

RCRA Compliance Evaluation Inspection Report

1) Inspector and Author of Report

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2) Facility Information

DSM Protective Materials LLC
5750 Martin Luther King Jr. Hwy.
Greenville, North Carolina 27834
County: Pitt
Latitude: 35°39'39"
Longitude: 77°21'36"
EPA ID Number: NCR000166835

Primary NAICS – 32522 – Artificial and synthetic fibers and filaments manufacturing
Other NAICS – 313110 – Fiber, yarn, and thread mills
SIC Code - 2823 – Cellulosic manmade fibers
Other SIC Code – 2824 – Organic fibers, non-cellulosic

3) Responsible Official

Myrna Pacheco, Environmental Engineer
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Office: (252) 406-5872

4) Inspection Participants

Parvez Mallick, US EPA Region 4
Andrea L. Stermer, Environmental Specialist II, NCDEQ
William Hunneke, Facilities Management Branch Head, NCDEQ
Myrna Pacheco, Environmental Engineer, DSM
Shan Collins, Logistics & Compliance Manager, DSM
Curtis Buys, Process Engineer, DSM

5) **Dates of Inspection**

February 23, 2021, 8:40 a.m.

6) **Applicable Regulations**

Subtitle C of the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. §§ 6921 – 6939f), 40 Code of Federal Regulation (C.F.R.), Parts 260 - 270, 273 & 279, and NCHWMR, 15A NCAC 13A .0101 to .0119. Hazardous Waste Management Permit No. NCD047373766.

As the State's authorized hazardous waste program operates in lieu of the federal RCRA program, the citations of those authorized provisions alleged herein will be to the authorized State program; however, for ease of reference, the federal citations will follow in brackets.

7) **Purpose of Compliance Evaluation Inspection**

On February 23, 2021, Andrea Stermer and William Hunneke, North Carolina Department of Environmental Quality (NCDEQ), and Parvez Mallick, EPA, conducted an announced compliance evaluation inspection of DSM Protective Materials LLC (DSM or the facility) to determine the facility's compliance with state and federal hazardous waste regulations. This was an EPA lead joint inspection. DSM was represented by Myrna Pacheco, Environmental Engineer; Shan Collins, Logistics & Compliance Manager; and Curtis Buys, Process Engineer. Upon entering the facility, the inspectors introduced themselves, showed their credentials and explained the purpose of the visit and a description of the facility's process was discussed.

8) **Facility Description**

DSM Protective Materials LLC, located in Greenville, Pitt County, is a manufacturer of high tensile strength extruded polyester yarns which are either sold as such for ropes, cables, and nets or further processed into non-woven products with a variety of end-use applications including ballistic retardant fabrics and very high strength sail material. The high-tech textile operation was created in 2001. The facility first started with a mechanical sheeting process creating Dyneema UDY (unidirectional) non-woven sheeting fabric. In 2004, Dyneema started manufacturing fiber produced from polyethylene powder extrusion. The fiber is either sold on bobbins or used on site to make ballistic tape (another non-woven product). The ballistic tape is mechanically oriented and laminated.

The facility has six main buildings totaling over 500,000 square feet associated warehouses for manufacturing and utility operations and administrative offices for the plant. Buildings #46 and #47 contain large scale fiber extrusion lines. Building #50 contains a medical grade fiber processing facility. Buildings #12, #12A, and #12B contain several non-woven manufacturing lines and a lab for ballistics testing. Fabric labeling takes place behind every non-woven products line using inks containing methyl ethyl ketone (MEK).

Hazardous wastes are generated from the synthetic fiber production process. They are stored in the facility's permitted hazardous waste storage areas, which consist of two hazardous waste container storage areas (B46 and B47) and one hazardous waste tank (T-0902). The facility was issued a renewal permit for hazardous waste storage that was effective on November 15, 2018, expiring on November 15, 2028. Before the 2018 permit issuance, DSM's operations were part

of Patheon Manufacturing Services LLC's (NCD047373766).

The facility has been notifying as a Large Quantity Generator under the current EPA ID number since September 9, 2018, at which time they were operating as DSM Dyneema LLC. In February 2020, the facility changed their name to DSM Protective Materials LLC, EPA ID number NCR000166835. They were also actively managing a hazardous secondary material (HSM) under the generator-controlled exclusion effective June 10, 2019. The facility has 380 employees and operating hours are Monday through Sunday, four shifts operation 24/7.

The facility's most recent biennial report submitted to NCDEQ on February 27, 2020, characterized the facility as a large quantity generator (LQG) of hazardous waste and a permitted hazardous waste storage facility, generating waste decalin (D001); UDY – solid resin, plastics or polymerized organics (D001); UDY filters (D001); UDY fibers extruded (D001); trial material-laminate CT71 B stage (D001); sodium hypochlorite spill clean-up (D002); MEK solvent and ink waste (D001, D035, and F005); liquid decalin (D001); flammable aerosol (D001); ballistic testing solids (D008); and crushed bulb (D009).

General Information:

- Legal owner of facility: DSM Dyneema LLC.;
- Legal owner of property: DSM Dyneema LLC.;
- Number of Employees/Shifts: ~380 employees/4 shifts operating 24/7;
- Water supply (municipal or well): Municipal (Greenville Utilities Commission)
- Municipal sewer/septic/on-site treatment facility: Municipal (Greenville Utilities Commission)/No septic/Industrial User Permit #DY-102 with Greenville Utilities Commission with a discharge limit of 300,000 gallons per day;
- Number of on-site wells: None;
- Distance to closest off-site well: Less than ¼ mile (5900 Martin Luther King Jr. Hwy);
- Closest private residence: Less than ¼ mile to the east; and
- Site Acreage: 87 acres.

9) Inspection Findings

A walk-through inspection of the facility was performed with the DSM representatives. Hazardous wastes are primarily generated from the synthetic fiber production and from maintenance activities. There are approximately 34 satellite accumulation areas (SAAs) throughout the facility located in Building No. 12, 46, 47, 50, and 51, which were randomly inspected during the inspection. Below is a description of the observations made in the various areas of the facility inspected.

All SAA containers were observed to be at or near the point of generation and under control of the operator, containers were closed, marked with the words "Hazardous Waste," had an indication of the hazard(s) of the contents of the containers. The containers did not exceed 55-gallons of waste in any SAA and containers were in good condition. Universal wastes (un-punctured aerosol cans and batteries) containers were closed, marked "Universal Waste", and had an accumulation start dates ranging from 7/17/20 to 1/11/21. Un-punctured aerosol cans and batteries are managed as universal waste with Veolia ES Technical Solutions, LLC, Creedmoor, North Carolina. The following SAAs were inspected during the inspection:

Building 51 – LP Manufacturing TAPE

- #51.1 – One 8-gallon container of ink containing methyl ethyl ketone (MEK) and ink (D001/D035/F005) in secondary containment; and
- #51.2 – One 55-gallon container of crushed fluorescent lamps (D009);
- One 35-gallon container of unpunctured universal waste aerosol cans (near SAA #51.1).

Building 12 – LP Manufacturing UD2 & UD3

- #12.1 – One 55-gallon container of Lead UD Ballistic Waste (D008); and
- #12A.1 – One 8-gallon container of MEK and ink (D001/D035/F005) in secondary containment.

Building 46

- One 15-gallon and one 5-gallon container of universal waste batteries.

Building 46 – Container Storage

- One 55-gallon container of universal waste aerosol cans.

Building 47 – Fiber Manufacturing DAPs 4-6

- #47.4 – One 55-gallon container UDY and decalin (D001);
- #47.1 – One 55-gallon container of decalin solids (D001);
- #47.2 – One 55-gallon container of UDY and decalin (D001);
- #47.6 – One 55-gallon container of UDY and decalin (D001);
- #47.5 – One 55-gallon container of decalin solids (D001);
- #47.8 – One 55-gallon container of UDY and decalin (D001);
- #47.9 – One 55-gallon container of decalin solids (D001); and
- #47.10 – One 55-gallon container UDY and decalin (D001).

Building 47 Container Storage

- One 55-gallon container of universal waste aerosol cans.

Used Oil

One 55-gallon container of used oil was observed in Building 51 during the inspection. The container was closed, marked “Used Oil.”

Generator Controlled Exclusion for Reclamation of Hazardous Secondary Materials (HSM) Tank T0906

– According to DSM, the decalin resulting from the separation of decalin and water from the manufacturing process generated in the P-Oven, the UDY Box (but not from the tote in the UDY Box), and the Quench is considered a hazardous secondary materials (HSM) that is subsequently reclaimed onsite and returned to the original process in which it was generated. A site visit by the NCDEQ on September 25, 2018, confirmed that the recycling process involving HSM decalin material was closed loop with reclamation and met the conditions of 40 C.F.R. § 261.4(a)(8).

During the inspection, Curtis Buys, Process Engineer, explained that approximately 3,000 kilograms of the HSM decalin is purged from the manufacturing process per day into the HSM storage tank T-0906 which then feeds into the distillation column C-901. The resulting distillation bottoms purge into the hazardous waste tank T-0902. The inspectors walked along the process lines of the HSM decalin from tank T-0906 into the manufacturing building. Process

lines were marked with labeling that included “Contaminated Decalin” and “Decalin for Reclamation.” The line from the permitted roll-offs container was marked “Decalin for Reclamation.”

The inspectors observed that the HSM tank (T-0906) was marked with the words “Spent Decalin,” marked with a National Fire Protection Association (NFPA) hazard diamond, and in good condition. The volume and turnover of spent decalin in HMS unit (T-0906) is tracked electronically to make sure that 75% of HSM is reclaimed in a calendar year.

Permitted Storage Area

Tank (T-0902)

One 37,600-gallon capacity carbon steel vertical above ground tank is used to store contaminated solvent (D001). Tank T-0902 is located on an outdoor diked concrete pad which provides approximately 80,000 gallons of containment volume. Level 1 controls are used to control air pollutant emissions from the tank to comply with Subpart CC requirements. The tank was marked with the words “Hazardous Waste”, had a NPFA placard to indicate the hazard of the contents, and a fire extinguisher and spill kit were observed in the area. The inspectors observed that the containment area was coated without any cracks. Ancillary equipment to the tank was tagged. The inspectors selected several emission test points Tag number T109181, 128766M, 128766AU, and 128766AL and later identified the Tags on the LDAR checklist and in the piping diagram.

Building 46 - Container Storage Area

The Building 46 (DAP 1-3) Container Storage Area is an existing roofed, concrete pad approximately 84' by 32'. Perimeter curbing provides approximately 4,000 gallons of secondary containment. Permitted maximum storage capacity is 25,940 gallons. A fire extinguisher, spill kit, and eye wash/shower stations were observed in the area. The following waste containers were observed during the inspection:

- One 27-cubic yard roll-off of bulk UDY fiber extruded (D001) dated 2/1/21;
- One 55-gallon container of decalin (D001) dated 1/17/21; and
- One 55-gallon container of UDY filters dated 12/19/20.

Building 47 Container Storage Area

The Building 47 (DAP 4-6) Container Storage Area is an existing roofed, concrete pad approximately 71' by 32'. Perimeter curbing provides approximately 3,170 gallons of secondary containment. Maximum storage capacity is 25,940 gallons. The following wastes were observed during the inspection:

- One 27-cubic yard roll-off of bulk UDY fiber extruded (D001) dated 2/8/21;
- Two 55-gallon containers of decalin (D001) dated 2/22/21;
- One 55-gallon container of UDY filters (D001) dated 2/20/21; and
- One 55-gallon container of UDY/Decalin (D001) dated 2/23/21.

The inspectors observed that emergency communication is available in all the permitted storage and HSM unit areas including cell phones and two-way radios. Emergency equipment observed included fire extinguishers, spill kits, and eye wash/shower stations. All containers were closed, marked with the words “Hazardous Waste,” with the indication of the hazard(s), and had accumulation start dates.

Records Review

Personnel Training – Review of RCRA training documentation, included job title and name of the employee filling the position, job descriptions, type and amount of introductory and continuing training required, and proof that training has been completed as required found no issues. Training records for everyone involved in hazardous waste management were provided and hazardous waste management training for each staff member is up to date.

Contingency Plan (CP) – The facility maintains a copy of a dedicated “RCRA Contingency Plan” which fulfills the permit requirements and was last updated on January 13, 2021. It was modified to add the emergency evacuation route maps from the satellite accumulation areas and the HSM area in addition to the permitted storage areas. The plan described the action employees will take to respond to fires and/or explosions, spills, and floods. The primary emergency coordinator was listed as Myrna Pacheco with alternate contacts listed as Shan Collins and Jonathan Heltzel. Also included were a description of the arrangements made with the local emergency authorities; a description of the signal used to begin evacuation of the facility (horn signal); and a physical description of the emergency equipment used at the permitted storage areas in the event of an emergency with the location of the equipment and a brief description of the capabilities of the equipment.

DSM developed a quick reference guide (QRG) revised in January 2021 that had the required components including a map of the facility showing where hazardous wastes are generated, accumulated, and stored with routes for accessing those wastes; and a map of the facility with a one-mile radius identifying surrounding businesses, residents, and schools.

On January 20, 2021, copies of the contingency plan and quick reference guide were provided to Greenville Fire and Rescue, Pitt County Sheriff’s Office, Stanton House Fire Department, Vidant Medical Center, Pitt County EMS, Pitt County Fire Marshal, and North Carolina Emergency Management. The facility had delivery confirmations from each entity.

Emergency Preparedness and Prevention – Two-way radios or cell phones are used for communication in the permitted storage area. DSM shares emergency response resources with the adjoining Patheon Manufacturing facility. The plant fire brigade operates the company fire truck for fire control that is in Building #20 along the common property line between the two sites. A complete list of available equipment was listed in the facility’s contingency plan. Emergency equipment in the permitted storage areas included fire extinguishers and spill kits with absorbent materials, personal protective equipment, and an over-pack container.

Arrangements with Local Authorities – The facility last submitted the Contingency Plan and QRG to the local emergency authorities on January 20, 2021, which include Greenville Fire and Rescue, Pitt County Sheriff’s Office, Stanton House Fire Department, Vidant Medical Center, Pitt County EMS, Pitt County Fire Marshal, and North Carolina Emergency Management. The facility had delivery confirmations from each entity.

Tank Inspections/Leak Detection and Repair Program – DSM has a fugitive emission monitoring standard operating procedure that describes details for monitoring fugitive emissions. The Leak Detection and Repair (LDAR) program areas of monitoring include the hazardous waste tank and ancillary equipment (test points 128766 A through AT), the distillation column equipment C-0901 (test points A through N), East Roll-off (test points A through G), West Roll-off (test

points A through G), and F-6401 & Quench Decalin Vapor area (8 test points include doors and windows). Leak detection is conducted monthly on approximately 162 test points. The inspectors reviewed Subpart BB and CC air emissions monitoring records from 7/6/20 to 1/11/21. Each monitoring log includes a Subpart BB equipment tag list, and a space to record the date and time of the inspection/monitoring event and the name of the employee conducting the activity. The paperwork documented that no emissions were detected during this timeframe, which was confirmed by DSM staff during the inspection.

Inventory monitoring of the hazardous waste tanks and HSM tanks are done electronically. The facility provided a hard copy of the waste inventory in T-0902 that recorded the gallons in it from 1/1/20 to 1/10/21. The last date of waste removal was on 12/18/20, which corresponded with the manifest #006977886SKS.

Additionally, DSM performs and documents daily visual inspections looking for leaks in piping and appurtenances associated with hazardous waste and the HSM tanks. The daily “B46 Decalin Storage Area Daily Inspection Form” includes the following inspection items: PE Silo UP1, PE Silo UP2, PE Silo UP3, Tanks T-0901 and T-0902, Waste Decalin Piping Systems, Containment Dike Condition, Pumps P-0905A/B, P-0906, P-0907, and Secondary Containment for Bulk (Un) Loading Area. The “B47 Decalin Storage Area Daily Inspection Form” includes the following inspection items: PE Silo UP4, PE Silo UP5, PE Silo UP6, Tanks T-0905 and T-0906, Waste Decalin Piping Systems, Containment Dike Condition, Pumps P-0910A/B, P-0913, P-0915, and Secondary Containment for Bulk (Un) Loading Area. The “Daily Environmental Checklist” includes a visual inspection for leaks or damage in Tanks T-0901 and T-0902, the decalin piping, containment dike, pumps, and containment area for both Buildings 46 and 47. Daily tank and ancillary equipment inspections were randomly reviewed from 7/19/20 to 1/31/21.

The inspectors reviewed the facility’s most recent tank assessment report dated January 26, 2021. The tank inspection was done by Denco Industrial Sales & Services, LLC. The report indicated that Denco Industrial Sales & Services, LLC performed API 653 external, ultrasonic thickness and internal inspections including tank roof. No adverse conditions were noted in the inspection report.

Biennial Report – A copy of the facility’s biennial report was maintained onsite. The last biennial report was submitted February 27, 2020, for the 2019 reporting year.

Manifests/Land Disposal Restriction (LDR) Notifications – Hazardous waste manifests and LDRs were reviewed from July 29, 2020 through January 14, 2021. They were signed by Sue Grandy, Paul Hudson, and Gentry Bridgeman. The following treatment, storage, and disposal facilities (TSDFs) accept hazardous waste from the facility:

TSDFs	EPA ID#
Veolia ES Technical Solutions	NCD986166338
Safety Kleen Systems, Inc.	NJD002182897
Clean Harbors	NCD000648451
KilnDirect Inc.	SCR000770073

The following transporters transports wastes to TSDFs:

Transporters	EPA ID#
Clean Harbors	MAD039322250
Veolia	NJD080631369

STC Industrial	SCR000784884
Eastern Environmental Management LLC	NCR000146456

Weekly Inspections – Review of weekly inspections indicated that inspections are typically conducted twice a week on hazardous waste areas in Building 46, 47, and 50. Weekly inspections were performed by Juan Atkinson, Ronnie Davis, Brent Morris, Andy Case, Patrick Evans, and Maurice Wiggins and were up to date.

Emergency Preparedness and Prevention – Two-way radios or cell phones are used for communication in the permitted storage area. DSM share emergency response resources with the adjoining Patheon Manufacturing facility. The plant fire brigade operates the company fire truck for fire control that is in Building #20 along the common property line between the two sites. A complete list of available equipment was listed in the facility's contingency plan. Emergency equipment in the permitted storage areas included fire extinguishers and spill kits with absorbent materials, personal protective equipment, and an over-pack container. There were "No Smoking" signs posted where ignitable waste was accumulating in the permitted areas.

10) **Signed**

Parvez Mallick

Signature
Parvez Mallick
Inspector and Author of Report

4/12/2021

Date

11) **Concurrence and Approval**

Signature
Araceli B. Chavez
Chief
RCRA Enforcement Section

Date