

REPORT OF RCRA COMPLIANCE EVALUATION INSPECTION

At

**Vishay Dale Electronics Plant 6
2064 12th Avenue
Columbus, Nebraska 68601**

EPA ID Number: NED007265382

On

October 5 – 6, 2022

By

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

1.0 INTRODUCTION

I performed a Resource Conservation and Recovery Act (RCRA) compliance evaluation inspection (CEI) at Vishay Dale Electronics Plant 6 (Vishay), located at 2064 12th Avenue, Columbus, Nebraska, on October 5 – 6, 2022. I conducted the RCRA inspection under the authority of RCRA Section 3007(a), as amended. During the inspection, I collected the information and data necessary to determine compliance with the applicable RCRA regulatory and statutory requirements. This report and attachments present the results of the inspection.

I inspected the facility as a large quantity generator of hazardous waste and small quantity universal waste handler. Vishay was previously inspected by the Nebraska Department of Environmental Quality¹ on September 18 – 19, 2019. Findings from the 2019 NDEQ RCRA CEI included:

- Labeling of complete hazardous waste accumulation start date
- Open satellite accumulation container
- Open universal waste lamp container
- Hazardous waste determination of unknown container of material in laboratory
- Update State Highway Patrol telephone number in contingency plan

¹ Effective July 1, 2019, the Nebraska Energy Office merged with the Nebraska Department of Environmental Quality to become the Nebraska Department of Environment and Energy.

2.0 PARTICIPANTS

Vishay

Bethany Alley, PhD, Environmental Health, and Safety Manager
John Bailey, Production Manager Plant 6 (exit conference)

Environmental Protection Agency Region 7

Kenneth Herstowski, Environmental Engineer, ECAD/Chemical Branch/RCRA Section

3.0 INSPECTION PROCEDURES

I followed the inspection procedures discussed in the RCRA CEI Standard Operating Procedure (No. 2321.1D), unless noted differently. The inspection was unannounced. I completed checklists and other inspection related documents and collected photocopies and electronic records. I collected 41 photographs with a digital camera and prepared a photographic log (attachments 1 and 2). I obtained copies of records from the facility as detailed in the sections that follow. I obtained two aerial photographs of the facility using Google Earth Pro (attachment 3). I obtained a facility drawing (attachment 4). A Notice of Preliminary Findings was provided to Vishay at the exit conference of the CEI (attachment 5). Documents and records were collected during the inspection and a Receipt for Documents and Samples was prepared (attachment 6). A Confidentiality Notice in which a no claim of confidential business information was asserted by Vishay (attachment 7).

During the inspection, discussions consisted of the facility operations, wastes generated, and waste management practices. I monitored certain containers for volatile organic air emissions with a Thermo Fisher Scientific TVA2020 organic vapor analyzer with a flame ionization detector (hereafter referred to as the “EPA FID”). I conducted a visual inspection of the following areas of the facility:

- Plasma Room
- Networks and Plasma Room
- WFM Production
- Plating Room (2)
- Wastewater Treatment Room
- Old Hazardous Waste Storage
- New Hazardous Waste Storage
- Universal Waste Accumulation

October 5, 2022

At about 08:19 on October 5, 2022, I arrived at Vishay (Plant 6). The facility is comprised of single building in an industrial area. I surveyed the north side of facility from 22nd Street and the east side from 12th Avenue with no observations. The facility appeared active with personnel and vehicle traffic. I then traveled to Vishay Dale Plant 2 at which Ms. Alley’s office is located. I parked in a visitor parking area near the entrance on the west side and entered the building proceeding to the human resources service window. I introduced myself and asked to see Ms. Alley. The personnel on staff at the human resources service window contacted Ms. Alley who arrived a short time later. I introduced myself to Ms. Alley and stated the purpose of my visit was to conduct a hazardous waste inspection at Vishay (Plant 6). We traveled to Vishay (Plant 6) for the opening conference.

Upon arriving at Vishay (Plant 6), Ms. Alley led us to a conference room where I began the opening conference. I presented my EPA credentials to Ms. Alley. I referenced RCRA Section 3007 which provides inspection authority. Ms. Alley provided verbal consent to proceed with the inspection. I described the importance of

collecting accurate information and I presented Ms. Alley with a copy of Title 18 United States Code, Sections 1001 and 1002, which provides for penalties if false and/or misleading information is provided to Federal representatives, and for the possession and use of fraudulent documents. Ms. Alley was made aware of Vishay's confidentiality rights and was informed that a Confidentiality Notice would be provided at the end of the inspection to make a confidential business information (CBI) claim. I provided Ms. Alley EPA Region 7's "Notice Regarding Proprietary/Confidential Business Information Submitted to or Collected by EPA in Connection with Inspections" and reviewed the information with her. Ms. Alley acted as the primary facility representative during the inspection.

I explained the purpose, scope, and procedures for the RCRA CEI. After the entrance discussions, I conducted a visual inspection of the facility. Ms. Alley acted as the primary facility representative and accompanied me during the visual inspection. The areas reviewed included the areas listed above. Following the visual inspection, I reviewed facility records with Ms. Alley. Following my records review, I departed the facility.

October 6, 2022

At about 08:00 on October 2, 2022, I arrived at Vishay Plant 2 where I met Ms. Alley. Ms. Alley led us to a conference room. I provided and discussed compliance assistance materials with Ms. Alley. We were joined by Mr. Bailey after which I conducted an exit conference.

I summarized the purpose and scope of the inspection. I provided Ms. Alley with a Receipt for Documents and Samples which she signed as acknowledgement of receipt. Ms. Alley signed the Confidentiality Notice with no claims of confidential business information. I provided Ms. Alley a copy of the Receipt of Documents and Samples and Confidentiality Notice (yellow copy of each of the completed carbonless transfer sets). I discussed the findings in the NOPF with those assembled. Ms. Alley signed the NOPF, and I provided her with a copy (yellow copy of the completed carbonless transfer set). I reviewed the instructions on responding to a NOPF printed on the reverse of the NOPF form. I described my process and timeline for converting field and record review observations into an inspection report. Following the exit conference, I departed the facility.

4.0 FINDINGS AND OBSERVATIONS

4.1 General Information/Facility Description

Vishay corporation is a worldwide manufacturer of resistors, inductors, capacitors, diodes, MOSFETs, Power ICs, and Optoelectronics. Vishay corporation operates in 22 countries producing 50 billion parts annually. Vishay (Plant 6) is located in the east central portion of the City of Columbus, Platte County, Nebraska, in an industrial area. The nearest residences are approximately 0.15 miles to the east (attachment 3).² The facility was purchased by Vishay in the 1990s is comprised of an approximately 50,000 square foot manufacturing building and an approximately 4,500 square foot detached shed on approximately 4.25 acres.³ Vishay has approximately 64 employees on site and operates with two shifts, 05:00 to 13:30/14:30 and 17:00 to 00:00, Monday through Friday.

Vishay (Plant 6) manufactures surface mount resistors, plasma display screens and the WMF Product line. A quality testing lab is located at the facility for products manufactured at Plant 6 and other Vishay locations. The manufacturing processes include micro printing, electroplating (cadmium, chromium, copper, gold, lead, nickel, silver, tin, zinc), and chemical etching. Plant 6 has an onsite pretreatment process to treat electroplating wastewater prior to discharge to the sanitary sewer and City of Columbus Wastewater Treatment Plant.

² Distance determined with Google Earth Pro.

³ Areas determined with Google Earth Pro

4.2 RCRA Status

I reviewed with Ms. Alley the RCRA Site Verification Form (attachment 8). Vishay is identified on the form as a large quantity generator of hazardous waste. Ms. Alley did not identify any updates to the RCRA Site Verification Form. The 2021 Biennial Report describes 158,494 pounds of hazardous waste generated during 2021. The information in the EPA e-Manifest system reports that in 2022 124,951 pounds of hazardous waste have been shipped off site as of September 30, 2022.

4.3 Hazardous Waste Streams and Management

The following major hazardous waste streams were generated and shipped in 2022.

Alkaline Cleaner Wash is a hazardous waste generated from WFM product production that exhibits the hazardous waste characteristic of corrosivity (EPA waste code D002). The spent solution is removed from the chemical developing process into 55-gallon containers. The filled containers are transferred to the New Hazardous Waste Storage building to await transport off site. In 2022, the e-Manifest system shows 3,982 pounds of this waste stream was transported to Heritage Environmental Services LLC, Kansas City, Missouri, (MOD981505556) for fuel blending (treatment method code H061) as of September 30, 2022.

Contaminated Wipes is a hazardous waste generated primarily in the WFM product production in the micro screening process that exhibits the Toxicity Characteristic Leaching Procedure waste codes for cadmium and lead (EPA waste code D006 and D008). The wipes are initially collected in satellite accumulation containers whose contents are transferred to a 55-gallon container in the Old Hazardous Waste Storage room. When filled, the 55-gallon container is transferred to the New Hazardous Waste Storage building to await transport off site. The 2021 Biennial Report shows 1,913 pounds of this waste stream was generated. In 2022, the e-Manifest system shows 4,409 pounds of this waste stream was transported to Abington Reldan Metals, LLC, Fairless Hills, Pennsylvania, (PAR0052194) for metals reclamation (treatment method code H010) as of September 30, 2022.

Contaminated Solvent Wipes is a hazardous waste generated from wiping and cleaning parts with solvents produced on site. that exhibits the Toxicity Characteristic Leaching Procedure waste codes for cadmium and lead (EPA waste code D006 and D008) and with spent solvents (EPA waste codes F003 and F005). The wipes are initially collected in satellite accumulation containers whose contents are transferred to a 55-gallon container in the Old Hazardous Waste Storage room. When filled, the 55-gallon container is transferred to the New Hazardous Waste Storage building to await transport off site. The 2021 Biennial Report shows 1,271 pounds of this waste stream was generated. In 2022, the e-Manifest system shows 572 pounds of this waste stream was transported to Heritage Environmental Services LLC, Kansas City, Missouri, (MOD981505556) for chemical treatment (treatment method code H070) as of September 30, 2022.

Ferric Chloride Solution is a spent chemical etching solution that exhibits the hazardous waste characteristic of corrosivity (EPA waste code D002). The spent etching solution is removed from the chemical etching process into 55-gallon containers. The filled containers are transferred to the New Hazardous Waste Storage building to await transport off site. The 2021 Biennial Report shows 17,834 pounds of this waste stream was generated. In 2022, the e-Manifest system shows 17,808 pounds of this waste stream was transported to Heritage Environmental Services LLC, Kansas City, Missouri, (MOD981505556) for chemical treatment (treatment method code H070) as of September 30, 2022.

F006 Sludge is hazardous waste generated from the treatment of electroplating and chemical etching wastewater. Wastewater is generated from the electroplating of metal on and the etching of metal from the

various parts manufactured. Vishay treats the wastewater on site. The treated wastewater is discharged to the City of Columbus publicly owned wastewater treatment plant through the city's sanitary sewer system. The wastewater sludge is generated in filter press in Vishay's onsite wastewater treatment system. The F006 sludge is dropped from the filter press plates into a 55-gallon metal container. The filled containers are transferred to the New Hazardous Waste Storage building to await transport off site. The 2021 Biennial Report shows 120,081 pounds of this waste stream was generated. In 2022, the e-Manifest system shows 92,338 pounds of this waste stream was transported to Heritage Environmental Services LLC, Kansas City, Missouri, (MOD981505556) for storage, bulking and/or transfer off site (treatment method code H141) as of September 30, 2022.

LDI Strip 77 is a spent chemical etching solution from WFM product production that exhibits the hazardous waste characteristic of corrosivity (EPA waste code D002). The spent etching solution is removed from the chemical etching process into 15-gallon containers. The filled containers are transferred to the New Hazardous Waste Storage building to await transport off site. The 2021 Biennial Report shows 3,284 pounds of this waste stream was generated. In 2022, the e-Manifest system shows 1,471 pounds of this waste stream was transported to Heritage Environmental Services LLC, Kansas City, Missouri, (MOD981505556) for storage, bulking and/or transfer off site (treatment method code H141) as of September 30, 2022.

Tin/Lead Plating Solution is a spent electroplating solution that exhibits the hazardous waste characteristic of corrosivity (EPA waste code D002). The spent etching solution is removed from the electroplating process into 55-gallon containers. The filled containers are transferred to the New Hazardous Waste Storage building to await transport off site. The 2021 Biennial Report shows 3,284 pounds of this waste stream was generated. In 2022, the e-Manifest system shows 1,106 pounds of this waste stream was transported to Heritage Environmental Services LLC, Kansas City, Missouri, (MOD981505556) for storage, bulking and/or transfer off site (treatment method code H141) as of September 30, 2022.

4.4 Less than 90-day Accumulation Areas

Vishay accumulates hazardous waste on site in two areas described as the Old Hazardous Waste Storage room and the New Hazardous Waste Storage building (attachment 3). I visually inspected the two areas on October 5, 2022, accompanied by Ms. Alley. We were joined by Mr. Doug Wiegand, Maintenance Group Leader, during the visual inspection.

4.4.1 Old Hazardous Waste Storage Room

The Old Hazardous Waste Storage Room is located in the south end of the building and is adjacent to and accessed through the Plating room (attachment 4). I observed portable fire extinguishers and a spill kit in the room. Personnel managing hazardous waste in the room use Vishay issued mobile telephones if assistance is needed or to signal an emergency. The containers of hazardous waste observed were all closed and in good condition.

Notice of Preliminary Finding (NOPF) 4: Accumulation start date missing or incomplete - Title 128, Chapter 10, 004.01F

The State of Nebraska has promulgated regulations for the management of hazardous waste which are codified in the Nebraska Administrative Code, Title 128 – Nebraska Department of Environmental Quality. The requirements for large quantity generators of hazardous waste are found in Chapter 10 – Requirements for Large Quantity Generators of Hazardous Waste. Section 004.01 in combination with subparagraph 004.01F requires, in pertinent part, that *“A generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that the date upon which each period of accumulation begins must be clearly marked and visible for inspection on each container.”*

I visually inspected the Old Hazardous Waste Storage room on October 5, 2022. I observed four containers of hazardous waste without accumulation start dates. Two filled 15-gallon containers of SDI Strip 77 hazardous waste without accumulation start dates were in the central portion of the room (photographs 2 – 4, attachment 1). One filled 15-gallon container of SDI Strip 77 hazardous waste without accumulation start dates was in the central portion of the room west of the two previous described containers (photograph 7, attachment 1). One less than five percent filled 55-gallon container of Contaminated Solvent Wipes was centrally against the east wall (photograph 5, attachment 1). Ms. Alley stated that the Contaminated Solvent Wipes container had just started being filled that day and marked the container with an accumulation start date of October 5, 2022 (photograph 6, attachment 1).

4.4.2 New Hazardous Waste Storage Building

The New Hazardous Waste Storage building is a detached building near the south property line of the facility (attachment 3). Ms. Alley stated that the New Hazardous Waste Storage Building was put into service accumulating hazardous waste beginning in September 2022. At that time, containers which had previously been accumulating in the Old Hazardous Waste Storage room were transferred to the building. The building is locked to prevent unauthorized entry. I observed portable fire extinguishers and a spill kit in the building. Personnel managing hazardous waste in the building use Vishay issued mobile telephones if assistance is needed or to signal an emergency. The containers of hazardous waste observed were all closed and in good condition.

The containers were arranged inside a low concrete berm that surrounded the containers being accumulated. Inside the berm were grated floor trenches to collect any leaks or spills from containers. The trenches are sloped to drain to a sump in the northwest corner of the trench system. I did not observe liquids in the trench system. The containers were in rows which were oriented north to south inside the berm. For reference in this report, I numbered the rows from 1 to 22 starting with the most western row. The first 4 rows and rows 11 to 16 contained unused wastewater treatment chemicals.

NOPF 1: Hazardous waste on top of containers – Title 128, Chapter 10, 004.01A.

The State of Nebraska has promulgated regulations for the management of hazardous waste which are codified in the Nebraska Administrative Code, Title 128 – Nebraska Department of Environmental Quality. The requirements for large quantity generators of hazardous waste are found in Chapter 10 – Requirements for Large Quantity Generators of Hazardous Waste. Section 004.01 in combination with subparagraph 004.01A requires, in pertinent part, that *“A generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that the waste is placed in containers...”*

I visually inspected the New Hazardous Waste Storage building on October 5, 2022, accompanied by Ms. Alley and Mr. Wiegand. I observed brownish solid material on top of the container corresponding with number 2 in the Row 5 diagram below (photograph 8, attachment 1). The material was similar to that observed as F006 Sludge in the Wastewater Treatment Room. I asked Ms. Alley if the material was F006 Sludge which she confirmed. I photographed the hazardous waste label on the subject container (photograph 9, attachment 1).

I observed brownish solid material on top of the container corresponding with number 1 in the Row 8 diagram below (photograph 13, attachment 1). The material was similar to that observed as F006 Sludge in the Wastewater Treatment Room. I asked Ms. Alley if the material was F006 Sludge which she confirmed. I photographed the hazardous waste label on the subject container (photograph 9, attachment 1).

Mr. Wiegand removed and containerized the F006 Sludge during my visual inspection of the New Hazardous Waste Storage building (photographs not collected).

Notice of Preliminary Finding (NOPF) 4: Accumulation start date missing or incomplete - Title 128, Chapter 10, 004.01F

The State of Nebraska has promulgated regulations for the management of hazardous waste which are codified in the Nebraska Administrative Code, Title 128 – Nebraska Department of Environmental Quality. The requirements for large quantity generators of hazardous waste are found in Chapter 10 – Requirements for Large Quantity Generators of Hazardous Waste. Section 004.01 in combination with subparagraph 004.01F requires, in pertinent part, that *“A generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that the date upon which each period of accumulation begins must be clearly marked and visible for inspection on each container.”*

I visually inspected the New Hazardous Waste Storage building on October 5, 2022. I observed 26 containers with incomplete accumulation start dates marked on the container or label. The dates observed typically consisted of the month and day without including the year designation. I observed 11 containers with no accumulation start date marked on the container or label. Please refer to the row diagrams below for the following discussion.

The filled containers of F006 Sludge corresponding with numbers 1 – 3 in the Row 5 diagram below had incomplete accumulation start dates. The filled container of F006 Sludge corresponding to 2 in Row 5 appears to have a month/year date (photograph 9, attachment 1).

The filled containers of F006 Sludge corresponding with numbers 1, and 4 – 5 in the Row 6 diagram below had incomplete accumulation start dates. The filled container of F006 Sludge corresponding to number 2 in Row 6 did not have any marking of accumulation start date (photograph 10, attachment 1). The filled container corresponding to number 3 in Row 6 did not have any marking of accumulation start date (photograph 11, attachment 1).

The filled containers F006 Sludge corresponding with numbers 2 – 10 in the Row 7 diagram below had incomplete accumulation start dates. The filled container of F006 Sludge corresponding to number 1 in Row 7 did not have any marking of accumulation start date (photograph 12, attachment 1).

The filled containers of F006 Sludge corresponding with numbers 1 – 10 in the Row 8 diagram below had incomplete accumulation start dates. The filled container of F006 Sludge corresponding to number 1 in Row 8 had markings typical of the containers in the row (photograph 14, attachment 1).

The filled container of LDI Strip 77 corresponding to number 1 in Row 9 did not have any marking of accumulation start date (photograph 15, attachment 1). The filled container Ferric Chloride Solution corresponding to number 3 in Row 9 did not have any marking of accumulation start date (photograph 16, attachment 1).

The filled container of Alkaline Cleaner Wash corresponding to number 4 in Row 10 did not have any marking of accumulation start date (photograph 39, attachment 1). The filled container of Tin/Lead Plating Solution corresponding to number 6 in Row 10 did not have any marking of accumulation start date (photograph 38, attachment 1). The filled container of Alkaline Cleaner Wash corresponding to number 8 in Row 10 did not have any marking of accumulation start date (photograph 37, attachment 1).

The filled container of Hydrochloric Acid/Zinc corresponding to number 1 in Row 17 had an incomplete marking of accumulation start date (photograph 34, attachment 1).

The filled container corresponding to number 6 in Row 21 did not have any marking of accumulation start date and did not have any marking or label affixed indicating the contents of the drum other than the diamond shaped corrosive hazard label (photograph 19, attachment 1). I asked Ms. Alley if the drum contained hazardous waste to which she replied that it contained Alkaline Cleaner Wash (EPA waste code D002) and affixed the corresponding hazardous waste labeling to the container which did not include an accumulation start date (photograph 40, attachment 1). Note that this drum as I first observed it did not include any date markings to indicate an accumulation start date. At the time of the visual inspection Ms. Alley was unable to determine the accumulation start date. Note the discussion below regarding the finding of no hazardous waste label on this container.

The filled container of Contaminated Wipes corresponding to number 1 in Row 22 did not have any marking of accumulation start date (photograph 27, attachment 1). The filled container of Contaminated Solvent Wipes corresponding to number 3 in Row 22 did not have any marking of accumulation start date (photograph 25, attachment 1). The filled container of Contaminated Solvent Wipes corresponding to number 5 in Row 22 did not have any marking of accumulation start date (photograph 24, attachment 1). The filled container of Contaminated Solvent Wipes corresponding to number 7 in Row 22 did not have any marking of accumulation start date (photograph 23, attachment 1). The filled container of Contaminated Solvent Wipes corresponding to number 8 in Row 22 did not have any marking of accumulation start date (photograph 22, attachment 1).

NOPF 5: Container missing hazardous waste label (and date) – Title 128, Chapter 10, 004.01G.

The State of Nebraska has promulgated regulations for the management of hazardous waste which are codified in the Nebraska Administrative Code, Title 128 – Nebraska Department of Environmental Quality. The requirements for large quantity generators of hazardous waste are found in Chapter 10 – Requirements for Large Quantity Generators of Hazardous Waste. Section 004.01 in combination with subparagraph 004.01G requires, in pertinent part, that *“A generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that each container and tank must be labeled or marked clearly with the words “Hazardous Waste.”*”

I visually inspected the New Hazardous Waste Storage building on October 5, 2022. I observed one container without a hazardous waste label. The filled container corresponding to number 6 in Row 21 diagram below did not have any marking or label affixed indicating the contents of the drum other than the diamond shaped corrosive hazard label (photograph 19, attachment 1). I asked Ms. Alley if the drum contained hazardous waste to which she replied that it contained Alkaline Cleaner Wash (EPA waste code D002) and affixed the corresponding hazardous waste labeling to the container (photograph 40, attachment 1). Note that this drum as I first observed it did not include any date markings to indicate an accumulation start date. At the time of the visual inspection Ms. Alley was unable to determine the accumulation start date. Note the discussion above regarding the finding of no accumulation start date on this container.

NOPF 2: Hazardous waste accumulation greater than 90 days (dates prior to June 4, 2022) – Title 128, Chapter 10, 004.01.

The State of Nebraska has promulgated regulations for the management of hazardous waste which are codified in the Nebraska Administrative Code, Title 128 – Nebraska Department of Environmental Quality. The requirements for large quantity generators of hazardous waste are found in Chapter 10 – Requirements for Large Quantity Generators of Hazardous Waste. Section 004 – Accumulation Time includes requirements for accumulation of hazardous waste on site without a hazardous waste permit or interim status. Section 004.01

specifies the allowed accumulation time, in pertinent part, as “*A generator may accumulate hazardous waste on-site for 90 days or less ...*” The time period is container by container based upon the date the generator began hazardous waste accumulation in each container. For the purposes of this finding, accumulation start dates of June 4, 2022, and earlier were identified as exceeding the 90-day on site accumulation time. The NDEE has provided an extension to the onsite accumulation time limit for containers whose 90-day accumulation time was first exceeded 90 days from September 4, 2022, through November 4, 2022, i.e., containers with accumulation start dates after June 4, 2022 (attachment 9).

I visually inspected the New Hazardous Waste Storage building on October 5, 2022. I observed the following seven containers that have been accumulating on site for greater than 90 days based upon the accumulation start date. Please refer to the row diagrams below for the following discussion.

The filled 15-gallon container of LDI Strip 77 with accumulation start date of 02/25/2022 (end of 90-day accumulation date is 05/26/2022) in row 17 (third container north to south in the row) (photograph 33, attachment 1).

The filled 15-gallon container of LDI Strip 77 with accumulation start date of 02/25/2022 (end of 90-day accumulation date is 05/26/2022) in row 17 (fourth container north to south in the row) (photograph 32, attachment 1).

The filled 15-gallon container of LDI Strip 77 with accumulation start date of 02/25/2022 (end of 90-day accumulation date is 05/26/2022) in row 17 (fifth container north to south in the row) (photograph 30, attachment 1).

The filled 55-gallon container of Alkaline Cleaner Wash with accumulation start date of 06/02/2022 (end of 90-day accumulation date is 08/31/2022) in row 17 (sixth container north to south in the row) (photograph 29, attachment 1).

The filled 55-gallon container of Ferric Chloride Solution with accumulation start date of 01/28/2022 (end of 90-day accumulation date is 04/28/2022) in row 17 of the New Hazardous Waste Storage building (eighth container north to south in the row) (photograph 31, attachment 1).

The filled 55-gallon container of Ferric Chloride Solution with accumulation start date of 12/27/2021 (end of 90-day accumulation date is 3/27/2022) in row 17 (ninth container north to south in the row) (photograph 28, attachment 1).

The filled 55-gallon container of Contaminated Solvent Wipes with accumulation start date of 3/3/2022 (end of 90-day accumulation date is 6/1/2022) in row 22 (second container north to south in the row) (photograph 26, attachment 1).

Container Row Diagrams

I numbered rows starting with Row 1 which is located on the west end of the container accumulation area and increasing in number row by row to the east.

Row 5 (north is to right for this diagram)

									
10	9	8	7	6	5	4	3	2	1

Note containers 4 – 10 contained unused wastewater treatment chemicals.

Row 6 (north is to right for this diagram)

									
7	6				5	4	3	2	1

Note containers 6 – 7 contained unused wastewater treatment chemicals.

Row 7 (north is to right for this diagram)

									
10	9	8	7	6	5	4	3	2	1

Row 8 (north is to right for this diagram)

									
10	9	8	7	6	5	4	3	2	1

Row 9 (north is to right for this diagram)

									
10	9	8	7	6	5	4	3	2	1

Row 10 (north is to right for this diagram)

									
10	9	8	7	6	5	4	3	2	1

Row 17 (north is to right for this diagram)

										
11	10	9	8	7	6	5	4	3	2	1

Row 21 (north is to right for this diagram)

								
9	8	7	6	5	4	3	2	1

Row 22 (north is to right for this diagram)

									
10	9	8	7	6	5	4	3	2	1

4.5 Air Emissions – Containers

Vishay is subject to 40 CFR Part 264, Subpart CC (hereafter “Subpart CC”), which are incorporated by reference at Title 128, Chapter 22, Section 021, for containers managing hazardous waste with greater than 500 parts per million by weight of volatile organics. The level of control required for containers is dependent on the size of the container and whether the waste contained is in light material service.

I observed Vishay manages hazardous waste in either 15-gallon or 55-gallon hazardous waste accumulation containers of which only the 55-gallon containers are subject to Subpart CC air emission controls. Vishay complies with the Level 1 container controls utilizing containers that meet the applicable requirements specified in 49 CFR part 178 - Specifications for Packaging promulgated by the United States Department of Transportation.

I monitored containers of Contaminated Solvent Wipes with the EPA FID. I did not observe levels of organic emissions greater than 500 parts per million by volume.

4.6 Method 21 Procedures

I calibrated the EPA FID that I used for Method 21 monitoring prior to arrival at the facility on October 5, 2022 (attachment 10). The EPA FID is a Thermo Fisher Scientific TVA-2020 and has both a photoionization detector and a flame ionization detector to measure organic vapors. Only the flame ionization detector was calibrated and operated for the Method 21 monitoring, i.e., the photoionization detector was switched off.

4.7 Satellite Accumulation in Containers

Satellite accumulation is the situation where the hazardous waste generator accumulates hazardous waste in containers at or near any point of hazardous waste generation. The pertinent requirements are found at Title 128, Chapter 9, 007.04 -Satellite accumulation. Vishay utilizes satellite accumulation in multiple locations. When filled, the contents of the satellite accumulation container are transferred to a hazardous waste accumulation container in the Old Hazardous Waste room.

I visually inspected satellite accumulation locations in the Reliability Test Lab Room, the Networks and Plasma Room, the Plasma Room, the WFM Room, and Plating Rooms (attachment 4), on October 5, 2022, accompanied by Ms. Alley.

Reliability Test Lab Room

I observed a 5-gallon safety container of spent solvent satellite accumulation. The container was near the point of generation, labelled hazardous waste, closed and in good condition.

I observed a 55-gallon container of Contaminated Solvent Wipes satellite accumulation. The container was near the point of generation, labeled hazardous waste, closed and in good condition.

Networks and Plasma Room

I observed satellite accumulation consisting of eight approximately 10-gallon self-closing oily waste safety cans, five approximately 5-gallon self-closing oily waste safety cans and one approximately 3-gallon self-closing oily waste safety can all containing Contaminated Wipes. The containers were near the point of generation, labeled hazardous waste, closed and in good condition.

Plasma Room

I observed satellite accumulation consisting of two approximately 5-gallon self-closing oily waste safety cans (plasma screen glass) and one approximately 3-gallon self-closing oily waste safety can (Contaminated Wipes). The containers were near the point of generation, labeled hazardous waste, closed and in good condition.

WFM Room

I observed satellite accumulation consisting of one approximately 5-gallon self-closing oily waste safety can (Contaminated Wipes) and one approximately 3-gallon self-closing oily waste safety can (ink bottles). The containers were near the point of generation, labeled hazardous waste, closed and in good condition.

Plating Room

I observed satellite accumulation consisting of one approximately 10-gallon self-closing oily waste safety can (Contaminated Wipes) and one approximately 5-gallon self-closing oily waste safety can (Contaminated Wipes)

I did not observe any issues or make any preliminary findings regarding the hazardous waste satellite accumulation.

4.8 Wastewater Treatment Room

NOPF 1: Hazardous waste on top of containers – Title 128, Chapter 10, 004.01A.

The State of Nebraska has promulgated regulations for the management of hazardous waste which are codified in the Nebraska Administrative Code, Title 128 – Nebraska Department of Environmental Quality. The requirements for large quantity generators of hazardous waste are found in Chapter 10 – Requirements for Large Quantity Generators of Hazardous Waste. Section 004.01 in combination with subparagraph 004.01A requires, in pertinent part, that *“A generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that the waste is placed in containers...”*

I visually inspected the Wastewater Treatment Room on October 5, 2022, accompanied by Ms. Alley to review F006 Sludge generation and management. I observed brownish solid material on top of an empty 55-gallon container positioned beneath the filter press where F006 Sludge is generated. I asked Ms. Alley if the material was F006 Sludge which she confirmed (photograph 1, attachment 1).

4.9 Universal Waste

Vishay generates Universal Waste Lamps. Ms. Alley stated that the Universal Waste Lamps are transferred to Vishay Plant 2 where they may accumulate until shipped off site to Heritage Environmental Services LLC, Kansas City, Missouri, (MOD981505556) for recycling. I visually inspected the Universal Waste Lamp accumulation that was located at a loading dock near the Maintenance Room. I observed one fiberboard container of 8-foot fluorescent lamps and two fiberboard containers of 4-foot fluorescent lamps. The containers were all labeled Universal Waste Lamps, closed, in good condition and dated September 21, 2022

I did not observe any issues or make any preliminary findings regarding Universal Waste Lamp accumulation.

4.10 Used Oil

I asked Ms. Alley if Vishay generates used oil to which she replied in the negative. I did not observe used oil during my visual inspection on October 5, 2022.

4.11 Contingency Plan

Vishay is a large quantity hazardous waste generator and is required to have a written Contingency Plan. I obtained a copy of Vishay's Contingency Plan (attachment 11). The plan contains the required information and elements.

I did not observe any issues or make any preliminary findings regarding the Contingency Plan.

4.12 Manifests

I reviewed hazardous waste manifests in the EPA e-Manifest system. Vishay has made 56 hazardous waste shipments from January 1, 2020, to September 30, 2022. I discussed hazardous waste manifest recordkeeping with Ms. Alley. All manifests and bills of lading are maintained as hard copies. I observed that Vishay maintains hard copy manifest records. I observed six occurrences where the transit days for hazardous waste shipments exceeded 35 days. I asked Ms. Alley if she contacts the designated facility on the manifest determine the status of the shipments to which she replied she telephones the facility.

I did not observe any issues or make any preliminary findings regarding the manifest information reviewed.

4.13 Personnel Training

I reviewed personnel training with Ms. Alley who described RCRA training consists of onsite in person training conducted by a third-party training organization, Nebraska Safety Council. I reviewed refresher training records for Messrs. Doug Wiegand and William Acamo whose duties include managing hazardous waste containers. I reviewed initial training records for Messrs. Kody Carson and Jaco Nicehelter whose job duties regarding managing hazardous waste containers in 2022.

I did not observe any issues or make any preliminary findings regarding the Personnel Training records reviewed.

4.14 Inspections

NOPF 3: Weekly container accumulation area inspections not conducted – Title 128, Chapter 10, 004.01A4.

The State of Nebraska has promulgated regulations for the management of hazardous waste which are codified in the Nebraska Administrative Code, Title 128 – Nebraska Department of Environmental Quality. The requirements for large quantity generators of hazardous waste are found in Chapter 10 – Requirements for Large Quantity Generators of Hazardous Waste. Section 004 – Accumulation Time includes requirements for accumulation of hazardous waste on site without a hazardous waste permit or interim status. Section 004.01A requires, in pertinent part, as *“The generator must inspect areas where containers are stored, at least weekly, looking for leaks and for deterioration caused by corrosion and other factors ...”*

I asked Ms. Alley how often the less than 90-day hazardous waste accumulation areas are inspected to which she replied weekly. I asked if there were instances where inspections were not conducted. Ms. Alley stated that inspections of the Old Hazardous Waste Storage room had ceased in June 2021 when a personnel change was made. Ms. Alley provided a copy of the inspection log for June 2021 showing the last inspection of the Old Hazardous Waste Storage room on June 10, 2021 (attachment 13). Ms. Alley stated the weekly inspections of the New Hazardous Waste Storage building began in September 2022 when waste was transferred into the building from the Old Hazardous Waste Storage room. She identified that the weekly inspection was not conducted for the week of September 19, 2022 (attachment 13).

5.0 COMPLIANCE ASSISTANCE

I provided Vishay with the following compliance assistance information:

Section 3007 Inspections Sheet (EPA Handout)

United States Code 1001/1002 Annotated (EPA Handout)

Notice Regarding Proprietary/Confidential Business Information Submitted to or Collected by EPA in Connection with Inspections (EPA Handout)

EPA Enforcement Alert National Compliance Initiative Focus on RCRA Air Emissions June 2020 (EPA Handout)

COMPLIANCE ADVISORY Reduction of Hazardous Waste Air Emissions April 2018 (EPA Handout)

Leak Detection and Repair: A Best Practices Guide (EPA Handout)

Tampering Pollutes Our Air (EPA Handout)

Clean Air Act Vehicle Aftermarket Defeat Devices and Tampering (EPA Handout)

Aerosol Can Waste, November 2016, (NDEE Handout)

Hazardous Waste Report: Guidance for Reporting, December 2016, (NDEE Handout)

Hazardous Waste Report: Frequently Asked Questions, December 2016, (NDEE Handout)

Solvent-Contaminated Shop Towels, Rags, and Wipes October 2016, (NDEE Handout)

Sump, Pit, Trench, & Trap Wastes: Hazardous Waste Determinations November 2016, (NDEE Handout)

Universal Waste Regulations, November 2016, (NDEE Handout)

Used Oil and Used Oil Filters Management, November 2016, (NDEE Handout)

Waste Computers, Monitors, and Electronics, November 2016, (NDEE Handout)

Waste Determination & Hazardous Waste Testing, November 2016, (NDEE Handout)

6.0 SUMMARY

I conducted an inspection of Vishay as large quantity generator of hazardous waste and small quantity handler of universal waste. The following preliminary findings are noted as discussed above:

NOPF 1: Hazardous waste on top of containers – Title 128, Chapter 10, 004.01A.

NOPF 2: Hazardous waste accumulation greater than 90 days (dates prior to June 4, 2022) – Title 128, Chapter 10, 004.01.

NOPF 3: Weekly container accumulation area inspections not conducted – Title 128, Chapter 10, 004.01A4.

NOPF 4: Accumulation start date missing or incomplete - Title 128, Chapter 10, 004.01F

NOPF 5: Container missing hazardous waste label (and date) – Title 128, Chapter 10, 004.01G.

Other than the items noted above, no other preliminary findings were noted. However, the EPA may review my findings further after the inspection, which may change or add to my findings.

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Herstowski, Ken

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Ken
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Kenneth Herstowski
Environmental Engineer
RCRA Section, Chemical Branch
Enforcement and Compliance Assurance Division

Date

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Amber Whisnant
Chief, RCRA Section, Chemical Branch
Enforcement and Compliance Assurance Division

Date

Attachments

1. Inspection [41] Photographs – (42 pages)
2. Photographic Log – (2 pages)
3. Vishay Aerial Photograph (2 pages)
4. Vishay Facility Drawing (1 pages)
5. Notice of Preliminary Findings (3 pages)
6. Receipt for Documents (1 page)
7. Confidentiality Notice (1 page)
8. RCRA Site Verification Report (2 pages)
9. NDEE Extension (2 pages)
10. EPA FID Calibration (4 pages)
11. Contingency Plan (28 pages)
12. RCRA Refresher Training (156 pages)
13. Inspection Logs (2 pages)