

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: 09/22/21

Region: Fayetteville Regional Office
County: Harnett
NC Facility ID: 4300106
Inspector's Name:
Date of Last Inspection:
Compliance Code:

Facility Data			Permit Applicability (this application only)
<p>Applicant (Facility's Name): Highland Paving - Neills Creek Township Facility</p> <p>Facility Address: Highland Paving - Neills Creek Township Facility 2520 U.S. Highway 401 N. Neills Creek Township, NC 27546</p> <p>SIC: 2951 / Paving Mixtures and Blocks NAICS: 324121 / Asphalt Paving Mixture and Block Manufacturing</p> <p>Facility Classification: Before: N/A After: Synthetic Minor Fee Classification: Before: N/A After: Synthetic Minor</p>			<p>SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other:</p> <p style="text-align: center;">GREENFIELD ASPHALT PLANT</p>
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 4300106.21A Date Received: 07/19/2021 Application Type: Greenfield Facility Application Schedule: State Existing Permit Data Existing Permit Number: N/A Existing Permit Issue Date: N/A Existing Permit Expiration Date: N/A</p>
<p>Brian Raynor Environmental Engineer (910) 485-5790 PO Box 1843 Fayetteville, NC 28302</p>	<p>John McCauley CEO (910) 485-5790 PO Box 1843 Fayetteville, NC 28302</p>	<p>Brian Raynor Environmental Engineer (910) 485-5790 PO Box 1843 Fayetteville, NC 28302</p>	
<p>Review Engineer: Jeffrey D. Cole</p> <p>Review Engineer's Signature: </p>		<p>Date: 09/22/21</p>	<p>Comments / Recommendations: Issue 10704/R00 Permit Issue Date: 09/22/21 Permit Expiration Date: 08/31/2029</p>

1. Purpose of Application:

The Highland Paving - Neills Creek Township Facility is a proposed greenfield continuous rotary drum-type hot mix asphalt facility with a 300 ton per hour rated throughput capacity to be located in Neills Creek Township outside of Lillington, NC in Harnett County. The facility has applied for a new air permit for this facility.

The facility's potential emissions of both PM₁₀ and CO exceed the 100 ton per year Title V threshold. The company has requested that the facility be classified as Synthetic Minor for PM₁₀ and CO and has requested a limit on asphalt production throughput no greater than 1,492,122 tons/yr and a limit of no more than 0.5% sulfur content by weight in the #2 fuel oil and the recycled #2 fuel oil combusted in the rotary dryer/mixer. In addition, the facility is limited to throughput of 300 tons per hour per the modeled throughput rate for 2D .1100 toxics emissions limitations.

The application did not contain any confidential information.

The facility contact for this application is Mr. Brian Raynor of Highland Paving (910) 824-1238. The company utilized a consultant to prepare the permit application. The contact at the consultant, GEL Engineering of NC Inc. is Mr. Matthew Wike, P.E. (842) 769-7378.

Invoice contact information was sent to the RCO and FRO fees coordinators on 09/21/21.

2. Description of Operation:

The Highland Paving - Neills Creek Township Facility will be a 300 ton per hour throughput capacity continuous drum-type hot mix asphalt plant. The facility will be subject to NSPS Subpart I, since the equipment was constructed after June 11, 1973. Initial startup notifications will be required in this permit, and source testing for PM and VE will also be required.

This facility will be able to utilize both Recycled Asphalt Pavement (RAP) in the asphalt mixes. A lump breaker and screening operation will be utilized to condition the RAP. Sand, aggregates and RAP are loaded into surge hoppers via a front end loader. From the surge hoppers, the materials are metered and conveyed to the mixer/dryer, where the mixture is heated to remove moisture and asphalt cement is added to form the finished asphalt product. The finished asphalt is conveyed to a 250-ton capacity storage silo, and then loaded into dump trucks for delivery to the paving site.

PM emissions from the mixer/dryer (ID No. ES1) are controlled by a Pulse Jet Bagfilter (ID No. CD1).

There are no stationary reciprocating internal combustion engines at this site.

3. Facility and Application Chronology:

- 07/19/21 FRO received the permit application package. The package included a check in the amount of \$400 for the applicable processing fees, and a zoning consistency request that had been mailed to the Harnett County Planning Department. Toxics modeling demonstration was included with the application. The application was considered complete for processing. **PERMIT APPLICATION ON**
- 08/30/21 Jeff Cole sent the toxics modeling demonstration that was included in the original permit application to RCO AQAB.
- 09/15/21 FRO received the toxics modeling review from AQAB. The review stated that the facility demonstrated compliance on a source by source basis.
- 09/15/21 Jeffrey Cole called the facility contact Mr. Brian Raynor and inquired about the proposed facility's operating hours. Mr. Raynor stated that the facility will likely operate 12 hrs/day, 6 days/wk, 52 weeks/yr.
- 09/21/21 Jeffrey Cole called the facility contact Mr. Brian Raynor and inquired about if the proposed facility was to be constructed onsite (either out of new components or parts of older plants) or if the plant will arrive onsite a package ready to set on pads and operate. Mr. Raynor confirmed that the plant comes to the site pre-constructed and pre tested for operation from the manufacturer. Under NSPS Subpart A (40 CFR 60.7(a) states, "*A notification of the date construction or reconstruction of an affected facility is commenced postmarked no later than 30 days after such date. This*

requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.” Therefore, since this proposed plant was mass-produced the proposed facility’s permit will not include any construction notification requirements.

4. Equipment, Emissions, Regulations and P.E. Seal:

The facility has requested a new greenfield permit.

A PE review was required for this application. Mr. Matthew W. Wike, Seal #029652, placed his seal on the permit application on 07/16/21.

There were no facility file "Pink Sheet" items as this is a greenfield permit.

The emissions sources are as follows:

Emission Source ID	Emission Source Description	Control System ID	Control System Description
Continuous Hot Mix Asphalt Plant, 300 tons per hour capacity			
ES1 (NSPS)	Natural gas/#2 fuel oil/recycled #2 fuel oil-fired Drum-type Aggregate Mixer/Dryer (75 mmBtu/hr maximum heat input)	CD1	Pulse-Jet Fabric Filter (10,543 square feet filter area)
ES2 (NSPS)	Truck Loadout Operation	N/A	N/A
ES3 (NSPS)	Hot Mix Asphalt Silo, 250 tons capacity	N/A	N/A
ES4 (NSPS)	Portable Recycled Asphalt Pavement (RAP) System, Consisting of one RAP Bin, one RAP Screen and one RAP Conveyor	N/A	N/A

The Insignificant/Exempt Sources are:

Source	Exemption Regulation	Source of TAPs?	Source of Title V Pollutants?
IES1 One Natural Gas/No. 2 Fuel Oil-fired Hot Oil Heater (1.2 mmBtu/hr maximum heat input)	02Q .0102 (h)(5)	Yes	Yes
IES2 One Liquid Asphalt Cement Storage Tank (30,000 gallon capacity)	02Q .0102 (h)(5)	Yes	Yes
I-AGGR Aggregate Handling System	02Q .0102 (h)(5)	No	Yes

5. Zoning

A Zoning Consistency Determination request was included with the permit application package. The completed Zoning Consistency Determination was dated and received on 07/19/21, from the Harnett County Director of Development Services - Planning Services was signed by Mark Locklear indicating that *"The proposed operation IS consistent with applicable zoning ordinances."*

6. NSPS, NESHAP, PSD, Attainment Status and 112(r):

- **NSPS** –
 - The Drum Dryer/Mixer (Source ID No. ES1) is subject to NSPS Subpart I as the equipment was constructed after June 11, 1973. This is a portable plant. The facility is required to submit notification of plant startup and perform stack testing for PM and VE within 180 days of startup.
 - The Liquid Asphalt Cement Storage Tank (IES2) is **not** subject to NSPS Subpart Kb "Volatile Organic Liquid Storage Vessels" because the low vapor pressure of the storage tank contents.
 - The Portable Recycled Asphalt Pavement (RAP) System (ES4) is **not** subject to NSPS Subpart OOO "Nonmetallic Mineral Processing Plants" as this facility will not have crushers or grinding mills.
- **NESHAP** - There are no current NESHAP regulations that apply to this facility. There are no stationary internal combustion engines on the site.
- **PSD** – The facility potential emissions before limits are above PSD thresholds for PM₁₀. The PSD minor source increment baseline tracking has been triggered for PM₁₀ and SO₂ in Harnett County by Burlington-Erwin on 10/16/1978. This modification expands the PM₁₀ increment by 0.005 lbs/hr.
- **Attainment Status** – Harnett County is in attainment for all pollutants.
- **112(r)** - The facility does not store any listed 112(r) chemicals above the threshold levels and is not required to maintain a written Risk Management Plan.

7. Facility Emissions Review:

Expected actual emissions are from the permit application, and are based on operation 12 hrs/day, 6 days/wk, 52 weeks/yr (3,744 hrs/yr). Potential emissions before controls are based on operation at 300 tons/hr, 8,760 hrs/yr. Potential emissions after controls/limits are based on 1,492,122 tons/yr production with fabric filter control. Calculations of all criteria pollutants, except potential emissions before controls/limits for PM and PM₁₀, are from the NC DAQ Asphalt Emissions Calculator Revision G, 08/30/2019, using worst-case emissions from either natural gas or #2 fuel oil, using 0.5% maximum Sulfur content of #2 fuel oil. Potential emissions before controls/limits for PM and PM₁₀ were calculated directly from AP-42 emission factors which were pound of pollutant per ton of product (uncontrolled dryer PM emission factor = 28 lb/ton and uncontrolled dryer PM₁₀ emission factor = 6.5 lb/ton; taken from Table 11.1-3. Particulate Matter Emission Factors for Drum Mix Hot Mix Asphalt Plants).

Pollutant	Expected Actual Emissions Tons/yr	Potential Emissions Before Controls/Limits Tons/yr	Potential Emissions After Controls/Limits Tons/yr
PM	10.93	20,889	25.57
PM ₁₀	7.74	4,849	18.11
SO ₂	1.16	85.96	49.96
NO _x	8.61	73.02	41.78
CO	42.34	174.33	99.06
VOC	15.34	63.21	35.90

8. Facility-Wide Air Toxics Review:

Projected actual emissions calculations show that emissions of Arsenic, Benzene, Cadmium, Formaldehyde, Mercury, and Nickel exceed their respective TPERs. An Air Dispersion Modeling Analysis was received by DAQ AQAB on 07/19/2021. The modeling was completed assuming a maximum asphalt hourly production rate 300 tons of asphalt/hr hour and a maximum annual asphalt production rate and 1,492,122 tons/yr. A review of this modeling by Tom Anderson of AQAB dated 09/15/2021 indicated that the respective AALs for these toxics will not be exceeded at the property boundaries.

Results of the Air Dispersion Modeling review are as follows:

Pollutant	Averaging Period	TPER	Potential Emissions	Ambient Air Concentration at Property Boundary $\mu\text{g}/\text{m}^3$	AAL $\mu\text{g}/\text{m}^3$	% of AAL
Arsenic	Annual	0.053 lb/yr	0.836 lb/yr	1.0E-04	0.0021	4.8
Benzene	Annual	8.1 lb/yr	591 lb/yr	5.46E-02	0.12	45.5
Cadmium	Annual	0.37 lb/yr	0.612 lb/yr	7.00E-02	5.50E-03	1.3
Formaldehyde	1-hour	0.04 lb/hr	0.956 lb/hr	12.4	150	8.3
Mercury (vapor)	24-hour	0.013 lb/day	0.0187 lb/day	3.28E-03	0.60	0.6
Nickel	24-hour	0.13 lb/day	0.454 lb/day	7.93E-02	6.0	1.3

As a result of the Air Dispersion Modeling Analysis, a 02D .1100 condition was added to the permit which includes limitations on emissions of the above toxics. Operations Restrictions in this condition limit asphalt hourly production to no more than 300 tons/hr and a maximum annual asphalt production of 1,492,122 tons/yr. Recordkeeping and annual reporting are also required.

A number of other toxic pollutants are emitted at the facility. The emissions of these pollutants are below their respective TPER, and were not modeled. These pollutants have been added to a 02Q .0711 toxics condition that has been incorporated into the permit.

9. Facility Compliance Status:

This is a greenfield facility, with no prior compliance history.

10. Stipulation Review:

Regulation	Affected Sources	Emission Limits or Requirements
15A NCAC 02D .0202	Facility-wide	Permit Renewal & Emission Inventory
15A NCAC 02D .0506	ES1	$E = 4.9445 * (P)^{0.4376}$ for $P < 300$ tons/hr, or $E = 60$ lbs/hr for $P \geq 300$ tons/hr
15A NCAC 02D .0516	Facility-wide	$SO_2 \leq 2.3$ lbs/mmBtu
15A NCAC 02D .0521	Facility-wide	Opacity ≤ 20 %
15A NCAC 02D .0524 NSPS Subpart I	Facility-wide	PM and Opacity Limits Startup Notifications Source Testing for PM ₁₀ and VE Testing to be conducted within 60 days of achieving the maximum production rate, but not later than 180 days after the initial operation date
15A NCAC 02D .0535	Facility-wide	Notification requirement
15A NCAC 02D .0540	Facility-wide	Control fugitive dust emissions
15A NCAC 02D .0605	ES1	Testing Testing for PM and Filterable PM per 02D .0506 and NSPS Subpart I Testing to be conducted within 60 days of achieving the maximum production rate, but not later than 180 days after the initial operation date
15A NCAC 02D .0611	CD1	Fabric Filter Requirements I&M, annual internal inspection, and recordkeeping
15A NCAC 02D .1100	Facility-wide	Arsenic, Benzene, Cadmium, Formaldehyde, Mercury, and Nickel Emissions limits - from Air Dispersion Modeling submitted 07/21/21 Asphalt Production $\leq 1,492,122$ tons/yr Recordkeeping Annual Report
15A NCAC 02D .1806	Facility-wide	No objectionable odors beyond the facility's boundary
15A NCAC 02Q .0309	Facility-wide	Startup Notification due within 15 days after these events
15A NCAC 02Q .0315	Facility-wide	PM ₁₀ and CO < 100 tons/yr, production limit 1,492,122 tons/yr recordkeeping and annual reporting
15A NCAC 02Q .0317 PSD Avoidance	Facility-wide	PSD Avoidance PM ₁₀ < 250 tons per consecutive 12-month period Facility will comply by complying with the synthetic minor limit.

15A NCAC 02Q .0317 Recycled Fuel Oil	Facility-wide	Certification that recycled fuel oil is equivalent to unadulterated fuels per permit specifications Maximum Sulfur content 0.5% by weight for #2 fuel oil
15A NCAC 02Q .0711	Facility-wide	Toxics emission rates requiring a permit


10. Conclusions, Comments, and Recommendations:

It is recommended that permit no. 10704R00 be issued to Highland Paving - Neills Creek Township Facility.


Note that startup notification, and initial source testing for PM and VE are required. These requirements have been added to the Pink Sheet in the facility file.

Modifications to the Permit Writer output:

- Adjusted column widths, merged cells, shaded and highlighted throughout to improve appearance and enhance readability.
- Added a note to the cover letter that informs the company that construction and startup notifications are required.
- Added a note to the cover letter that informs the company that source testing is required within 60 days of achieving the maximum production rate but not later than 180 days after the initial startup date, per the 02D .0524 and 02D .0605 permit conditions.
- Modified the 02D .0605 condition to include Visible Emissions testing using the NSPS limitations and modified the 90 day language to coincide with the NSPS testing requirements "...within 60 days of achieving the maximum production rate but not later than 180 days after initial startup..."
- Combined the operations restrictions, recordkeeping requirements, and reporting requirements of the 02Q .0317 PSD Avoidance stipulation into a single condition.

Review Engineer:  Date: 9/22/21

Permit Coordinator:  Date: 09/22/2021

DAQ Supervisor:  Date: 9/22/2021

