

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION**

September 20, 2023

PERMIT TO INSTALL
116-23

ISSUED TO
Billerud Quinnesec, LLC

LOCATED AT
W-6791 Highway US-2
Quinnesec, Michigan 49876

IN THE COUNTY OF
Dickinson

STATE REGISTRATION NUMBER
B7192

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: September 15, 2023	
DATE PERMIT TO INSTALL APPROVED: September 20, 2023	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO ₂ e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H ₂ S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO _x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO ₂	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal condition or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU0917-1	Lime Kiln – Lime mud from the causticizing system is converted to lime in a rotary kiln. Emissions are controlled by a wet scrubber.	06/01/1981	FGPULPINGMOD-1

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

**EU0917-1 LIME KILN
 EMISSION UNIT CONDITIONS**

DESCRIPTION

LIME KILN – Lime mud from the causticizing system is converted to lime in a rotary kiln. Emissions are controlled by a wet scrubber.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Venturi wet scrubber to control particulate, total reduced sulfur (TRS), hydrogen sulfide, methanol, and total gaseous nonmethane organics (TGNMO) emissions.

Low NOx burner to control NOx emissions.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. TRS based on H ₂ S	8.0 ppmv on a dry basis, at 10% oxygen	12-hour block average	EU0917-1	SC VI.1	R 336.1224, R 336.1225, 40 CFR 60.283(a)(5), 40 CFR 52.21(j)(3)
2. Carbon Monoxide (CO)	0.64 lb/MMBTU heat input when firing natural gas, No. 6 fuel oil, and/or biofuel	Hourly	EU0917-1	SC V.1	R 336.2804, 40 CFR 52.21(d)
3. Nitrogen Oxides (NOx)	0.30 lb/MMBTU heat input when firing natural gas, No. 6 fuel oil, and/or biofuel	Hourly	EU0917-1	SC V.1	R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
4. NOx	29 pph	Hourly	EU0917-1	SC V.1	R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
5. PM	0.064 gr/dscf at 10% oxygen	Hourly	EU0917-1	SC V.3, SC VI.2	40 CFR 60.282(a)(3)(i), 40 CFR 63.862(a)(1)(i)
6. PM	16.9 pph	Hourly	EU0917-1	SC V.1, SC VI.2	40 CFR 52.21(j)(3)
7. PM	9.4 pph	Hourly	EU0917-1	SC V.1, SC VI.2	R 336.2803, R 336.2804
8. PM	41.1 tpy	12-month rolling time period as determined at the end of each calendar month	EU0917-1	SC VI.7	R 336.1205(1)(a) & (b)
9. PM ₁₀	9.7 pph	Hourly	EU0917-1	SC V.1, SC VI.2	R 336.2803, R 336.2804

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
10. PM10	42.3 tpy	12-month rolling time period as determined at the end of each calendar month	EU0917-1	SC VI.7	R 336.1205(1)(a) & (b)
11. PM2.5	9.7 pph	Hourly	EU0917-1	SC V.1, SC VI.2	R 336.2803, R 336.2804
12. PM2.5	42.3 tpy	12-month rolling time period as determined at the end of each calendar month	EU0917-1	SC VI.7	R 336.1205(1)(a) & (b)
13. SO ₂	40 pph	Hourly	EU0917-1	SC V.2	R 336.2803, R 336.2804, 40 CFR 52.21(j)(3)
14. SO ₂	1.7 lbs/MMBTU of heat input (Applies when burning fuel oil)	Hourly	EU0917-1	SC V.2, SC VI.6	R 336.1402, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
15. Total Gaseous Nonmethane Organics (TGNMO) measured as total methane	68 ppmv on a dry basis, at 10% oxygen	Hourly	EU0917-1	SC V.1	R 336.1702(a)
16. TGNMO measured as total methane	5.0 pph	Hourly	EU0917-1	SC V.1	R 336.1702(a)

II. MATERIAL LIMIT(S)

1. The permittee shall not burn biofuel in EU0917-1 for more than 144 total hours, during the lifetime of this PTI. Upon voidance of this permit, as referenced in SC IX.3, the permittee shall not burn biofuel in EU0917-1. **(R 336.1205, R 336.1225)**
2. The permittee shall not burn more than 64,000 gallons of biofuel in EU-0917-1, during the lifetime of this permit. **(R 336.1225)**
3. The permittee shall not produce more than 15.2 tons of lime per hour, or 350 tons of lime per day, when burning biofuel in EU0917-1. **(R 336.1225)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(j) except for up to five 3-hour average periods in a semiannual period, with the exception of pressure drop during periods of startup and shutdown. The permittee shall implement a corrective action when any 3-hour average parameter value is outside the range of values established as provided in 40 CFR 63.864(j). No more than one exceedance will be attributed to any 24-hour period. **(40 CFR 63.864(k)(1)(ii), 40 CFR 63.864(k)(2), 40 CFR 63.864(k)(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU0917-1 unless the wet scrubber is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(j)(3), R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify Methanol, CO, NO_x, PM, PM₁₀, PM_{2.5}, and TGNMO emission rates from EU0917-1, by testing at owner's expense, in accordance with the Department requirements, once every five years from the last test. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
CO	40 CFR Part 60, Appendix A
NO _x	40 CFR Part 60, Appendix A
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM ₁₀	40 CFR Part 51, Appendix M
PM _{2.5}	40 CFR Part 51, Appendix M
TGNMO	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. The TRS emission testing shall be conducted when incinerating DVGs in the chemical recovery furnace. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR Part 51 and Appendix M, 40 CFR Part 60 and Appendix A)**

2. Upon request of the AQD District Supervisor, the permittee shall verify SO₂ emission rates from EU0917-1, by testing at owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
SO ₂	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.7, 40 CFR 60.8 and Appendix A)**

3. The permittee shall conduct performance tests for particulate matter per the applicable performance test requirements and test methods specified in 40 CFR Part 63, Subpart A and MM. Subsequent periodic tests must be conducted within 5 years following the previous performance test. Test results must be submitted within 60 days of test completion to the USEPA via CEDRI in a format generated through USEPA's ERT (electronic reporting tool), or consistent with the XML schema listed on USEPA's ERT website. A notification of compliance status must be submitted within 60 days of performance test completion. Beginning October 11, 2019, the notification of compliance status must be submitted to the USEPA via CEDRI. **(40 CFR 63.7, 40 CFR 63.865, 40 CFR 63.867)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The TRS concentration limit shall be determined using a CEMS located downstream of the scrubber and in accordance with the procedures specified in 40 CFR 60.284, 40 CFR Part 60, Appendix F and Performance Specifications 5 & 3. **(40 CFR 60.284, 40 CFR 60 Appendix F and Appendix B PS 5 & 3)**
2. The permittee shall install, calibrate, maintain, monitor and operate a continuous monitoring system to measure and record pressure drop across the scrubber and scrubber liquid flow rate at least once every successive 15-minute period using the procedure in (40 CFR 63.864 (e)(10), 40 CFR 60.13(a). **(40 CFR 63.8, 40 CFR 63.864 (e)(10))**
3. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(j) except for up to five 3-hour average periods in a semi-annual period. No more than one exceedance will be attributed to any 24-hour period. **(40 CFR 63.864(k)(2)(iv), 40 CFR 63.864(k)(3))**
4. The permittee shall maintain and implement CMS data quality assurance procedures consistent with the requirements in 40 CFR 63.8(d)(1) and (2). **(40 CFR 63.864(f), 40 CFR 63.8(d)(1)-(2))**
5. The permittee shall maintain records, as applicable, specified in 40CFR 63.866(b) - (d) in addition to the applicable record keeping requirements of 40 CFR 63.10. **(40 CFR 63.866(b)-(d), 40 CFR 63.10)**
6. The permittee shall maintain purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing or any other records adequate to demonstrate compliance with the emission limit in SC I.14. **(R 336.1402, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**
7. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period PM2.5, PM10, and PM emission calculation records for EU0917-1, as required by SC I.8, I.10, and I.12. The permittee shall keep all records on file at the facility and make them available to the Department upon request. The permittee shall include the emissions from all biofuel burned in EU-0917-1 in the calculations, even after this permit is voided. **(R 336.2803, R 336.2804)**
8. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(R 336.1910, R 336.1912)**
9. The permittee shall keep, in a satisfactory manner, records of the following while burning biofuel in EU0917-1:
 - a) The total number of hours in which biofuel has been burned in EU-0917-1, since approval of this PTI, updated each calendar day.
 - b) The total amount of biofuel, in gallons, that has been burned in EU-0917-1, since approval of this PTI, updated each calendar day.
 - c) The amount of lime produced in EU0917-1, on an hourly and daily basis.**(R 336.1205, R 336.1225, 40 CFR 52.21 (c) & (d))**

VII. REPORTING

1. The permittee shall submit NESHAP semiannual excess emissions reports as specified in 40 CFR Part 63, Subparts MM and A. Semiannual reports must be submitted electronically via CEDRI if forms are available. If CEDRI forms are not available, electronic reports must be submitted within one year of availability. **(40 CFR 63.867(c), 40 CFR 63.10(e)(3)(v))**
2. The permittee shall submit the applicable notifications and reports specified in 40 CFR 63.9 and 40 CFR 63.10. **(40 CFR 63.867(a), 40 CFR 63.10(d))**
3. The permittee shall submit any performance test reports {including RATA reports} to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**

- The permittee shall notify the AQD District Supervisor, as well as the AQD Permit Section, upon commencement of, and cessation of, the burning of biofuel in EU-0917-1. **(R 336.1201(3))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV09-ST-005-001	60	185	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

- The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart MM - National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semi-chemical Pulp Mills. **(40 CFR Part 63, Subpart MM)**
- The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart BB: New Source Performance Standards for Kraft Pulp Mills. **(40 CFR Part 60, Subpart BB)**
- The permittee shall comply with the requirements of this PTI upon commencement of the burning of biofuel in EU0917-1. Fourteen calendar days after the commencement of the burning of biofuel in EU0917-1, the conditions of this PTI are null and void, and the permittee shall revert to the conditions for EU0917-1 in Permit to Install no. 99-20B. **(R 336.1201)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).