



Clean Air Act Compliance Inspection Report

United States Environmental Protection Agency
Region 10 – Seattle, WA

Full Compliance Evaluation

Clarios, LLC
Canby, Oregon

Inspection Date: November 14, 2023

ZACHARY HEDGPETH

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Date

Zach Hedgpeth, PE
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1. Basic Facility and Inspection Information

Facility: Clarios, LLC
800 N.W. 3rd Avenue
Canby, OR 97013

FRS Number: 110070725061
(no AFS Number)

Permit Number: Standard ACDP #03-2634-ST-01
Oregon Department of Environmental Quality

Facility Contact: Christopher Norgbey – Environmental Engineer
971-754-5847, christopher.norgbey@clarios.com

Agency Inspectors: Zach Hedgpeth, PE – EPA Region 10
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Louis Bivins – Oregon DEQ
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Thomas Rhodes – Oregon DEQ
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Inspection: November 14, 2023

Inspection Report: January 22, 2024

Inspection Notice: Unannounced

Disclaimer

This report is a summary of observations and information gathered from the facility at the time of the inspection. The information provided does not constitute a final decision regarding compliance with the Clean Air Act (CAA) and applicable regulations or permits, nor is it meant to be a comprehensive report of all activities and processes conducted at the facility.

2. Introduction

- a) This was a Clean Air Act (CAA) compliance inspection by the Environmental Protection Agency (EPA). Louis Bivins and Thomas Rhodes of the Oregon Department of Environmental Quality (ODEQ) attended portions of this inspection.
- b) The purpose of this inspection was to conduct a full compliance evaluation (FCE) of the facility with respect to applicable requirements under the CAA, including the current air permit issued by ODEQ.
- c) Components of the inspection included a walk-through to gain basic familiarity with the facility equipment and processes, examination of industrial process equipment and air pollution control equipment, review of various documents, and discussions with facility staff, in addition to the observations of the inspectors.
- d) Advance notice of this inspection was not provided to the facility.

3. Inspection Elements and Field Observations – November 14, 2023

- a) Arrival and Introductions. I arrived at the facility and entered the reception area around 09:00 where I introduced myself and requested to speak with the facility environmental manager or staff. Reception staff informed me that they had called Christopher Norgbey, Environmental Engineer with Clarios. While waiting, I was joined by Thomas Rhodes of ODEQ. Mr. Norgbey arrived shortly thereafter, and I introduced myself, explained the purpose of my visit to be an unannounced CAA inspection, and presented my inspector credentials. Mr. Norgbey left us at reception briefly while he contacted other facility personnel and arranged for a conference room. Mr. Bivins of ODEQ arrived during this time.
- b) Opening Conference. The agency inspectors met with the following Clarios staff and management in the room or via Teams conference call, as noted:
 - 1. In the room:
 - a. Christopher Norgbey, Environmental Engineer
 - b. Rebecca Schuster, HR Manager
 - c. Erik Halverson, Launch Manager – Engineering
 - 2. Teams call:
 - a. Jeff Bendelewski, Regional EHS Engineer
 - b. Melissa Bitter, Environmental Engineering Manager
 - c. Igor Rusetsky, Plant Manager
 - d. Ryan Wright, Interim Safety Manager
- c) I began the opening conference by reviewing the purpose and scope of the CAA inspection. I explained that the CAA inspection will be an FCE. This means the goal of the inspection is to review each applicable requirement and understand how the facility complies. Photographs and confidential business information (CBI) were discussed. The facility considers much of the process equipment to be CBI. It was agreed that Mr. Norgbey would take side-by-side photos of any inspection photos taken by EPA.
- d) Process Discussions. A discussion of the facility processes occurred next, led by Erik Halverson. The following notes were recorded:
 - 1. Lead oxide, referred to as “oxide” by facility staff, is received by the facility as a powder – it is not produced onsite. The powdered lead oxide is received by truck

and is pneumatically conveyed into the Oxide Tanks. The Oxide Tanks are equipped with bin vents, and the Oxide Tank Room air is collected and routed to the Strip Casting Baghouse.

2. Lead oxide is conveyed pneumatically from the Oxide Tanks to mixers positioned above each of two Pasting Lines. At each of the two mixers, the pneumatic conveyance system uses a drop-out pipe to slow the air velocity, allowing the lead oxide powder to fall into a hopper below. The pneumatic conveyance system emissions are routed to the Pasting Baghouse.
 3. Water and sulfuric acid are added to the lead oxide in mixers to produce a paste. The lead oxide paste is added wet to solid lead frames to form the positive and negative plates that go into each battery. The negative plates are formed from molten lead onsite using strip casting. The positive plates are a proprietary design referred to as "Powerframe", which are produced at the Clarios plant in Red Oak, IA.
 4. The negative plates are trimmed, and all plates are dried in the Trim Oven after the paste is added. Emissions from the Trim Oven are routed to the Strip Casting Baghouse.
 5. Positive and negative plates are then placed into envelopes, assembled and placed into battery cases in the three Cast On Strap (COS) lines. At this point, the batteries are dry. Acid is added in the Formation area, and then the batteries are charged using jumper cables.
 6. Final battery products are packaged and labeled before shipping.
- e) The opening conference ended at approximately 11:00, and the group proceeded to the field walk-through.
- f) Field Observations - Morning
1. Accompanied by the ODEQ inspectors, I conducted a general walk-through to observe the facility process and control equipment. The walk-through was led by Mr. Halverson with assistance from Mr. Norgbey. The following describes my observations in each area.
 2. *Oxide Truck Receiving Room.* After donning N95 masks, disposable gloves, and boot covers, we walked through the facility from the offices to the oxide delivery area. In the Oxide Receiving Room, I observed building air pickups as well as the oxide pneumatic transport piping (see photo 221). The room was reasonably clean and I did not observe evidence of spillage or fugitive lead oxide dust emissions escaping from this area. During the inspection, the destination of the room air collected by the building air pickups during oxide receiving was not determined. EPA has asked for clarification on this point post inspection.
 3. *Strip Casting.* Next the group observed the strip casting equipment, which was not operating at the time of the inspection. The Strip Caster melts lead at approximately 800-900 °F and casts the molten lead into a thin strip of solid lead approximately 3-inches wide. The main molten lead chamber is open to the building, but does have air collection pickups that are routed to the Strip Casting Baghouse. The remainder of the Strip Caster is uncontrolled and any emissions would be released to the building air.
 4. *Pasting Lines 2 and 3.* The two pasting lines were in operation at the time of the inspection. Solid lead strip of two different designs was passed through equipment

that added lead paste to the strip frame (Pasters 2 and 3). Paster 2 is vented to the Pasting Baghouse, while Paster 3 is vented to the Expanded Metal Baghouse. The Trim Oven pickups were also observed; these are routed to the Strip Casting Baghouse. Note that Pasting Line 1 has been decommissioned. While in the pasting area, we climbed a stairway to observe the lead oxide hoppers above the pasting mixers. Lead oxide is conveyed to the hoppers via pneumatic transport lines. One such transport line is shown in photo 222. I noted significant buildup of yellow-colored dust in the area. Upon questioning, Mr. Halverson stated that the dust buildup was the result of cleaning of the hoppers.

5. *Enveloping*. I observed the dried, trimmed positive and negative plates being placed inside envelopes in this area of the plant. This work is conducted on ventilated tables to improve lead dust capture. During the inspection, the destination of the ventilated table exhaust was not determined. EPA has asked for clarification on this point post inspection.
6. *Cast On Strap*. After enveloping, I observed the “books” of enveloped plates being placed inside empty battery cases. The COS process equipment was observed melting solid lead to cast straps that connect tabs on each book of plates. While each of the three COS lines (#2, #3, and #4) have air pickups on portions of the process, the molten lead portion of the process was observed to be uncontrolled and any emissions would be released to the building air. The exhaust from the pickups from each of the three COS lines are routed as follows:
 - a. COS #2 → COS Baghouse
 - b. COS #3 → COS 3 Radco
 - c. COS #4 → COS 4 Radco → Radco Cleaner Baghouse
7. After the COS process, plastic lids were observed being placed on each battery and heat sealed. The heat sealing emissions are collected through a paint booth type particulate filter and then released to atmosphere through the building roof. I then briefly observed the battery formation process where sulfuric acid is added to the batteries, the charging area, as well as the labeling/packaging process.
8. The field walk-through completed around 12:15, and the inspectors departed the facility for lunch.

g) Permit Conditions and Records Review

1. After returning from lunch, I met with the ODEQ inspectors and Mr. Norgbey in the facility offices. Together we reviewed the current air permit¹ issued by ODEQ. The following requirements were discussed:
2. Permit Condition 2.2b. This condition requires the facility to conduct weekly visible emissions surveys of the property boundary using EPA Method 22. At the time of the inspection, Mr. Norgbey could not locate any records demonstrating compliance with this permit condition, and stated that he has not personally conducted this type of survey since joining the company approximately 6 months ago.

¹ Oregon DEQ Standard Air Contaminant Discharge Permit (ACDP) No. 03-2634-ST-01 which was issued on 08/20/2021 and expires 08/01/2026. This permit is included as Attachment 3 to this inspection report.

3. Permit Condition 2.6. This condition requires the facility to maintain a log of all complaints related to air pollution. Mr. Norgbey showed on screen a blank complaint log stating “no complaints received” from 2017-2022. This blank complaint log is included as Attachment 5, but the electronic file was modified by Clarios post inspection to remove the 2022 entry. Post inspection, Mr. Norgbey provided an additional complaint log for 2022 which included information regarding a complaint received via ODEQ dated 08/01/2022. This additional complaint log is included as Attachment 6. When printed, the header on both documents is “Excess Emissions Records”.
4. Permit Condition 3.2. This condition incorporates applicable emission limits from 40 CFR 60, subpart KK for a variety of emission units/sources and control devices at the facility. I asked Mr. Norgbey about how the facility has demonstrated compliance with these emission limits. Mr. Norgbey displayed on screen a stack test report for 15 emission sources at the facility, dated December 10-17, 2008 from the testing firm Trigon/Kleinfelder. This test report is included as Attachment 7. cursory review of the test report indicates all emission units met the applicable emissions limits at the time. Detailed review of this test report has not been conducted as part of this inspection. Mr. Norgbey indicated no more recent emission testing has occurred, but that the facility is planning emission testing during 2024.
5. Permit Condition 4.1(b)(i). This condition incorporates applicable requirements from 40 CFR 63, subpart P (NESHAP 6P) which require the facility to conduct semiannual inspections of each fabric filter (baghouse). Clarios hires a contractor to conduct these inspections. Mr. Norgbey displayed on screen Excel spreadsheets showing results from various inspections, generally occurring semi-annually over the past few years. Of the reports displayed on screen, I requested copies of the contractor reports documenting the May 2021 and October 2023 inspections, and Mr. Norgbey provided these via file transfer during the inspection. These baghouse inspection reports are included as Attachment 8. Post inspection review of these contractor baghouse inspection reports identifies the following:
 - a. The May 2021 inspection report states that the MR-100 and Radco Central Vacuum did not include an internal inspection. See pdf page 2 of Attachment 8.
 - b. The May 2021 inspection report states that Filter 3 was replaced on RADCO 3 and Filter 1 was replaced on RADCO 4 (see pdf page 3 of Attachment 8). However, the “Monthly Baghouse Checklist” documents for the RADCO 3 and 4 units are inconsistent with the statements on page 3. On pages 9 and 10 of Attachment 8, the reports check the boxes for “Serviceable” for “Visual Inspection of Primary Filters”, and do not identify the repair or replacement of the filters. No remarks are included to explain or document the repairs.
 - c. The October 2023 inspection report states that Filter 5 was replaced on RADCO 4 (see pdf page 15 of Attachment 8). However, the “Monthly Baghouse Checklist” document for the RADCO 4 unit is inconsistent with the statement on page 15. On page 24 of Attachment 8, the report

checks the box for “Serviceable” for “Visual Inspection of Primary Filters”, and does not identify the repair or replacement of the filter. No remarks are included to explain or document the repair.

6. Permit Condition 4.1(b)(ii). This condition incorporates applicable requirements from NESHAP 6P which require the facility to measure and record pressure drop (differential pressure) across each baghouse. The permit requires differential pressure to be recorded once per day, but the provisions of this NESHAP were recently updated to require differential pressure to be recorded twice per day in certain circumstances (see NESHAP 6P, Section 63.11423(e)(2)(iii)), and these changes became effective for Clarios on 8/22/23 (see NESHAP 6P, Section 63.11422(g)). Mr. Norgbey stated that he was aware of these changes to the NESHAP, but was not able to provide documentation demonstrating that none of the baghouses at the facility required this increased frequency of monitoring. The facility only records differential pressure once per day for each baghouse.

Mr. Norgbey escorted the inspectors to his office in another part of the facility where I reviewed baghouse differential pressure records dating back to 2021. The records included a cover sheet stating that some differential pressure records are stored electronically on a shared server, while some are stored in hard copy. Photos 223-229 show a sampling of these records. Specific follow-up actions are required if the pressure drop is observed outside the normal operational ranges. Mr. Norgbey stated that he was not aware of any instances where the differential pressure had been outside the normal operational range, and that therefore he was not aware that any of the specified follow-up actions had ever been done. Post inspection review of the records photographed indicates that none of the forms specify the units of differential pressure². Post inspection review of the records photographed also identified the following instances where differential pressure was recorded to be outside the normal operating range, and two instances where differential pressure was not recorded for several days.

- a. March 31, 2021. RADCO Cleaner Baghouse “Prim” reading is recorded as 5.2, while the normal operating range is listed as 0.1-5.0 (see photo 227). No “Comments/Corrective Actions” are documented on the form.
- b. April 18-20, 2021. COS Line 3 RADCO filter #1 reading is recorded as 3.2 or 3.4, while the normal operating range is listed as 0.25-3.0 (see photo 228). No “Comments/Corrective Actions” are documented on the form.
- c. April 25-28, and 30, 2021. RADCO Cleaner Baghouse “Prim” reading is recorded as 5.1-5.7, while the normal operating range is listed as 0.1-5.0 (see photo 229). No “Comments/Corrective Actions” are documented on the form.
- d. October 2, 2023. RADCO Cleaner Baghouse “Prim” filter reading is recorded as 6.0, while the normal operating range is listed as 0.5 – 5.0 (see photo 226). No “Comments/Corrective Actions” are documented on the form.

² Note that industry standard units for differential pressure across fabric filters are inches of water column (in. w.c.).

- e. October 2-8, 2023. COS Line 4 RADCO filter #6 reading is recorded as 0.1 or 0.2, while the normal operating range is listed as 0.25 – 3.0 (see photo 226). No “Comments/Corrective Actions” are documented on the form.
 - f. October 2-8, 2023. APB-2 Filter Unit reading was not recorded (see photo 226). The “Comments/Corrective Actions” space on the form includes a printed note “New gage installed with new tubings, but gage not reading”.
 - g. October 7, 2023. COS Line 3 RADCO “Total” reading is recorded as 10.5, while the normal operating range is listed as 1.0-10.0 (see photo 226). No “Comments/Corrective Actions” are documented on the form.
 - h. October 2-8 and October 30 – November 12, 2023. COS Baghouse “Sec” filter reading is recorded at 0.5 or 0.6, while the normal operating range is listed as 1.0 – 10.0 (see photos 224-226). No “Comments/Corrective Actions” are documented on any of the three forms photographed during the inspection.
 - i. October 2-8 and October 30 – November 12, 2023. COS Line 3 RADCO filter #5 reading is recorded as 0.1 or 0.2, while the normal operating range is listed as 0.25 – 3.0 (see photo 224-226). No “Comments/Corrective Actions” are documented on any of the three forms photographed during the inspection.
 - j. October 30 – November 5, 2023. APB-2 Filter Unit reading was not recorded (see photo 225). The “Comments/Corrective Actions” space on the form is blank.
 - k. October 30 – November 5, 2023. Strip Caster Baghouse “Prim” filter reading is recorded as 0.4, while the normal operating range is listed as 0.5 – 6.0 (see photo 225). The “Comments/Corrective Actions” space on the form is blank.
 - l. November 7-10, 2023. APB-2 Filter Unit reading is recorded at 3.2, while the normal operating range is listed as 0.1 – 3.0 (see photo 224). The “Comments/Corrective Actions” space on the form includes a handwritten note: “Filter replaced 11/7. Gauge not functioning properly. CN”.
 - m. November 6-12, 2023. Strip Caster Baghouse “Prim” filter reading is recorded as 0.4, while the normal operating range is listed as 0.5 – 6.0 (see photo 224). The “Comments/Corrective Actions” space on the form is blank.
7. Permit Condition 5.3(d). This condition requires the facility to remove the dust collected in the baghouse hoppers at least weekly. Records documenting dust removal were not available in the facility office. EPA has requested these records post inspection.
 8. Permit Condition 7.2. This condition requires the facility to calculate emissions for each 12-consecutive calendar month period. During the inspection, Mr. Norgbey displayed on screen a spreadsheet titled “All Production-Utilities and Environmental metrics_updated 9.12.23.xlsx” which appeared to calculate

emissions based on production rates and emissions factors. The calculations in the spreadsheet were not reviewed in detail during the inspection.

9. The permit discussion concluded around 15:45. Both Mr. Bivins and Mr. Rhodes departed the facility about midway through the discussion of permit conditions.

h) Field Observations - Afternoon

1. Following the permit discussion, Mr. Norgbey and I proceeded around the outside perimeter of the building clockwise until reaching the location of the majority of the baghouses, which are located outside the building wall, in the southeast portion of the site.
2. Photos 230-246 show the baghouses and differential pressure gauges, as detailed in the Photolog in Attachment 1.

4. Closing Conference

- a) I conducted the closing conference with the following Clarios staff and management in the room or via Teams conference call, as noted:
 - a. In the room:
 - i. Christopher Norgbey, Environmental Engineer
 - ii. Rebecca Schuster, HR Manager
 - iii. Erik Halverson, Launch Manager – Engineering
 - iv. Igor Rusetsky, Plant Manager
 - b. Teams call:
 - i. Jeff Bendelewski, Regional EHS Engineer
 - ii. Melissa Bitter, Environmental Engineering Manager
 - iii. Brian Meyer, Superintendent
- b) First, I reviewed the EPA Region 10 post-inspection process and timeline.
- c) Next, the following issues were identified as potential compliance concerns under the CAA. I clarified that these items did not necessarily constitute violations and may not include any additional compliance concerns that are identified post-inspection.
 1. Records documenting visible emissions monitoring, as required under Condition 2.2(b), could not be located during the inspection. Mr. Norgbey stated he has not conducted this type of survey.
 2. Potential sources of emissions from uncontrolled process equipment containing molten lead at COS and Strip Casting.
 3. No documentation of why differential pressure monitoring qualifies for reduced frequency (1x per day vs. 2x per day) under 40 CFR 63, subpart P, section 63.11423(e)(2)(iii).
- d) The closing conference ended around 17:00, and I departed the facility.