Memorandum

Florida Department of Environmental Protection

TO: Rick Bradburn
THROUGH: Armando I. Sarasua, P.E.
FROM: Howard Ard
DATE: April 17, 2012
SUBJECT: Evaluation Summary for Peavy and Son Construction Co., Inc., Midway Asphalt Concrete Plant 7775144-006-AO, Gadsden County

We recommend issuing a renewal air operation permit to Peavy and Son Construction Co., Inc., to operate their Midway Asphalt Concrete Plant. This renewal permit follows Permit No. 7775144-005-AO, effective April 13, 2007.

Process Description

This facility is a relocatable asphalt concrete plant constructed and initially permitted on October 30, 2001. The drum mix asphalt concrete plant, manufactured by ASTEC Industries Inc., has an operating capacity of 300 tons of asphalt mix per hour. The plant is primarily fired by natural gas; however, the facility may operate using No. 2 fuel oil with a maximum sulfur content of 0.4% by weight. The dryer is rated at a maximum heat input of 96.8 MMBtu/hr.

Aggregate material is supplied by rail, and sand is shipped on-site by truck. These materials are moved from stockpiles to a six-bin cold feed storage hopper by front end loader then conveyed by belt system in predetermined proportions to a counter flow double barrel rotary drum dryer. Aggregate and sand are dried in the inner drum, and then mixed with hot asphalt cement, additives and up to 25% reclaimed asphalt pavement (RAP) in the outer drum. Mixed asphaltic concrete from the dryer is moved by an enclosed drag conveyor to three heated storage silos for storage and truck loading.

Pre-crushed RAP is brought on-site by truck and stored in open stock pile. Hot asphalt cement is delivered to the plant by truck tanker and pumped into two 20,000 gallon heated storage tanks. Dry additive is delivered to the site by truck tanker and pneumatically loaded into the 500 barrel vertical dry additive silo.

Pollution Control Equipment

Particulate emissions from the plant are controlled by an ASTEC baghouse. Fines from the baghouse are recycled into the asphalt mix.

The Dry Additive Silo is exempt from permitting; however, particulate emissions from the silo are controlled by a pulse jet baghouse atop the silo.

Fugitive emissions at the facility resulting from uncontrolled process emissions, open stock piles and vehicular traffic are controlled by standard operational practices and watering.

Environmental Impact

Emissions calculations are based on emission factors for Drum Mix Hot Mix Asphalt Plant fired by No. 2 fuel oil.

Airborne Contaminant Emitted	Emission Factors (fuel oil)	FAC Rule	Estimated Emissions (300 PPH; 3000 hrs/yr)		Synthetic Minor Emissions (No. 2 fuel oil 1.2MMGPY; Production 500,000 T/yr) (Tons/year)	
	lbs/ton		lbs/hr	T/yr	Allowable	Estimated
PM_{total}	0.033[a]	62-204.800(8)(b)12	9.9	14.85	10.75[d]	8.25
SO_2	0.011[b]	62-4.070	3.3	4.95		2.75
VOC	0.032[c]		9.6	14.40		8.00
NOx	0.055[b]		16.5	24.75		13.75
CO	0.13[b]		39.0	58.50		32.50
Objectionable Odors		62-296.320(2)	N/A	N/A	None allowed off plant property	
VE[2]		62-204.800(8)(b)12	N/A	N/A	Not more than 20% opacity	

a. Emission Factor for PM_{total} from AP-42 Table 11.1-3 (Baghouse with fabric filter).
b. Emission Factors for SO_2, NOx and CO from AP-42 Table 11.1-7. (Fifty percent of fuel-bound sulfur retained in product, remainder emitted as SO_2).
c. Emission Factor for VOC from AP-42 Table 11.1-8.
d. Permit limit for PM based on 0.04 grains/dscf, flow rate of 20, 909 dscfm, and 3,000 hours operation:
PM_{total} = (0.04gr/dscf)x(20,909 dscf/min)x(60 min/hr)x(1lb/7,000 gr)x(3,000 hours)x(1ton/2,000 lbs).

Applicable Rules & Regulations

The facility is regulated under NSPS, 40 CFR 60 subpart I (Standards of Performance for Hot Mix Asphalt Facilities) and Rule 62-210.300(3)(c)2., F.A.C. (Conditional Exemptions from Title V Permitting). The facility is a synthetic minor source with annual throughput limited to 500,000 tons of asphalt concrete per year, fuel oil consumption limited to 1.2 million gallons in any consecutive twelve-month period and fuel oil sulfur content is limited to 0.4 percent by weight. Application of Rule 62-210.300(3)(c)2.a. - j., F.A.C. allows the facility to be conditionally exempt from Title V permitting.

Potential emissions from the asphalt cement heater and the vertical dry additive silo (with baghouse) meet the criteria for a generic exemption [Rule 62-210.300(3)(b)1, F.A.C.], and are therefore exempt from permitting.

Compliance Monitoring

Compliance testing is to be conducted once every federal fiscal year for both PM and VE.

Compliance History

File review shows one enforcement action taken within the last five years. Enforcement action was taken in 2010 due to failure to meet the PM emission limit. Warning letter NWAP 777-1864 was issued October 12, 2010, short form consent order OGC File No. 10-3535-20-AS was executed November 29, 2010 and the case was closed. Test reports for 2007 through 2011 show the facility to be in compliance for VE and PM on all tests with the exception of the PM test conducted on August 18, 2010 which resulted in enforcement action noted above. A follow-up PM test conducted on August 27, 2010 found the facility to be in compliance.

Fee Summary

This is an AO2A ($1,500 fee) minor source with stack test.

RB/ha/c