

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

# Application Review

**Issue Date: XXXX XX, 2018**

**Region:** Asheville Regional Office  
**County:** Mitchell  
**NC Facility ID:** 6100016  
**Inspector's Name:** Patrick Ballard  
**Date of Last Inspection:** 11/06/2017  
**Compliance Code:** 3 / Compliance - inspection

Facility Data	Permit Applicability (this application only)
<b>Applicant (Facility's Name):</b> United States Gypsum Company  <b>Facility Address:</b> United States Gypsum Company 722 Altapass Highway Spruce Pine, NC 28777  <b>SIC:</b> 3295 / Minerals, Ground Or Treated <b>NAICS:</b> 327992 / Ground or Treated Mineral and Earth Manufacturing  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V	<b>SIP:</b> 15 NCAC 02D .0509, .0516, .0521, 0540, & .1806 <b>NSPS:</b> 15A NCAC 02D .0524 – Subpart OOO <b>NESHAP:</b> N/A <b>PSD:</b> N/A <b>PSD Avoidance:</b> 15A NCAC 02Q .0317 <b>NC Toxics:</b> N/A <b>112(r):</b> N/A <b>Other:</b>

Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<b>Application Number:</b> 6100016.16A <b>Date Received:</b> 07/01/2016 <b>Application Type:</b> Renewal/Modification <b>Application Schedule:</b> TV-Renewal <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 04314/T10 <b>Existing Permit Issue Date:</b> 10/07/2013 <b>Existing Permit Expiration Date:</b> 05/31/2017
Randy Kenyon Site Manager (828) 765-9481 722 Altapass Way Spruce Pine, NC 28777	David Price Plant Manager (770) 454-1533 4859 New Peachtree Road Chamblee, GA 30341	John Bolden Environmental Projects Manager (312) 436-5587 100 Crocker Road Westlake, OH 44145	

Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2016	---	0.6700	39.85	0.4800	3.16	0.7079	0.3180 [Xylene (mixed isomers)]
2015	---	0.6400	58.69	0.4800	3.14	1.03	0.4600 [Xylene (mixed isomers)]
2014	---	0.6400	56.74	0.4900	3.14	0.9715	0.4400 [Xylene (mixed isomers)]
2013	4.28	1.27	93.20	0.3500	10.31	1.64	0.7441 [Xylene (mixed isomers)]
2012	4.18	1.18	99.85	0.3000	10.31	1.77	0.8001 [Xylene (mixed isomers)]

<b>Review Engineer:</b> David Hughes  <b>Review Engineer's Signature:</b>	<b>Date:</b> XXXX XX, 2018	<b>Comments / Recommendations:</b> <b>Issue</b> 04314/T11 <b>Permit Issue Date:</b> XXXX XX, 2018 <b>Permit Expiration Date:</b> XXXX XX, 2023
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## I. Purpose of Application

The existing Title V permit (**04314T10**) was issued on **October 7, 2013**, and is currently scheduled to expire on **May 31, 2017**. The renewal application was received on **July 1, 2016**, or at least nine months prior to the original expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

As part of this permit renewal, the Permittee is requesting the following modifications:

1. United States Gypsum Company (U.S. Gypsum) is requesting to add a new raw material storage point to the facility. The facility stores mica in a storage pit (**ID No. ES-15**) prior to drying. However, the dryer does not react well to mica that is overly wet, due to rain or other precipitation. Therefore, the Spruce Pine facility plans on storing some raw material in a shed (referred to as the “K mica shed”), which is designed to keep a relatively small amount of mica as dry as possible, so that the dryer will continue to operate efficiently after precipitation events. At most, 10 percent of the raw material throughput would go through the shed. U.S. Gypsum is requesting that K mica shed (**ID No. ES-21**) be added to the permit. This shed will be loaded by a front-loader, and will have three (3) walls and a ceiling, with one wall open for the front-loader. As such, U.S. Gypsum is assuming an 85% reduction in pollution from the partially-enclosed space. The following table is a summary of potential emissions.

### K mica shed (ID No. ES-21)

#### Potential Emissions Summary

Pollutant	Potential Emissions		
	(lb/ton)	(lb/hr)	(ton/yr)
PM	3.56E-06	1.82E-05	7.97E-05
PM <sub>10</sub>	1.73E-06	8.61E-06	3.77E-05
PM <sub>2.5</sub>	2.61E-07	1.30E-06	5.70E-06

2. U.S. Gypsum is requesting that one dryer bypass hopper (**ID No. ES-18**) and two bulk loading storage bins (**ID Nos. ES-8 and ES-9**) be removed from the permit. This equipment no longer exists at the facility.
3. U.S. Gypsum is requesting that the Division of Air Quality (DAQ) remove the annual testing requirement from Condition 2.2 B.2.c to establish a facility-wide emissions factor based on the measurement of the diesel fuel content of the mica at the point mica is brought on-site and after the grinding mills. The difference between the two concentrations is used to calculate the quantity of VOC emitted to the atmosphere. U.S. Gypsum provided testing results (emission factors) for the last three years (2013 - 0.006646 ton VOC/ton Mica, 2014 - 0.006716 ton VOC/ton Mica, and 2015 - 0.005329 ton VOC/ton Mica) for a three-year average of 0.006230 ton VOC/ton Mica. The recent testing has shown VOC emissions are far below the levels needed to exceed the permit limit. These levels have not increased in recent years, and there is no reason to suspect that the levels will increase, as the facility consistently receives mica from the same supplier. DAQ has agreed to remove annual testing but would like to see a test performed once per five-year permit period with the VOC emission factor being based on the latest material analysis instead of the last three-year material analyses. (See History Note in Section III of this document).

4. U.S. Gypsum is also requesting the following changes to the Insignificant Activities list.
  - (1) Remove the No. 2 oil storage tank (12,000 gallon capacity) (**ID No. I-3**) and replace it with one diesel storage tank (275 gallon capacity) (**ID No. I-4**).
  - (2) U.S. Gypsum sent in an Applicability Determination application (See History Note in Section III of this document) requesting the addition of one new mica screw conveyor (**ID No. I-5**) to the Insignificant Activities list in accordance with 15A NCAC 02Q .0523 – Changes Not Requiring Permit Revisions under 15A NCAC 02Q .0523(b) – Off Permit Changes. David B. Hughes reviewed the Applicability Determination and determined that the mica screw conveyor (ID No. I-5) could be added to the Insignificant Activities list without a revision to the permit. This source will be added during this permit renewal.

## **II. Facility Description**

The facility dries and grinds mica and was reclassified as Title V for VOC emissions on June 25, 2012. Diesel fuel is a residual flotation chemical in the mica before it is dried, and is emitted as a VOC from various sources in the plant site. After the mica is dried and ground it is shipped off by rail or in bags for end in joint treatment compound (sheet rock mud) or other uses. The facility is currently in production approximately 3 to 4 days per week, 12 hours per day.

## **III. History/Background/Application Chronology**

**June 25, 2012** – Air Permit No. **04314T09** issued as a Title V for VOC emissions based on material sampling in 2011.

**October 7, 2013** – Air Permit No. **04314T10** issued as a Title V minor modification.

**July 1, 2016** – Permit application **6100016.16A** received as a Title V renewal. The application was deemed complete for processing.

**July 5, 2017** – United States Gypsum Company sent in an Application Determination application requesting a new mica screw conveyor (**ID No. I-5**) be added to Insignificant Activities list as an Off Permit Change.

**August 16, 2017** – David B. Hughes responded in a letter to United States Gypsum Company informing them that it was acceptable to add a new mica screw conveyor (**ID No. I-5**) to Insignificant Activities list without revising Air Permit No. **04314T10**. The conveyor would be added on the next permit action.

**November 6, 2017** - Patrick Ballard of the ARO completed the annual compliance inspection of the facility.

**April 10, 2018** – David B. Hughes had a phone conversation with Patrick Ballard requesting regional input on the following item:

1. U.S. Gypsum requested that the Division of Air Quality (DAQ) remove the annual testing requirement from Condition 2.2 B.2.c for VOC emissions for 15A NCAC 02Q .0317 Avoidance conditions for 15A NCAC 02D .0530 Prevention of Significant Deterioration. Mark Cuilla (Permit Supervisor) and David B. Hughes agreed to remove annual testing but would like to see a test performed once per five-year permit period. They also agreed that the VOC emission factor be based on the latest material analysis instead of the last three-year material analyses. *Patrick Ballard confirmed that it would be acceptable to remove the*

*annual testing requirement and add the once per five-year permit period. He also agreed that the VOC emission factor be based on the latest material analysis instead of the last three-year material analyses.*

**April 18, 2018** – DRAFT permit sent to Permittee, Supervisor, Regional Office and Tech Services for comment prior to the public notice and EPA review periods. Randy Kenyon of United States Gypsum Company states via e-mail on **May 3, 2018**, that he has reviewed the draft permits and has no comment. Patrick Ballard of ARO states via e-mail on **April 18, 2018** that he has reviewed the draft permits and had minor corrections. Samir Parekh of RCO states via e-mail on **April 23, 2018** that he has reviewed the draft permits and had comments on the Compliance Assurance Monitoring (CAM) section.

**XXXX XX, 2018** – DRAFT permit sent to 30-day public notice and 45-day EPA review. The 30-day public comment period ended **XXXX XX 2018** with the receipt of no comments. The 45-day EPA review period ended **XXXX XX, 2018** with the receipt of no comments.

#### IV. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Page	Section	Description of Change
Attachment	Insignificant Activities	-revised dates, names, permit revision number -removed one No. 2 fuel oil storage tank (12,000 gallon capacity) (I-3) -added one diesel storage tank (275 gallon capacity) (I-4) -added one mica screw conveyor (I-5)
Cover	---	-amended permit revision numbers and all dates
All	Header	-amended permit revision
---	Section 1 Table	-removed one dryer feed hopper (ES-18) -removed two loading storage bins (ES-8 and ES-9) -added one K mica shed (ES-21)
4 & 5	2.1	-removed one dryer feed hopper (ES-18) -removed two loading storage bins (ES-8 and ES-9) -added one K mica shed (ES-21)
5-8	2.1 A.1.e	-removed one dryer feed hopper (ES-18) -added one K mica shed (ES-21)
10 & 11	2.1 A.3	-updated shell language for 15A NCAC 02D .0521 -removed one dryer feed hopper (ES-18) -added one K mica shed (ES-21)
12 & 13	2.2 B.2.c	-removed annual emission testing and replaced with once per five- year permit period. -removed VOC emission factor based on the last three material analyses and replaced with VOC emission factor based on most recent material analyses.
16-26	General Conditions	-updated shell conditions (v5.2 04/03/2018)
27	List of Acronyms	-added acronym for DEQ per current shell language

There were only minor, non-significant modifications to the equipment descriptions needed in the Title V Equipment Editor (TVEE) in addition to the addition and deletion of equipment as described above.

## **V. Regulatory Review**

The facility is currently subject to the following regulations:

15A NCAC 02D .0509, Particulates from Mica or Feldspar Processing Operations  
15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources  
15A NCAC 02D .0521, Control of Visible Emissions  
15A NCAC 02D .0524, New Source Performance Standards (40 CFR 60, Subpart OOO)  
15A NCAC 02D .0614, Compliance Assurance Monitoring  
15A NCAC 02D .0540, Particulates from Fugitive Non-Process Dust Emissions Sources  
15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions  
15A NCAC 02Q .0317, Avoidance Conditions (for 15A NCAC 2D .1111, Maximum Achievable Control Technology)

A regulatory review for these existing requirements will not be included in this document as the applicability of them to current equipment has not changed.

## **VI. NSPS, NESHAPS/MACT, PSD, 112(r), CAM**

### **NSPS**

#### **NSPS Subpart OOO**

The Permittee is subject to 15A NCAC 02D .0524: New Source Performance Standards and 40 CFR Part 60 Subpart OOO, “Standards of Performance for Nonmetallic Mineral Processing Plants.” This regulation applies to owners and operators of crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck or railcar loading stations. U.S. Gypsum emission sources subject to NSPS Subpart OOO are the bagger No. 2 and feed bin (**ID No. ES-14**) and the oversize elevator (**ID No. ES-20**). Continued compliance is expected. This permit renewal does not affect this status.

#### **NSPS Subpart UUU**

NSPS Subpart UUU contains standards for calciners and dryers at mineral processing plants that have been constructed, modified, or reconstructed after April 23, 1986. Mineral processing plant is defined as any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller’s earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculate. U.S. Gypsum does not process or produce any of the listed materials. Therefore, the facility **is not** subject to the requirements of NSPS Subpart UUU. This permit renewal does not affect this status.

**NESHAPS/MACT** – The Permittee is not currently required to comply with any National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR 63). U.S. Gypsum is considered an area source of Hazardous Air Pollutants (HAP) since potential emissions of individual HAP are less than 10 ton per year (tpy) and potential emissions of total aggregate HAP are less than 25 tpy. The

operations at U.S. Gypsum are not covered under any Part 63 area source NESHAPs, and therefore there are no requirements under this part. This permit renewal does not affect this status.

### **PSD**

The PSD program limits emissions from major stationary sources of regulated air pollutants. For the purposes of the PSD program, a major stationary source is defined as any one of the following:

- (1) Any stationary source that is listed as one of the 28 named source categories in Title 40 of the Code of Federal Regulations (40 CFR), Part 52.21(b)(1)(i) which emits, or has the potential to emit, 100 tons per year (tpy) or more of any pollutant subject to regulation under the ACT;*
- (2) Any stationary source that is not listed as one of the 28 named source categories in 40 CFR Part 52.21(b)(1)(i) which emits, or has the potential to emit, 250 tons per year (tpy) or more of any pollutant subject to regulation under the ACT; or*
- (3) For any stationary source that does not meet the definition of 1) or 2), any physical change that would constitute a major stationary source by itself.*

Mica processing is not included on the list of 28 categories detailed in 40 CFR §52.21 which have lower threshold of 100 tpy. Therefore, the PSD applicability threshold for U.S. Gypsum is 250 tpy. Potential VOC emissions from combustion are below 1 tpy, and U.S. Gypsum operates under a non-combustion facility-wide VOC emission limit of 248.98 tpy to avoid PSD requirements. To demonstrate compliance with this PSD avoidance limit, U.S. Gypsum calculates rolling 12-month VOC emissions using material analyses using the methodology in Air Permit 04314T10 Section 2.2 B.2.d. U.S. Gypsum submits the rolling 12-month VOC emissions to DEQ on a semiannual basis.

Section 2.2 B.2.c requires annual testing to establish a facility-wide emission factor based on the measurement of the diesel fuel content of the mica at the point mica is brought on-site and after the grinding mills. The difference between the two concentrations is used to calculate the quantity of VOC emitted to the atmosphere. The VOC emission factor was based on the last three material analyses performed. U.S. Gypsum has requested that the annual testing be removed and that the maximum calculated emission factor be based on data from testing from the calendar years 2012 through 2015 to demonstrate ongoing compliance. DAQ would like to see one (1) test done every five (5) years and that the VOC emission factor be based on the latest material analyses performed instead of a three-year average. The renewed permit will be modified to include this new “once-per-permit-term testing requirement” in place of the current annual requirement.

**112(r)** – The facility is not currently subject to the 112(r) “Prevention of Accidental Releases” requirements because no chemicals are stored in amounts greater than the applicability threshold of the regulation. This permit renewal does not affect this status.

### **CAM**

40 CFR Part 64 is applicable to any pollutant-specific emission unit, if the following three conditions are met:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- the unit’s pre-control potential emission rate exceeds either 100 tpy (for criteria pollutants)

or 10/25 tpy (for HAP's).

40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold, and use a control device to meet an applicable standard.

One natural gas-fired rotary mica dryer (**ID No. ES-1**) controlled by a pulse jet bagfilter (**ID No. CD-1**) is the only emission source subject to 40 CFR 64 and 15A NCAC 02D .0614 Compliance Assurance Monitoring. Emissions of particulate matter from this source shall not exceed the allowable emission rate per 15A NCAC 02D .0509. The monitoring requirements are presented in the following table.

<b>Indicator</b> <b>[64.6(c)(1)(i)]</b>	<b>Pressure drop</b>
<b>Measurement Approach</b> <b>[64.6(c)(1)(ii)]</b>	Pressure drop ( $\Delta P$ ) across the bagfilter is measured with a differential pressure gauge
<b>Indicator Range</b> <b>[64.6(c)(2)]</b>	An excursion is defined as a pressure drop greater than 5.0" H <sub>2</sub> O or less than 0.5" H <sub>2</sub> O.
<b>Bypass</b> <b>[64.3(a)(2)]</b>	Excursions trigger an inspection, corrective action, and a reporting requirement.
<b>QIP threshold</b> <b>[64.8]</b>	If the pressure drop falls below 0.5" H <sub>2</sub> O, the possibility of bypass is investigated  Instantaneous $\Delta P$ readings outside range 3 times within a six-month period
<b>Performance Criteria, Data Representativeness</b> <b>[64.6(c)(1)(iii)]</b>	Pressure taps are located at the bagfilter inlet and outlet. The gauge has an indicator range from 0.5 to 5.0 inches of water and has an accuracy of plus or minus 2 percent of full scale, and 70°F. The actual temperature of the monitored exhaust will vary depending on seasonal changes
<b>Verification of Operational Status</b> <b>[64.3(b)(1)]</b>	N/A
<b>QA/QC Practices and Criteria</b> <b>[64.3(b)(3)]</b>	The pressure gauge is calibrated semi-annually. Pressure taps are checked for plugging daily.
<b>Monitoring frequency</b> <b>[64.3(b)(4)]</b>	$\Delta P$ is monitored continuously while the bagfilter is in operation.
<b>Data collection procedure</b> <b>[64.3(b)(4)]</b>	$\Delta P$ is manually recorded daily.
<b>Averaging period</b>	N/A

**Reporting** [15A NCAC 02Q .0508(f), 40CFR 64.9]

- d. The Permittee shall submit a summary report of all monitoring and record keeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

The report shall also include the following information, as applicable:

- i. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
- ii. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and
- iii. A description of the actions taken to implement a QIP during the reporting period as specified in 40 CFR 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

This permit renewal does not affect this status.

#### **VII. Facility-Wide Air Toxics**

The Permittee is not currently subject to any NC Air Toxics provisions. This permit renewal does not affect this status.

#### **VIII. Facility Emissions Review**

See Table in the header for a summary of the actual emissions as reported to DAQ from the years 2012 to 2016.

Mitchell County has not been triggered for PSD purposes; therefore, no increment tracking for PM is necessary as part of this permit renewal.

#### **IX. Stipulation Review**

The facility was last inspected by Patrick Ballard of the ARO on **November 6, 2017**. At that time of the inspection, the facility appeared to be in compliance with the applicable air quality regulations.

#### **X. Public Notice/EPA and Affected State(s) Review**

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521. The states of Tennessee and Virginia as well as the Western North Carolina Regional Air Quality Agency and Mecklenburg County Department of Environmental Protection are all affected states/local programs within 50 miles of this facility.



## **XI. Conclusions, Comments, and Recommendations**

A professional engineer's seal was not required for this renewal.

A zoning consistency determination was not required for this renewal.

ARO recommends issuance of the permit and was presented with a DRAFT permit prior to notice and issuance.

RCO concurs with ARO's recommendation to issue the renewed air permit.