



January 23, 2017

Mr. Marshall Williams
Brookville Services, LLC
4 S. Pickering Street
Brookville, PA 15825

Re: Brookville Model 25T174D locomotive utilizing a Deutz BF4M1013 diesel engine (MSHA ID 07-ENA040007-Part7) 173HP @ 2300 RPM with a DST Management System emissions control system using an MSHA Approved DST M30-411-01R DPM Filter (96% Efficient) and an AirFlow Catalyst Inc. MinNoDoc #08-19430 diesel oxidation catalyst.

Dear Mr. Miller:

Chapter 4 of the "Bituminous Coal Mine Safety Act" (the Act) provides for the use of diesel-powered equipment in underground bituminous coal mines. Section 424 of the act created a Technical Advisory Committee ("TAC") for the purpose of advising the Department regarding implementation of Chapter 4 and evaluation of alternative technology or methods for meeting the requirements of Chapter 4.

On October 18, 2016 Brookville Equipment Corp. submitted a request to the Technical Advisory Committee ("TAC") and Bureau of Mine Safety to have this piece of equipment inspected. On October 18, 2016, The DEP Bureau Director requested the TAC to review and comment on this request.

The TAC and DEP traveled to Bailey Mine in Wind Ridge, PA to conduct their investigation and issued their report recommending temporary approval on November 22, 2016. Temporary approval was granted on December 1, 2016. Permanent approval was recommended at the TAC meeting on January 18, 2017.

Based on the recommendation of the TAC and the equipment approval staff, your request for approval is granted.

If you have any questions on this request, please contact me at either cocarson.pa.gov or at 724.404.3154.

Sincerely,

/s/

Colvin C. Carson
Director

cc: Ron Bowersox, TAC
Paul Borchick, TAC



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

December 1, 2016

Mr. Paul J. Borchick
Manager Mine Health & Safety
CNX Coal Resources, LP
1000 CONSOL Energy Drive
Canonsburg, PA 15317-6506

Re: Temporary Approval – Brookville Model 25T174D Diesel Locomotive

Dear Mr. Borchick:

This is in response to your email dated November 30, requesting temporary approval on behalf of Mike Caprini, Diesel Maintenance Supervisor, Bailey Mine, for use of the Brookville Model 25T174D Diesel locomotive at the Bailey Mine. The next Technical Advisory Committee on Diesel-Powered Equipment (TAC) meeting is scheduled for January 11, 2017, at which time the final approval for this equipment will be recommended by the TAC.

The TAC and the DEP traveled to the Bailey Mine in Wind Ridge, PA, to evaluate this equipment. Subsequently, the TAC issued a recommendation dated November 22, 2016, to the Bureau recommending the approval of the equipment.

Temporary approval is granted for this equipment to be used prior to the regular scheduled TAC meeting that is to be held on January 11, 2017.

Sincerely,

A handwritten signature in black ink, appearing to read "Colvin C. Carson".

Colvin C. Carson
Director

Enclosures

cc: Ron Bowersox, TAC
Paul Borchick, TAC

APS 925191

**Pennsylvania Technical Advisory Committee
On Diesel Powered Equipment**

Paul Borchick
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Email: paulborchick@consolenergy.com

Ron Bowersox
(724) 726-8987 (Home)
(724) 479-8692 (Office)
Email: umwarbowersox@yahoo.com

November 22, 2016

Colvin Carson, Director
Bureau of Mine Safety
Department of Environmental Protection
131 Broadview Road
New Stanton, PA 15672

RE: Brookville Model 25T174D locomotive utilizing a Deutz BF4M1013C diesel engine (MSHA ID 07-ENA040007 - Part 7) 173HP @ 2300 RPM with a DST Management System emissions control system using an MSHA Approved DST M30-411-01R DPM Filter (96% Efficient) and an AirFlow Catalyst Inc. MinNoDoc #08-19430 diesel oxidation catalyst.

Dear Mr. Carson:

Chapter 4 of the "Bituminous Coal Mine Safety Act" (the Act) provides for the use of diesel-powered equipment in underground bituminous coal mines. Section 424 of the act created a Technical Advisory Committee ("TAC") for the purpose of advising the Department regarding implementation of Chapter 4 and evaluation of alternative technology or methods for meeting the requirements of Chapter 4.

Background

On October 12, 2016 Brookville Equipment Corp. submitted a request for evaluation of their Brookville Model 25T174D locomotive utilizing a Deutz BF4M1013C diesel engine (MSHA ID 07-ENA040007 - Part 7) 173HP @ 2300 RPM with a DST Management System emissions control system using an MSHA Approved DST M30-411-01R DPM Filter (96% Efficient) and an AirFlow Catalyst Inc. MinNoDoc #08-19430 diesel oxidation catalyst. This request was simply to utilize a different diesel oxidation catalyst from a previously approved engine and emission control package.

On October 18, 2016 the Director of BMS requested the TAC to evaluate the Brookville Model 25T174D locomotive engine and emission package and to advise the Department regarding the TAC's recommendation as to whether the referenced equipment meets requirements of Section 403 of the Act. The engine and emissions control package has not been previously approved under Section 403 of the Act.

The diesel power package includes the following items:

- Deutz BF4M1013C diesel engine (MSHA ID 07-ENA040007 - Part 7) 173HP @ 2300 RPM
- DST Management System emissions control system using an MSHA Approved DST M30-411-01R DPM Filter (96% Efficient).
- DST heat exchanger part number M115-301-21
- AirFlow Catalyst Inc. MinNoDoc #08-19430 diesel oxidation catalyst.

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Bureau of Mine Safety
New Stanton

More detailed information on the specifications of the diesel power package is included on the General Specification Sheet which is attached as Attachment 1.

Investigation

On November 18, 2016 the TAC and DEP traveled to Bailey Mine in Wind Ridge, PA to inspect the equipment when it became available. The TAC evaluated the engine and exhaust emissions package.

Emissions testing of the engine and after-treatment system were performed, as well as exhaust gas temperature monitoring and stall test procedure. The results of the emission tests showed the engine was performing within MSHA's approval specifications. The CO measured on the clean side of the emissions control system was 14 ppm when measured during the stall test. The raw CO measured was 69 ppm during the stall test.

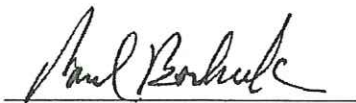
In addition to the testing that was conducted, our investigation and our observations confirmed that the diesel power package is capable of meeting all the requirements of Section 403 of the Act.

Recommendation

Our recommendation is based upon the data supplied by Brookville Equipment Corporation, the results of the tests conducted on November 18, 2016, as well as the data acquired and observations made during our investigation. The power package utilizing a Deutz BF4M1013C diesel engine (MSHA ID 07-ENA040007 - Part 7) 173HP @ 2300 RPM with a DST Management System emissions control system using an MSHA Approved DST M30-411-01R DPM Filter (96% Efficient) and an AirFlow Catalyst Inc. MinNoDoc #08-19430 diesel oxidation catalyst meets all requirements of Section 403 of Chapter 4 of the Pennsylvania Bituminous Coal Mine Safety Act. As such, we are recommending approval of the above described diesel power package

This recommendation is provided with the understanding that the General Specification Sheet (Attachment 1) be strictly adhered to.

If the Director should receive a request to use this equipment prior to the next scheduled TAC meeting, the TAC will recommend temporary approval until the next regular scheduled TAC meeting on January 11, 2017 at which time permanent approval will be recommended.



Paul Borchick



Ron Bowersox

BROOKVILLE EQUIPMENT CORP.
MODEL 25T174D
Diesel 25 Ton Locomotive
General Specifications of the Diesel-Powered Equipment Package

Engine Manufacturer		Deutz		
Engine Model		BF4M1013FC		
Horsepower		173 HP		
Rated Speed		2300 RPM		
Manufacturer's Recommended Exhaust Back-pressure (InH ₂ O)		30 Inches Water Gauge		
Maximum Exhaust Out Temperature		950 deg F		
MSHA Engine Approval		MSHA Part 7		
MSHA Certification No.		07-ENA040007		
Rated Speed		2300 RPM		
Rated Horsepower		173 HP		
Exhaust GAS Flow (SCFM)		996 CFM		
ISO 8178-1 Average DPM (gr/hr)		6.2 gr/hr		
Average Ambient DPM Level (mg/m ³)		0.021 mg/m ³		
MSHA Ventilation Rate (CFM)		7,000 CFM (Part 7)	CFM (Part 32)	
Pa. State Ventilation Rate (CFM)				
Emissions Control System		DST Management System		
Fuel Injection Pump	Make P/N	Bosch -- Belt driven rotary fuel lift pump		
Oxidation Catalyst	Make P/N	Airflow Catalyst Inc MinNoDoc 08-10430		
Heat Exchanger	Make P/N	Dry Systems Technologies M115-301-21		
DPM Filter	Make P/N	Dry Systems Technologies M30-411-01R	Model Filter Size	M249 (Total System) M30 (Filter) 16 x 12 in Outer 10 x 6 in Inner
	Air Rating (CFM)	2100 CFM	Filter Length	20 in
	Surface Area (In ²)	42,231 In ²		
	Efficiency	98%		
	Recommended Exhaust Back-Pressure	Less than 30 Inches Water Gauge		

ATTACHMENT 1