 0924-208
 Company Dow Chemical Company
 Site Dole SCO-St. Charles, LA

Can Number	C78284	C78012	C78066	C78079	C78255	C78405
Job	0924-208	0924-208	0924-208	0924-208	0924-208	0924-208
Sample ID	#1 South of North Pond	#2 North of North Pond	#3 T-8302	#4 T-1401	#5 FGC Discharge Drum	#6 OldTar Pot Lvl3
CleanDate	06/29/2024	08/13/2024	08/22/2024	07/22/2024	08/07/2024	07/26/2024
LeakCheckDate	07/08/2024	08/15/2024	08/26/2024	07/30/2024	08/13/2024	07/30/2024
LeakCheckAnalyst	buddhikaranawella	buddhikaranawella	buddhikaranawella	buddhikaranawella	buddhikaranawella	buddhikaranawella
BlankCheckRef	X2403039	X2403684	Y2402929	T2401330	X2403619	T2401365
Weather Station ID	97	97	97	97	97	97
Weather Station Exp.	08/24/2025	08/24/2025	08/24/2025	08/24/2025	08/24/2025	08/24/2025
Transducer ID	3	3	3	3	3	3
Transducer Exp.	11/17/2024	11/17/2024	11/17/2024	11/17/2024	11/17/2024	11/17/2024
Can Size (L)	6	6	6	6	6	6
Evac Temp (F)	68.7	68.7	68.7	68.7	68.7	68.7
Evac Pbar (mmHg)	756.4	756.4	756.4	756.4	756.4	756.4
Evac Gauge (mmHg)	-756.4	-756.4	-756.4	-756.4	-756.4	-756.4
Evac Analyst	buddhikaranawella	buddhikaranawella	buddhikaranawella	buddhikaranawella	buddhikaranawella	buddhikaranawella
Evac Time	09/25/24 10:38	09/25/24 10:34	09/25/24 10:36	09/25/24 10:40	09/25/24 10:37	09/25/24 10:35
Evac Vol (L)	0.000	0.000	0.000	0.000	0.000	0.000
Recd. Temp (F)	68.4	68.4	68.4	68.4	68.4	68.4
Recd. Pbar (mmHg)	758.2	758.2	758.2	758.2	758.2	758.2
Recd. Gauge (mmHg)	-202.0	-238.0	-210.0	-242.0	-218.0	-180.0
Recd Vol (L)	4.388	4.104	4.325	4.072	4.261	4.561
P1 Temp (F)	68.4	68.4	68.4	68.4	68.4	68.4
P1 Pbar (mmHg)	758.2	758.2	758.2	758.2	758.2	758.2
P1 Gauge (mmHg)	214.0	166.0	206.0	150.0	189.0	257.0
P1 Analyst	buddhikaranawella	buddhikaranawella	buddhikaranawella	buddhikaranawella	buddhikaranawella	buddhikaranawella
P1 Time	10/03/24 15:14	10/03/24 15:24	10/03/24 15:34	10/03/24 15:39	10/03/24 15:45	10/03/24 15:49
P1 Fill Gas	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen
P1 Vol (L)	7.669	7.291	7.606	7.164	7.472	8.009
P1 DF Override	false	false	false	false	false	false
P1 Dilution Factor	1.748	1.777	1.759	1.759	1.753	1.756

Lab QC



Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs

Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name 0924-208.#1 South of North Pond.LD
 Sample Info. 0924-208; 500mL load; Can #C78284
 Sampling Date 2024-09-27 10:15
 Received Date 2024-10-03 00:00
 Sample Type LabDup
 Batch Xavier_X100324A_0924-208.v1
 Data File X2404421.D
 Dilution 1.000
 Pressurization Factor 1.748
 Acquisition Date 2024-10-03 18:55
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Parent 0924-208.#1 South of North Pond.Can
 Enthalpy ID 0924-208.#1 South of North Pond.LD

Target Compound	Parent Conc (ppbv)	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Dup Diff (%)	Flags
Propylene	2.31	2.25	0.0675	0.0612	3.87	0.116	0.105	2.6	pass, m
Freon 12 (CCl2F2)	0.488	0.457	0.0684	0.0612	2.26	0.338	0.302	6.5	pass
Freon 114 (C2Cl2F4)	ND	ND	0.701	0.0612	ND	4.89	0.427		
Chloromethane	1.05	1.03	0.0691	0.0612	2.13	0.143	0.126	1.8	pass
Chloroethene (Vinyl chloride)	ND	ND	0.0698	0.0612	ND	0.178	0.156		
1,3-Butadiene	0.456	0.450	0.0680	0.0612	0.995	0.150	0.135	1.4	pass
Bromomethane	ND	ND	0.0686	0.0612	ND	0.266	0.237		
Chloroethane	ND	ND	0.0710	0.0612	ND	0.187	0.161		
Bromoethene (Vinyl bromide)	ND	ND	0.0684	0.0612	ND	0.299	0.267		
Freon 11 (CCl3F)	0.225	0.223	0.0738	0.0612	1.25	0.414	0.344	0.8	pass, m
Ethanol	1.14	1.01	0.0693	0.0693	1.90	0.130	0.130	12.2	pass, m
Acrolein	0.257	0.245	0.0689	0.0612	0.562	0.158	0.140	4.6	pass, m
Freon 113 (C2Cl3F3)	0.0659	0.0679	0.0710	0.0612	0.520	0.544	0.469	3.0	pass, J, m
1,1-Dichloroethene	ND	ND	0.0703	0.0612	ND	0.279	0.242		
Acetone	3.82	3.54	0.0701	0.0612	8.39	0.166	0.145	7.7	pass, m
Carbon disulfide	0.0622	ND	0.0697	0.0612	ND	0.217	0.190		
Isopropyl alcohol	1.03	0.970	0.0697	0.0612	2.38	0.171	0.150	5.6	pass, m
Allyl chloride (3-chloropropene)	ND	ND	0.0755	0.0612	ND	0.236	0.191		
Acetonitrile	0.276	0.277	0.0697	0.0612	0.464	0.117	0.103	0.2	pass, m
Methylene chloride	0.115	0.114	0.0716	0.0612	0.396	0.249	0.212	0.8	pass
trans-1,2-Dichloroethene	ND	ND	0.0713	0.0612	ND	0.283	0.242		
Methyl tert-butyl ether	ND	ND	0.0719	0.0612	ND	0.259	0.220		
Acrylonitrile	ND	ND	0.0712	0.0612	ND	0.154	0.133		
Hexane	0.449	0.463	0.0710	0.0612	1.63	0.250	0.216	3.1	pass, m
1,1-Dichloroethane	ND	ND	0.0694	0.0612	ND	0.281	0.247		
Vinyl acetate	ND	ND	0.0715	0.0612	ND	0.252	0.215		
cis-1,2-Dichloroethene	ND	ND	0.0706	0.0612	ND	0.280	0.242		
Methyl ethyl ketone (2-Butanone)	0.226	0.252	0.0723	0.0612	0.741	0.213	0.180	10.6	pass, m
Ethyl acetate	1.43	1.48	0.0698	0.0612	5.35	0.251	0.220	3.7	pass, m
Chloroform	0.0619	0.0707	0.0701	0.0612	0.345	0.342	0.299	13.3	pass
Tetrahydrofuran	0.0819	ND	0.0708	0.0612	ND	0.209	0.180		
1,1,1-Trichloroethane	ND	ND	0.0706	0.0612	ND	0.385	0.334		
Cyclohexane	0.231	0.235	0.0717	0.0612	0.808	0.247	0.210	1.5	pass, m
Carbon tetrachloride	0.0743	0.0775	0.0704	0.0612	0.488	0.443	0.385	4.2	pass, m
Benzene	2.09	2.04	0.0703	0.0612	6.52	0.225	0.195	2.5	pass, m
2,2,4-trimethylpentane	ND	ND	0.0723	0.0612	ND	0.338	0.286		
1,2-Dichloroethane	0.0641	0.0708	0.0719	0.0612	0.287	0.291	0.247	9.9	pass, J
Heptane	0.393	0.396	0.0708	0.0612	1.62	0.290	0.251	0.8	pass, m

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs

Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name 0924-208.#1 South of North Pond.LD
 Sample Info. 0924-208; 500mL load; Can #C78284
 Sampling Date 2024-09-27 10:15
 Received Date 2024-10-03 00:00
 Sample Type LabDup
 Batch Xavier_X100324A_0924-208.v1
 Data File X2404421.D
 Dilution 1.000
 Pressurization Factor 1.748
 Acquisition Date 2024-10-03 18:55
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Parent 0924-208.#1 South of North Pond.Can
 Enthalpy ID 0924-208.#1 South of North Pond.LD

Target Compound	Parent Conc (ppbv)	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m³)	RL (ug/m³)	MDL (ug/m³)	Dup Diff (%)	Flags
Trichloroethene	ND	ND	0.0707	0.0612	ND	0.380	0.329		
1,2-Dichloropropane	ND	ND	0.0704	0.0612	ND	0.325	0.283		
Methyl methacrylate	ND	ND	0.0732	0.0612	ND	0.300	0.250		
1,4-Dioxane	6.14	6.16	0.0701	0.0612	22.2	0.253	0.220	0.2	pass, m
Bromodichloromethane	ND	ND	0.0706	0.0612	ND	0.473	0.410		
cis-1,3-Dichloropropene	ND	ND	0.0694	0.0612	ND	0.315	0.277		
Methyl isobutyl ketone	ND	ND	0.0726	0.0612	ND	0.297	0.250		
Toluene	0.327	0.316	0.0712	0.0612	1.19	0.268	0.230	3.3	pass
trans-1,3-Dichloropropene	ND	ND	0.0722	0.0612	ND	0.327	0.277		
1,1,2-Trichloroethane	ND	ND	0.0711	0.0612	ND	0.388	0.334		
Tetrachloroethene	ND	ND	0.0715	0.0612	ND	0.485	0.415		
2-Hexanone (Methyl butyl ketone)	ND	ND	0.0715	0.0612	ND	0.293	0.250		
Dibromochloromethane	ND	ND	0.0705	0.0612	ND	0.600	0.521		
1,2-Dibromoethane	ND	ND	0.0715	0.0612	ND	0.549	0.470		
Chlorobenzene	ND	ND	0.0720	0.0612	ND	0.331	0.281		
Ethylbenzene	ND	ND	0.0694	0.0612	ND	0.301	0.265		
1,1,1,2-Tetrachloroethane	ND	ND	0.0705	0.0612	ND	0.484	0.420		
m-/p-Xylenes	0.0676	0.0648	0.0709	0.0612	0.281	0.308	0.265	4.3	pass, J
o-Xylene	ND	ND	0.0701	0.0612	ND	0.304	0.265		
Styrene	ND	ND	0.0685	0.0612	ND	0.292	0.260		
Bromoform	ND	ND	0.0701	0.0612	ND	0.724	0.632		
1,1,2,2-Tetrachloroethane	ND	ND	0.0707	0.0612	ND	0.485	0.420		
4-Ethyltoluene	ND	ND	0.0711	0.0612	ND	0.349	0.301		
2-Chlorotoluene	ND	ND	0.0705	0.0612	ND	0.365	0.317		
1,3,5-Trimethylbenzene	ND	ND	0.0709	0.0612	ND	0.348	0.301		
1,2,4-Trimethylbenzene	ND	ND	0.0700	0.0612	ND	0.344	0.301		
1,3-Dichlorobenzene	ND	ND	0.0710	0.0612	ND	0.427	0.368		
1,4-Dichlorobenzene	ND	ND	0.0703	0.0612	ND	0.422	0.368		
Benzyl chloride	ND	ND	0.0703	0.0612	ND	0.364	0.317		
1,2-Dichlorobenzene	ND	ND	0.0708	0.0612	ND	0.426	0.368		
1,2,4-Trichlorobenzene	ND	ND	0.0696	0.0612	ND	0.516	0.454		
Hexachlorobutadiene	ND	ND	0.0691	0.0612	ND	0.736	0.652		
Naphthalene	ND	ND	0.0704	0.0612	ND	0.369	0.321		
1-Bromopropane	ND	ND	0.0694	0.0612	ND	0.349	0.308		
1-Octene	ND	ND	0.0690	0.0612	ND	0.317	0.281		
n-Octane	ND	0.0649	0.0720	0.0612	0.303	0.336	0.286		J, m
Isopropylbenzene	ND	ND	0.0710	0.0612	ND	0.349	0.301		

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs

Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name 0924-208.#1 South of North Pond.LD
 Sample Info. 0924-208; 500mL load; Can #C78284
 Sampling Date 2024-09-27 10:15
 Received Date 2024-10-03 00:00
 Sample Type LabDup
 Batch Xavier_X100324A_0924-208.v1
 Data File X2404421.D
 Dilution 1.000
 Pressurization Factor 1.748
 Acquisition Date 2024-10-03 18:55
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Parent 0924-208.#1 South of North Pond.Can
 Enthalpy ID 0924-208.#1 South of North Pond.LD

Target Compound	Parent Conc (ppbv)	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m ³)	RL (ug/m ³)	MDL (ug/m ³)	Dup Diff (%)	Flags
n-Propylbenzene	ND	ND	0.0717	0.0612	ND	0.352	0.301		

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	876,924	10.99	5.21	pass, m
1,4-Difluorobenzene (IS)	3,185,065	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,615,426	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name X100324A_Humid Blank Can #C78367/1874
Sample Info. 500mL load
Sample Type Blank
Batch Xavier_X100324A_0924-208.v1
Data File X2404419.D
Dilution 1.000
Pressurization Factor 1.000
Acquisition Date 2024-10-03 15:21
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID X100324A_Humid Blank Can #C78367/1874

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m ³)	RL (ug/m ³)	MDL (ug/m ³)	Flags
Propylene	ND	0.0386	0.0350	ND	0.0665	0.0602	pass
Freon 12 (CCl ₂ F ₂)	ND	0.0392	0.0350	ND	0.194	0.173	pass
Freon 114 (C ₂ Cl ₂ F ₄)	ND	0.401	0.0350	ND	2.80	0.245	pass
Chloromethane	ND	0.0396	0.0350	ND	0.0816	0.0722	pass
Chloroethene (Vinyl chloride)	ND	0.0400	0.0350	ND	0.102	0.0894	pass
1,3-Butadiene	ND	0.0389	0.0350	ND	0.0860	0.0774	pass
Bromomethane	ND	0.0392	0.0350	ND	0.152	0.136	pass
Chloroethane	ND	0.0406	0.0350	ND	0.107	0.0923	pass
Bromoethene (Vinyl bromide)	ND	0.0391	0.0350	ND	0.171	0.153	pass
Freon 11 (CCl ₃ F)	ND	0.0422	0.0350	ND	0.237	0.197	pass
Ethanol	0.0540	0.0396	0.0396	0.102	0.0746	0.0746	pass, m
Acrolein	ND	0.0394	0.0350	ND	0.0903	0.0802	pass
Freon 113 (C ₂ Cl ₃ F ₃)	ND	0.0406	0.0350	ND	0.311	0.268	pass
1,1-Dichloroethene	ND	0.0402	0.0350	ND	0.159	0.139	pass
Acetone	0.0659	0.0401	0.0350	0.156	0.0951	0.0831	pass
Carbon disulfide	ND	0.0399	0.0350	ND	0.124	0.109	pass
Isopropyl alcohol	ND	0.0399	0.0350	ND	0.0980	0.0860	pass
Allyl chloride (3-chloropropene)	ND	0.0432	0.0350	ND	0.135	0.109	pass
Acetonitrile	ND	0.0399	0.0350	ND	0.0669	0.0587	pass
Methylene chloride	ND	0.0410	0.0350	ND	0.142	0.122	pass
trans-1,2-Dichloroethene	ND	0.0408	0.0350	ND	0.162	0.139	pass
Methyl tert-butyl ether	ND	0.0411	0.0350	ND	0.148	0.126	pass
Acrylonitrile	ND	0.0407	0.0350	ND	0.0883	0.0759	pass
Hexane	ND	0.0406	0.0350	ND	0.143	0.123	pass
1,1-Dichloroethane	ND	0.0397	0.0350	ND	0.161	0.142	pass
Vinyl acetate	ND	0.0409	0.0350	ND	0.144	0.123	pass
cis-1,2-Dichloroethene	ND	0.0404	0.0350	ND	0.160	0.139	pass
Methyl ethyl ketone (2-Butanone)	ND	0.0414	0.0350	ND	0.122	0.103	pass
Ethyl acetate	ND	0.0399	0.0350	ND	0.144	0.126	pass
Chloroform	ND	0.0401	0.0350	ND	0.196	0.171	pass
Tetrahydrofuran	ND	0.0405	0.0350	ND	0.119	0.103	pass
1,1,1-Trichloroethane	ND	0.0404	0.0350	ND	0.220	0.191	pass

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs

Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name X100324A_Humid Blank Can #C78367/1874
 Sample Info. 500mL load
 Sample Type Blank
 Batch Xavier_X100324A_0924-208.v1
 Data File X2404419.D
 Dilution 1.000
 Pressurization Factor 1.000
 Acquisition Date 2024-10-03 15:21
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Analyst TDD
 Instrument Xavier
 Enthalpy ID X100324A_Humid Blank Can #C78367/1874

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m ³)	RL (ug/m ³)	MDL (ug/m ³)	Flags
Cyclohexane	ND	0.0410	0.0350	ND	0.141	0.120	pass
Carbon tetrachloride	ND	0.0403	0.0350	ND	0.253	0.220	pass
Benzene	ND	0.0402	0.0350	ND	0.128	0.112	pass
2,2,4-trimethylpentane	ND	0.0414	0.0350	ND	0.193	0.163	pass
1,2-Dichloroethane	ND	0.0412	0.0350	ND	0.166	0.142	pass
Heptane	ND	0.0405	0.0350	ND	0.166	0.143	pass
Trichloroethene	ND	0.0404	0.0350	ND	0.217	0.188	pass
1,2-Dichloropropane	ND	0.0403	0.0350	ND	0.186	0.162	pass
Methyl methacrylate	ND	0.0419	0.0350	ND	0.171	0.143	pass
1,4-Dioxane	ND	0.0401	0.0350	ND	0.144	0.126	pass
Bromodichloromethane	ND	0.0404	0.0350	ND	0.271	0.234	pass
cis-1,3-Dichloropropene	ND	0.0397	0.0350	ND	0.180	0.159	pass
Methyl isobutyl ketone	ND	0.0416	0.0350	ND	0.170	0.143	pass
Toluene	ND	0.0407	0.0350	ND	0.153	0.132	pass
trans-1,3-Dichloropropene	ND	0.0413	0.0350	ND	0.187	0.159	pass
1,1,2-Trichloroethane	ND	0.0407	0.0350	ND	0.222	0.191	pass
Tetrachloroethene	ND	0.0409	0.0350	ND	0.277	0.237	pass
2-Hexanone (Methyl butyl ketone)	ND	0.0409	0.0350	ND	0.168	0.143	pass
Dibromochloromethane	ND	0.0403	0.0350	ND	0.343	0.298	pass
1,2-Dibromoethane	ND	0.0409	0.0350	ND	0.314	0.269	pass
Chlorobenzene	ND	0.0412	0.0350	ND	0.190	0.161	pass
Ethylbenzene	ND	0.0397	0.0350	ND	0.172	0.152	pass
1,1,1,2-Tetrachloroethane	ND	0.0403	0.0350	ND	0.277	0.240	pass
m-/p-Xylenes	ND	0.0406	0.0350	ND	0.176	0.152	pass
o-Xylene	ND	0.0401	0.0350	ND	0.174	0.152	pass
Styrene	ND	0.0392	0.0350	ND	0.167	0.149	pass
Bromoform	ND	0.0401	0.0350	ND	0.414	0.362	pass
1,1,2,2-Tetrachloroethane	ND	0.0404	0.0350	ND	0.277	0.240	pass
4-Ethyltoluene	ND	0.0407	0.0350	ND	0.200	0.172	pass
2-Chlorotoluene	ND	0.0404	0.0350	ND	0.209	0.181	pass
1,3,5-Trimethylbenzene	ND	0.0406	0.0350	ND	0.199	0.172	pass
1,2,4-Trimethylbenzene	ND	0.0400	0.0350	ND	0.197	0.172	pass

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name X100324A_Humid Blank Can #C78367/1874
Sample Info. 500mL load
Sample Type Blank
Batch Xavier_X100324A_0924-208.v1
Data File X2404419.D
Dilution 1.000
Pressurization Factor 1.000
Acquisition Date 2024-10-03 15:21
Instrument Method TO15_SCNV6.M
Matrix Air
Analyst TDD
Instrument Xavier
Enthalpy ID X100324A_Humid Blank Can #C78367/1874

Target Compound	Concentration (ppbv)	RL (ppbv)	MDL (ppbv)	Concentration (ug/m ³)	RL (ug/m ³)	MDL (ug/m ³)	Flags
1,3-Dichlorobenzene	ND	0.0406	0.0350	ND	0.244	0.210	pass
1,4-Dichlorobenzene	ND	0.0402	0.0350	ND	0.242	0.210	pass
Benzyl chloride	ND	0.0402	0.0350	ND	0.208	0.181	pass
1,2-Dichlorobenzene	ND	0.0405	0.0350	ND	0.243	0.210	pass
1,2,4-Trichlorobenzene	ND	0.0398	0.0350	ND	0.295	0.260	pass
Hexachlorobutadiene	ND	0.0395	0.0350	ND	0.421	0.373	pass
Naphthalene	ND	0.0403	0.0350	ND	0.211	0.183	pass
1-Bromopropane	ND	0.0397	0.0350	ND	0.199	0.176	pass
1-Octene	ND	0.0395	0.0350	ND	0.181	0.161	pass
n-Octane	ND	0.0412	0.0350	ND	0.192	0.163	pass
Isopropylbenzene	ND	0.0406	0.0350	ND	0.200	0.172	pass
n-Propylbenzene	ND	0.0410	0.0350	ND	0.202	0.172	pass

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	869,640	10.99	5.21	pass
1,4-Difluorobenzene (IS)	3,102,662	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,590,384	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs

Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name X100324A_5ppbv TO15 LCS
 Sample Info. 125mL load; Can #C98040; GCMSPrepPg1374; MP1
 Sample Type QC
 Batch Xavier_X100324A_0924-208.v1
 Data File X2404416.D
 Dilution 1.000
 Pressurization Factor 1.000
 Acquisition Date 2024-10-03 12:41
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Enthalpy ID X100324A_5ppbv TO15 LCS

Target Compound	Response	Concentration (ppbv)	Expected Conc (ppbv)	Recovery (%)	Flags
Propylene	612,392	4.40	4.74	92.8	pass
Freon 12 (CCl ₂ F ₂)	2,055,351	5.11	4.80	107	pass
Freon 114 (C ₂ Cl ₂ F ₄)	2,149,110	5.17	5.06	102	pass
Chloromethane	739,902	5.11	4.88	105	pass
Chloroethene (Vinyl chloride)	526,578	6.16	4.96	124	pass
1,3-Butadiene	738,255	5.13	4.89	105	pass
Bromomethane	437,447	4.73	4.86	97.3	pass, m
Chloroethane	356,750	5.20	5.03	103	pass
Bromoethene (Vinyl bromide)	752,694	4.56	4.94	92.3	pass
Freon 11 (CCl ₃ F)	2,347,776	5.86	5.30	110	pass
Ethanol	310,433	3.84	5.05	76.1	pass
Acrolein	275,880	4.85	4.88	99.3	pass
Freon 113 (C ₂ Cl ₃ F ₃)	1,516,764	5.24	4.89	107	pass
1,1-Dichloroethene	1,394,812	5.40	4.98	108	pass
Acetone	1,482,239	4.99	5.15	96.8	pass, m
Carbon disulfide	2,116,542	5.21	4.86	107	pass
Isopropyl alcohol	1,426,492	4.68	4.97	94.2	pass, m
Allyl chloride (3-chloropropene)	295,177	5.07	5.00	101	pass, m
Acetonitrile	694,420	5.08	5.11	99.3	pass
Methylene chloride	1,159,714	5.25	5.00	105	pass
trans-1,2-Dichloroethene	1,250,656	5.93	5.04	118	pass
Methyl tert-butyl ether	1,931,734	5.43	5.08	107	pass, m
Acrylonitrile	631,593	5.64	4.98	113	pass
Hexane	1,201,028	5.62	5.00	112	pass, m
1,1-Dichloroethane	1,462,244	5.71	4.89	117	pass
Vinyl acetate	1,979,413	4.75	5.06	93.9	pass
cis-1,2-Dichloroethene	1,437,929	6.18	4.98	124	pass
Methyl ethyl ketone (2-Butanone)	335,359	5.24	5.24	100	pass, m
Ethyl acetate	322,593	5.21	4.95	105	pass
Chloroform	1,740,875	5.74	5.06	114	pass
Tetrahydrofuran	316,653	5.32	5.04	106	pass
1,1,1-Trichloroethane	1,757,914	5.61	4.94	114	pass
Cyclohexane	1,276,155	5.88	5.02	117	pass, m

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
 Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name X100324A_5ppbv TO15 LCS
 Sample Info. 125mL load; Can #C98040; GCMSPrepPg1374; MP1
 Sample Type QC
 Batch Xavier_X100324A_0924-208.v1
 Data File X2404416.D
 Dilution 1.000
 Pressurization Factor 1.000
 Acquisition Date 2024-10-03 12:41
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Enthalpy ID X100324A_5ppbv TO15 LCS

Target Compound	Response	Concentration (ppbv)	Expected Conc (ppbv)	Recovery (%)	Flags
Carbon tetrachloride	1,973,145	5.61	5.18	108	pass
Benzene	2,128,523	5.29	4.95	107	pass, m
2,2,4-trimethylpentane	4,092,595	5.78	5.09	114	pass, m
1,2-Dichloroethane	1,281,162	5.94	5.06	117	pass
Heptane	785,705	5.56	5.00	111	pass, m
Trichloroethene	1,126,841	4.74	5.05	93.8	pass
1,2-Dichloropropane	939,346	5.61	4.94	113	pass
Methyl methacrylate	793,117	5.63	5.14	110	pass, m
1,4-Dioxane	489,478	5.27	4.93	107	pass
Bromodichloromethane	1,860,194	5.72	4.83	118	pass
cis-1,3-Dichloropropene	1,207,713	4.96	4.87	102	pass
Methyl isobutyl ketone	2,433,963	5.44	5.14	106	pass, m
Toluene	2,924,830	5.34	5.00	107	pass
trans-1,3-Dichloropropene	1,326,872	5.33	5.04	106	pass
1,1,2-Trichloroethane	1,011,135	5.25	4.98	105	pass
Tetrachloroethene	1,633,403	5.14	5.02	102	pass
2-Hexanone (Methyl butyl ketone)	2,356,262	5.57	5.07	110	pass, m
Dibromochloromethane	2,208,071	5.46	5.00	109	pass
1,2-Dibromoethane	1,795,698	5.29	5.04	105	pass
Chlorobenzene	2,438,744	5.08	5.04	101	pass
Ethylbenzene	3,682,929	5.15	4.89	105	pass
1,1,1,2-Tetrachloroethane	1,476,058	5.21	5.08	103	pass
m-/p-Xylenes	2,929,481	5.42	5.09	107	pass, m
o-Xylene	2,978,314	5.29	5.01	106	pass
Styrene	2,326,328	5.26	4.80	109	pass
Bromoform	2,455,086	5.81	4.96	117	pass
1,1,2,2-Tetrachloroethane	2,356,904	5.49	4.97	110	pass
4-Ethyltoluene	4,401,485	5.44	4.84	112	pass
2-Chlorotoluene	3,791,902	5.67	5.00	114	pass
1,3,5-Trimethylbenzene	3,666,180	5.46	4.99	109	pass
1,2,4-Trimethylbenzene	3,585,034	5.23	4.87	107	pass
1,3-Dichlorobenzene	2,860,884	5.14	5.00	103	pass
1,4-Dichlorobenzene	2,944,774	5.20	5.02	103	pass

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name X100324A_5ppbv TO15 LCS
Sample Info. 125mL load; Can #C98040; GCMSPrepPg1374; MP1
Sample Type QC
Batch Xavier_X100324A_0924-208.v1
Data File X2404416.D
Dilution 1.000
Pressurization Factor 1.000
Acquisition Date 2024-10-03 12:41
Instrument Method TO15_SCNV6.M
Matrix Air
Enthalpy ID X100324A_5ppbv TO15 LCS

Target Compound	Response	Concentration (ppbv)	Expected Conc (ppbv)	Recovery (%)	Flags
Benzyl chloride	3,371,758	5.66	4.96	114	pass, m
1,2-Dichlorobenzene	2,800,174	5.23	5.00	105	pass
1,2,4-Trichlorobenzene	2,420,443	5.23	4.88	107	pass
Hexachlorobutadiene	2,278,226	5.65	4.95	114	pass
Naphthalene	5,109,178	4.82	5.00	96.5	pass
1-Bromopropane	1,622,209	5.18	4.90	106	pass
1-Octene	602,718	5.37	4.88	110	pass, m
n-Octane	801,334	5.38	5.02	107	pass, m
Isopropylbenzene	4,230,175	5.17	5.04	103	pass
n-Propylbenzene	5,109,980	5.56	5.00	111	pass

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	873,826	10.99	5.21	pass
1,4-Difluorobenzene (IS)	3,215,828	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,745,963	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs

Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name X100324A_5ppbv TO15 LCS LD
 Sample Info. 125mL load; Can #C98040; GCMSPrepPg1374; MP1
 Sample Type QcDup
 Batch Xavier_X100324A_0924-208.v1
 Data File X2404417.D
 Dilution 1.000
 Pressurization Factor 1.000
 Acquisition Date 2024-10-03 13:29
 Instrument Method TO15_SCNV6.M
 Matrix Air
 Parent X100324A_5ppbv TO15 LCS
 Enthalpy ID X100324A_5ppbv TO15 LCS LD

Target Compound	Response	Concentration (ppbv)	Expected Conc (ppbv)	Parent Conc (ppbv)	Recovery (%)	Diff (%)	Flags
Propylene	622,293	4.50	4.74	4.40	94.9	2.3	pass
Freon 12 (CCl ₂ F ₂)	2,076,650	5.20	4.80	5.11	108	1.7	pass
Freon 114 (C ₂ Cl ₂ F ₄)	2,151,568	5.21	5.06	5.17	103	0.8	pass
Chloromethane	735,652	5.11	4.88	5.11	105	0.1	pass
Chloroethene (Vinyl chloride)	531,241	6.26	4.96	6.16	126	1.5	pass, m
1,3-Butadiene	743,043	5.19	4.89	5.13	106	1.3	pass
Bromomethane	435,308	4.74	4.86	4.73	97.4	0.2	pass, m
Chloroethane	363,885	5.34	5.03	5.20	106	2.6	pass
Bromoethene (Vinyl bromide)	755,117	4.60	4.94	4.56	93.2	1.0	pass, m
Freon 11 (CCl ₃ F)	2,360,486	5.93	5.30	5.86	112	1.2	pass
Ethanol	301,737	3.76	5.05	3.84	74.5	2.2	pass, m
Acrolein	276,273	4.89	4.88	4.85	100	0.8	pass
Freon 113 (C ₂ Cl ₃ F ₃)	1,509,684	5.25	4.89	5.24	107	0.2	pass
1,1-Dichloroethene	1,395,186	5.43	4.98	5.40	109	0.7	pass
Acetone	1,493,166	5.06	5.15	4.99	98.2	1.4	pass
Carbon disulfide	2,106,381	5.22	4.86	5.21	107	0.2	pass
Isopropyl alcohol	1,416,782	4.68	4.97	4.68	94.2	0.0	pass
Allyl chloride (3-chloropropene)	296,690	5.13	5.00	5.07	103	1.2	pass, m
Acetonitrile	682,315	5.02	5.11	5.08	98.2	1.1	pass, m
Methylene chloride	1,164,518	5.31	5.00	5.25	106	1.1	pass
trans-1,2-Dichloroethene	1,257,375	6.00	5.04	5.93	119	1.2	pass
Methyl tert-butyl ether	1,943,896	5.50	5.08	5.43	108	1.3	pass
Acrylonitrile	626,661	5.63	4.98	5.64	113	0.1	pass
Hexane	1,189,972	5.61	5.00	5.62	112	0.3	pass
1,1-Dichloroethane	1,443,857	5.67	4.89	5.71	116	0.6	pass
Vinyl acetate	1,967,524	4.75	5.06	4.75	94.0	0.1	pass, m
cis-1,2-Dichloroethene	1,427,620	6.18	4.98	6.18	124	0.1	pass
Methyl ethyl ketone (2-Butanone)	335,375	5.28	5.24	5.24	101	0.7	pass, m
Ethyl acetate	320,180	5.20	4.95	5.21	105	0.1	pass
Chloroform	1,750,140	5.81	5.06	5.74	115	1.2	pass
Tetrahydrofuran	318,597	5.39	5.04	5.32	107	1.3	pass
1,1,1-Trichloroethane	1,760,915	5.65	4.94	5.61	115	0.8	pass
Cyclohexane	1,278,952	5.93	5.02	5.88	118	0.9	pass, m

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name X100324A_5ppbv TO15 LCS LD
Sample Info. 125mL load; Can #C98040; GCMSPrepPg1374; MP1
Sample Type QcDup
Batch Xavier_X100324A_0924-208.v1
Data File X2404417.D
Dilution 1.000
Pressurization Factor 1.000
Acquisition Date 2024-10-03 13:29
Instrument Method TO15_SCNV6.M
Matrix Air
Parent X100324A_5ppbv TO15 LCS
Enthalpy ID X100324A_5ppbv TO15 LCS LD

Target Compound	Response	Concentration (ppbv)	Expected Conc (ppbv)	Parent Conc (ppbv)	Recovery (%)	Diff (%)	Flags
Carbon tetrachloride	1,974,408	5.65	5.18	5.61	109	0.7	pass
Benzene	2,123,702	5.32	4.95	5.29	108	0.6	pass, m
2,2,4-trimethylpentane	4,079,101	5.81	5.09	5.78	114	0.5	pass, m
1,2-Dichloroethane	1,302,958	6.09	5.06	5.94	120	2.6	pass
Heptane	782,588	5.59	5.00	5.56	112	0.5	pass, m
Trichloroethene	1,128,822	4.79	5.05	4.74	94.8	1.1	pass
1,2-Dichloropropane	928,879	5.59	4.94	5.61	113	0.2	pass
Methyl methacrylate	789,496	5.66	5.14	5.63	110	0.4	pass, m
1,4-Dioxane	484,586	5.27	4.93	5.27	107	0.1	pass
Bromodichloromethane	1,865,582	5.78	4.83	5.72	120	1.2	pass
cis-1,3-Dichloropropene	1,219,232	5.05	4.87	4.96	104	1.8	pass
Methyl isobutyl ketone	2,406,750	5.43	5.14	5.44	106	0.2	pass, m
Toluene	2,934,790	5.41	5.00	5.34	108	1.3	pass
trans-1,3-Dichloropropene	1,338,160	5.43	5.04	5.33	108	1.8	pass
1,1,2-Trichloroethane	1,003,388	5.26	4.98	5.25	106	0.2	pass
Tetrachloroethene	1,652,163	5.25	5.02	5.14	105	2.1	pass
2-Hexanone (Methyl butyl ketone)	2,336,181	5.58	5.07	5.57	110	0.1	pass, m
Dibromochloromethane	2,221,488	5.55	5.00	5.46	111	1.6	pass
1,2-Dibromoethane	1,813,281	5.40	5.04	5.29	107	1.9	pass, m
Chlorobenzene	2,419,567	5.09	5.04	5.08	101	0.2	pass
Ethylbenzene	3,735,210	5.28	4.89	5.15	108	2.4	pass
1,1,1,2-Tetrachloroethane	1,469,244	5.24	5.08	5.21	103	0.5	pass
m-/p-Xylenes	2,957,760	5.53	5.09	5.42	109	1.9	pass
o-Xylene	2,967,562	5.32	5.01	5.29	106	0.6	pass
Styrene	2,305,312	5.26	4.80	5.26	109	0.0	pass
Bromoform	2,466,447	5.89	4.96	5.81	119	1.4	pass
1,1,2,2-Tetrachloroethane	2,340,748	5.50	4.97	5.49	111	0.3	pass
4-Ethyltoluene	4,350,381	5.43	4.84	5.44	112	0.2	pass
2-Chlorotoluene	3,790,304	5.72	5.00	5.67	115	0.9	pass
1,3,5-Trimethylbenzene	3,677,356	5.53	4.99	5.46	111	1.3	pass
1,2,4-Trimethylbenzene	3,557,310	5.24	4.87	5.23	108	0.2	pass
1,3-Dichlorobenzene	2,868,197	5.21	5.00	5.14	104	1.2	pass
1,4-Dichlorobenzene	2,907,929	5.18	5.02	5.20	103	0.3	pass

Enthalpy Analytical

Job No.: 0924-208-1 EPA Method TO-15 Analysis -- Runs
Dow Chemical Company PROJ-046250 Dole SCO-St. Charles, LA

Sample Name X100324A_5ppbv TO15 LCS LD
Sample Info. 125mL load; Can #C98040; GCMSPrepPg1374; MP1
Sample Type QcDup
Batch Xavier_X100324A_0924-208.v1
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Dilution 1.000
Pressurization Factor 1.000
Acquisition Date 2024-10-03 13:29
Instrument Method TO15_SCNV6.M
Matrix Air
Parent X100324A_5ppbv TO15 LCS
Enthalpy ID X100324A_5ppbv TO15 LCS LD

Target Compound	Response	Concentration (ppbv)	Expected Conc (ppbv)	Parent Conc (ppbv)	Recovery (%)	Diff (%)	Flags
Benzyl chloride	3,361,003	5.69	4.96	5.66	115	0.6	pass
1,2-Dichlorobenzene	2,820,265	5.32	5.00	5.23	106	1.7	pass
1,2,4-Trichlorobenzene	2,465,915	5.38	4.88	5.23	110	2.8	pass
Hexachlorobutadiene	2,271,375	5.69	4.95	5.65	115	0.7	pass
Naphthalene	5,159,370	4.91	5.00	4.82	98.4	1.9	pass
1-Bromopropane	1,616,519	5.19	4.90	5.18	106	0.3	pass
1-Octene	600,998	5.41	4.88	5.37	111	0.7	pass, m
n-Octane	795,734	5.40	5.02	5.38	107	0.3	pass, m
Isopropylbenzene	4,222,001	5.21	5.04	5.17	103	0.8	pass
n-Propylbenzene	5,097,028	5.60	5.00	5.56	112	0.7	pass

Compound	Response	Retention Time (min)	Concentration (ppbv)	Flag
Bromochloromethane (IS)	868,069	10.99	5.21	pass, m
1,4-Difluorobenzene (IS)	3,187,825	12.41	5.16	pass
Chlorobenzene-d5 (IS)	2,719,824	16.54	4.92	pass

(ND) = Not Detected

(J) = Below Calibration Range, (E) = Above Calibration Range, (m) = Manual Integration

IS Acceptance Criteria: RT +/- 20 sec, Response +/- 40%

Narrative Summary



Enthalpy Analytical Narrative Summary

Company	Dow Chemical Company	Client #	Dole SCO - St. Charles, LA PROJ-046250
Analyst	TDD	Job #	0924-208
Parameters	EPA Method TO-15	# Samples	(6L) Canisters

Custody	Alyssa Miller received the samples on 10/3/2024 after being relinquished by Dow Chemical Company. The samples were received at ambient temperature and in good condition. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, LLC.
Analysis	The samples were analyzed for the TO-15 target compound list using the analytical procedures in EPA Method TO-15, <i>Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canister And Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)</i>. Upon receipt, the canister pressures was measured and recorded. The canisters were then pressurized with UHP nitrogen and dilution ratios were calculated. See the Canister Pressurization Data sheet located in the Results section of this report. All samples were analyzed undiluted. Sample #6 OldTar Pot Lvl3 was analyzed at a subsequent 20-fold analytical dilution in order to bring benzene, propylene, and 1,3-butadiene into the instrument's calibration range. Dilution factors are displayed in the sample header. The Agilent Technologies Model 6890N, Gas Chromatograph "Xavier" (S/N US10721018) equipped with a 5975C VL Mass Selective Detector (S/N US71215962) was used for this analysis. The sample and standards were introduced directly to the analyzer using an Entech 7200 Preconcentrator.
Calibration	The BFB tune analyses associated with the initial and continuing calibrations met all method acceptance criteria. The initial calibration (X100722A_TO15) met the 30% RSD criteria. The initial calibration verification (ICV) met the 70-130% recovery criteria. The continuing calibration (CCV) met the 30% difference criteria.
Chromatographic Conditions	The acquisition method (TO15_SCNV6) may be made available upon request.

Enthalpy Analytical Narrative Summary (continued)

QC Notes

All internal standard area (IS) responses and retention time criteria were met for this analysis.

The Laboratory Duplicate (LD) associated with this sample set met the 25% difference criteria for all reported compounds above the LOQ. The LCS was also analyzed in duplicate and met the 25% difference criteria for all compounds.

The laboratory humid blank associated with this analysis did not contain any of the target analytes at a concentration greater than 3x their MDL.

The Laboratory Control Sample (LCS) met the 70-130% recovery criteria for all reported compounds.

The samples were analyzed within the 30-day holding time required by the method.

Reporting Notes

The analysis met the requirements of the TNI Standard. Any deviations from the requirements of the reference method or TNI Standard have been stated above.

The results presented in this report are representative of the samples as provided to the laboratory.

General Reporting Notes

The following are general reporting notes that are applicable to all Enthalpy Analytical, LLC data reports, unless specifically noted otherwise.

- Any analysis which refers to the method as “**Type**” represents a planned deviation from the reference method. For instance a Hydrogen Sulfide assay from a Tedlar bag would be labeled as “EPA Method 16-Type” because Tedlar bags are not mentioned as one of the collection options in EPA Method 16.
- The acronym **MDL** represents the Minimum Detection Limit. Below this value the laboratory cannot determine the presence of the analyte of interest reliably.
- The acronym **LOQ** represents the Limit of Quantification. Below this value the laboratory cannot quantitate the analyte of interest within the criteria of the method.
- The acronym **ND** following a value indicates a non-detect or analytical result below the MDL.
- The letter **J** in the Qualifier or Flag column in the results indicates that the value is between the MDL and the LOQ. The laboratory can positively identify the analyte of interest as present, but the value should be considered an estimate.
- The letter **E** in the Qualifier or Flag column indicates an analytical result exceeding 100% of the highest calibration point. The associated value should be considered as an estimate.
- Sample results are presented ‘as measured’ for single injection methodologies, or an average value if multiple injections are made. If all injections are below the MDL, the sample is considered non-detect and the ND value is presented. If one, but not all, are below the MDL, the MDL value is used for any injections that are below the MDL. For example, if the MDL is 0.500 and LOQ is 1.00, and the instrument measures 0.355, 0.620, and 0.442 - the result reported is the average of 0.500, 0.620, and 0.500 - - - i.e. 0.540 with a J flag.
- When a spike recovery (Bag Spike, Collocated Spike Train, or liquid matrix spike) is being calculated, the native (unspiked) sample result is used in the calculations, as long as the value is above the MDL. If a sample is ND, then 0 is used as the native amount (not the MDL value).
- The acronym **DF** represents Dilution Factor. This number represents dilution of the sample during the preparation and/or analysis process. The analytical result taken from a laboratory instrument is multiplied by the DF to determine the final undiluted sample results.
- The addition of **MS** to the Sample ID represents a Matrix Spike. An aliquot of an actual sample is spiked with a known amount of analyte so that a percent recovery value can be determined. The MS analysis indicates what effect the sample matrix may have on the target analyte, i.e. whether or not anything in the sample matrix interferes with the analysis of the analyte(s).



General Reporting Notes

(continued)

- The addition of **MSD** to the Sample ID represents a Matrix Spike Duplicate. Prepared in the same manner as a MS, the use of duplicate matrix spikes allows further confirmation of laboratory quality by showing the consistency of results gained by performing the same steps multiple times.
- The addition of **LD** to the Sample ID represents a Laboratory Duplicate. The analyst prepares an additional aliquot of sample for testing and the results of the duplicate analysis are compared to the initial result. The result should have a difference value of within 10% of the initial result (if the results of the original analysis are greater than the LOQ).
- The addition of **AD** to the Sample ID represents an Alternate Dilution. The analyst prepares an additional aliquot at a different dilution factor (usually double the initial factor). This analysis helps confirm that no additional compound is present and coeluting or sharing absorbance with the analyte of interest, as they would have a different response/absorbance than the analyte of interest.
- The Sample ID **LCS** represents a Laboratory Control Sample. Clean matrix, similar to the client sample matrix, prepared and analyzed by the laboratory using the same reagents, spiking standards and procedures used for the client samples. The LCS is used to assess the control of the laboratory's analytical system. Whenever spikes are prepared for our client projects, two spikes are retained as LCSs. The LCSs are labeled with the associated project number and kept in-house at the appropriate temperature conditions. When the project samples are received for analysis, the LCSs are analyzed to confirm that the analyte could be recovered from the media, separate from the samples which were used on the project and which may have been affected by source matrix, sample collection, and/or sample transport.
- **Significant Figures:** Where the reported value is much greater than unity (1.00) in the units expressed, the number is rounded to a whole number of units, rather than to 3 significant figures. For example, a value of 10,456.45 ug catch is rounded to 10,456 ug. There are five significant digits displayed, but no confidence should be placed on more than two significant digits. In the case of small numbers, generally 3 significant figures are presented, but still only 2 should be used with confidence. Many neat materials are only certified to 3 digits, and as the mathematically correct final result is always 1 digit less than all its pre-cursors - 2 significant figures are what are most defensible.
- **Manual Integration:** The data systems used for processing will flag manually integrated peaks with an "M". There are several reasons a peak may be manually integrated. These reasons will be identified by the following two letter designations on sample chromatograms, if provided in the report. The peak was **not integrated** by the software "**NI**", the peak was **integrated incorrectly** by the software "**II**" or the **wrong peak** was integrated by the software "**WP**". These codes will accompany the analyst's manual integration stamp placed next to the compound name on the chromatogram.



Sample Custody





ORIG.

0924-208

10.03.24

CHAIN of CUSTODY and ANALYTICAL REQUIREMENTS

Client Name: DOUG SCO
 Client Location: St. Charles, LA
 Source Name: _____

Samples Collected By: Ollie Hertzog
 Project Manager: Ollie Hertzog
 MAQS Project Number: PROJ-046250

MAQS Sample ID	Lab ID Number	Sample Description	Collection Date	Matrix	Preservative/ Type & Amount	Analysis Required
#1 South of North pond	C78284	SumnerCAN GL TER	9/27/24	1015 AIR 24 Nov 7	---	VO-15 NO EO
#2 North of North pond	C78012	↓	↓	0830	---	↓ ↓ ↓
#3 T-8302	C78066	↓	↓	1045	---	↓ ↓ ↓
#4 T-1401	C78079	↓	↓	1100	---	↓ ↓ ↓
#5 FGC Discharge Drum	C78255	↓	↓	1145	---	↓ ↓ ↓
#6 O/DYAR Port N/3	C78405	↓	↓	1200	---	↓ ↓ ↓
Ambient Temp good condition Amm 3 10.03.24						

Special Instructions:

SEND Results to Charles Citi

Special Handling:

Office Location:

Turn around time:

Baton Rouge
ASAP

Sample set: 1 of 1Page: 1 of 1

Samples Transferred to (Lab Name)	Transfer Date	Transfer Method	Number of Samples	Condition of Samples	Receiving Sample Trustee Signature
Enthwpy, NC	10/2/24	FED EX	6		Aupsemmu

Montrose Air Quality Services, LLC ▪ 625 Highlandia Drive, Baton Rouge, LA 70810 ▪ 225.753.1115 ▪ Fax 225.753.1116 ▪ www.montrose-env.com

10.03.24
0915
0930
Amm 3
10.03.24

**This Is The Last Page
Of This Report.**





- | | |
|-----------|---|
| Sample #1 | South of North Aeration Pond |
| Sample #2 | North of North Aeration Pond |
| Sample #3 | Tank T-8302 (hatch top of tank) |
| Sample #4 | Tank T-1401 (hatch top of tank) |
| Sample #5 | Olefins 1 FGC Discharge Drum - Sewer Hub |
| Sample #6 | Olefins 1 - Old Tar Pot (Regulator - 3rd level) |

Appendix 10

RCRA Records Request

From: [Penland, John](#)
To: pspeyrer@dow.com
Cc: [Pandak, Debra \(she/her/hers\)](#); [McCarthy, Colleen \(she/her/hers\)](#)
Subject: Sept. 24-25, 2024-Inspection Summary and Information Request for DOW St Charles Operations (EPAID:LAD041581422)
Date: Tuesday, October 1, 2024 4:36:00 PM

All,

Here is a summary of my notes from last week's inspection. If there are any errors or omissions, please let me know.

Introduction

On September 24 and 25, 2024, I, John Penland, conducted an unannounced inspection of the Dow St. Charles facility and collocated Vopak Terminal located at 355 Highway 3142, Hahnville, LA 70057 for compliance with the Resource Conservation and Recovery Act (RCRA). This inspection focused on the generation and management of the wastewater generated by operations at the two facilities and was conducted in conjunction with a parallel Clean Air Act inspection.

Daily Summary

Initial Entry to the facility – September 24, 2024, at approximately 9:00am

I presented my credentials to Mr. Philip Speyrer and informed him that I was there to conduct an inspection of the facility under the authority of section 3007 of the Resource Conservation and Recovery Act.

RCRA Section 3007 - For purposes of developing or assisting in the development of any regulation or enforcing the provisions of this chapter, any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes shall, upon request of any officer, employee or representative of the Environmental Protection Agency, duly designated by the Administrator, or upon request of any duly designated officer, employee or representative of a State having an authorized hazardous waste program, furnish information relating to such wastes and permit such person at all reasonable times to have access to, and to copy all records relating to such wastes. For the purposes of developing or assisting in the development of any regulation or enforcing the provisions of this chapter, such officers, employees or representatives are authorized—

(1) to enter at reasonable times any establishment or other place where hazardous wastes are or have been generated, stored, treated, disposed of, or transported from;

(2) to inspect and obtain samples from any person of any such wastes and samples of any containers or labeling for such wastes.

Discussed the right of DOW to assert a Confidential Business Information claim for records requested by EPA.

Facility Walkthrough – Following my meeting with Mr. Speyrer, I began my walkthrough of the facility with the two Olefins units. This was followed by inspection of the 1300 series tanks, the Barge Dock, the 6200 tank, and the 5101 tank.

Applicability of 268 standards

During this inspection I assessed the applicability of the 40 CFR 268.40 treatment standards to the wastewaters generated by Dow St. Charles. Initially, I believed that the presence of the surface impoundment in the WWTU might affect the applicability treatment standards and the dilution prohibition. However, upon further review, footnote 8 of the table found in 40 CFR 268.40 clarifies the applicability of the treatment standards by citing to the exemption located at 268.1(c)(4).

Request for information:

Based on my preliminary observations, EPA will require additional information to complete its assessment of the wastewaters generated by DOW St. Charles.

- A. For each wastewater stream treated in the following units: OLE1-PWS DA-1463; OLE-2 PWS DA-3106; #3WWS DA-116; East WWS DA-118; and West WWS DA-119
 - 1. Identify the point of generation of the waste.
 - 2. Provide waste determination documentation consistent with the requirements of 40 CFR 262.11 at the waste's point of generation and where any subsequent management may have altered the waste's properties.
 - 3. For any claims of exemption under 40 CFR 261.2 (c)(3) or 40 CFR 261.4, provide a written explanation of the applicability of that exemption.
- B. For the 1300 series tanks
 - 1. Identify the dates for any change of the materials stored in those tanks.

Where documents presented to the EPA as part of the concurrent Clean Air Act inspection address this request, a duplicate is not necessary. Simply provide reference to the responsive document.

During the closing meeting of this inspection, we scheduled a meeting on October 8, 2024, to review the information provided as a response to this request. However, if you believe you will require additional time to prepare this response, I am open to rescheduling that meeting.

Thank you for your time and consideration.

John Penland
Sr. Environmental Scientist
Enforcement and Compliance Assurance Division (ECAD)
United States Environmental Protection Agency – Region 6
1201 Elm Street, Suite 500, Dallas, TX 75270
214-665-9717
Penland.john@epa.gov