Blue Ridge Environmental Defense League

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Michael Abraczinskas, Director
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RE: Carolina Sunrock–Prospect Hill and Carolina Sunrock–Burlington North

Dear Mr. Abraczinskas:

On behalf of the Blue Ridge Environmental Defense League and our chapter members in Caswell County, I write to provide comments on the two draft air permits designated Burlington North and Prospect Hill: 10628R00 and 10641R00, respectively. These comments address common issues first followed by specific comments on each site.

First, I would register my opposition to the holding of two public hearings and comment periods on two permits at the same time in the same place. Holding them simultaneously has generated an unusually high level of public anxiety and confusion. I have participated in many permit actions during the last 34 years but the Division's double jeopardy in Caswell beggars understanding.

General Comments

The draft permits are fatally flawed because they substitute internal guidance for legal limits, toxic permit emission rates for acceptable ambient limits, TPERs for AALs. The NC Division of Air Quality states that a specific permit limit or limits are required if and when Toxic Permit Emission Rates (TPER) are exceeded. TPERs are not permit limits, they are benchmarks, regulatory thresholds, which trigger further analysis. This further analysis compares predicted emissions of air toxics with ambient limits, which are the regulatory levels which no pollution source may exceed at the property line. The DAQ states:

> In November 1999 DAQ issued an asphalt plant permitting policy, which requires new and modified asphalt plant applications to quantify all 97 Toxic Air Pollutants (TAPs) emitted to determine the need for air toxics permit limits using EPA AP-42 emissions.
>
> If the emissions of a specific TAP are below their regulatory threshold in NC Regulation 15A NCAC 2Q.0711, an air quality permit is not required.
>
> If the TAP emissions exceed its threshold, a dispersion modeling demonstration must be performed. The results of this model must show that the emissions are

> below the acceptable ambient level (AAL) listed in NC Regulation 15A NCAC 2D.1104, and air quality permit emission limit, for the respective TAP not to exceed the AAL, is required.[1]

Emphasis added. The AALs are legally enforceable limits, levels determined by the Science Advisory Board's assessment of potential adverse human health effects caused by toxic air pollutants. As "ambient" limits they regulate the air people breathe. AALs are codified as the *purpose* of the toxic air pollution program, stated as: "This Section sets forth the rules for the control of toxic air pollutants to protect human health." 15A NCAC 02D .1101.

Toxic air pollution ambient limits are listed in units of milligram per cubic meter in air. The rule at 2D .1104 (AALs) states:

> A facility shall not emit any of the following toxic air pollutants in such quantities that may cause or contribute beyond the facility's premises to any significant ambient air concentration that may adversely affect human health, except as allowed pursuant to 15A NCAC 02Q .0700.[2]

And 2Q .0700 states:

> The owner or operator of the facility shall submit a permit application to comply with 15A NCAC 02D .1100 if emissions of any toxic air pollutant, excluding sources exempt from evaluation pursuant to 15A NCAC 02Q .0702, exceed the levels set forth in 15A NCAC 02Q .0711.[3]

Emphases added. Here we see that the TPER rate determines only whether a permit to emit toxic pollutants is required. "A permit to emit toxic air pollutants shall be required for any facility…whose actual rate of emissions from all sources are greater than…toxic air pollutant permitting emissions rates." *See* 15A NCAC 02Q.0711 (The full regulation is included in the footnote below).[4]

Further, the draft permits are unenforceable because, *inter alia*, they fail to require hourly or daily limits on asphalt production. The annual production limits—500,000 tons/year at

[1] NC DAQ Webpage "How are asphalt plants regulated by DAQ?" Memorandum, Procedures for Permitting and Estimating Emissions from Asphalt Plants, Laura S. Butler, (November 18, 1999) accessed 4/29/2020 at https://deq.nc.gov/about/divisions/air-quality/air-quality-permits/asphalt-plants

[2] 15A NCAC 02D .1104 TOXIC AIR POLLUTANT GUIDELINES

[3] 15A NCAC 02Q .0704(c) NEW FACILITIES.

[4] 15A NCAC 02Q .0711 EMISSION RATES REQUIRING A PERMIT

(a) A permit to emit toxic air pollutants shall be required for any facility where one or more emission release points are obstructed or non-vertically oriented whose actual rate of emissions from all sources are greater than any one of the following toxic air pollutant permitting emissions rates:

(b) A permit to emit toxic air pollutants shall be required for any facility where all emission release points are unobstructed and vertically oriented whose actual rate of emissions from all sources are greater than any one of the following toxic air pollutant permitting emissions rates:

(c) For the following pollutants, the highest emissions occurring for any 15-minute period shall be multiplied by four and the product shall be compared to the value in Paragraph (a) or (b) as applicable.

Burlington North and 600,000 tons/year at Prospect Hill—are directed to control emissions of carcinogens. Neither permit limits chronic toxicants, acute systemic toxicants or acute irritants, which have daily or hourly limits and are emitted by asphalt plants.

Truck Load-Our Omission Underestimates Toxic Pollution

Both draft permits omit assessment of toxic air pollutants from trucks exiting the plant fully loaded with hot asphalt. The emissions are easily quantified using the formula published in the US EPA database of air pollution emission factors, below.

> Vapors from the HMA loaded into transport trucks continue following load-out operations. The TOC emissions for the 8-minute period immediately following load-out (yard emissions) can be estimated using an emission factor of 0.00055 kg/Mg (0.0011 lb/ton) of asphalt loaded. This factor is assigned a rating of E. The derivation of this emission factor is described in Reference 1. Carbon monoxide emissions can be estimated by multiplying the TOC emissions by 0.32 (the ratio of truck load-out CO emissions to truck load-out THC emissions).[5]

This omission should be corrected.

Specific Comments RE: Carolina Sunrock – Prospect Hill
NC Facility ID 1700017, Draft Permit No.10641R00

Standard Industrial Classification Misrepresents Facility Operation

The draft permit, if approved, would allow construction and operation of the proposed Carolina Sunrock LLC – Prospect Hill Quarry and Distribution Center at 1238 Wrenn Road, Prospect Hill, NC 27314. The company's permit application seeks an asphalt plant, a concrete plant and a quarry at this location. However, the industrial codes submitted in the permit application cite SIC 1429 and NAICS 212319, which describe the operation as "Primarily Crushed and Broken Stone, Not Elsewhere Classified" and "Other Crushed and Broken Stone Mining and Quarrying," respectively.

The NAICS Association provides the following detail for Code 212319.

> This U.S. industry comprises: (1) establishments primarily engaged in developing the mine site and/or mining or quarrying crushed and broken stone (except limestone and granite); (2) preparation plants primarily engaged in beneficiating (e.g., grinding and pulverizing) stone (except limestone and granite); and (3) establishments primarily engaged in mining or quarrying bituminous limestone and bituminous sandstone.[6]

[5] US EPA AP-42, Chapter 11.1 Hot Mix Asphalt Plants, page 11.1-9, accessed 4/29/2020 at https://www3.epa.gov/ttnchie1/ap42/ch11/final/c11s01.pdf
[6] NAICS Association accessed 4/29/2020 at https://www.naics.com/naics-code-description/?code=212319

Neither industrial code includes asphalt plant operation. The draft permit would allow a facility manufacturing 600 thousand tons of asphalt per year. This is a large asphalt plant operation. As such, it would properly be considered a primary use.

Asphalt Loadout Adds TOC and CO

The permit lists five emission sources from asphalt loadout operations. Utilizing AP-42 total organic compounds emission factors for transport trucks (0.0011 lb/ton of asphalt loaded) and 600,000 tons/year of asphalt, we calculate 660 pounds per year of additional TOC and 211 pounds per year of additional carbon monoxide.

Ambiguous Permit Conditions

Draft permit Condition 8 and Condition 9, Visible Emissions, include different requirements for pollution sources manufactured before and after July 1, 1971. The difference is not small: either a 20% opacity limit or a 40% opacity limit. The permit fails to designate which limit applies to which source.

The draft permit at Condition 12, which stipulated New Source Performance Standards for the three natural gas-fueled electric power generators, contains the following testing requirements:

> In addition, the Permittee shall conduct an initial performance test within 1 year of engine startup and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

This sentence appears twice, at section a.iii.B.I and a.iv.B.I. A year has 8,760 hours.

Fugitive dust emissions are particulate matter that does not pass through a pollution control device. The draft permit at Condition 13, New Source Performance Standards, lists fugitive emissions from crushers, conveyor belts, screening operations and other sources but it is unclear which standard applies to which source. The dividing line between higher and lower opacity requirements, as stated in the draft, is April 22, 2008. However, the draft permit does not specify which standard applies to which source.

Toxic Air Pollution Limits Uncontrolled

The draft permit at Condition 19, Toxic air Pollutant Emissions Limitations and Reporting Requirement, includes a table which lists six groups of affected sources with limits for formaldehyde, mercury, nickel, arsenic, benzene and cadmium. The permit states, "The Permittee has submitted a toxic air pollutant dispersion modeling analysis…for the facility's toxic air pollutant emissions as listed." However, the emission limits are measured in pounds/year, pounds/24-hour and pounds/hour. But computer models are only predictors; they are misapplied in this draft permit. Toxic air pollution regulations at 15A NCAC 02D .1106 state:

> Modeling shall not be used for enforcement. Modeling shall be used to determine process operational and air pollution control parameters and emission rates for toxic air pollutants to place in the air quality permit for that facility that will prevent any of the acceptable ambient levels in 15A NCAC 02D .1104 from being exceeded….[7]

Emphasis added. Moreover, the lack of hourly asphalt production caps for pollutants with hourly and daily emission limits means that they are uncontrolled. This draft permit fails to enforce North Carolina's health-based toxic air pollutant limits.

Finally, the draft permit at Condition 26.b contains an impossible condition:

> PRIOR to exceeding any of these listed TPERs, the Permittee shall be responsible for obtaining a permit to emit TAPs and for demonstrating compliance with the requirements of 15A NCAC 2D .1100 "Control of Toxic Air Pollutants."

"Prior" is all caps in the permit apparently for emphasis. However, it is akin to getting directions to a meeting place which say, "Turn left before you get to the service station." The draft permit, once issued, will grant the owner the ability to operate with impunity because there is either late enforcement or none at all.

Specific Comments RE: Carolina Sunrock LLC– Burlington North
NC Facility ID: 1700016, Draft Permit No. 10628R00

The draft permit would, if approved, allow construction and operation of an asphalt plant to be located at 12971 S NC Highway 62, Burlington, NC 27127.

Permit Underestimates Asphalt Loadout TOC and CO

The permit lists five emission sources for asphalt loadout operations. Utilizing AP-42 total organic compounds emission factors for transport trucks (0.0011 lb/ton of asphalt loaded) and the draft permit limit of 500,000 tons/year of asphalt, we calculate 550 pounds per year of additional TOC and 176 pounds per year of additional carbon monoxide.

Visible Emission Limits Ambiguous

Fugitive dust emissions are particulate matter that does not pass through a pollution control device. The draft permit at Condition 10, New Source Performance Standards, lists fugitive emissions from crushers, conveyor belts, screening operations and other sources but it is unclear which standard applies to which source. The dividing line between higher and lower opacity requirements, as stated in the draft, is April 22, 2008. However, the draft permit does not specify which standard applies to which source.

[7] Determination of Ambient Air Concentration 15A NCAC 02D .1106(a)

Toxic Air Pollution Limits Uncontrolled

The draft permit at Condition 15, Toxic air Pollutant Emissions Limitations and Reporting Requirement, includes a table which lists five groups of affected sources with limits for arsenic, benzene, cadmium, formaldehyde, mercury and nickel. The permit states, "The Permittee has submitted a toxic air pollutant dispersion modeling analysis…for the facility's toxic air pollutant emissions as listed." However, the emission limits are measured in pounds/year, pounds/24-hour and pounds/hour. But computer models are only predictors; they are misapplied in this draft permit. Toxic air pollution regulations at 15A NCAC 02D .1106 state:

> Modeling shall not be used for enforcement. Modeling shall be used to determine process operational and air pollution control parameters and emission rates for toxic air pollutants to place in the air quality permit for that facility that will prevent any of the acceptable ambient levels in 15A NCAC 02D .1104 from being exceeded….[8]

Emphasis added. Moreover, the lack of hourly asphalt production caps for pollutants with hourly and daily emission limits means that they are uncontrolled. This draft permit fails to enforce North Carolina's health-based toxic air pollutant limits.

Further, at Condition 21 the draft permit states, "The facility shall be operated and maintained in such a manner that emissions of any listed TAPs from the facility, including fugitive emissions, will not exceed TPERs listed in 15A NCAC 2Q .0711(a)." As explained in my General Comments, this is a misapplication of the TPER benchmarks. The permit must set enforceable limits to comply with AALs, not TPERs.

Finally, the draft permit at Condition 21.b contains an impossible condition:

> PRIOR to exceeding any of these listed TPERs, the Permittee shall be responsible for obtaining a permit to emit TAPs and for demonstrating compliance with the requirements of 15A NCAC 2D .1100 "Control of Toxic Air Pollutants."

"Prior" is all caps in the permit apparently for emphasis. Again, it is like getting directions to a meeting place which tell you to "Turn left before you get to the service station." The draft permit, once issued, will grant the owner the ability to operate with impunity because there is late enforcement if at all.

Multiple Pollution Sources Require Additional Controls

In addition to the two proposed paving facilities, there is a third one in the area which was permitted in 2018: Carolina Sunrock at 4266 Wrenn Road, Prospect Hill. On the following page is a compilation of some of the toxic air pollutants from the three sites, based on the state permits.

[8] Determination of Ambient Air Concentration 15A NCAC 02D .1106(a)

Annual Toxic Air Pollutants From Three Asphalt Plants in Caswell County

Pollutant	ID 1700015	ID 1700016	ID 1700017	Total
Carbon monoxide	193,516	65,000	78,000	336,516
Total organic compounds	65,498	22,000	26,400	113,898
Volatile organic compounds	47,635	16,000	19,200	82,835
Formaldehyde	4,615	1,550	1,860	8,025
Benzene	581	195	234	1,010
Xylene	298	100	120	518
Toluene	223	75	90	388

All pollutant values in pounds

The annual pollution levels above are derived from asphalt production limits granted or proposed by NC DAQ, listed below, and US EPA AP-42 air pollution emission factors.[9]

NC Facility ID	Address	Annual asphalt production
ID 1700015	4266 Wrenn Road, Prospect Hill	1,488,581 tons/year
ID 1700016	12971 NC 62 Burlington North	500,000 tons/year
ID 1700017	1238 Wrenn Road, Prospect Hill	600,000 tons/year

State regulations identify multiple sources of air pollution which require extra scrutiny to ensure public health protection as follows:

> If an acceptable ambient level in 15A NCAC 02D .1104 is exceeded because of emissions of two or more facilities and if public exposure is such that human health may be adversely affected, the Commission shall require the subject facilities to apply additional controls or to otherwise reduce emissions. In considering whether human health may be adversely affected, the Commission shall consider one or more of the following:
>
> 1) an emission inventory;
> 2) ambient monitoring;
> 3) modeling; or
> 4) an epidemiological study.[10]

Conclusion

We believe the two draft permits as written are fatally flawed because they fail to protect public health. Further, we hereby request a multiple source review be completed by the Division of Air Quality before any new permits are issued.

Respectfully submitted

Louis A. Zeller
Executive Director

[9] US EPA AP-42, Chapter 11.1 Hot Mix Asphalt Plants, Tables 11.1-7, 11.1-8 and 11.1-10 accessed 4/29/2020 at https://www3.epa.gov/ttnchie1/ap42/ch11/final/c11s01.pdf

[10] 15A NCAC 02D .1107(a) MULTIPLE FACILITIES