AECOM

Class II Administrative Update Application

Half Moon Bay Hydration Facility
Mississippi Lime Company
Weirton, West Virginia

Plant ID No. 009-00088

REDACTED VERSION

November 14, 2017

Table of Contents

Introduction

Mississippi Lime Company is requesting a Class II Administrative update as required by 45 CSR 13-4 for construction of additional product storage, truck loading equipment, a lime conditioning system, and a hydrate conditioning system at its Weirton, WV facility, known as the Half Moon Hydration Facility.

The facility currently operates under Permit R13-2661B. The facility is proposing to construct four new emission units (18S through 21S) and three new control devices (9C, 10C, and 11C), emitting through three new emission points (10E, 11E, and 12E).

These modifications qualify for a Class II Administrative Update because the project emissions will be below 6 pounds per hour and 10 tons per year of PM10.

Construction Application Form

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☐ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☒ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
Mississippi Lime Company

2. Federal Employer ID No. ***(FEIN):***
37-0183365

3. Name of facility *(if different from above):*
Half Moon Hydration Facility

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
Jeff Dahl - Director of Operations
Mississippi Lime Company
525 Hance Road
Verona, KY 41092

5B. Facility's present physical address:
Half Moon Docking Facility
3001 Birch Drive
Weirton, WV 26062

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☐ **YES** ☒ **NO**

➪ If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**

➪ If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation: Not Applicable

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

➪ If **YES,** please explain: Lease agreement in place for property on which facility is located

➪ If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.):
Lime Hydration Facility

10. North American Industry Classification System **(NAICS)** code for the facility:
327410

11A. DAQ Plant ID No. (for existing facilities only):
009-00088

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R-13-2661B

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

From Highway 22 turn North onto Highway 2 (Weirton West Virginia - Exit 2). Highway 2 becomes Main Street.
Turn left (West) at first stop light at first intersection onto Freedom Way.
Drive one mile and take first right immediately after passing under train trestle. Stay on road to Security Gate. If Gate is un-manned follow road toward river to storage silo. Check in at office.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
3001 Birch Drive	Weirton, WV 26062	Brooke
12.E. UTM Northing (KM): 4470.45 Longitude: -80.620747°	12F. UTM Easting (KM): 532.32 Latitude: 40.385628°	12G. UTM Zone: 17 Elevation 671'

13. Briefly describe the proposed change(s) at the facility:

Installation of additional product storage, truck loading equipment, lime conditioning system, and hydrate conditioning system.

14A. Provide the date of anticipated installation or change: 2018 ➪ If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: Not applicable	14B. Date of anticipated Start-Up if a permit is granted: 2018

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? ☒ **YES** ☐ **NO**

17**. Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, submit your Risk Management Plan (RMP) to U. S. EPA Region III. Not subject to 112 (r)

18**. Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known).* A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known).* Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13). $300.00

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) **.**

➪ Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**

➪ Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

➪ For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations	☐ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☐ Hot Mix Asphalt Plant	☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	☐ Storage Tanks
☐ Grey Iron and Steel Foundry	☐ Indirect Heat Exchanger	☒ Lime Processing
☐ General Emission Unit, specify		

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems	☒ Baghouse	☐ Flare
☐ Adsorption Systems	☐ Condenser	☐ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☐ Wet Collecting System

☒ Other Collectors, specify DCL collector controlling truck loading operations, integrated into product loadout spout.

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☒ **YES** ☐ **NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "***Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity	☐ Authority of Partnership
☐ Authority of Governmental Agency	☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.** - Not Applicable

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE Terry J Zerr *(Please use blue ink)* DATE: Nov 16, 2017 *(Please use blue ink)*

35B. Printed name of signee: Terry J. Zerr		35C. Title: Vice President of Operations
35D. E-mail: JTZerr@mlc.com	36E. Phone: 314-543-6335	36F. FAX: 314-543-6502
36A. Printed name of contact person (if different from above): Amber R. Nipper		36B. Title: Environmental and Regulatory Affairs Manager
36C. E-mail: arnipper@mlc.com	36D. Phone: 573-883-4715	36E. FAX: 573-883-4199

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☒ **Attachment B: Map(s)**
- ☒ **Attachment C: Installation and Start Up Schedule**
- ☒ **Attachment D: Regulatory Discussion**
- ☒ **Attachment E: Plot Plan**
- ☒ **Attachment F: Detailed Process Flow Diagram(s)**
- ☒ **Attachment G: Process Description**
- ☒ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☒ **Attachment I: Emission Units Table**
- ☒ **Attachment J: Emission Points Data Summary Sheet**
- ☒ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☒ **Attachment L: Emissions Unit Data Sheet(s)**
- ☒ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☒ **Attachment N: Supporting Emissions Calculations**
- ☒ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☒ **Attachment P: Public Notice**
- ☒ **Attachment Q: Business Confidential Claims**
- ☐ **Attachment R: Authority Forms**
- ☐ **Attachment S: Title V Permit Revision Information**
- ☒ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***
- ☐ ***For Title V Administrative Amendments:***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***
- ☐ ***For Title V Minor Modifications:***
  - ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***
- ☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***
  - ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
  - ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
  - ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

Attachment A: Business Certificate

State of West Virginia

Certificate

I, Mac Warner, Secretary of State of the State of West Virginia, hereby certify that

MISSISSIPPI LIME COMPANY

a corporation formed under the laws of Missouri filed an application to be registered as a foreign corporation authorizing it to transact business in West Virginia. The application was found to conform to law and a "Certificate of Authority" was issued by the West Virginia Secretary of State on July 06, 2015.

I further certify that the corporation has not been revoked by the State of West Virginia nor has a Certificate of Withdrawal been issued to the corporation by the West Virginia Secretary of State.

Accordingly, I hereby issue this Certificate of Authorization

CERTIFICATE OF AUTHORIZATION

Validation ID:7WV6H_YGJH6

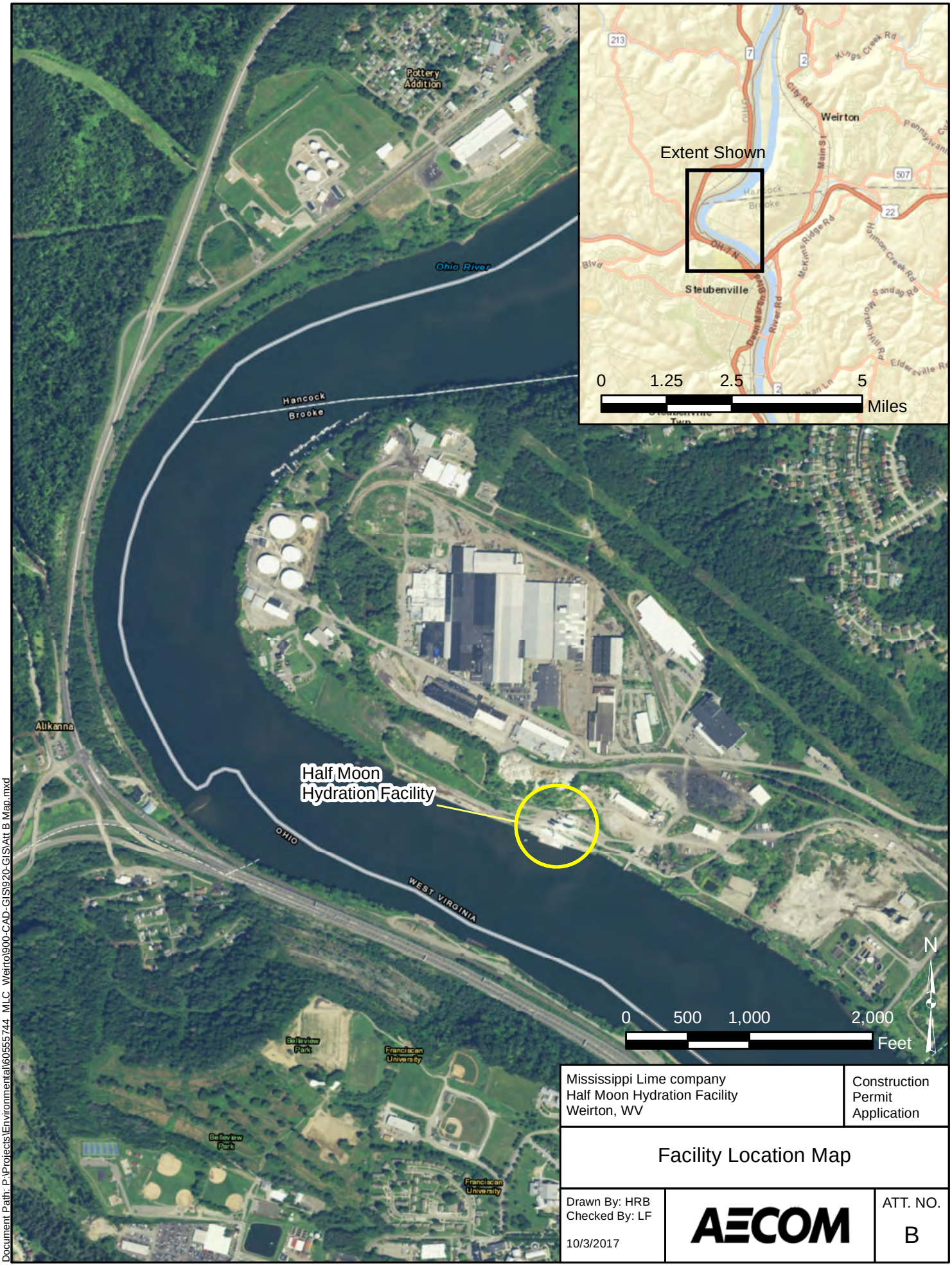
Given under my hand and the Great Seal of the State of West Virginia on this day of

September 22, 2017

Mac Warner

Secretary of State

Attachment B: Facility Map



Mississippi Lime company
Half Moon Hydration Facility
Weirton, WV

Construction Permit Application

Facility Location Map

Drawn By: HRB
Checked By: LF

10/3/2017

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ATT. NO.
B

Document Path: P:\Projects\Environmental\60555744_MLC_Weirton\900-CAD-GIS\920-GIS\Att B Map.mxd

Attachment C: Installation and Start Up Schedule

Installation and Startup Schedule

Mississippi Lime Company will implement the construction and equipment installation in a phased approach. Construction and installation dates for each phase of work are detailed below. Following approval of the permit application, it is expected that work will begin within 3 months.

Phase I:

Phase I of the construction process will include the installation of emission unit (EU)18S. [redacted]

Phase I of the construction activities to install emission unit 18S will begin within 3 months following the permit issuance.

Phase II:

Phase II of the construction process will include the installation of emission unit 19S. [redacted]

[redacted]

Construction activities to install equipment associated with EU 19S will begin in 2018 following the completion of Phase I.

Phase III:

Phase III of the construction process will include the installation of emission units 20S and 21S under two new emission points, 11E and 12E. [redacted]

Phase III of this construction process is currently scheduled to begin in 2019 following the construction of the two previously listed phases.

Dates of installation are subject to change due to equipment lead times and contractor availability. As work on this project progresses, informational updates will be periodically supplied to the agency as requested.

Attachment D: Regulatory Discussion

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Regulatory Discussion

The facility expects to retain the conditions in the existing permit. A review of potentially applicable regulations is provided below.

Federal Regulations

40 CFR Part 60: New Source Performance Standards

[redacted]

40 CFR Part 61 and 63: National Emission Standards for Hazardous Air Pollutants

40 CFR 63 Subpart AAAAA - National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants

This subpart applies to lime manufacturing plants that are major sources of HAP emissions. As the facility is not a major source of HAP emissions, this subpart does not apply.

[1] EPA Applicability Determination Index, Control Number 0400016, Dated 11/18/2003, "Subpart OOO and UUU Applicability to Lime Plants."

State Regulations

Facility-Wide Regulations

The following regulations are currently applied facility-wide in the facility's existing permit:

Open Burning 45 CSR 6-3.1 and 6-3.2

Asbestos 40 CFR 61.145(b) and 45 CSR 34

Odor 45 CSR 4-3.1

Permanent Shutdown 45 CSR 13-10.5

Standby Plan for Reducing Emissions 45 CSR 11-5.2

Testing Requirement 45 CSR 13

No additional regulations are expected to apply facility-wide as a result of this facility modification.

Source-Specific Limitations

45 CSR 7-3. Emission of Smoke and/or Particulate Matter Prohibited and Standards of Measurement

The opacity limitations of 45 CSR 7-3.1 and 7-3.2 will apply to new emission points 10E, 11E, and 12E, in addition to the existing emission points listed in the current permit.

The visible emissions from storage structures limitations of 45 CFR 7-3.7 will apply to new emission point 12E (product silo), in addition to the existing emission points listed in the current permit.

45 CSR 7-4. Control and Prohibition of Particulate Emissions by Weight from Manufacturing Process Source Operations.

The facility does not belong to the four listed source operation types, therefore this regulation does not apply.

45 CSR 7-5. Control of Fugitive Particulate Matter.

The current permit conditions regarding maintenance of facility access roads to minimize fugitive emissions still apply.

Attachment E: Plot Plan

REDACTED COPY - CLAIM OF CONFIDENTIALITY

REDACTED COPY - CLAIM OF CONFIDENTIALITY

REDACTED COPY - CLAIM OF CONFIDENTIALITY

Attachment F: Detailed Process Flow Diagrams

REDACTED COPY - CLAIM OF CONFIDENTIALITY

Mississippi Lime Company
Half Moon Hydration Facility
Weirton, WV

Attachment F
Process Flow Diagram

Rev. 10.31.17

KEY
EU – Emission Unit

EP – Emission Point

CD – Control Device

- Existing

- Proposed

Attachment G: Process Description

REDACTED COPY - CLAIM OF CONFIDENTIALITY

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Process Description

Mississippi Lime Company is proposing to install four new emission units (18S, 19S, 20S, and 21S) to improve facility efficiency and product quality.

[redacted]

Attachment H: Material Safety Data Sheets (MSDS)

MISSISSIPPI LIME COMPANY – MATERIAL SAFETY DATA SHEET
OSHA HAZARD COMMUNICATION

PRODUCT IDENTIFICATION	CHEMICAL ABSTRACT	DATE REVISED
Calcium Hydroxide "Hydrated Lime"	**CAS 1305-62-0**	**01/01/2014** Previous Versions Obsolete

Section I

MANUFACTURER		HMIS RATING
Mississippi Lime Company Half Moon Terminal 3001 Birch Drive Weirton, WV 26062 Website Mississippilime.com	24 Hour Emergency Contact Number: (800) 437-5463 Telephone Number for Information: (800) 437-5463 Signature of Preparer J.S. Castleberry	**Health - 2** **Flammability - 0** **Physical Hazard - 1** **Protective Equip – E**

Section II – Hazardous Ingredients / Identity Information

Specific Chemical Identity; Common Names	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (Optional)
Calcium Hydroxide; Slaked Lime; Hydrated Lime	5 mg/m^3	5 mg/m^3		
Crystalline Silica (Quartz)	0.1 mg/m^3	0.05 mg/m^3	Respirable	Variable <0.10-0.2%

Calcium Hydroxide is not listed on the NTP, IARC, or OSHA lists of carcinogens. Calcium hydroxide produced with quicklime manufactured by coal fired kilns may contain crystalline silica >0.1%. Crystalline silica is listed by IARC and NTP but not by OSHA. In 1997, IARC determined that "crystalline silica inhaled in the form or quartz or crystobalite from occupational sources is carcinogenic to humans (Group 1). OSHA requires that products containing >0.1% of a known carcinogen must be labeled. NTP states that "silica, crystalline (respirable)" may reasonably be anticipated to be a carcinogen (1991). Mississippi Lime Company recommends using personal protection equipment when handling this product.

Section III – Physical / Chemical Characteristics

Boiling Point (Calcium Oxide)	5162 ^oF	Specific Gravity (H_2O) = 1)	2.2
Vapor Pressure (mm Hg)	NA	Melting Point – Loses CO^2	1076 ^oF
Vapor Density (Air = 1)	NA	Evaporation Rate	NA
Solubility in Water	0.185 % @ 0 ^oC; 0.077 % @ 100 ^oC		
Appearance and Color	Odorless; White as a dry powder, wet slurry, or paste		

Section IV – Fire and Explosion Hazard Data

Flash Point	NA	Flammable Limits – NA
Extinguishing Method	NA	
Special Fire Fighting Procedures	NA	
Unusual Fire and Explosion Hazards	NA	

PRODUCT IDENTIFICATION	CHEMICAL ABSTRACT	DATE REVISED
Calcium Hydroxide "Hydrated Lime"	**CAS No. 1305-62-0**	**01/01/2013**

Section V – Reactivity Data

Stability	Stable	Conditions to Avoid – NA
Incompatibility (Materials to Avoid)		Acids, Inter-halogens, Phosphorus (V) Oxide
Hazardous Decomposition or Byproducts		None
Hazardous Polymerization	Will Not Occur	Conditions to Avoid – NA

Section VI - Health Hazard Data

Route(s) of Entry	Inhalation? YES	Absorption Through Skin? YES	Ingestion (swallowing)? – YES
Health Hazards	Acute	Prolonged contact may irritate or burn skin - especially in the presence of moisture. Inhalation of dust may irritate mucous membranes or respiratory passages. Direct eye contact may cause permanent damage.	
	Chronic	Long term exposure can cause irritation	

Carcinogenicity	NTP?	IARC Monographs?	OSHA Regulated?
Calcium Hydroxide	NO	NO	NO
Crystalline Silica	YES	YES	YES

Signs and Symptoms of Exposure	Irritation of eyes, respiratory tract, or red "sun burn" like skin.
Medical Conditions Generally Aggravated by Exposure	Respiratory disease, skin condition.
Emergency and First Aid Procedures	Provide fresh air. Wash off dust with soap and water. Drink plenty of water if swallowed. Flush eyes with water immediately and contact physician.

Section VII – Precautions for Safe Handling

Steps to Be Taken in Case Material is Released or Spilled	Normal clean-up procedures. Care should be taken to avoid causing dust to become airborne. Vacuum cleaning systems are recommended.
Waste Disposal Method	Dispose of product in accordance with Federal, State and Local regulations. **See Section IX Guidance**
Precautions to Be Taken in Handling	Store away from water and acids.
Other Precautions	

Section VIII – Control Measures

Respiratory Protection - Dust filter masks are recommended for personal comfort and/or protection		
Ventilation	Local Exhaust – To maintain TLV's and PEL's Mechanical – To maintain TLV's and PEL's	Special – None Other – None
Protective Gloves – Cloth/leather gloves when handling dry product –rubber gloves if wet or damp		
Eye Protection – ALWAYS wear shielded glasses and/or fitted goggles around product to reduce eye injury. Wearing of contact lenses may impede first aid.		
Other Protective Clothing – Wear long sleeve shirts and pants to minimize skin contact with product.		
Work / Hygienic Practices – Maintain dust exposure limits below TLV's and PEL's. Whenever necessary wear respiratory protection. Air blowers are effective for dedusting skin and clothing.		

PRODUCT IDENTIFICATION	CHEMICAL ABSTRACT	DATE REVISED
Calcium Hydroxide "Hydrated Lime"	**CAS No. 1305-62-0**	**01/01/2013**

Section IX – Regulatory Compliance Guidance

CONEG	Materials used to manufacture bags containing products are CONEG compliant.
CWA	Product contains alkaline material potentially toxic to aquatic life if concentration is elevated for extended periods of time. Minimize contact with storm water runoff.
DOT	Product is not regulated by U.S. Dept of Transportation
EPA	Waste derived from unused products is not subject to RCRA. Waste is acceptable at most landfills as a "special waste" but can often be beneficially reused for other purposes.
SPILL	Whenever possible, contain and sweep up spillage in dry form rather than flushing with water.
TSCA	Product is listed on Toxic Substance Control Act, Canada DSL and all other International Inventories
Prop65	Subject to California Proposition 65 warning labeling requirements due to presence of trace metals and crystalline silica above instrument detection levels.
NAFTA	Product qualifies under HS Tariff No 2522.20 or 2825.90 as 100% US Origin, Preference Criteria A. Annual certification is provided upon direct request.
REACH	Product has been pre-registered under **05-2116 374 587-30-0000** EINECS # **215-137-3**

MISSISSIPPI LIME COMPANY – MATERIAL SAFETY DATA SHEET

OSHA HAZARD COMMUNICATION

PRODUCT IDENTIFICATION	CHEMICAL ABSTRACT	DATE REVISED
Calcium Oxide "Quicklime"	**CAS 1305-78-8**	**01/01/2014** **Previous Versions Obsolete**

Product Line: MicroCal – OF100, OF200, OF325, OFT15; **PolyCal** – OFT15, OF325, 0S325; **PetroCal** - OF100, OS100; **Standard Quicklime** – Granular, ½", 1", 2", 2X1, Pulverized, Flow Treated, CG; **VitaCal O**

Section I

MANUFACTURER		HMIS RATING
Mississippi Lime Company 16147 US Highway 61 Ste Genevieve, MO 63670 Website-Mississippilime.com	24 Hour Emergency Contact Number: (800) 437-5463 Telephone Number for Information: (800) 437-5463	**Health - 3** **Flammability - 0** **Physical Hazards - 1** **Protective Equip - E**
	Signature of Preparer	J.S. Castleberry

Section II – Hazardous Ingredients / Identity Information

Specific Chemical Identity; Common Names	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (Optional)
Calcium Oxide; Lime; Quicklime	5 mg/m^3	2 mg/m^3		
Crystalline Silica (Quartz)	0.1 mg/m^3	0.05 mg/m^3	Respirable	0.1 to 0.3 %

Calcium oxide is not listed on the NTP, IARC, or OSHA lists of carcinogens. Crystalline silica, a component of this product, is listed by IARC and NTP but not by OSHA. In 1997, IARC determined that "crystalline silica inhaled in the form or quartz or crystobalite from occupational sources is carcinogenic to humans (Group 1). OSHA requires that products containing >0.1% of a known carcinogen must be labeled. NTP states that "silica, crystalline (respirable)" may reasonably be anticipated to be a carcinogen (1991). Mississippi Lime Company recommends using personal protection equipment when handling this product.

Section III – Physical / Chemical Characteristics

Boiling Point (Calcium Oxide)	5162 ^{0}F	Specific Gravity (H_2O) = 1)	3.40
Vapor Pressure (mm Hg)	NA	Melting Point – Loses CO^2	4662 ^{0}F
Vapor Density (Air = 1)	NA	Evaporation Rate	NA
Solubility in Water	Reacts with water to form calcium hydroxide		
Appearance and Color	Odorless; White / light gray pebble, granules, or powder		

Section IV – Fire and Explosion Hazard Data

Flash Point	NA	Flammable Limits – NA
Extinguishing Method	NA	
Special Fire Fighting Procedures	Caution! Water application may produce exothermic reaction and release sufficient heat to ignite combustible material.	
Unusual Hazards - Storage	Wet or unused product stored for lengthy periods will absorb moisture potentially rupture bags resulting in spillage.	

PRODUCT IDENTIFICATION	CHEMICAL ABSTRACT	DATE REVISED
Calcium Oxide "Quicklime"	**CAS No. 1305-78-8**	**01/01/2014**

Section V – Reactivity Data

Stability	Stable	X	Conditions to Avoid – NA
Incompatibility (Materials to Avoid)		Water, Acids, Inter-halogens, Phosphorus (V) Oxide	
Hazardous Decomposition or Byproducts		None	
Hazardous Polymerization	May Occur		Conditions to Avoid – NA
	Will Not Occur	X	

Section VI – Health Hazard Data

Route(s) of Entry	Inhalation? YES	Absorption Through Skin? YES	Ingestion (swallowing)? – YES
Health Hazards	Acute	Prolonged contact may irritate or burn skin - especially in the presence of moisture. Inhalation of dust may irritate mucous membranes or respiratory passages. Direct eye contact may cause permanent damage.	
	Chronic	Long term exposure can cause irritation, ulceration and perforation of nasal septum.	

Carcinogenicity	NTP?	IARC Monographs?	OSHA Regulated?
Calcium Carbonate	NO	NO	NO
Crystalline Silica	YES	YES	YES

Signs and Symptoms of Exposure	Irritation of eyes, respiratory tract, red "sun burned" skin
Medical Conditions Generally Aggravated by Exposure	Respiratory disease, dry skin condition.
Emergency and First Aid Procedures	Provide fresh air. Scrub off dust with soap and water. Drink plenty of water if swallowed. Flush eyes immediately with water immediately and contact physician.

Section VII – Precautions for Safe Handling

Steps to Be Taken in Case Material is Released or Spilled	Normal clean-up procedures. Care should be taken to avoid causing dust to become airborne. Vacuum cleaning systems are recommended.
Waste Disposal Method	Dispose of product in accordance with Federal, State and Local regulations. See Section IX.
Precautions to Be Taken in Handling	Store away from water and acids.
Other Precautions	Product should never be discarded with wet combustible material or commingled in containers exposed to rainfall.

Section VIII – Control Measures

Respiratory Protection - Dust filter masks are recommended for personal comfort and/or protection		
Ventilation	Local Exhaust – To maintain TLV's and PEL's Mechanical – To maintain TLV's and PEL's	Special – None Other – None
Protective Gloves – Cloth or leather gloves. Reduce wrist burns from sweat by using protective cream.		
Eye Protection – ALWAYS wear shielded glasses and/or fitted goggles around product to reduce eye injury. Flush eyes immediately and seek medical attention. Contact lenses may impede first aid.		
Other Protective Clothing – Wear long sleeve shirts and pants to minimize contact with product.		
Work / Hygienic Practices – Maintain dust exposure limits below TLV's and PEL's. Whenever necessary wear respiratory protection. Air blowers are effective for dedusting clothing.		

PRODUCT IDENTIFICATION	CHEMICAL ABSTRACT	DATE REVISED
Calcium Oxide – "Quicklime"	**CAS No. 1305-78-8**	**01/01/2014**

Section IX – Regulatory Compliance Guidance

CONEG	Materials used to manufacture bags containing products are CONEG compliant.
CWA	Product contains alkaline material potentially toxic to aquatic life if concentration is elevated for extended periods of time. Minimize contact with storm water runoff.
DOT	Product is not regulated by U.S. Dept of Transportation - **unless shipped by air.**
EPA	Waste derived from unused products is not subject to RCRA. Waste is acceptable at most landfills as a "special waste" but can often be beneficially reused for other purposes. Commingling waste product with wet combustible refuse may result in fire in trash containers and trucks.
SPILL	Whenever possible, contain and sweep up spillage in dry form rather than flushing with water. Fire may occur in containers if damp product is placed in direct contact with combustible materials.
TSCA	Product is listed on Toxic Substance Control Act, Canada DSL and all other International Inventories
Prop65	Subject to California Proposition 65 warning labeling requirements due to presence of trace metals and crystalline silica above instrument detection levels.
NAFTA	Product qualifies under HS Tariff No 2522.10 as 100% US Origin, Preference Criteria A. Annual certification will be provided upon request.
REACH	Product has been pre-registered under **# 05-2116 374 516-39-0000** EINECS **215-138-9**

Attachment I: Emission Units Table

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
18S	1E	Lime Conditioning System	2018 est.	[redacted]	New	1C
19S	10E	Hydrate Conditioning System	2018 est.	[redacted]	New	9C
20S	11E	Finished Product Silo	2019 est.	[redacted]	New	10C
21S	12E	Finished Product DCL Loadout	2019 est.	[redacted]	New	11C
5S	3E	Processing and Conveyance Equipment	2018 est.	[redacted]	Removal - Est. 2018	3C
4S	3E	Processing and Conveyance Equipment	2018 est.	[redacted]	Modification (placed out of service) Est. 2018	3C

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

Attachment J: Emission Points Data Summary Sheet

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data															
Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used [6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
10E	Horizontal Stack	19S	Hydrate Conditioning System	9C	Fabric Filter	N/A	N/A	PM_{10}			0.10	0.42	Solid	EE	See Att N-3
11E	Vertical Stack	20S	Product Silo	10C	Fabric Filter	N/A	N/A	PM_{10}			0.26	1.14	Solid	EE	See Att N-3
12E	Vertical Stack	21S	Telescoping Loadout	11C	Fabric Filter – Integrated into Spout	N/A	N/A	PM_{10}			0.26	1.14	Solid	EE	See Att N-3

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

[1] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

[2] Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

[3] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. **DO NOT LIST** H_2, H_2O, N_2, O_2, and Noble Gases.

[4] Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 b VOC/20 minute batch).

[5] Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 b VOC/20 minute batch).

[6] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

[7] Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data								
Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (^{0}F)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height [2] *(Release height of emissions above ground level)*	Northing	Easting
10E		Ambient						
11E		Ambient						
12E		Ambient						

[1] Give at operating conditions. Include inerts.
[2] Release height of emissions above ground level.

Attachment K: Fugitive Emissions Data Summary Sheet

ATTACHMENT K

Fugitive Emission Data Summary Sheet

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS
1.) Will there be haul road activities? ☐ Yes ☒ **No** - **No net increase** ☐ If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles? ☐ Yes ☒ **No** ☐ If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations? ☐ Yes ☒ **No** ☐ If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation? ☐ Yes ☒ **No** ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)? ☐ Yes ☒ **No** ☐ If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations? ☐ Yes ☒ **No** ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions? ☐ Yes ☒ **No** ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS [1]	Maximum Potential Uncontrolled Emissions [2]		Maximum Potential Controlled Emissions [3]		Est. Method Used [4]
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads		Does not apply		Does not apply		
Unpaved Haul Roads		Does not apply		Does not apply		
Storage Pile Emissions		Does not apply		Does not apply		
Loading/Unloading Operations		Does not apply		Does not apply		
Wastewater Treatment Evaporation & Operations		Does not apply		Does not apply		
Equipment Leaks		Does not apply		Does not apply		
General Clean-up VOC Emissions		Does not apply		Does not apply		
Other		Does not apply		Does not apply		

[1] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. DO NOT LIST H_2, H_2O, N_2, O_2, and Noble Gases.

[2] Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[3] Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[4] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

Attachment L: Emissions Unit Data Sheets

Attachment L
Emission Unit Data Sheet
(NONMETALLIC MINERALS PROCESSING)

Control Device ID No. (must match List Form): CD9C, CD10C, CD11C

Equipment Information

1. Plant Type:
   - ☐ Hot-mix asphalt facility that reduces the size of nonmetallic minerals embedded in recycled asphalt pavement
   - ☐ Plant without crushers or grinding mills and containing a stand-alone screening operation
   - ☐ Sand and gravel plant ☐ Common clay plant
   - ☐ Crushed stone plant ☐ Pumice plant
   - ☒ Other, specify Lime Plant

2. Plant Style: ☒ Fixed Plant ☐ Portable Plant

3. Plant Capacity: [redacted] tons/hr

4. Underground mine: ☐ Yes ☒ No

5. Storage: ☐ Open ☒ Enclosed

6.

Emission Facility Type	Equipment Type Used	ID Number of Emission Unit	Manufacturer	Model Number/ Serial Number	Date of Manufacture
Conveyors					
Crusher					
Secondary Crushers					
Tertiary Crushers					
Grinder					
Hoppers					
Rock Drills					
Screens					
Enclosed Storage	Product Silo	20S			
Other	Lime Conditioning System	18S			
Other	Hydrate Conditioning System	19S			
Other	Telescoping Loadout	21S			

Emission Facility Type	Operation Rate Design Ton/hr	Operation Rate Design Ton/hr	Annual Production Tons/year	Number of Units	Air Pollution Control Device Used
Conveyors					
Crusher					
Secondary Crushers					
Tertiary Crushers					
Grinder					
Hoppers					
Rock Drills					
Screens					
Enclosed Storage Product Silo - 20S	[redacted]		[redacted]	1	Fabric Filter Bag House (CD 10C)
Other Lime Conditioning System -18S	[redacted]		[redacted]	1	Fabric Filter Bag House (CD 1C)
Other Hydrate Conditioning System - 19S	[redacted]		[redacted]	1	Fabric Filter Bag House (CD 9C)
Other Telescoping Loadout -21S	[redacted]		[redacted]	1	Integrated DCL Collector (CD 11C)

7. Provide a diagram and/or schematic that shows the proposed process of the operation or plant. The diagram and/or schematic is to show all sources, components and facets of the operation or plant in an understandable line sequence of the operation. The diagram should include all the equipment involved in the operation; such as conveyors, transfer points, stockpiles, crushers, facilities, vents, screens, truck dump bins, truck, barge and railcar loading and unloading, etc. Appropriate sizing and specifications of equipment should be included in the diagram. The diagram shall logical follow the entire process load-in toload-out.

Please see Attachment F – Process Flow Diagram

8. Roads

	Paved Miles of Road	Unpaved Miles of Road	Watered Miles	Watered Frequency	Other Control (Specify)
Plant Yard		[redacted]			
Access Roads		[redacted]			

9. Vehicle Type

Vehicle Type	Mean Vehicle Speed in mph	Mean Vehicle Weight in Tons Empty	Mean Vehicle Weight in Tons Full	Number of Wheels	Distance Traveled per Round Trip Paved Feet or Miles	Distance Traveled per Round Trip Unpaved Miles
Raw Aggregate						
Loaders						
Product Trucks	[redacted]	[redacted]	[redacted]			[redacted]
Other						

Other						
Other						
Other						

10. Describe all proposed materials storage facilities associated with the **Emission Units** listed.

Emission unit 20S is a [redacted] finished product silo. Other materials will be stored in existing product silos EU 10S and EU 16S.

Storage Activity

ID of Emission Unit	20S				
Type Storage	Silo				
Material Stored	[redacted]				
Typical Moisture Content (%)	[redacted]				
Avg % of material passing through 200 mesh sieve					
Maximum Total Yearly Throughput in storage (tons)	[redacted]				
Maximum Stockpile Base Area (ft^2)					
Maximum Stockpile height (ft)					
Dust control method applied to storage	Fabric Filter Bag House				
Method of material load-in to bin or stockpile	Conveyance Equipment under separate ownership				
Dust control method applied during load-in	None				
Method of material load-out to bin or stockpile	Telescoping Loadout Spout				
Dust control method applied during load-out	Integrated DCM Collector				

Storagepiles	**Estimated Annual Tons**	**Turnover Rate (Ton/Month)**	**Wetted as Piled**	**Number of Sides Enclosed**	**Other Dust Control**	**Loading Method** (Loader, Conveyor) **IN/OUT**
Coarse: over 1”	N/A – no storage piles					
Fine: 1” to ¼“						
¼” and less						
MFG. Sand						
Other, specify						

Conveying and Transfer

Describe the conveying system including transfer points associated with proposed Emission Units (crushers, etc…).

[redacted]

Describe any methods of emission control to be used with these proposed conveying systems:

EU 18S will vent to a fabric filter bag house (CD 1C).
EU 19S will vent to a fabric filter bag house (CD 9C).
EU 20S will vent to a fabric filter bag house (CD 10C).
EU 21S has an integrated dust collector in the spout (CD 11C).

ID of Emission Unit	Type Conveyor or Transfer Point	Material Handled [Note nominal size of material transferred (e.g. ¾" × 0)]	Material Conveying or Transfer Rate		Dust Control Measures Applied	Approximate Material Moisture Content (%)
			Max. TPH	Maximum TPY		
18S	Integrated screw conveyors	[redacted]	[redacted]	[redacted]	Fabric Filter Baghouse	[redacted]
19S	Integrated screw conveyors	[redacted]	[redacted]	[redacted]	Fabric Filter Baghouse	[redacted]
20S	Integrated screw conveyors	[redacted]	[redacted]	[redacted]	Fabric Filter Baghouse	[redacted]
21S	Integrated loadout spout	[redacted]	[redacted]	[redacted]	Integrated DCM collector	[redacted]

Crushing and Screening

ID of Emission Unit	No crushing or screening in proposed equipment
Type Crusher or Screen	
Material Sized	
Material Sized Throughput:	
Tons/hr	No crushing or screening in proposed equipment
Tons/yr	
Material sized from/to	
Typical moisture content as crushed or screened (%)	
Dust control methods applied	
Stack Parameters:	
Height (ft)	No crushing or screening in proposed equipment
Diameter (ft)	
Volume (ACFM)	
Temp (°F)	
Maximum operating schedule:	
Hour/day	No crushing or screening in proposed equipment
Day/year	
Hour/year	
Approximate Percentage of Operation from:	
Jan – Mar	No crushing or screening in proposed equipment
April – June	
July – Sept	
Oct – Dec	
Maximum Particulate Emissions:	
LB/HR	No crushing or screening in proposed equipment
Ton/Year	

List emission sources with request information:

ID of Emission Unit	Type of Emission Unit and Use	Operating Schedule		Max. Amount of Stone Input to Emission (lb/hr)	Crushed or Screened From/To	Date of Emission Unit was Manufacture
		Actual (hrs/yr)	Design (hrs/yr)			
18S	Lime Conditioning System		8760	N/A – no crushing or screening; no input of stone		Est. 2018
19S	Hydrate Conditioning System		8760			Est. 2018
20S	Product Silo		8760			Est. 2019
21S	Telescoping Loadout Spout		8760			Est. 2019

List emission sources with request information:

ID of Emission Unit	Maximum expected emissions from Emission Unit without Air Pollution Control Equipment				
	PM_{10} (lbs/hr)	SO_2 (lbs/hr)	CO (lbs/hr)	NO_x (lbs/hr)	VOC (lbs/hr)
18S	0.11 (controlled)				
19S	0.10 (controlled)				
20S	0.26 (controlled)				
21S	0.16 (controlled)				

ID of Emission Unit	Maximum expected emissions from Emission Unit without Air Pollution Control Equipment				
	PM_{10} (tons/yr)	SO_2 (tons/yr)	CO (tons/yr)	NO_x (tons/yr)	VOC (tons/yr)
18S	0.48 (controlled)				
19S	0.42 (controlled)				
20S	1.14 (controlled)				
21S	0.16 (controlled)				

Please fill out a separate Air Pollution Control Device Sheet for each Emission Unit equipped with an air pollution control system.

What type of stone will be quarried at this site?

N/A – no quarries

How will it be quarried?

- ☐ Sawing
- ☐ Blasting
- ☐ Other, Specify:

N/A – no quarries

If blasting is checked, complete the following:

- ☐ Frequency of blasting:
- ☐ What method of air pollution control will be employed during drilling and blasting?

N/A – no blasting

Attachment M: Air Pollution Control Device Sheets

Attachment M
Air Pollution Control Device Sheet
(BAGHOUSE)

Control Device ID No. (must match Emission Units Table): 9C

Equipment Information and Filter Characteristics

1. Manufacturer: [redacted]
   Model No.: TBD
2. Total number of compartments: One
3. Number of compartment online for normal operation:
4. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.
5. Baghouse Configuration: (check one)
   - [X] Open Pressure
   - [ ] Closed Pressure
   - [ ] Closed Suction
   - [ ] Electrostatically Enhanced Fabric
   - [ ] Other, Specify
6. Filter Fabric Bag Material:
   - [ ] Nomex nylon
   - [ ] Wool
   - [X] Polyester
   - [ ] Polypropylene
   - [ ] Acrylics
   - [ ] Ceramics
   - [ ] Fiber Glass
   - [ ] Cotton Weight oz./sq.yd
   - [ ] Teflon Thickness in
   - [ ] Others, specify
7. Bag Dimension: TBD
   Diameter in.
   Length ft.
8. Total cloth area: ft^2
9. Number of bags:
10. Operating air to cloth ratio: 3.1:1 ft/min
11. Baghouse Operation:
    - [ ] Continuous
    - [X] Automatic
    - [ ] Intermittent
12. Method used to clean bags:
    - [ ] Mechanical Shaker
    - [ ] Pneumatic Shaker
    - [ ] Bag Collapse
    - [ ] Manual Cleaning
    - [ ] Sonic Cleaning
    - [ ] Reverse Air Flow
    - [X] Pulse Jet
    - [ ] Reverse Jet
    - [ ] Reverse Air Jet
    - [ ] Other:
13. Cleaning initiated by:
    - [ ] Timer
    - [ ] Expected pressure drop range in. of water
    - [ ] Frequency if timer actuated
    - [X] Other Pressure Drop
14. Operation Hours: Max. per day: 24 Max. per yr: 8760
15. Collection efficiency: Rating: % Guaranteed minimum: [redacted] %

Gas Stream Characteristics

16. Gas flow rate into the collector: [redacted] ACFM at Ambient °F and PSIA
    ACFM: Design: PSIA Maximum: PSIA Average Expected: PSIA
17. Water Vapor Content of Effluent Stream: lb. Water/lb. Dry Air
18. Gas Stream Temperature: Ambient °F
19. Fan Requirements: hp
    OR [redacted] ft^3/min
20. Stabilized static pressure loss across baghouse. Pressure Drop: High TBD in. H_2O
    Low TBD in. H_2O
21. Particulate Loading: Inlet: grain/scf Outlet: [redacted] grain/scf

22. Type of Pollutant(s) to be collected (if particulate give specific type):
PM_{10}

23. Is there any SO_3 in the emission stream? ☐ No ☐ Yes SO_3 content: ppmv

24. Emission rate of pollutant (specify) into and out of collector at maximum design operating conditions:

	IN		OUT	
Pollutant	**lb/hr**	**grains/acf**	**lb/hr**	**grains/acf**
PM_{10}			[redacted]	[redacted]

25. Complete the table:

	Particle Size Distribution at Inlet to Collector	**Fraction Efficiency of Collector**
Particulate Size Range (microns)	**Weight % for Size Range**	**Weight % for Size Range**
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

26. How is filter monitored for indications of deterioration (e.g., broken bags)?
- ☐ Continuous Opacity
- ☒ Pressure Drop
- ☐ Alarms-Audible to Process Operator
- ☐ Visual opacity readings, Frequency: Daily
- ☐ Other, specify:

27. Describe any recording device and frequency of log entries:
Daily Visible Emission Log

28. Describe any filter seeding being performed:

29. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

30. Describe the collection material disposal system:

Recycle

31. Have you included ***Baghouse Control Device*** in the Emissions Points Data Summary Sheet? Yes

32. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:	RECORDKEEPING:
Daily Visual Emission Readings	Daily Control Log
REPORTING:	TESTING:
As required if exceedance occurs	Annual Method 9

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

33. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.
[redacted]

34. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
[redacted]

35. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
TBD

Attachment M
Air Pollution Control Device Sheet
(BAGHOUSE)

Control Device ID No. (must match Emission Units Table): 10C

Equipment Information and Filter Characteristics

1. Manufacturer: [redacted]
   Model No.: TBD
2. Total number of compartments: One
3. Number of compartment online for normal operation:
4. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.
5. Baghouse Configuration: (check one)
   - [X] Open Pressure
   - [ ] Closed Pressure
   - [ ] Closed Suction
   - [ ] Electrostatically Enhanced Fabric
   - [ ] Other, Specify
6. Filter Fabric Bag Material:
   - [ ] Nomex nylon
   - [ ] Wool
   - [X] Polyester
   - [ ] Polypropylene
   - [ ] Acrylics
   - [ ] Ceramics
   - [ ] Fiber Glass
   - [ ] Cotton Weight oz./sq.yd
   - [ ] Teflon Thickness in
   - [ ] Others, specify
7. Bag Dimension: TBD
   Diameter in.
   Length ft.
8. Total cloth area: ft^2
9. Number of bags:
10. Operating air to cloth ratio: 3.1:1 ft/min
11. Baghouse Operation:
    - [ ] Continuous
    - [X] Automatic
    - [ ] Intermittent
12. Method used to clean bags:
    - [ ] Mechanical Shaker
    - [ ] Pneumatic Shaker
    - [ ] Bag Collapse
    - [ ] Manual Cleaning
    - [ ] Sonic Cleaning
    - [ ] Reverse Air Flow
    - [X] Pulse Jet
    - [ ] Reverse Jet
    - [ ] Reverse Air Jet
    - [ ] Other:
13. Cleaning initiated by:
    - [ ] Timer
    - [ ] Expected pressure drop range in. of water
    - [ ] Frequency if timer actuated
    - [X] Other Pressure Drop
14. Operation Hours: Max. per day: 24 Max. per yr: 8760
15. Collection efficiency: Rating: % Guaranteed minimum: [redacted] %

Gas Stream Characteristics

16. Gas flow rate into the collector: [redacted] ACFM at Ambient °F and PSIA
    ACFM: Design: PSIA Maximum: PSIA Average Expected: PSIA
17. Water Vapor Content of Effluent Stream: lb. Water/lb. Dry Air
18. Gas Stream Temperature: Ambient °F
19. Fan Requirements: hp
    OR [redacted] ft^3/min
20. Stabilized static pressure loss across baghouse. Pressure Drop: High TBD in. H_2O
    Low TBD in. H_2O
21. Particulate Loading: Inlet: grain/scf Outlet: [redacted] grain/scf

22. Type of Pollutant(s) to be collected (if particulate give specific type):
PM_{10}

23. Is there any SO_3 in the emission stream? ☐ No ☐ Yes SO_3 content: ppmv

24. Emission rate of pollutant (specify) into and out of collector at maximum design operating conditions:

	IN		OUT	
Pollutant	**lb/hr**	**grains/acf**	**lb/hr**	**grains/acf**
PM_{10}			[redacted]	[redacted]

25. Complete the table:

	Particle Size Distribution at Inlet to Collector	**Fraction Efficiency of Collector**
Particulate Size Range (microns)	**Weight % for Size Range**	**Weight % for Size Range**
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

26. How is filter monitored for indications of deterioration (e.g., broken bags)?
- ☐ Continuous Opacity
- ☒ Pressure Drop
- ☐ Alarms-Audible to Process Operator
- ☐ Visual opacity readings, Frequency: Daily
- ☐ Other, specify:

27. Describe any recording device and frequency of log entries:
Daily Visible Emission Log

28. Describe any filter seeding being performed:

29. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

30. Describe the collection material disposal system:

Recycle

31. Have you included ***Baghouse Control Device*** in the Emissions Points Data Summary Sheet? Yes

32. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:	RECORDKEEPING:
Daily Visual Emission Readings	Daily Control Log
REPORTING:	TESTING:
As required if exceedance occurs	Annual Method 9

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

33. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.
[redacted]

34. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
[redacted]

35. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
TBD

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Attachment M
Air Pollution Control Device Sheet
(OTHER COLLECTORS)

Control Device ID No. (must match Emission Units Table): 11C

Equipment Information

1. Manufacturer: TBD Model No.: TBD	2. Control Device Name: Integrated DCM Collector Type: DCL Spout
3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.	
4. On a separate sheet(s) supply all data and calculations used in selecting or designing this collection device.	
5. Provide a scale diagram of the control device showing internal construction.	
6. Submit a schematic and diagram with dimensions and flow rates.	
7. Guaranteed minimum collection efficiency for each pollutant collected: PM 99.9%	
8. Attached efficiency curve and/or other efficiency information.	
9. Design inlet volume: [redacted] SCFM	10. Capacity:
11. Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any.	
12. Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.	
13. Description of method of handling the collected material(s) for reuse of disposal. Recycle	

Gas Stream Characteristics

14. Are halogenated organics present?	☐ Yes	☒ No
Are particulates present?	☒ Yes	☐ No
Are metals present?	☐ Yes	☒ No

15. Inlet Emission stream parameters:	Maximum	Typical
Pressure (mmHg):	Ambient	
Heat Content (BTU/scf):	0	
Oxygen Content (%):	Ambient	
Moisture Content (%):	Ambient	
Relative Humidity (%):	Ambient	

16. Type of pollutant(s) controlled: ☐ SO_x ☐ Odor
☒ Particulate (type): PM, PM_{10}, $PM_{2.5}$ ☐ Other

17. Inlet gas velocity: 63.6 ft/sec

18. Pollutant specific gravity:

19. Gas flow into the collector:
[redacted] ACF @ Ambient°F and PSIA

20. Gas stream temperature:
Inlet: Ambient °F
Outlet: Ambient °F

21. Gas flow rate:
Design Maximum: [redacted] ACFM
Average Expected: [redacted] ACFM

22. Particulate Grain Loading in grains/scf:
Inlet:
Outlet: [redacted]

23. Emission rate of each pollutant (specify) into and out of collector:

Pollutant	IN Pollutant		Emission Capture Efficiency %	OUT Pollutant		Control Efficiency %
	lb/hr	grains/acf		lb/hr	grains/acf	
A PM				[redacted]	[redacted]	[redacted]
B PM_{10}						
C $PM_{2.5}$						
D						
E						

24. Dimensions of stack: Height ft. Diameter ft.

25. Supply a curve showing proposed collection efficiency versus gas volume from 25 to 130 percent of design rating of collector.

Particulate Distribution

26. Complete the table: Particulate Size Range (microns)	Particle Size Distribution at Inlet to Collector: Weight % for Size Range	Fraction Efficiency of Collector: Weight % for Size Range
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

27. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

28. Describe the collection material disposal system:

29. Have you included ***Other Collectores Control Device*** in the Emissions Points Data Summary Sheet?

30. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING: Daily Visible Emission Observations Monthly Pressure Drop Observations	RECORDKEEPING: Daily Visible Emission Log Monthly Pressure Drop Reading Log
REPORTING: On during times of exceedance	TESTING: Annual Method 9

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

31. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
[redacted]

32. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
[redacted]

33. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
Pressure drop review, periodically, to determine baghouse functionality. Value of pressure reading to be determined.

Attachment N: Supporting Emissions Calculations

ATTACHMENT N-1

Original Emission Calculations - Prior to Proposed Modification

Emission Unit ID	Emission Point ID	Control Device	Emission Unit Description	Date Installed / Modified	Design Capacity TPH	Annual Rate (Units/Yr)	Units	Emission Factor Source	Controlled PM10 Factor (lb/Unit)	Controlled Hourly PM10 Emissions (lb/hr)	Controlled PM-10 (TPY)
1S	1E	1C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.0432	0.17
2S	1E	1C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.204	0.41
3S	2E	2C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	1.824	7.33
4S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.05472	0.22
5S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.00722	0.03
6S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.05472	0.22
7S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.047804	0.19
8S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.0013376	0.01
9S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.0013376	0.01
10S	4E	4C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.055012	0.22
11 S	7E	6C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.183	0.24
12S	5E	5C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.0081216	0.03
13S	5E	5C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.019176	0.08
14S	5E	5C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.183	0.08
15S	6E	-	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	2.842236	3.15
16 S	8 E	7C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.055012	0.22
17S	9 E	8C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.183	0.24
									TOTAL	5.77	12.84

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ATTACHMENT N-2

Revised Emission Calculations - After Proposed Modification

Emission Unit ID	Emission Point ID	Control Device ID	Emission Unit Description	Date Installed / Modified	Design Capacity (Units/Hr)	Annual Rate (Units/Yr)[1]	Units	Controlled PM10 Emission Factor (lb/Unit)	Emission Factor Source	Controlled Hourly PM10 Emissions (lb/hr)	Controlled PM-10 (TPY)
1S	1E	1C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.1097	0.4805
2S	1E	1C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
18S	1E	1C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
3S	2E	2C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	1.34	5 87
5S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0	0.00
4S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	1.06	4.63
6S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
7S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
8S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
9S	3E	3C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
10S	4E	4C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.26	1.14
11 S	7E	6C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.16	0.72
12S	5E	5C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.19	0 84
13S	5E	5C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
14S	5E	5C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
15S	6E	-	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.71	3.10
16 S	8 E	7C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.26	1.14
17S	9 E	8C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.17	0.75
19S	10E	9C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.10	0.42
20S	12E	10C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.26	1.14
21S	13E	11C	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.16	0.72
									TOTAL	**4.78**	20.95
									Increase	**-0.98**	8.11

[redacted]

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ATTACHMENT N-3
Grain Loading Calculations

Emission Point ID	Control Device ID	Grains/ft^3	Max Blower Rate (ft^3/min	Lbs/grain	Controlled PM10 Emission Factor (lb/hr)
1E	1C	[redacted]	[redacted]	[redacted]	[redacted]
3E	3C				
4E	4C				
5E	5C				
7E	6C				
8 E	7C				
9E	8C				
10E	9C				
12E	10C				
13E	11C				

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ATTACHMENT N-4
Haul Road Calculations

Haul Road/Haul Truck/Material Hauled Information	
Length of Haul Road (Feet):	[redacted]
Unloaded Truck Weight (Tons):	[redacted]
Loaded Truck Weight (Tons):	[redacted]
Rate Hauled (Tons/hr):	[redacted]
W (tons)	[redacted]
s (%):	[redacted]
P:	[redacted]
Max Hourly VMT Rate and Emission Factor Calculations	
D (Miles):	[redacted]
MHDR (VMT/Hr):	[redacted]
$E(PM_{30})$ (lbs/VMT):	[redacted]
$E(PM_{10})$(lbs/VMT):	[redacted]
$E(PM_{2.5})$(lbs/VMT):	[redacted]
$Eext(PM_{30})$ (lbs/VMT):	[redacted]
$Eext(PM_{10})$(lbs/VMT):	[redacted]
$Eext(PM_{2.5})$(lbs/VMT):	[redacted]

MHDR = D * R / (U - L) where:
MHDR = maximum hourly design rate (VMT/hr)
D = length of haul road (miles)
R = rate of material hauled (tons/hr)
U = unloaded truck weight (tons)
L = loaded truck weight (tons)

E = k (s/12)^a * (W/3)^b where:
E = size-specific emission factor (lb/VMT)
s = surface material silt content (%)
W = mean vehicle weight (tons)

Constants for Equation

	Constant		
Particle Size	**k(lb/VMT)**	**a**	**b**
PM2.5	0.15	0.9	0.45
PM10	1.5	0.9	0.45
PM30	4.9	0.7	0.45

Eext = E[(365-P)/365] where E is defined above and:

Eext = annual size-specific emission factor extrapolated for natural mitigation (lb/VMT)
P = number of days in a year with at least 0.01 inch of precipitation

Attachment O: Monitoring/Recordkeeping/Reporting/Test Plans

Monitoring, Recordkeeping, Reporting and Testing Plans

The facility proposes to retain the monitoring, recordkeeping, reporting, and testing requirements listed in the current permit. These include the facility-wide Monitoring, Testing, Recordkeeping, and Reporting requirements listed as permit conditions 3.2 through 3.5 in the facility's existing permit.

For Source-Specific requirements, the facility proposes to extend the monitoring requirements of permit condition 4.2.1 to emission units 10E, 11E, and 12E. The facility proposes to retain the testing requirements of permit condition 4.3, recordkeeping requirements of permit condition 4.4, and reporting requirements of permit condition 4.5.

Attachment P: Public Notice

Public Notice

The following notice will be published in The Weirton Daily Times for a minimum of one day. An affidavit of publication will be submitted to DAQ no later than the last day of the public comment period.

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Mississippi Lime Company has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Modification Permit for a Lime Hydration Facility located on 3001 Birch Drive, Weirton, in Brook County, West Virginia. The latitude and longitude coordinates are: 40.385735°, -80.620718°.

The applicant estimates the increased potential to discharge the following Regulated Air Pollutants will be: 8 tons of PM10 per year.

Startup of operation is planned to begin on or about the 1st day of April, 2018. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.
Dated this the ____ day of ____, 2017.

By: Mississippi Lime Company
Jeff Dahl
Director of Operations
525 Hance Road
Verona, KY 41092

Attachment Q: Business Confidential Claims

CONFIDENTIAL INFORMATION JUSTIFICATION

Company Name Mississippi Lime Company	**Responsible Official** Terry Zerr - Vice President of Operations
Company Address Mississippi Lime Company 16147 US Highway 61 Ste. Genevieve, MO 63670	**Confidential Information Designee in State of WV** Jeff Dahl - Regional Director of Operations Half Moon Hydration Plant Weirton, WV 26062
Person /Title Submitting Confidential Information Amber Nipper - Environmental and Regulatory Affairs Manager	

Reason for Submittal of Confidential Information

The US lime industry is highly competitive and is dominated by three foreign-owned corporations. Mississippi Lime Company, in contrast, is a privately owned US corporation that spends considerable time and effort protecting its market share and dedicating resources to research and development to produce high purity lime products. Thorough marketing analyses are conducted before selecting manufacturing locations and distribution sites such as Weirton, WV. Once selected, the plant is designed, constructed, and operated using select manufacturing equipment and proprietary knowledge and formulations. Mississippi Lime is recognized globally for establishing the industry standard for hydrated lime quality. Our vision is to be the preferred supplier of calcium-based products and services; respected by our customers, employees and communities.

Permit applications may contain general or specific process and production rate information, that if accessible could provide knowledge for constructing similar processes. Confidential information falling into the hands of a competitor could enable that entity to copy our process, manipulate market pricing and significantly impact the domestic lime industry. **For those reasons, we respectfully request the Administrator protect our business interest to the fullest extent allowable and grant our request for confidentiality.**

Identification of Confidential Information	Rational for Confidential Claim -Provide justification that the criteria in § 45 CSR 31-4.1.a-e have been met	Confidential Treatment Time Period - Life of Permit
Attachment C Installation and Start Up Schedule	**Attachment C** contains information on process equipment and process flow. This information can provide our competitors with knowledge of the production process thus providing a mechanism for market manipulation and disruption. The purpose of this form is only to outline the timeline of proposed changes being made to assist the Administrator with understanding the permit application**. Process Flow information is formally claimed confidential and redacted.**	
Attachment D Regulatory Discussion	**Attachment D** includes discussions of what types of equipment are and are not present at the facility. Knowledge of the specific equipment present at the facility **can** provide our competitors with knowledge of the production process thus providing a mechanism for market manipulation and disruption. The purpose of this form is only to assist the Administrator with drafting permit conditions**. Discussion of facility equipment is formally claimed confidential and redacted.**	
Attachment E Plot Plan	**Attachment E** contains information on the location and dimensions of buildings and process equipment found on site. The size and layout of the buildings and equipment can provide our competitors with information on equipment capacities, thus providing a mechanism for market manipulation and disruption. The purpose of this diagram is show the physical location of changes being made to assist the Administrator with understanding the permit application**. Facility Plot Plan diagrams are formally claimed confidential and redacted.**	

CONFIDENTIAL INFORMATION JUSTIFICATION

Identification of Confidential Information	Rational for Confidential Claim -Provide justification that the criteria in § 45 CSR 31-4.1.a-e have been met	Confidential Treatment Time Period - Life of Permit
Attachment F Process Flow Diagram	**Attachment F** contains information on process equipment and process flow. This information can provide our competitors with knowledge of the production process thus providing a mechanism for market manipulation and disruption. The purpose of this diagram is only to outline the proposed changes being made to assist the Administrator with understanding the permit application. **Process Flow information is formally claimed confidential and redacted.**	
Attachment G Process Description	**Attachment G** contains information on process equipment, process flow, and equipment capacity. This information can provide our competitors with knowledge of the production process thus providing a mechanism for market manipulation and disruption. The purpose of this form is only to outline the proposed changes being made to assist the Administrator with understanding the permit application**. Process Flow information and Maximum Hourly Design Rate information is formally claimed confidential and redacted.**	
Attachment I Emission Table	**Attachment I** contains process design capacity rates and storage capacity Information that provide our competitors with knowledge of the production process thus providing a mechanism for market manipulation and disruption. The purpose of this form is only to outline the scope of proposed changes being made to assist the Administrator with understanding the permit application. **Maximum Hourly Design Rate information and storage capacity is formally claimed confidential and redacted.**	
Attachment L Emission Unit Data Sheet	**Attachment L** contains information relative to the Maximum Storage Capacity of each silo and Maximum Annual Production of each emission unit. It also includes descriptions of process flow and material handled at each emission unit. This information provides competitors with the knowledge of facility production capacity and production processes, thus providing a mechanism for market manipulation and disruption. The purpose of this form is to outline the changes being made to assist the Administrator with understanding the permit application. **Process Flow information, Material Handled, Moisture Content, Maximum Hourly Design Rate, Maximum Storage Capacity, Truck/Road Information and Maximum Annual Throughput information is formally claimed confidential and redacted.**	
Attachment M Air Pollution Control Device Data Sheet	**Attachment M** contains information on flow rates and particulate loading of each control device. This information provides competitors with knowledge of control device capacity which can be used to determine product throughput, thus providing a mechanism for market manipulation and disruption. The purpose of this form is to outline the changes being made is to assist the Administrator with understanding the permit application. **Blower capacity and grain loading information are formally claimed confidential and redacted.**	

CONFIDENTIAL INFORMATION JUSTIFICATION

Identification of Confidential Information	Rational for Confidential Claim -Provide justification that the criteria in § 45 CSR 31-4.1.a-e have been met	Confidential Treatment Time Period - Life of Permit
Attachment N-1 Supporting Emission Calculations - Prior to Proposed Modification	**Attachment N-1** reports information submitted to the Administrator in the 2008 revision. The Administrator granted Mississippi Lime's Company's claim of confidentiality . The spreadsheet contains detailed production rate information (maximum input and output) and controlled PM-10 emission factors that can be used to back calculate the annual production rate. Attachment N-1 also lists the equipment, age, and provides a road map to reconstruct the hydration process. This information provides competitors with knowledge of the production process, rate and capacity, thus providing a mechanism for market manipulation and disruption. The purpose of this form is to outline the changes being made to assist the Administrator with understanding the permit application. **Process description, age, design capacity, annual throughput, units of measure, source of emission factors and controlled emission factors are formally claimed confidential and redacted.**	
Attachment N-2 Supporting Emission Calculations - After Proposed Modification	**Attachment N-2** reports information submitted to the Administrator for this modification. The spreadsheet contains detailed production rate information (maximum input and output) and controlled PM-10 emission factors that can then be used to back calculate the annual production rates of the processing equipment. Attachment N-2 also lists the equipment description and age, which provides a roadmap to reconstructing the process. This information provides competitors with knowledge of the production process, rate and capacity, thus providing a mechanism for market manipulation and disruption. The sole purpose of this form is to outline the changes being made to assist the Administrator with a better understanding the permit application. **Process description, equipment age, design capacity, annual throughput, units of measure, source of emission factors and controlled emission factors are formally claimed confidential and redacted.**	
Attachment N-3 Supporting Emission Calculations - Grain Loading	**Attachment N-3** contains information on flow rates and particulate loading of each control device. Controlled PM-10 emission factors shown in the attachment can be used to back calculate the annual production rates of the processing equipment. This information provides competitors with knowledge of control device capacity which can be used to determine product throughput, thus providing a mechanism for market manipulation and disruption. The purpose of this form is to show how emission factors were calculated to assist the Administrator with understanding the permit application. **Blower capacity, grain loading, and controlled emission factors are formally claimed confidential and redacted.**	
Attachment N-4 Supporting Emission Calculations - Haul Roads	**Attachment N-4** contains information on empty and full truck weights and maximum trucks per hour, information that can be back calculated to determine facility production rates. This information provides competitors with knowledge of facility production capacity, thus providing a mechanism for market manipulation and disruption. The purpose of this form is to show how haul road emissions were calculated to assist the Administrator with understanding the permit application. **Haul road information is formally claimed confidential and redacted.**	
Responsible Official Signature	Terry J Zerr	
Responsible Official Name	Terry Zerr	
Responsible Office Title	Vice President of Operations	

(cofc.wpd)
WVDEP-DAQ: Revised 3/02