REPORT OF RCRA COMPLIANCE EVALUATION INSPECTION

At

CLIMAX MOLYBDENUM COMPANY
2598 Hwy. 61 South
Fort Madison, Iowa 52627
(319) 463-2245

EPA RCRA ID No. IAD000222653

ON

March 14, 2023

By

TOEROEK ASSOCIATES, INC.

For

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 7
Enforcement and Compliance Assurance Division

INTRODUCTION

At the request of the Enforcement and Compliance Assurance Division/Chemical Branch/RCRA Section of the U.S. Environmental Protection Agency (EPA) Region 7, Toeroek Associates, Inc. and its subcontractor CLAENE Group (Toeroek team) conducted a hazardous waste compliance evaluation inspection (CEI) at Climax Molybdenum Company (Climax), at 2598 Hwy. 61 South, Fort Madison, Iowa. The CEI was conducted under the authority of Section 3007 of the Resource Conservation and Recovery Act (RCRA), as amended. The CEI covered hazardous waste generator, used oil, and universal waste requirements as applicable. This report and its attachments present the findings of the CEI.

PARTICIPANTS

Climax:

David Caskey, Manager, Environmental Plant
Denae Rutherford, Environmental Scientist I
Jessi Woods, Environmental Technician II
David Morton, Laboratory (Lab) Technician
Michael Cavasos, Manager Maintenance (exit briefing only)
Javier Guevava, General Manager (exit briefing only)
Amy Conlee, Community Development (exit briefing only)
Sarah Johnson, Manager Moly Operations (exit briefing only)

Toeroek Team:

William F, Starks, Environmental Consultant, (816) 286-6951

INSPECTION PROCEDURES

Prior to the CEI at Climax on March 14, 2023, I conducted a drive-by visual inspection. I did not observe any areas of concern during the drive-by. Upon my arrival, I approached the guard shack, explained the purpose of the CEI, and asked to speak with Mr. Caskey. The guard notified Mr. Caskey of my arrival, and asked me to sign the visitor's log. Upon reviewing the visitor's logbook, I noted a restriction on cameras without prior approval. I explained to the guard that I would not be able to sign the visitors log unless I was allowed to take photographs during the CEI. The guard stated that I would be allowed entry with the camera and no restrictions on photography. I signed the visitors log and noted the verbal approval conveyed to me. I parked my car in the visitor's parking log and waited at the guard shack for Mr. Caskey, who arrived approximately two minutes later. After a brief introduction, I explained the purpose of the CEI to Mr. Caskey. Mr. Caskey and I proceeded to his office where I conducted an entry briefing with him. Mses. Rutherford and Woods participated in the entry briefing in Mr. Caskey's office.

During the entry briefing, I presented my business card and EPA credentials to Mr. Caskey, Ms. Rutherford, and Ms. Woods. I explained the scope and procedures for the CEI. I explained the facility's right to make confidentiality claims and provided a Notice Regarding Proprietary/ Confidential Business Information. I stated that at the conclusion of the CEI, they would be presented with a Confidentiality Notice (Notice) with which they could make or not make a claim of confidentiality for the facility. I also provided Mr. Caskey, Ms. Rutherford, and Ms. Woods a copy of U.S. Federal Codes 1001 and 1002, concerning communication of false statements and documents to federal inspectors, and RCRA Section 3007, explaining EPA's inspection authority. Mr. Caskey, Ms. Rutherford, and Ms. Woods read both of these documents.

A copy of each of the following documents was left with the facility during the inspection:

- RCRA Facility Access Information Sheet
- Mr. Trevor Urban's business card
- RCRA Section 3007

- U.S. Federal Codes 1001 and 1002
- Notice Regarding Proprietary/Confidential Business Information

During the CEI, I inadvertently neglected to provide compliance assistance handouts to the facility. I contacted Mr. Caskey after the CEI, explained the error, and asked if he wanted hard copies mailed to the facility or electronic copies. Mr. Caskey stated that electronic copies were preferred. I emailed Mr. Caskey electric copies of the following compliance assistance materials:

- U.S. EPA Small Business Resources Information Sheet
- Chemical Facility Anti-Terrorism Standards
- Solvent-Contaminated Wipes Final Rule Summary Chart
- E-Manifest Fact Sheet: Generators
- Small Quantity Generator Reminder to Re-notify
- Managing your Hazardous Waste: A Guide for Small Businesses
- Part 279 Requirements: Used Oil Management Standards
- EPA Region 7 Emergency Response Program
- Recycling Electronics: A Guide for Businesses
- Lead-Based Paint Activities: Handling and Disposal
- IDNR Excluded Solvent-Contaminated Wipes Rule: Management Practices for Wipes, Rags, and Shop Towels
- Battery Recycling/Disposal
- Management of Fluorescent Lamps for Businesses
- Incompatible Chemicals
- Universal Wastes – Including Aerosol Cans
- TCLP – Toxicity Characteristic Leaching Procedure
- Iowa Environmental Guide for Businesses

During the CEI, I reviewed the Notification Acknowledgement/Verification Report (Verification Report) with Mr. Caskey (Attachment 1). Based on this review, as well as observations during the CEI, I made no corrections or additions to the Verification Report.

I conducted the visual inspection and the records review on March 14, 2023, accompanied by Mr. Caskey, Ms. Rutherford, and Ms. Woods. During the records review, I reviewed facility documentation such as inventory reports, inspection logs, RCRA Contingency Plan, training records, shipping records, and hazardous waste determination records. I prepared and completed a site-specific inspection checklist to document my observations.

At the conclusion of the CEI on March 14, 2023, I conducted an exit briefing with Mr. Caskey, Ms. Rutherford, and Ms. Woods. Messrs. Cavasos and Guevava and Mses. Conlee and Johnson also participated in the exit briefing. During the exit briefing, I provided a Receipt for Documents and Samples, which Mr. Caskey signed, acknowledging receipt (Attachment 2). I provided Mr. Caskey the Notice, which he signed indicating no confidential business information had been provided (Attachment 3). I made no preliminary findings during the inspection so a Notice of Preliminary Findings (NOPF) was not left with the facility at the conclusion of the CEI. However, I explained to facility representatives that findings might be added by EPA after review of the inspection report.

A diagram of the facility was obtained during the CEI and is in Attachment 4. An aerial photograph of the facility was downloaded after the CEI and is in Attachment 5. The 25 photographs taken during the CEI are included in Attachment 6. Of these, 24 photographs are discussed in this report.

FINDINGS AND OBSERVATIONS

1. Facility Description and General Information

Climax extracts molybdenum (moly) by refining ore concentrates supplied by mines. Climax gets ore from two primary mines in Colorado, where moly is the sole product of the mining operations. Climax also gets moly material from the Sierrita, Arizona copper mine, where moly ore is a by-product of the copper mining operations.

At Climax, ore concentrate is roasted during the refining process. The roasting process produces a technical-grade oxide which is the ingredient for moly oxide powder. The technical-grade oxide can undergo further refining for chemical-grade applications.

The plant refining processes consist of roasters, pumps, process piping, tanks, and filters before products are sent to several finished product lines. There are two roasters used to convert moly disulfide in the ore to moly trioxide through the oxidation of sulfur to sulfur dioxide gas. Each roaster operates in the temperature range of 1,000 degrees Fahrenheit (°F) to 1,500 °F. Molybdates are produced from the extracted moly.

Climax produces lubricant grade moly disulfide, moly sulfide, sublimed pure molybdic oxide, ammonium dimolybdate, ammonium heptamolybdate, ammonium octamolybdate, and sodium molybdate. Climax molybdates are used in steel alloy products and chemical products such as lubricants, pigments, catalysts, and plastics.

Sulfur dioxide gas is removed from the roaster vent gas in a wet gas cleaning process using scrubbers and wet electrostatic precipitators. Sulfur dioxide gas is used in the production of sulfuric acid.

The majority of hazardous waste generated at the facility occurs during an annual event the facility calls “Turnaround.” Mr. Caskey explained that during Turnaround, the facility cleans tanks, sumps, and lines. Roaster brick from the roasters is also repaired or replaced during Turnaround. He added that the event usually occurs between May and August, depending on the availability of contract labor. Mr. Caskey explained that Climax works with other facilities in the area to determine the best time for Turnaround, as all facilities in the area utilize the same contractors. Personal protective equipment (PPE) utilized during Turnaround is disposed with the waste that is being generated (for example, waste PPE generated during tank cleanout is consolidated with tank cleanout wastes for disposal).

Roaster bricks are replaced during Turnaround. The roaster bricks removed for replacement are covered with product, moly trioxide (MoO_3). The facility evaluated various options to recover this valuable product for reintroduction into the roasters. This included having personnel rinse

the bricks to recover the MoO_3. While they did recover product, (moly concentration on brick went from 18.9% on the unwashed brick to 6.2% in the washed brick), the facility ultimately determined that MoO_3 recovery was not economically feasible based on the amount of time and labor it took to rinse the bricks. Therefore, the facility elected to not attempt product recovery and to manage removed roaster bricks as hazardous waste.

Outside of Turnaround, the facility generates waste PPE, lab waste, waste aerosol cans, scrap metal, used oil, used lamps, and used batteries. Waste PPE, such as gloves, rags, and Tyvek suits, is accumulated in 55-gallon satellite accumulation containers (SACs). SACs are transferred to the hazardous waste container accumulation area (CAA) when full.

Lab waste is generated in one of the facility's two labs (Main Lab and Roaster Building Lab). Waste acetone generated in the Main Lab is collected in a one-gallon SAC. When full, the waste acetone is transferred to a 35-gallon hazardous waste accumulation container (HWAC) in the CAA. Waste magnesium perchlorate is generated in both labs. It is collected in one-gallon SACs, which are lab-packed for disposal when full. Hazardous wastes are collected by Clean Harbors Environmental Solutions (Clean Harbors) for treatment or disposal.

Facility maintenance generates waste aerosol cans. Upon generation, waste aerosol cans are punctured and drained into a 35-gallon SAC in the Maintenance Shop. Punctured aerosol cans are considered to be scrap metal container. Scrap metal generated at the facility is collected and transferred to a 30-cubic-yard scrap metal accumulation container south of the Chemical Plant. Scrap metal is transported to Alter Metal Recycling in Burlington, Iowa, for recycling.

Used oil is generated during facility equipment maintenance and the roasting process. Used oil is managed as used oil according to provisions of Title 40 *Code of Federal Regulations* (40 CFR) Part 279. It is collected in 55-gallon used oil storage containers in the Maintenance Shop and under the roasters. Used oil is pumped through piping from the 55-gallon used oil storage containers to a 5,000-gallon used oil aboveground storage tank (AST) in the Roaster Building. Used oil is transported to Green For Life in Mokena, Illinois, for recycling.

Used lamps, used batteries, and mercury-containing equipment are generated during facility and equipment maintenance and are managed as universal waste according to provisions of 40 CFR 273. Universal wastes are transferred to a universal waste accumulation area in the Sewage Treatment building and are transported off site for recycling.

Process wastewater generated at the facility is treated at an onsite wastewater treatment plant (WWTP). Wastewater is treated and discharged under a National Pollutant Discharge Elimination System (NPDES) permit; therefore, the facility considers process wastewater exempt per 40 CFR 261.4(a)(2). The WWTP was constructed in 2019 and commissioned in February 2020. Mr. Caskey provided a description of the WWTP process following the CEI, which is included in Attachment 7.

General trash is considered nonhazardous waste and is generated throughout the facility. The waste is collected in various containers and transferred to roll off containers. General trash is transported to Great River Regional Waste Authority in Fort Madison, Iowa, for recycling or landfill disposal.

Climax has been in operation at its current location since 1974. Climax employs approximately 160 full-time personnel, with additional contract labor during Turnaround. The facility operates on a 24-hour/seven-day schedule. The facility is divided into nine main areas: West Chemical Plant, Roaster Building, Acid Plant, Product Warehouse, WWTP, Maintenance Shop, Shipping/Receiving, Office Area, and Main Lab.

On July 31 and August 1, 2018, Climax was inspected by EPA. Following the CEI, the inspector left a Notice of Violation (NOV) with the following findings:

- Failure to clearly mark or label used oil storage containers and tanks with the words "used oil," as required by 40 CFR 279.22(c)(1)
- Failure to describe signal(s) to be used to begin an evacuation, as required by 40 CFR 262.17(a)(6) referencing 262.261(f)

These findings were not repeated during this inspection.

2. RCRA Status

Climax was identified as a large quantity generator (LQG) of hazardous waste (generating more than 1,000 kilograms [kg] of hazardous waste per month) on the Verification Report provided by EPA (Attachment 1). During the CEI, I confirmed that Climax's is currently operating as a LQG of hazardous waste through a review of current operations, interviews with facility representatives, and a review of waste disposal records (manifests and shipment summary records).

I reviewed the facility's 2021 Hazardous Waste Biennial Report prior to the CEI, and Mr. Caskey provided a copy of the Clean Harbors Shipments for 2022 which summarized waste shipments in 2022 (Attachment 8). Based on these records, Climax generated approximately 335,493 pounds (152,177 kg) of hazardous waste during Turnaround in 2021, and 373,959 pounds (169,625 kg) of hazardous waste during Turnaround in 2022. Based on Attachment 8, the facility generated 148,089 pounds (67,172 kg) of hazardous waste in June 2022, 128,750 pounds (58,400 kg) of hazardous waste in July 2022, and 97,120 pounds (44,053 kg) of hazardous waste in August 2022. The facility's hazardous waste generation rate during Turnaround easily exceeds the LQG threshold of 2,200 pounds per month. Therefore, I determined that Climax is currently operating as a LQG of hazardous waste (D001, D002, D003, D004, D006, D007, D008, D009, D010, D035 characteristic; and F003 listed hazardous wastes), and inspected the facility as such.

I also reviewed universal waste shipment tracking spreadsheets for 2020, 2021, and 2022 (Attachment 9). Based on these documents, Climax generates between 733 and 1,911 pounds (332 and 867 kg) of universal waste lamps per year, and between 605 and 1,578 pounds (274 and 716 kg) of universal waste batteries per year. Therefore, I inspected Climax as a small quantity handler (SQH) of universal waste (accumulating less than 5,000 kg of universal waste at any time). I also inspected Climax as a generator of used oil.

3. Waste Streams

This section of the CEI report describes waste streams generated by the facility, including the facility's waste determination and waste codes, generation process and rate, management at the facility, and ultimate disposition. The following discussion of waste streams is based on my interviews with Messrs. Caskey and Morton, and Mses. Rutherford and Woods, the visual inspection, and my review of available documentation.

Waste acetone is generated in the Main Lab during quality control/quality assurance (QA/QC) testing. Waste acetone is considered hazardous waste (D001, D035, F003) based on process/product knowledge. The waste is collected in a 1-gallon SAC upon generation. When full, the SAC is transferred to the CAA and decanted into a 35-gallon HWAC. The facility generates approximately 56 pounds of waste acetone per month. The waste is transported to Clean Harbors in Kimball, Nebraska, or Grantsville, Utah, for incineration. It was last collected on February 22, 2023.

Mr. Caskey provided a copy of the safety data sheet (SDS) for acetone during the CEI (Attachment 10). I asked Mr. Caskey why the waste determination includes the D035 (methyl ethyl ketone) characteristic hazardous waste code. Mr. Caskey stated that upon further review of current lab analytical procedures and the acetone SDS, D035 does not appear to be an applicable waste code. He added that Climax plans to remove the D035 hazardous waste code from the waste determination going forward.

In the Main Lab, Mr. Caskey introduced me to Mr. Morton. I provided Mr. Morton a copy of U.S. Federal Codes 1001 and 1002, which he read. I asked Mr. Morton how waste acetone is managed in the Main Lab. Mr. Morton explained that upon generation, waste acetone is added to the SAC in the lab. When the SAC is full, he transfers the waste acetone to the CAA and pours it into a HWAC. Mr. Morton explained that it takes approximately 1 week to fill the SAC.

I observed a one-gallon SAC of waste acetone in the Main Lab (Attachment 6, Photographs 1 and 2). The SAC was closed, at the point of generation, under control of an operator, labeled with the words "hazardous waste" and an indication of the nature of the hazard, and held approximately 0.5 gallons of waste acetone.

In the CAA, I observed a 35-gallon HWAC of waste acetone (Attachment 6, Photographs 3 and 4). The HWAC was closed, in good condition, labeled with the words "hazardous waste" and an indication of the nature of the hazard, and marked with accumulation start date of February 24, 2023. I noted no deficiencies with management of waste acetone.

Lab pack waste is generated in both labs and consists of unwanted/expired chemicals and waste magnesium perchlorate used in lab testing. The facility considers the waste to be hazardous and/or nonhazardous by product/process knowledge. The waste is accumulated in the satellite accumulation area in each Lab until it is lab-packed, which occurs once or twice per year. The facility generates approximately 53 pounds of lab pack waste per year. The waste is transported to Clean Harbors in Kimball, Nebraska, or Grantsville, Utah, for incineration. It was last collected on February 22, 2023.

Mr. Caskey provided a copy of the SDS for magnesium perchlorate during the CEI (Attachment 11). Based on the SDS, waste magnesium perchlorate appears to be a D001 characteristic hazardous waste.

In the Main Lab, I observed a 1-gallon SAC of waste magnesium perchlorate. The SAC was closed, at the point of generation, under control of an operator, labeled with the words "hazardous waste" and an indication of the nature of the hazard, and held approximately 3 quarts of waste magnesium perchlorate. Mr. Morton stated that it takes approximately 1 year to fill the waste magnesium perchlorate SAC and, when full, it is lab-packed for shipment.

In the Roaster Building Lab, I observed a 1-gallon SAC of waste magnesium perchlorate (Attachment 6, Photographs 17 and 18). The SAC was closed, at the point of generation, under control of an operator, labeled with the words "hazardous waste" and an indication of the nature of the hazard, and held approximately 1 quart of waste magnesium perchlorate. I noted no deficiencies with management of lab pack waste.

Waste PPE is generated during facility maintenance and production. Waste PPE generated during Turnaround is disposed with the waste being generated during Turnaround. The facility considers waste PPE to be hazardous (D007) based on product/process knowledge and testing. The facility generates between 825 pounds and 1,220 pounds of waste PPE annually. Waste PPE not generated during Turnaround is accumulated in 55-gallon SACs across the plant. The waste is transported to Clean Harbors in Deer Trail, Colorado, for landfilling, or Clean Harbors in Kimball, Nebraska, bulking and/or transfer off site. Waste PPE was last collected on February 22, 2023.

Mr. Caskey provided a copy of an analytical report for waste PPE, dated November 27, 2018 (Attachment 12). The analytical report presented results of toxicity characteristic leaching procedure (TCLP) testing for metals on gloves, Tyvek suits, and rags. TCLP results for gloves was 35.8 milligrams per liter (mg/L) for chromium (D007), which exceeds 5.0 mg/L regulatory limit for chromium. Based on the analytical results, it appears that the hazardous waste determination for waste PPE is adequate. Mr. Caskey stated that new leather gloves would also fail the TCLP for chromium.

During the visual inspection, I observed four 55-gallon SACs of waste PPE in Chemical Plant, Roaster Building, Acid Plant, and Maintenance Shop (Attachment 6, Photographs 7, 14, 19, and 21). All four SACs were closed, at the point of generation, under control of an operator, labeled with the words "hazardous waste" and an indication of the nature of the hazard (Attachment 6, Photographs 15 and 22). Each SACs held less than 55 gallons of waste PPE. I noted no deficiencies with management of waste PPE.

Waste roaster brick is generated by maintenance of the roasters during Turnaround. The waste is transferred to a 25-cubic-yard roll off HWAC upon generation and then transferred to the Outdoor CAA. The facility considers the waste to be hazardous (D006) based on product/process knowledge and testing. The facility generates between 87,000 pounds and 162,772 pounds of waste roaster brick annually. The waste is transported to Clean Harbors in Deer Trail, Colorado, for landfilling. Waste roaster brick was last collected on June 9, 2022.

Mr. Caskey provided a copy of an analytical report, dated July 1, 2019 (Attachment 13). Based on the analytical report, TCLP result for unwashed roaster brick was 1.22 mg/L for cadmium (D006), which exceeds the 1.0 mg/L regulatory limit for cadmium. Therefore, it appears that the hazardous waste determination for waste roaster brick is adequate. Waste roaster brick was not in accumulation at the time of the CEI.

20 K tank cleanout is generated during maintenance of the 20 K tanks during Turnaround. The waste is accumulated in 330-gallon HWACs upon generation and transferred to the Outdoor or Generator Building CAA. The facility considers the waste to be hazardous (D002, D004, D008, D009, D010) based on product/process knowledge and testing. TCLP testing results for 20 K tank cleanout (Tanks A and B) are in the July 1, 2019, analytical report (Attachment 13). The facility generates between 60,800 pounds and 65,960 pounds of 20 K tank cleanout annually. The waste is transported to Clean Harbors in Orienta, Oklahoma, for landfilling. 20 K tank cleanout was last collected on June 22, 2022. 20 K tank cleanout was not in accumulation at the time of the CEI.

Chemical plant sump and trench cleanout is generated during maintenance of the chemical plant sump and trench during Turnaround. The waste is transferred to a 25-cubic-yard dewatering box HWAC upon generation and transferred to the Generator Building CAA. The facility considers the waste to be hazardous (D004, D010) based on product/process knowledge and testing. The facility generates between 31,605 pounds and 85,140 pounds of chemical plant sump and trench cleanout annually. The waste is transported to Clean Harbors in Deer Trail, Colorado, for landfilling. Chemical plant sump and trench cleanout was last collected on October 25, 2022. The waste was not in accumulation at the time of the CEI.

Mr. Caskey provided a copy of an analytical report, dated May 20, 2021 (Attachment 14). Based on the analytical report, TCLP results for the main sump clean-out box samples were 1.18 and 1.02 mg/L for selenium (D010), which exceeds the 1.0 mg/L regulatory limit for selenium. Therefore, it appears that the hazardous waste determination for chemical plant sump and trench cleanout is adequate.

DynaWave Weir cleanout is generated during maintenance of the DynaWave Weir bowl and liner. The waste is transferred to a 55-gallon or 330-gallon HWAC upon generation and transferred to the Outdoor or Generator Building CAA. The facility considers the waste to be hazardous (D010) by product/process knowledge and testing. TCLP testing results for DynaWave Weir cleanout are in the July 1, 2019, analytical report (Attachment 13). The facility generates between 786 pounds and 2,560 pounds of DynaWave Weir cleanout annually. The waste is transported to Clean Harbors in Deer Trail, Colorado, for landfilling. DynaWave Weir cleanout was last collected on August 30, 2022. The waste was not in accumulation at the time of the CEI.

Process wastewater includes wastewater from the acid plant (wet scrubber blowdown), steam condensate from the chemical plant, boiler blowdown, cooling tower blowdown, demineralizer backwash, lab wastewater, and leachate from the Climax Molybdenum Industrial Landfill. Process wastewater is transferred to the onsite WWTP. Treated wastewater is discharged to the Mississippi River under NPDES permit No. 5625106. Because wastewater is regulated under the Clean Water Act, the facility considers wastewater to be exempt from the definition of solid

waste per 40 CFR 261.4(a)(2). The WWTP design capacity is 0.375 million gallons per day, and the facility is permitted for up to 0.9 million gallons per day through its discharge point (Outfall 001).

Filter cake sludge is generated during treatment of process wastewater in the facility's WWTP. The facility considers filter cake sludge to be nonhazardous based on product/process knowledge and testing. Filter cake sludge is collected in two, 10-cubic-yard containers beneath the filter press. The facility generates approximately 20 to 40 cubic yards per week. The waste is transported to Great River Regional Waste Authority, Fort Madison, Iowa, for landfill disposal.

Mr. Caskey provided a copy of an analytical report, dated August 17, 2020 (Attachment 15). Based on the analytical report, it appears that the hazardous waste determination for filter cake sludge is adequate.

In the WWTP, I observed two, 10-cubic-yard containers of nonhazardous wastewater filter cake sludge located under the filter press (Attachment 6, Photograph 20). Each container held approximately 2.5 cubic yards of filter cake sludge. I noted no deficiencies with management of filter cake sludge.

Scrap metal is generated during facility maintenance. It is accumulated in containers and transferred to a 30-cubic-yard scrap metal container south of the Chemical Plant. Scrap metal is considered to be excluded from the definition of solid waste when recycled. The facility generates approximately 150 tons of scrap metal per year. Scrap metal is transported to Alter Metal Recycling in Burlington, Iowa, for recycling. The last collection of scrap metal was on March 6, 2023.

During the CEI, I observed the trailer of scrap metal south of the Chemical Plant (Attachment 6, Photograph 8). I noted no RCRA concerns with the management of scrap metal.

Used oil is generated during facility equipment maintenance and roasting process. The facility manages used oil according to provisions of 40 CFR Part 279. Used oil is collected in 55-gallon used oil storage containers and transferred to a 5,000-gallon used oil AST in the Roaster Building. The facility generates approximately 16,812 gallons of used oil per year. Used oil is transported to Green For Life Environmental in Peoria, Illinois, for recycling. Used oil was last collected on March 5, 2023 (Attachment 16).

During the CEI, I observed five, 55-gallon used oil storage containers in drip pans under the roasters in the Roaster Building (Attachment 6, Photograph 13). All five used oil storage containers and drip pans were in good condition, and each container was labeled with the words "used oil."

In the Roaster Building, I observed a 5,000-gallon used oil AST (Attachment 6, Photograph 9). The used oil AST appeared to be in good condition with no visible leaks, labeled with the words "used oil," and contained approximately 3,500 gallons of used oil (Attachment 6, Photograph 10).

I also observed a 1,200-gallon used oil AST adjacent to the 5,000-gallon used oil AST (Attachment 6, Photograph 11). The used oil AST appeared to be in good condition with no visible leaks, labeled with the words "used oil," and was empty (Attachment 6, Photograph 12). Mr. Caskey explained that the used oil AST is used as additional capacity when the 5,000-gallon used oil AST is full. I noted no deficiencies with management of used oil.

Waste aerosol cans are generated during facility equipment maintenance. The facility considers waste aerosol cans hazardous (D001) and nonhazardous based on product knowledge. Waste aerosol cans are transferred to the Maintenance Shop upon generation to a 35-gallon satellite accumulation container with an aerosol can puncture device affixed to the lid. After puncturing, empty aerosol cans are managed as scrap metal and transferred to a scrap metal container. According to Mr. Caskey, the facility generates between 65 to 70 waste aerosol cans per month. Scrap metal is transported to Alter Metal Recycling (Burlington, Iowa) for recycling.

I did not observe waste aerosol cans in accumulation during the CEI. I explained to Mr. Caskey that waste aerosol cans could be managed as universal waste per 40 CFR Part 273 until the waste aerosol cans are punctured. I provided compliance assistance to Mr. Caskey regarding management of aerosol cans as universal waste. I noted no deficiencies with management of waste aerosol cans.

Aerosol can waste is generated when aerosol cans are punctured into a 35-gallon SAC in the Maintenance Shop. Punctured aerosol cans are disposed as scrap metal. The facility considers aerosol can waste hazardous (D001) based on product knowledge. The facility generates approximately 150 pounds of aerosol can waste every five years. Aerosol can waste is transported to Clean Harbors in Kimball, Nebraska, for incineration. The waste was last collected on September 21, 2022.

During the CEI, I observed a 35-gallon SAC with an aerosol can puncture device affixed to the lid in the Maintenance Shop (Attachment 6, Photograph 23). The SAC was closed, at the point of generation, under control of an operator, labeled with the words "hazardous waste" and an indication of the nature of the hazard, and held less than 1 gallon of aerosol can waste. I noted no deficiencies with management of aerosol can waste.

Used batteries are generated during facility equipment maintenance, and include lead-acid, nickel-cadmium, alkaline, and lithium batteries. The facility manages all used batteries as universal waste batteries according to provisions of 40 CFR Part 273. Used batteries are transferred to a 5-gallon universal waste battery accumulation container in the universal waste accumulation area in the Sewage Treatment building. The facility generates between 605 pounds and 1,578 pounds of used batteries per year. The waste is transported to A-Tec Recycling in Des Moines, Iowa, for recycling. The waste was last collected on December 19, 2022 (Attachment 17).

In the universal waste accumulation area, I observed a 5-gallon universal waste battery accumulation container (Attachment 6, Photograph 25). The universal waste battery accumulation container was labeled with the words "universal waste batteries," marked with an accumulation start date of January 6, 2023, and held approximately 2.5 gallons of used batteries. I noted no deficiencies with management of used batteries.

Used mercury-containing devices are generated during facility equipment maintenance. They are transferred to five-gallon universal waste mercury-containing device container located in the universal waste accumulation area in the Sewage Treatment building. The facility manages used mercury-containing devices as universal waste according to provisions of 40 CFR Part 273. The facility does not typically generate used mercury-containing devices (no shipments occurred from January 1, 2020 through March 14, 2023). When the waste is generated, it is transported to A-Tec Recycling in Des Moines, Iowa, for recycling.

In the universal waste accumulation area, I observed a 5-gallon universal waste mercury-containing device container (Attachment 6, Photograph 25). The universal waste mercury-containing device container was labeled with the words "universal waste mercury-containing devices," marked with an accumulation start date of February 15, 2023, and held four used mercury-containing devices. I noted no deficiencies with management of used mercury-containing devices.

Used lamps are generated during facility maintenance. The facility manages used lamps as universal waste according to provisions of 40 CFR Part 273. Used lamps are transferred upon generation to universal waste lamp accumulation containers in the universal waste accumulation area in the Sewage Treatment building. The facility generates between 733 pounds and 1,911 pounds of used lamps per year. The waste is transported to A-Tec Recycling in Des Moines, Iowa, for recycling. The waste was last collected on December 19, 2022 (Attachment 18).

Mr. Caskey stated that the facility is in the process of transitioning to light-emitting diode (LED) lighting. He estimated that the lighting conversion is approximately 60 percent complete.

In the Sewage Treatment building universal waste accumulation area, I observed one 10-foot, three 4-foot, and one empty 8-foot universal waste lamp accumulation containers (Attachment 6, Photograph 24). All four universal waste lamp containers were closed, labeled with the words "universal waste lamps," and marked with accumulation start dates. The containers held a total of approximately 425 used lamps, and the oldest accumulation start date was December 20, 2022. I noted no deficiencies with management of used lamps.

General trash is generated during production and facility maintenance. It is accumulated in various containers throughout the facility and transferred to roll-off containers. General trash is considered nonhazardous based on product/process knowledge. The facility generates approximately 1,850 tons of general trash per year. General trash is transported to Great River Regional Waste Authority in Fort Madison, Iowa, for landfill disposal or recycling. I noted no deficiencies with management of general trash.

4. Container Accumulation Areas

Mr. Caskey, Ms. Rutherford, and Ms. Woods accompanied me to the facility's less-than-90-day CAA. The CAA is in the Utilities Compressor Room. A No Smoking sign was posted at the entrance to the CAA, and I observed fire extinguishers and spill control equipment readily available in the area.

In the CAA, I observed a 35-gallon HWAC of waste acetone, a 55-gallon HWAC of waste phosphoric acid, and a 55-gallon container of nonhazardous sulfur cleanout (Attachment 6, Photograph 3). Both HWACs were closed, in good condition, labeled with the words "hazardous waste" and an indication of the nature of the hazard, and labeled with accumulation start dates of February 24, 2023, and February 22, 2023 (Attachment 6, Photographs 4 and 5). The 55-gallon container of nonhazardous sulfur cleanout had an accumulation start date of June 7, 2022 (Attachment 6, Photograph 6).

Mr. Caskey stated that during Turnaround, temporary CAAs are established outside of the Product Warehouse and in the Generator Building. He explained that prior to use, spill control equipment (that is, sorbents, shovels, empty containers) and safety equipment (eye wash stations, boots, gloves) are placed in the CAAs. Mr. Caskey stated that the CAAs are inspected weekly until Turnaround is complete and all HWACs are removed from the CAA. He added that the temporary CAAs are not inspected after Turnaround when they do not have waste.

Mr. Caskey explained that all personnel working in the CAA are required to carry a facility-issued mobile phone to summon emergency assistance if needed. I asked Mr. Caskey how often the facility inspects the CAA. Mr. Caskey stated that the CAA is inspected weekly, and that the facility documents the inspection on a Hazardous Waste Storage Inspection Form. I reviewed the inspection forms dated January 27, 2020, to March 8, 2023 and noted that inspections were performed each calendar week. Copies of the inspection log forms from January 9, 2023, to March 8, 2023, are included in Attachment 18. I noted no deficiencies with management of wastes in the CAA.

5. Manifests, Bills of Lading, Biennial Report

The facility generated 85 manifests from February 6, 2020 through February 22, 2023. I reviewed all 85 manifests and associated land disposal restriction (LDR) notifications. I obtained a copy of manifest 017839699FLE and associated LDR notification, dated December 1, 2022, as an example (Attachment 19). Prior to the CEI, I reviewed the 2021 Biennial Report, which was submitted to EPA on February 17, 2022. I noted no deficiencies during my review of manifests, LDR notifications, or the Biennial Report.

6. Personnel Training Requirements

Personnel training is required by LQG regulations specified in 40 CFR 262.17(a)(7) to ensure that employees are thoroughly familiar with proper waste handling procedures relevant to their responsibilities. I did not request copies of all documents reviewed.

I reviewed the training materials documenting the topics included in the facility's hazardous waste training, and verified that the training included emergency response and hazardous waste management.

During the CEI, I requested written job descriptions for personnel responsible for management of hazardous waste and implementation of the contingency plan—Mr. Caskey (Emergency Coordinator), Ms. Woods (CAA inspector) and Mr. David Morton (lab technician). These job

descriptions include duties, qualifications, skills, and education. They also contained a description of the required initial and ongoing hazardous waste training.

Climax maintains documentation confirming that training has been completed. Copies of training records for Mr. Caskey, Ms. Woods, and Mr. Morton are in Attachments 20 through 22, respectively. I noted no deficiencies with personnel training during the CEI.

7. Preparedness and Prevention and Contingency Plan

As a LQG, Climax is required to arrange for emergency response with local emergency agencies, to designate an emergency coordinator (EC) for the facility, and maintain a RCRA Contingency Plan. I reviewed the contingency plan, dated October 15, 2022, during the CEI.

I noted the RCRA Contingency Plan included a description of actions needed to respond to fires and explosions and spills, a description of arrangements with the local emergency agencies, a list of emergency response equipment (including capabilities and location), and a complete evacuation plan with a description of the signals used.

The RCRA Contingency Plan included the telephone numbers of the primary EC and alternate ECs, and a Quick Reference Guide (Attachment 23). Mr. Jones stated that the latest revision of the RCRA Contingency Plan has been delivered to all emergency agencies, including the Fort Madison fire and police departments, and the Southeast Iowa Regional Medical Center, Fort Madison Campus. I noted no deficiencies with content of the RCRA Contingency Plan during the CEI.

8. Air Emissions: 40 CFR Part 265 Subparts AA, BB, CC

EPA regulations in 40 CFR Part 265, Subparts AA, BB, and CC apply to LQGs. If a LQG manages hazardous waste with an organic concentration greater than 10 parts per million by weight (ppmw), the standards specified in Subpart AA apply to hazardous waste air emissions from certain process used in distillation, fractionation, solvent extraction, thin-film evaporation, air stripping, or steam stripping. Climax is not subject to the Subpart AA regulations because the facility does not have any of the process vents listed above.

If a LQG has equipment that contains or contacts hazardous waste composed of 10 percent or greater organics by weight, the facility is subject to Subpart BB standards for inspection and monitoring of the equipment. Climax is not subject to the Subpart BB regulations because it does not have equipment that contains or comes in contact with hazardous waste.

The standards found in Subpart CC apply to LQGs that manage hazardous waste in containers with organic compounds (VOC) concentration that exceeds 500 ppmw. The Subpart CC standards are applicable because the facility accumulates hazardous waste that contains VOCs in 55-gallon hazardous waste accumulation containers. During the CEI, I determined that Climax meets the Subpart CC requirements for containers by using Container Level 1 controls (hazardous waste accumulation containers smaller than 122 gallons that are Department of Transportation [DOT]-approved). I noted no concerns with management of hazardous waste per the Subpart CC air emissions requirements.

9. Summary of Preliminary Findings

In summary, as part of the CEI, I made no preliminary findings.

Other than items specifically noted in the narrative, I observed no additional issues. However, further review by EPA may change or add to my findings.

William F Starks Digitally signed by William F Starks Date: 2023.05.11 10:00:13 -05'00' Date: _____

William F. Starks
Environmental Consultant
CLAENE Group, LLC.

AMBER WHISNANT Digitally signed by AMBER WHISNANT Date: 2023.05.15 18:27:37 -05'00' Date: _____

Amber Whisnant
Section Chief
ECAD/CB/RCRA, EPA Region 7

Attachments:

1. Notification Acknowledgement/Verification Report (1 Page)
2. Receipt for Documents and Samples (1 Page)
3. Confidentiality Notice (1 Page)
4. Facility Diagram (1 Page)
5. Google Maps Aerial Image of the Facility (1 Page)
6. Photographic Documentation (25 Photos and Photolog) (17 Pages)
7. WWTP Process (2 Pages)
8. Clean Harbors Shipments for 2022 (2 Pages)
9. Universal Waste Shipment Tracking for 2020, 2021, and 2022 (3 Pages)
10. SDS for Acetone (8 pages)
11. SDS for Magnesium Perchlorate (7 Pages)
12. TestAmerica Analytical Report, Dated November 27, 2018 (12 Pages)
13. Eurofins TestAmerica Analytical Report, Dated July 1, 2019 (18 Pages)
14. Eurofins TestAmerica Analytical Report, Dated May 20, 2021 (14 Pages)
15. Eurofins TestAmerica Analytical Report, Dated August 17, 2020 (17 Pages)
16. Used Oil Bill of Lading, Dated March 5, 2023 (1 Page)
17. Universal Waste Certificate of Recycling, Dated December 19, 2022 (1 Page)
18. Inspection Log, Dated January 9, 2023 to April 8, 2023 (9 Pages)
19. Hazardous Waste Manifest 017839699FLE, Dated December 1, 2022, and Associated LDR Notification (2 Pages)
20. RCRA Training Record for Dave Caskey (1 Page)
21. RCRA Training Record for Jessica Woods (1 Page)
22. RCRA Training Record for David Morton (1 Page)
23. RCRA Contingency Plan Quick Reference Guide (12 Pages)