TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

UNITED STATES GYPSUM COMPANY
6825 Evergreen Ave.
Jacksonville, Florida
Jacksonville Facility
Facility ID No. 0310072

PROJECT

Project No. 0310072-024-AC
Application for Air Construction Permit
Wallboard Production Line No. 3

COUNTY

Duval, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Waste and Air Resource Management Program
Northeast District Office
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

COMPLIANCE AUTHORITY

Florida Department of Environmental Protection
Compliance Assurance
Northeast District Office
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

February 7, 2014

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

Facility Description and Location

United States Gypsum Co. is an existing Gypsum Wallboard Manufacturer, which is categorized under Standard Industrial Classification Code No. 3275. The facility is located in Duval County at Evergreen Ave., in Jacksonville, Florida. The UTM coordinates of the existing facility are Zone 17, 438.9 km East and 3361.2 km North; Latitude: 30° 22′ 52″ North and Longitude: 81° 38′ 07″ West. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

Facility Regulatory Categories

- The facility **is not** a major source of hazardous air pollutants (HAP).
- The facility **has no** units subject to the acid rain provisions of the Clean Air Act.
- The facility **is** a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility **is not** a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

This project is for an Air construction permit, which authorizes the modification of (EU110) Wallboard Production Line No. 3, to produce a new product using heavier pre-coated glass mat on one side of the wallboard and standard glass mat on the other side.

Processing Schedule

January 15, 2014 - Received the application for a minor source air pollution construction permit.

2. PSD APPLICABILITY

General PSD Applicability

For areas currently in attainment with the state and federal AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the potential emission exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

United States Gypsum Co. is currently minor for Prevention of Significant Deterioration (PSD) regulations by the previous establishment of a facility-wide emission limit for PM and VOC of less than 250 tons per year each. The facility has previously established a facility-wide emission limit for hazardous air pollutants (HAP) of less than 10 tons per year for any single HAP and less than 25 tons per year for total HAPs classifying it as a Synthetic Minor Source of HAPs.

3. APPLICATION REVIEW

Discussion of Emissions

EU109- Wallboard Coating Booth at Wallboard Production Line No. 2
EU110- Wallboard Coating Booth at Wallboard Production Line No. 3

a. **Wallboard Production Line Nos. 2 and 3**. Additive use in wallboard production on wallboard production line no. 3 shall be limited to a maximum of 1.44 X 10^6 pounds per year total, **standard glass mat (only)** use shall be limited to a maximum of 3.08 X 10^6 pounds per year total as a paper substitute. Year means calendar year.

b. Wallboard Production Line No. 3 (Only). The new product uses heavier pre-coated glass mat additive use in wallboard production on wallboard production line no. 3 shall be limited to a maximum of 1.62 X 10^5 pounds per year total, **standard glass mat** use shall be limited to a maximum of 4.50 X 10^5 pounds per year, and **pre-coated glass** mat use shall be limited to a maximum of 1.53 x 10^6 pounds per year. Year means calendar year. **{Note: While Line No. 3 is using the thicker pre-coated glass mat, it is not using the standard glass mat on both sides of the product.}**

Facility-wide PTE

Table 1: Summary of Potential Emissions
U.S. Gypsum - Jacksonville, FL

Emission Unit	Description	PM		VOC		Formaldehyde		NOx		CO		SO_2	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
5	Textures Bulk Calcium Carbonate Unloading and Supply System	0.34	1.49										
6	No. 3 Stucco Storage Bin	0.35	1.52										
7	No. 4 Stucco Storage Bin	0.29	1.26										
37	No. 2 Raymond Mill	1.19	5.21										
40	No. 2 Stucco Storage Bin	0.83	3.66										
42	No. 2 Board Plant End Saws	0.64	2.82										
43	No. 3 Raymond Mill and No. 7 Kettle Landplaster Elevator	1.29	5.63										
58	No. 1 Stucco Storage Bin	0.42	1.83										
60	No. 5 Raymond Mill	0.65	2.83										
61	No. 3 Board Plant Stucco Elevator, Screen, Additive Screw	0.64	2.81										
62	No. 3 Board Plant Starch Stucco Bin	0.15	0.68										
63	No. 3 Board Plant End Saws	1.17	5.12										
64	No. 3 Board Plant Stucco Feed Bin	0.54	2.35										
65	No. 3 Board Plant Vermiculite/Starch Storage Bin	0.04	0.18										
66	No. 6 Raymond Mill and Rock Screw	1.54	6.76										
77	No. 1 Board Plant End Saws	0.90	3.94										
88	Dunnage Machine Sawing Operation	0.87	3.83										
89	No. 4 Raymond Mill	0.64	2.82										
90	No. 3 Board Plant Ball Mill	0.05	0.20										
111	Receiver/Refill Bin Dust Collector	0.06	0.28										

Table 1: Summary of Potential Emissions
U.S. Gypsum - Jacksonville, FL

Emission Unit	Description	PM		VOC		Formaldehyde		NOx		CO		SO_2	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
98	Hurst Boiler No. 1	1.51	6.62	5.82	25.50	0.0038	0.02	2.52	11.04	4.23	18.54	0.03	0.15
99	Hurst Boiler No. 2	1.51	6.62	5.82	25.50	0.0038	0.02	2.52	11.04	4.23	18.54	0.03	0.15
100	Hurst Boiler No. 3	1.51	6.62	5.82	25.50	0.0038	0.02	2.52	11.04	4.23	18.54	0.03	0.15
39	No. 5 & 6 Calcining Kettles	1.29	5.63										
48	Rotary Rock Dryer	7.78	34.09	0.28	1.20	0.0038	0.02	5.00	21.90	4.20	18.40	0.03	0.14
57	No. 7 Calcining Kettle	1.54	6.76										
92	Nos. 1-7 Calcining Kettle Burners	0.89	3.90	0.64	2.82	0.0088	0.04	11.72	51.33	9.84	43.12	0.08	0.34
95	No. 1 MBR Calcining Kettle	1.01	4.44										
96	No. 4 MBR Calcining Kettle	1.62	7.09										
101	Joint Treatment CaCO3 No. 1 Silo	0.13	0.57										
102	Joint Treatment CaCO3 No. 2 Silo	0.13	0.57										
103	Joint Treatment Mica Silo	0.10	0.45										
104	Joint Treatment Clay Silo	0.10	0.45										
105	Joint Treatment Talc/Perlite Silo	0.10	0.45										
106	Joint Treatment Premixer System	0.26	1.13										
107	Joint Treatment Dumpstation	0.15	0.68										
97	No. 2 & 3 Calcining Kettles	1.13	4.95										
108	Wallboard Production Line No. 1	4.50	10.70	75.90	18.28	2.33	1.17	2.50	10.95	4.20	18.40	0.033	0.14
109*	Wallboard Production Line No. 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110*	Wallboard Production Line No. 3	27.40	51.27	40.58	63.74	6.69	7.57	8.00	35.04	13.44	58.87	0.11	0.46
54	Waste Board Reclaim System	0.22	0.96										
94	Gypsum Rock Unloading, Conveying, and Storage System												
93	Synthetic Gypsum Feed System												

	PM		VOC		Formaldehyde		NOx		CO		SO_2	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Total Potential Emissions	65.48	209.17	134.86	162.54	9.04	8.86	34.78	152.34	44.37	194.41	0.34	1.53

Note:
Red text indicates increased emissions from proposed new product
Footnote:
*Glass Mat and Additive maximum usage for EU 109 and 110 combined is 3,080,000 lb/yr and 1,440,000 lb/yr, respectively. Total emissions for maximum hourly and annual usage are represented with EU 110 operating parameters.

Y:\Projects\2015\13-02201 US Gypsum\Air Permit\Part III\Table 1_Summary of Emissions.xlsx

Other Draft Permit Requirements

Rule 62-212.400(12), F.A.C., Rule 2.1201, JEPB, and Rule 2.1401, JEPB.

Emissions Increases:

VOC: 3.38 TPY; PM: 0.64 TPY; Formaldehyde: 2.04 TPY.

This project does not trigger any new rule applicability. A construction permit was issued because it meets the definition of modification as per Rule 62-210.200(185), F.A.C.

NSPS Requirements

This EU is not subject to any NSPS requirements.

NESHAPS

This EU is not subject to any NESHAPS requirements.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Leslie Maybin is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Northeast District Office's mailing address 8800 Baymeadows Way West, Suite 100, Jacksonville, Florida 32256.