Statement of Basis

Air Quality Construction Permit

Showplace Wood Products
Harrisburg, South Dakota

South Dakota Department of Environment and Natural ResourceS

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1.0 Background

1.1 Existing Operations

Showplace Wood Products operates a bathroom and kitchen cabinet manufacturing facility in Harrisburg, South Dakota. The primary standard industrial classification (SIC) code is 2434 – Millwork, Veneer, Plywood, and Structural Wood – Wood Kitchen Cabinets. Operations at the facility include sawing, sanding, finishing, and assembling plywood, particleboard, softwood, and hardwood in the production of kitchen and bathroom cabinets for the residential market. Finishing materials include toners, stains, sealers, glazes and topcoats sprayed using high volume low pressure spray technology, hand wiped, air flashed, and oven dried. The cabinets are assembled using water-based or hot-melt glues.

Table 1-1 provides a description of the units and processes covered under Showplace Wood Products' existing Title V air quality operating permit #28.4401-44 issued on September 21, 2010.

Table 1-1 – Description of Permitted Units, Operations, and Processes

Unit	Description	Maximum Operating Rate	Control Device
#2	Toner Booth Line 1 – 1999 JBI spray booth, model #IDB-107, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate emissions controlled by a two-inch thick blanket style filter.
#3	Stain Booth Line 1 – 1999 JBI spray booth, model #IDB-127, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate emissions controlled by a two-inch thick blanket style filter.
#4	Seal Booth Line 1 – 1999 JBI spray booth, model #IDB-127, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate emissions controlled by a two-inch thick blanket style filter.
#5	Glaze Booth Line 1 – 1999 JBI spray booth, model #IDB-107, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate emissions controlled by a two-inch thick blanket style filter.
#6	Topcoat Booth Line 1 – 1999 JBI spray booth, model #IDB-127, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate emissions controlled by a two-inch thick blanket style filter.
#7	Walk-Through 1 Clears Booth – 2004 Global Finishing Solutions spray booth, model #FP-1676, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate emissions controlled by a two-inch thick blanket style filter.

Unit	Description	Maximum Operating Rate	Control Device
#8	Walk-Through 1 Color Booth – 2004 Global Finishing Solutions, model #FP-1676, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate emissions controlled by a two-inch thick blanket style filter.
#9	Glaze Booth Line 3 – 2002 JBI spray booth, model #IDB-127, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#10	Stain Booth Line 2 – 2001 JBI spray booth, model #IDB-127, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#11	Seal Booth Line 2 – 2001 JBI spray booth, model #IDB-127, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#12	Topcoat Booth Line 2 – 2001 JBI spray booth, model #IDB-127, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#13	Toner Booth Line 3 – 2002 JBI spray booth, model #IDB-107, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#14	Stain Booth Line 3 – 2002 JBI spray booth, model #IDB-127, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#15	Seal Booth Line 3 – 2002 JBI spray booth, model #IDB-127, with a Graco Delta high volume low pressure air-atomized spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#16	Topcoat Booth Line 3 – 2003 JBI spray booth, model #IDB-107, with a Graco Delta high volume low pressure spray gun	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#17	Toner Booth Line 4 – spray booth, make and model to be determined, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.

Unit	Description	Maximum Operating Rate	Control Device
#18	Stain Booth Line 4 – spray booth, make and model to be determined, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#19	Seal Booth Line 4 – spray booth, make and model to be determined, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#20	Spray Booth, make and model to be determined, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#21	Glaze Booth Line 4 – spray booth, make and model to be determined, with a Graco Delta high pressure low volume spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#22	Topcoat Booth Line 4 – spray booth, make and model to be determined, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#23	Toner Booth Line 5 – 2005 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#24	Stain Booth Line 5 – 2005 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#25	Seal Booth Line 5 – 2006 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#26	Toner Booth Line 2 – 2007 Global Finishing Solutions spray booth, model IFPG-1076, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#27	Glaze Booth Line 5 – 2005 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.

Unit	Description	Maximum Operating Rate	Control Device
#28	Topcoat Booth Line 5 – 2005 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#29	Toner Booth Line 6 – 2005 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#30	Stain Booth Line 6 – 2005 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#31	Seal Booth Line 6 – 2005 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#32	Spray Booth, make and model to be determined, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#33	Glaze Booth Line 6 – 2005 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#34	Topcoat Booth Line 6 – 2005 Col-Met spray booth, model IB-1007-06, with a Graco Delta high volume low pressure spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#35	Walk-Through 2 Color Booth – spray booth, make and model to be determined, with a Graco Delta high pressure low volume spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.
#36	Walk-Through 2 Clears Booth – spray booth, make and model to be determined, with a Graco Delta high pressure low volume spray gun.	Not applicable	Particulate matter emissions are controlled by a two-inch thick blanket style filter.

1.2 Proposed Project

Showplace Wood Products submitted a construction permit application on November 13, 2014, for a new wood cabinetry manufacturing line. Additional information was received on January

26, 2015, and February 5, 2015. The proposed manufacturing line will be located in a new building constructed west of Showplace Wood Products' existing facility. Showplace is proposing to install two 3.0 million Btu per hour natural gas fired drying ovens and 34 additional spray booths (Units #37 through #70) in the new facility. These units constitute six new paint lines. Each spray booth will be equipped with a two-inch thick blanket style filter to control particulate emissions. The proposed project will increase Showplace Wood Products' emissions of volatile organic compounds and hazardous air pollutants. Showplace Wood Products is requesting a limit of 238 tons per year of volatile organic compound emissions to avoid triggering a PSD review for the proposed project.

1.3 Insignificant Activities

The proposed project will include installation of two 3.0 million Btu per hour natural gas fired drying ovens. In accordance with the Administrative Rules of South Dakota (ARSD) 74:36:05:04.01, since the maximum capacity of each drying oven is less than 3.5 million Btus per hour, the drying ovens are considered insignificant activities and are exempt from permitting.

2.0 New Source Performance Standards

The proposed project does not change or add any additional requirements under the New Source Performance Standards (40 CFR Part 60).

3.0 New Source Review

ARSD 74:36:10:01 notes that new source review regulations apply to areas of the state which are designated as nonattainment pursuant to the Clean Air Act for any pollutant regulated under the Clean Air Act. Showplace Wood Products is located in Harrisburg, South Dakota, which is in attainment or unclassifiable for all the pollutants regulated under the Clean Air Act. Therefore, the proposed project is not subject to new source review.

4.0 Prevention of Significant Deterioration

A prevention of significant deterioration (PSD) review applies to new major stationary sources and major modifications to existing major stationary sources in areas designated as attainment under Section 107 of the Clean Air Act for any regulated air pollutant. The following is a list of regulated air pollutants under the PSD program:

1. Total suspended particulate (PM);
2. Particulate with a diameter less than or equal to 10 microns (PM10);
3. Particulate with a diameter less than or equal to 2.5 microns (PM2.5);
4. Sulfur dioxide (SO_2);
5. Nitrogen oxides (NO_x);

6. Carbon monoxide (CO);
7. Ozone – measured as volatile organic compounds (VOCs);
8. Lead;
9. Fluorides;
10. Sulfuric acid mist;
11. Hydrogen sulfide;
12. Reduced sulfur compounds;
13. Total reduced sulfur; and
14. Greenhouse gases (carbon dioxide, methane, nitrous oxide, etc.).

If the source is considered one of the 28 named PSD source categories listed in Section 169 of the federal Clean Air Act, the major source threshold is 100 tons per year of any regulated pollutant, except for greenhouse gases. The major source threshold for all other sources is 250 tons per year of any regulated pollutant, except for greenhouse gases. Showplace Wood Products is not one of the 28 named PSD source categories. Therefore, the PSD threshold is 250 tons per year.

According to the Clean Air Act, once a pollutant is regulated under any part of the Act (as was the case with greenhouse gas emissions after the motor vehicle regulations were finalized in March 2010), major new sources or major modifications are subject to the PSD program and Title V air quality operating permit program. Under the Clean Air Act, PSD and Title V air quality operating permits are required for all sources that emit a regulated air pollutant above 100 or 250 tons per year, depending on the source. This threshold, if applied to greenhouse gases, would greatly increase the number of facilities requiring a PSD review or Title V air quality operating permit. Based on administrative necessity, EPA increased these thresholds through the "Tailoring Rule."

On May 13, 2010, EPA issued the final version of the "Tailoring Rule" for greenhouse gas emissions. The major source threshold for greenhouse gases is listed below:

1. New PSD source because of a criteria air pollutant, the major source threshold for greenhouse gases is 75,000 tons per year of carbon dioxide equivalent or more;
2. New PSD source if greenhouse gas emissions are 100,000 tons per year of carbon dioxide equivalent or more;
3. For an existing PSD source because of a criteria air pollutant, a major modification for greenhouse gases is an increase of 75,000 tons per year of carbon dioxide equivalent or more;
4. For an existing non-PSD source that has the potential to emit 100,000 tons per year of carbon dioxide equivalent emissions or more, a major modification for greenhouse gases is an increase of 75,000 tons per year of carbon dioxide equivalent or more; and
5. In addition to subsection (2) and (4), a specific greenhouse gas, without calculating the carbon dioxide equivalent, also needs to emit greater than 100 or 250 tons per year, whichever is applicable, to be regulated.

On June 24, 2014, the Supreme Court ruled greenhouse gases may not be regulated under the PSD program unless the facility requires a PSD permit for the other regulated air pollutants.

4.1 Background

Showplace Wood Products was constructed in 1999 and 2000. The potential emissions were less than 250 tons per year; therefore, the facility was not subject to the PSD program. The permit was modified in November 2000, which increased Showplace Wood Products' potential emissions above the major source threshold for the PSD program. Since the potential emissions from the modification itself were less than 250 tons per year, Showplace Wood Products was not subject to PSD review for the modification.

Showplace Wood Products submitted an application in November 2004 to add several paint booths. The potential VOC emissions from the modification were greater than 40 tons per year, which is the threshold for a modification under the PSD program. Showplace Wood Products requested operational limits in the permit to maintain actual emissions below the major source threshold under the PSD program. Since Showplace Wood Products' actual emissions have never exceeded the PSD major source threshold of 250 tons per year, EPA agreed to allow Showplace Wood Products to accept operational limits to avoid obtaining a PSD permit. Federally enforceable limits were placed in Showplace Wood Products' permit which restrict VOC emissions to less than or equal to 238 tons per 12-month rolling period. Therefore, Showplace Wood Products is considered a minor source under the PSD program.

In accordance with 40 CFR 52.21 (b)(1)(i), Showplace Wood Products' existing operations are not considered a major source under the PSD program. Therefore, in accordance with 40 CFR 52.21(b)(1)(i)(c), a PSD review and permit is required for any physical change at a non-major source if the physical change, by itself, is a major source under the PSD program. In addition, in accordance with 40 CFR 52.21 (r)(4), if there is any relaxation of an enforceable limit established to maintain emissions below the PSD threshold, the source or modification (i.e., physical change) is considered a major source and is subject to a PSD review and permit.

Therefore, Showplace Wood Products is allowed to increase its emissions by 250 tons per year, as long as the proposed project (physical change) does not by itself have the potential to emit greater than 250 tons per year. Showplace Wood Products has requested enforceable limits in the permit to maintain actual emissions from the proposed expansion below the PSD threshold of 250 tons per year. Therefore, the proposed project does not trigger a PSD review. Showplace Wood Products will be required to maintain separate records of volatile organic compound emissions for the existing facility and for the proposed project to ensure the PSD threshold is not exceeded.

The enforceable limits will allow Showplace Wood Products to forgo a PSD review. However, Showplace Wood Products will now be considered a major source under the PSD program and any future changes will be reviewed to determine if the change is considered a major modification under the PSD program.

4.2 Potential Emissions

DENR uses stack test results to determine air emissions whenever stack test data is available from the source or a similar source. When stack test results are not available, DENR relies on

manufacturing data, material balance, EPA's Compilation of Air Pollutant Emission Factors (AP-42) Fifth Edition, 3.1, or other methods to determine potential air emissions. Potential emissions for each applicable pollutant are calculated by assuming the unit operates every day of the year at the maximum design capacity (8,760 hours per year).

4.2.1 Spray Booths

Showplace Wood Products has not determined the exact coatings or amounts that will be used in the new cabinet manufacturing line. Operations are expected to be similar to the existing cabinet manufacturing line. Showplace estimates that the spray booths for the new product line will operate on average 260 days per year. The spray booths are equipped with 2-inch thick dry filter pads to collect the paint overspray; however, the dry filter pads do not collect VOC emissions. Showplace Wood Products is a major source of volatile organic compounds. Showplace Wood Products has requested enforceable limits on VOC emissions for the new cabinet manufacturing line to forgo a PSD review. Therefore, Showplace Wood Products will have a separate VOC limit of 238 tons per year for the proposed project. The limit includes all VOC emissions from material handling/mixing, spraying, and drying. Emissions will be calculated using the monthly amounts of finishes, cleaning solvents, and contact adhesives purchased and the density and weight percent VOCs from the certified product data sheet for each product.

5.0 National Emission Standards for Hazardous Air Pollutants

The proposed project does not change or add any additional requirements under the National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

6.0 Maximum Achievable Control Technology Standards

DENR reviewed the maximum achievable control technology standards under 40 CFR Part 63 and determined that the following may be applicable to the proposed project.

6.1 40 CFR Part 63, Subpart JJ

This standard applies to each facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and is located at a plant site that is a major source for hazardous air pollutants. The major source threshold under the Maximum Achievable Control Technology (MACT) standards is the potential to emit greater than 10 tons per year of a single hazardous air pollutant or 25 tons per year of a combination of hazardous air pollutants. Showplace Wood Products' potential hazardous air pollutant emissions are greater

than the major source threshold. Therefore, the proposed project is applicable to the provisions of this subpart.

For the purpose of this subpart, the affected source is the entire wood furniture manufacturing facility. EPA adopted the broad definition of an affected source in part because it is difficult to define specific pieces of equipment for a wood furniture plant that could be considered the affected source. Showplace Wood Products was constructed in 1999. Therefore, Showplace Wood Products' manufacturing facility (both the existing facility and the proposed project) is considered a new affected source under this subpart.

Showplace Wood Products meets the following criteria and is subject to the applicable requirements under this subpart:

1. Major source of hazardous air pollutants;
2. It is an new source;
3. There are no air pollution control devices for volatile organic compounds;
4. Continuous coaters are not in use; and
5. Initial compliance has already been demonstrated.

6.2 40 CFR Part 63, Subpart B

A Case-by-Case MACT determination in accordance with Clean Air Act Sections 112(g) and 112(j) is not required for a process or operation that falls underneath a finalized MACT standard. Showplace Wood Products' operations are subject to 40 CFR, Part 63, Subpart JJ; therefore, a Case-by-Case MACT determination is not required.

7.0 State Requirements

7.1 Particulate and Sulfur Dioxide Emission Limits

Showplace Wood Products does not operate any processes that are subject to the state's particulate or sulfur dioxide emission limits. However each permitted unit is required to meet the 20 percent opacity limit as required in ARSD 74:36:12:01.

7.2 Summary of Applicable Requirements

Showplace Wood Products is required to operate within the requirements stipulated in the Title V air quality operating permit. Showplace Wood Products will be required to submit an application to revise the Title V air quality operating permit to add the new spray booths to the permit within 12 months of initial startup of the first spray booth.

Showplace Wood Products is required to construct and operate within the requirements stipulated in the following regulations:

1. ARSD 74:36:06 – Regulated Air Pollutant Emissions;
2. ARSD 74:36:08 – National Emission Standards for Hazardous Air Pollutants;
3. ARSD 74:36:11 – Performance Testing;

4. ARSD 74:36:12 – Control of Visible Emissions; and
5. ARSD 74:36:20 – Construction permits for new sources or modifications.

8.0 Recommendation

Showplace Wood Products' existing operations are covered under Title V air quality operating permit #28.4401-44. In accordance with ARSD 74:36:20:01, a construction permit is required for all modifications to an existing source. The proposed addition of 34 spray booths will increase emissions of volatile organic compounds and hazardous air pollutants. Therefore, Showplace Wood Products is required to obtain a construction permit for the proposed project.

Based on the information submitted in the construction permit application, DENR recommends conditional approval of a construction permit for Showplace Wood Products. Questions pertaining to this permit recommendation should be directed to Marlys Heidt, Engineer III, at (605) 773-3151.