Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

DEVAL L. PATRICK
Governor

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Secretary

KENNETH L. KIMMELL
Commissioner

August 30, 2013

Mr. Jason Ouellette
Westfield Ready-Mix, Inc.
403 Paper Mill Road
Westfield, Massachusetts 01085

Re: PVAPCD – Westfield
Regulation 310 CMR 7.02(5)
Appl. #1-P-10-003; Trans. #X231114
Rock Crushing/Concrete Batch Plant

Final Approval amended

Dear Mr. Ouellette:

The Massachusetts Department of Environmental Protection, Western Regional Office ("MassDEP") has completed its technical review of the Westfield Ready-Mix, Inc. Plan Application, submitted on February 23, 2010 for a modification to an existing rock crushing / concrete batch plant located at 403 Paper Mill Road in Westfield, Massachusetts. Westfield Ready-Mix is proposing to add one engine/generator and one dust collector to their existing operations. The additional equipment will not result in an increase in actual or potential emissions above that which is already permitted in MassDEP Approval #1-P-95-048 issued October 20, 1995. This application bears the seal and signature of Mr. David L. Bramley, Massachusetts Professional Engineer No. 28098.

MassDEP received on August 29, 2013 a request for an administrative amendment to the original October 1, 2010 permit to correct the oil use limits in Table 2 for the two facility engine/generators. This Administrative Amendment does not change the allowable annual emissions that were stated correctly in the original permit.

EXISTING FACILITY

The equipment at the existing facility approved in accordance with MassDEP Approval #1-P-95-048 (10/20/1995) includes the following:

Fuel burning equipment:

- **Cummins Model NT-855 diesel engine (2.6 MMBtu/hr heat input capacity)**
- **Natco Industrial Boiler (2.66 MMBtu/hr heat input rating)**
- **4 space heaters (0.56 MMBtu/hr heat input rating each)**

Process and material handling equipment:

- **plant feed hopper**
- **screen grizzly bar**
- **primary jaw crusher rated at 150 tons per hour**
- **secondary cone crusher**
- **belt conveyors & screening operations**
- **concrete batching**

The Detroit, Model 8063-7416 diesel engine/generator referenced in the 1995 approval was never installed.

NEW EQUIPMENT

The new process equipment at the facility will include:

- **One Caterpillar Diesel oil fired electric generator – Model 3412CDITA**
  The electric generator is rated at 6.12 MMBtu/hr heat input capacity, 896 brake hp, and 44.5 gallons per hour fuel consumption rate.

- **One Cartridge Dust Collector by Torit – Model TD4600**
  The dust collector, controlling PM emissions from the truck loading/mixing operations, holds 24 cartridges and is rated at 8319 acfm wet, 2-inches pressure drop, 0.002 gr/dscf outlet emission rate, and 99.99% particulate removal efficiency.

  Each cartridge has a filter area of 226 sq ft. The total filter area is equal to 24 x 226 sq ft = 5,424 sq ft. The filter cartridges have a Minimum Efficiency Reporting Value (MERV) of 13, based on a face velocity of 118 feet per minute and loading up to four inches water gauge.

PROCESS DESCRIPTION

Westfield Ready-Mix is a rock crushing facility that processes raw materials (ledge, gravel, sand, cement, and various concrete additives) received from other locations. Trucks deliver the raw materials to the site, which is stock piled onto the ground for processing. These materials can then be transferred to the plant feed hopper by front-end loader.

Two diesel electric generators power the processing equipment.

Raw material feed from the *plant feed hopper* to a *screen grizzly bar* at a rate up to 250 tons per hour. Material that passes through is divided into one of two production paths: crushing (material > 3") and sand plant (material > ½" but < 3").

Crushing

Stone that is > 3" is loaded into the *primary jaw crusher* (rated at up to 150 tons per hour) via a front-end loader. The crushed material continues via conveyer belt to another vibrating screen for additional size separation. Material that passes through the screen (< ½") is stock piled on the ground. Material that is > ½" continues to the

secondary cone crusher. The crushed material (a total of no more than 250 tons per hour) continues via conveyer belt to another vibrating screen for additional size separation. The material that passes through the screen is < 5/16" and is stock piled in the dust pile for future use. The material that is too large to pass through the screen (5/16" to < 1") becomes a final product called “3/4" stone”.

Some of the aggregate materials are sold without additional processing, while other aggregate materials are used to batch concrete at the batching plant.

Sand Plant
Material from the secondary cone crusher continues to the EXTEC vibrating screen. Material that passes through the EXTEC vibrating screen continues to another vibrating screen for additional size separation. Material that is larger than 5/16" is collected in a pile on the ground as a finished product called “3/8" stone”. Material that is < 5/16" continues to the ORTNER sand washing plant. This process yields two streams of materials: finished sand for concrete batching and “fines” collected for future use.

Concrete Batching Plant
Westfield Ready-Mix produces four concrete products:

- 3/8" gravel stone concrete
- 3/4" gravel stone concrete
- 3/4" trap rock concrete made from trap rock/basalt rock purchased off-site
- 1-1/2" trap rock concrete made from trap rock/basalt rock purchased off-site

Various sands, stone, slag, cement, other “add-mixtures” for specific applications, and city water are mixed together to form concrete. The sand and stone are weighed on the “aggregate scale”. The cement and slag are weighed on the cement scale (with dust collection). The “add-mixtures” and city water are metered. Batched concrete is transported to the customer.

Left over concrete has three uses:

- Batching into new concrete
- Making concrete blocks
- Making concrete strips

STACKS AND EMISSIONS

Fuel burning equipment consists of two ULSD oil fired electric generators, one boiler, and four space heaters. Emissions from the stacks of the generators and boiler stack (and fugitive for the space heaters) include water and other products of combustion (SOx, NOx, CO, CO_2,, TOC, NH_3, VOC, and Particulate Matter (PM)).

Fugitive Emissions
Fugitive emissions of PM are generated by front-end loaders, vibrating grizzly feeder, jaw crusher, cone crusher, conveyor belts, concrete batching plant, stock piling of aggregate, and vehicle traffic on unpaved roads.

Raw material processing rates for ledge, gravel, and sand were established at 250 tons per hour total. The large primary crusher is listed at 150 tons per hour and 100 tons per hour for the balance to the processing of smaller materials. No processing limits were established for the concrete batching operations.

Particulate Matter (PM) Control:
Water spray is used for PM suppression at the crushers, which also provides a wet material transported by the conveyer belt systems to the screen separators and then to piles on the ground. The Facility uses water spray, as needed, on non-paved roads to control fugitive dust emissions.

Installed Dust Collectors:
Dust collectors are installed on each of the three silos: 2-Cement and 1-Slag. There is also a dust collection system installed on the Cement Scale at the Concrete Batching Plant. According to the manufacturers (McNeilus and Griffin), the installed dust collectors have control efficiencies approximately equal to 99.6% to 99.9% down to 1 µm particle size.

EMISSION LIMITS
Potential emission rates of the criteria pollutants have been established in MassDEP Approval #1-P-95-048 (10/20/1995), and are unchanged in the current application:

PM	29.9 tpy
PM_{10}	8.0 tpy
$PM_{2.5}$	3.3 tpy
SOx	0.4 tpy
NOx	6.8 tpy
VOC	0.6 tpy
CO	1.5 tpy

PROVISIONS OF APPROVAL
It is the opinion of the MassDEP that the installation and operation of the Westfield Ready-Mix rock crushing/concrete batch plant at 403 paper Mill Road in Westfield, Massachusetts is consistent with modern air pollution control technology and Best Available Control Technology. The MassDEP hereby issues approval for the equipment and installation described herein and in the submittal pursuant to Regulation 310 CMR 7.02(5) of the “Regulations for the Control of Air Pollution in the Pioneer Valley Air Pollution Control District”, subject to the following provisions:

1. ***Please be advised that your facility may be subject to the requirements of 40 CFR Part 60, Subpart OOO (New Source Performance Standards for Non-Metallic Mineral Processing Plants). Since MassDEP has not accepted delegation of this NSPS, you are responsible for contacting USEPA to obtain this determination.***

If Westfield Ready-Mix is subject to Subpart OOO, there may be additional/more stringent emissions limits, monitoring, recordkeeping, and reporting requirements that are applicable to your facility than contained herein, and any reports required by Subpart OOO must be submitted to the USEPA Region 1 office.

2. Westfield Ready-Mix shall not exceed the emission limits, fuel use restrictions, and operating hour restrictions contained in Tables 1, 2, and 3, as follows:

Table 1

Fuel Utilization Equipment – Emission Limits

Fuel Equipment Emission Unit	Fuel	Pollutant	Emissions (1) (2)	
			lb/hr	tons per year
Cummins engine/ generator	ULSD oil (< 0.0015% S by weight)	$PM/PM_{10}/PM_{2.5}$	0.25	0.1
		SOx	0.70	0.2
		NOx	3.2	2.3
		CO	2.3	0.5
		VOC	0.87	0.2
Caterpillar engine/ generator	ULSD oil (< 0.0015% S by weight)	$PM/PM_{10}/PM_{2.5}$	0.16	0.1
		SOx	0.46	0.3
		NOx	7.0	4.5
		CO	1.5	1.0
		VOC	0.57	0.4
Natco Boiler	ULSD oil (< 0.0015% S by weight)	$PM/PM_{10}/PM_{2.5}$	–	negligible
		SOx	–	negligible
		NOx	0.01	0.01
		CO	0.001	0.003
		VOC	–	negligible
Space Heaters	ULSD oil (< 0.0015% S by weight)	$PM/PM_{10}/PM_{2.5}$	–	negligible
		SOx	–	negligible
		NOx	0.013	0.03
		CO	0.0033	0.01
		VOC	–	negligible
Facility Wide	ULSD oil (< 0.0015% S by weight)	S in fuel	0.0015% by weight	
		visible emissions	No visible emissions during normal operations except during startup, shutdown and malfunctions	

(1) Based on AP-42 Emission Factors

(2) Based on a "rolling 12 month total". Compliance with a rolling 12-month total is determined ***each month*** by adding the "fuel use" or "hours of operation" for each of the previous 12 months and comparing the total with the amount specified in the table above.

Table 2

Fuel Utilization Equipment – Fuel Use/Operating Limits			
Emission Unit	**ULSD oil (<0.0015% S by wt.)**		**Operating Hours**
	gallons/month (1)	**gallons/year (2)**	
Cummins engine/generator	633	7,592	1280 hr/year (2), and 8 hr/day, 5 days/wk, 32 wk/yr
Caterpillar engine/generator	1,855	14,857	1280 hr/year (2), and 8 hr/day, 5 days/wk, 32 wk/yr
Natco Boiler	116	1,393	4704 hr/year (2), and 24 hr/day, 7 days/wk, 28 wk/yr
Space Heaters	255	3,061	4704 hr/year (2), and 24 hr/day, 7 days/wk, 28 wk/yr

(1) Based on a calendar month
(2) Based on a "rolling 12 month total". Compliance with a rolling 12-month total is determined ***each month*** by adding the "fuel use" or "hours of operation" for each of the previous 12 months and comparing the total with the amount specified in the table above.

Table 3

Process Equipment – Mass Emission Limits			
Process Equipment Emission Unit	**Raw Material**	**Pollutant**	**Emissions (1) (2) (tons per year)**
Concrete Batch Plant	stone, gravel, sand, cement, and concrete additives	PM Total	3.65
		PM_{10}	1.19
		$PM_{2.5}$	2.46
Crushing & screening	stone, gravel, sand, cement, and concrete additives	PM Total	0.21
		PM_{10}	0.08
		$PM_{2.5}$	0.01
Unpaved Roads	stone, gravel, sand, cement, and concrete additives	PM Total	25.86
		PM_{10}	6.59
		$PM_{2.5}$	0.66
Facility Wide	stone, gravel, sand, cement, and concrete additives	Opacity	No visible opacity during normal operations

(1) Based on AP-42 Emission Factors
(2) Based on a "rolling 12 month total". Compliance with a rolling 12-month total is determined ***each month*** by adding the "fuel use" or "hours of operation" for each of the previous 12 months and comparing the total with the amount specified in the table above.

Table 4

Process Equipment – Stack Emission Limits			
Emission Unit	**Dust Collector**	**Pollutant**	**Emission Limits**
Concrete Batch Plant	Truck Loading (Torit Dust Collector)	PM_{10}	≥ 99.99 % collection efficiency ≤ 0.002 gr/acf; ≤ 0.14 lb/hr
	Cement Batcher Scale (McNeilus dust collector)	PM_{10}	≥ 99.6 % collection efficiency
Crushing, screening, & storage	Silo # 1 (McNeilus dust collector)	PM_{10}	≥ 99.6 % collection efficiency
	Silo #2 (Griffin dust collector)	PM_{10}	≥ 99.9 % collection efficiency
	Silo #3 (Griffin dust collector)	PM_{10}	≥ 99.9 % collection efficiency
(1) Based on AP-42 Emission Factors **(2)** Based on a "rolling 12 month total". Compliance with a rolling 12-month total is determined ***each month*** by adding the "fuel use" or "hours of operation" for each of the previous 12 months and comparing the total with the amount specified in the table above.			

Testing Requirements

3. MassDEP may, in accordance with Regulation 310 CMR 7.13, require source emission testing ("stack testing") at any time. All emission testing shall be conducted in accordance with Regulation 310 CMR 7.13(a) - (d).

4. Westfield Ready-Mix shall ensure that the facility is designed, constructed, operated and maintained such that at all times:

   a. No condition of air pollution will be caused by emissions of sound as provided in 310 CMR 7.01;
   b. No sound emissions resulting in noise will occur as provided in 310 CMR 7.10 and MassDEP's Policy 90-001.

5. Westfield Ready-Mix shall conduct noise testing at their facility within 45 days of issuance of this approval or, if the facility will have finished operation for calendar year 2010, within 30 days after facility startup in the spring of 2011.

6. Westfield Ready-Mix shall submit a pre-test protocol for conducting noise testing at least 15 days before the scheduled testing. It is suggested that Westfield Ready-Mix schedule a pre-test meeting at the offices of MassDEP to discuss the details of noise testing at their facility.

7. Westfield Ready-Mix shall conduct noise testing at the facility property lines and as the nearest sensitive receptors, in order to document background noise levels (ie: without the facility operating) and noise levels with the facility operating at full capacity.

8. Westfield Ready-Mix shall conduct noise testing during normal business hours (7 am to 5 pm) and during those evening hours and early morning hours that Westfield Ready-Mix may want to operate in the future.

9. Westfield Ready-Mix shall submit a final report documenting the noise testing results within 30 days following the completion of noise testing.

10. If the sound levels measured during a given time period are not in compliance with Regulation 310 CMR 7.10 and MassDEP Policy 90-001, Westfield Ready-Mix may not operate their facility during those time periods.

11. Westfield Ready-Mix shall ensure that noise testing is conducted in a manner that reflects worst case noise testing conditions.

12 . Westfield Ready-Mix shall ensure that MassDEP is notified of compliance noise testing no less than 3 days in advance of the testing.

Jaw Crusher requirements

13. Westfield Ready-Mix shall not cause to be discharged into the atmosphere from the jaw crusher, fugitive emissions which exhibit greater than 15 percent opacity.

14. In determining compliance with the 15 percent opacity standard, Westfield Ready-Mix shall use Method 9, with the following additions:
    a. The minimum distance between the observer and the emission source shall be 15 feet.
    b. The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun must be followed.
    c. Any water mist is not to be considered a visible emission.

15. When determining compliance with the fugitive emissions standard for the jaw crusher, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:
    a. There are no individual readings greater than 15 percent opacity; and
    b. There are no more than 3 readings of 15 percent for the 1-hour period.

Truck loading dust collector requirements

16. Westfield Ready-Mix shall not cause to be discharged into the atmosphere from the truck loading dust collector stack emissions which:
    a. Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf), and
    b. Exhibit greater than 7 percent opacity (as determined by Method 9)

17. Westfield Ready-Mix shall monitor the differential pressure across the truck loading dust collector at least once each calendar day that truck loading takes place, to ensure that the dust collector is operating within manufacturer's recommendations.

Operational Requirements

18. Westfield Ready-Mix shall employ all best management practices to minimize fugitive particulate emissions from the handling of materials at the facility, including but not limited to wetting down the plant area on an as-needed basis,

19. Westfield Ready-Mix shall take whatever measures are necessary to minimize wind erosion of fines from the raw material stockpiles.

20. Westfield Ready-Mix shall take immediate steps to abate any nuisance condition(s), including but not limited to visible emissions, dust, noise, and odor, that may be generated by the operation of the subject facility.

21. Westfield Ready-Mix shall operate the concrete batch plant with zero visible emissions from the baghouses. If visible emissions are observed from a baghouse, Westfield Ready-Mix shall remove that portion of the plant operation as quickly as practical and repair the baghouse before returning the plant to service.

Caterpillar Engine/Generator Requirements

22. Westfield Ready-Mix, In accordance with 310 CMR 7.04(4)(a), shall ensure that the Caterpillar ULSD oil fired electric generator is inspected and maintained in accordance with the manufacturer's recommendations and tested for efficient operation at least once in each calendar year. The results of said inspection, maintenance and testing and the date upon which it was performed shall be recorded and posted conspicuously on or near the permitted equipment.

23. Westfield Ready-Mix shall ensure that the Caterpillar engine stack is configured to discharge the exhaust gases vertically upwards.

24. Westfield Ready-Mix shall ensure that the Caterpillar engine stack shall not have rain protection of a type that restricts the vertical flow of the exhaust gases as they are emitted to the ambient air. “Shanty caps”, “egg beaters” and the like are prohibited.

25. Westfield Ready-Mix shall install an hour-meter on each engine/generator.

Recordkeeping Requirements

26. Westfield Ready-Mix shall record the hours of operation of the crushing operation and of the truck loading operation on a calendar month basis.

27. Westfield Ready-Mix shall generate monthly reports in-house which document compliance with fuel use and operating hours stated herein.

28. Westfield Ready-Mix shall maintain all records up-to-date such that year-to-date information is readily available for MassDEP examination. Records shall be kept for at least five calendar years.

29. Westfield Ready-Mix shall maintain records of routine maintenance activities on all facility equipment that could result in a change in air emissions, including, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.

30. Westfield Ready-Mix shall maintain records of all malfunctions of all equipment that could result in a change in air emissions, including, at a minimum: the date and time the malfunction occurred; a description of the malfunction and the corrective action taken; the date and time corrective actions were initiated; and the date and time corrective actions were completed and the facility returned to compliance.

31. Westfield Ready-Mix shall maintain an Environmental Logbook, or equivalent record keeping system, which shall record actions associated with environmental issues and overall emission changes at the facility. The facility shall record information such as the results of federal, state, or local environmental inspections; and measures taken to lower overall emissions to the environment. This logbook, or equivalent, shall be made available to MassDEP personnel upon request.

32. Westfield Ready-Mix shall record in an Environmental Logbook the results from all differential pressure check observations performed.

33. Westfield Ready-Mix shall ensure they keep records of the cause of any process shut down, any repairs and preventive measures performed to correct the cause(s) of the shutdown and the duration of any process shut down. These records shall be maintained on-site for a minimum of five years and shall be made available for review by MassDEP personnel upon request.

Reporting Requirements

34. Westfield Ready-Mix shall report to MassDEP's Western Regional Office all instances of deviations from the requirements of this Approval, by telephone or fax, within 3 days of discovery of such deviation. This report shall include the deviation itself, including those attributable to upset conditions, the probable cause of such deviations, and any corrective actions or preventative measures taken. Said deviation report shall also be submitted in writing to the Western Regional Office within seven (7) days of documentation of the deviation by facility personnel. Deviations are instances where any condition of this Approval is violated and has not already been reported as an emergency.

35. Westfield Ready-Mix shall notify the MassDEP in writing no later than the 15th day of the following month if the fuel use limits or operating hours limits are exceeded.

36. Westfield Ready-Mix shall generate and maintain on-site, calendar month reports documenting the compliance status of the facility with regard to the limits specified in this approval.

This Approval consists of the application materials and this Approval letter. If conflicting information is found between these two documents, then the requirements of the Approval letter shall take precedence over the documentation in the application materials.

This Approval pertains only to the air quality control aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other applicable state, local, or federal laws and regulations.

If you have any questions regarding this Approval, please do not hesitate to contact the undersigned at (413) 755-2115 or John Kirzec of the Western Regional Office at (413) 755-2225.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

_____

Marc Simpson
Permit Chief
Western Region

JK/jk
ecc: William Judd; bjudd@IndCompGroup.com
Yi Tian, MassDEP, Boston
Peter Czapienski, MassDEP, WERO

APPEAL OF APPROVAL

This Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why the Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency) county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.