

# PERMIT BOOK

STATE OF MISSOURI



## DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

### PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **102014-008**

Project Number: 2014-07-025  
Installation Number: 207-0036

Parent Company: Obermann Concrete

Parent Company Address: P.O. Box 2045, Cape Girardeau, MO 63730

Installation Name: SEMO Ready Mix - Advance

Installation Address: 33285 State Highway 25, Advance, MO 63730

Location Information: Stoddard County, S12, T28N, R10E

Application for Authority to Construct was made for:

The installation of a new concrete batch plant next to the existing plant at the Advance, MO site. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

**OCT - 8 2014**

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EFFECTIVE DATE

  
\_\_\_\_\_  
DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of startup of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual startup of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

SEMO Ready Mix - Advance  
Stoddard County, S12, T28N, R10E

1. Emission Limitation – NAAQS
  - A. SEMO Ready Mix - Advance shall maintain a daily record of material processed to demonstrate that the daily impact on ambient air quality from the entire installation does not exceed the daily NAAQS of 150.0  $\mu\text{g}/\text{m}^3$  for  $\text{PM}_{10}$  at or beyond the property boundary.
  - B. Attachment A or an equivalent form, such as an electronic form, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
2. Best Management Practices Requirement
  - A. SEMO Ready Mix - Advance shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing BMPs as defined in Attachment AA.
3. Documented Haul Road Watering
  - A. SEMO Ready Mix - Advance shall control dust from all haul roads at this site using water or surfactant spray consistently and correctly at all times to prevent visible fugitive emissions from entering the ambient air beyond the property boundary. The following conditions apply to haul road watering:
    - 1) The water application rate shall be 100 gallons per 1000 square feet at least once every day.
    - 2) A quarter inch or more rainfall during the preceding 24 hours shall substitute for one daily water application
    - 3) Water/surfactant application shall not be required when the ground is frozen or when there will be no traffic on the roads.

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#### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. SEMO Ready Mix - Advance shall keep the following records on file and available for inspection:
  - 1) A daily log initialed by the responsible facility operator of roads watered and quantity of water/chemical application used, or notation that there was a quarter inch or greater rainfall within the past 24 hours or that the facility was not in operation.
  - 2) Water tank size, total area of roads to be watered, and the resultant number of fills necessary to accomplish the required application rate.
  - 3) Records of watering equipment breakdowns and repairs.
  
- 4. Control Device Requirement-Baghouse
  - A. SEMO Ready Mix - Advance shall control emissions from the 400 barrel (bbl) silo, the 300 bbl silo, and the mixer loading point using baghouses as specified in the permit application.
  
  - B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
  
  - C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
  
  - D. SEMO Ready Mix - Advance shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours, while in operation. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
  
  - E. SEMO Ready Mix - Advance shall maintain a copy of the baghouse manufacturer's performance warranty on site.
  
  - F. SEMO Ready Mix - Advance shall maintain an operating and maintenance log for the baghouses which shall include the following:
    - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

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#### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

5. Record Keeping and Reporting Requirements
  - A. SEMO Ready Mix - Advance shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
  - B. SEMO Ready Mix - Advance shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.
6. Decommissioning Requirement
  - A. SEMO Ready Mix - Advance shall halt the operation of existing equipment to be replaced before production begins with the new equipment. This includes the aggregate load hopper (EP-4), conveyor (EP-5), aggregate bin (EP-6), aggregate batcher (EP-7), 400 bbl silo (EP-8), and mixer loading (EP-10). The existing equipment listed above may not be operated after the startup of the new equipment without first obtaining a New Source Review permit or receiving approval for the like kind replacement of other existing equipment at the installation from the Air Pollution Control Program.
  - B. SEMO Ready Mix - Advance shall notify the Air Pollution Control Program's Compliance/ Enforcement Section no later than 15 days after the following events occur:
    - 1) The date of initial startup of the new equipment added under this permit, and
    - 2) The date the existing equipment (as indicated in Special Condition 6.A.) was rendered inoperable.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2014-07-025  
Installation ID Number: 207-0036  
Permit Number:

SEMO Ready Mix - Advance  
33285 State Highway 25  
Advance, MO 63730

Complete: July 16, 2014

Parent Company:  
Obermann Concrete dba SEMO Ready Mix  
P.O. Box 2045  
Cape Girardeau, MO 63730  
Stoddard County, S12, T28N, R10E

REVIEW SUMMARY

- SEMO Ready Mix has applied for authority to construct a new concrete batch plant next to the existing plant at the Advance, MO site.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Baghouses are being used to control the PM emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Stoddard County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed because modeling standards do not currently exist for PM.
- Emissions testing is not required for the equipment.

- Approval of this permit is recommended with special conditions.

## PROJECT DESCRIPTION

SEMO Ready Mix is applying for a construction permit to erect a newly purchased, used 1987 Ross Bandit BTR-12 concrete batch plant next to the existing plant at the Advance, MO site. The equipment includes an aggregate load hopper, conveyor belt, aggregate bin, aggregate batcher, and 400 bbl cement silo with a V-200 baghouse. An additional 300 bbl silo with a V-200 baghouse will also be incorporated. The existing equipment that will not be replaced includes an RBI 8900 Series natural gas fired water heater with a heat input of 602,700 BTU/hr and two fuel storage tanks. Before production begins with the new plant equipment, operation of the existing equipment is to be halted, and within 90 days, it is to be dismantled and removed from the property. All the new equipment has the same control devices and approximate relative locations as the existing equipment, but the new plant has a MHDR of 150 tons per hour, compared to the existing MHDR of 140 tons per hour.

## EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42).

Emissions from the concrete batch plant were calculated using emission factors from AP-42 Section 11.12 *Concrete Batching*, June 2006. This section cites Equation (1) in Section 13.2.4 *Aggregate Handling and Storage Piles*, November 2006 for calculating the emissions from aggregate and sand transfer. The silos are controlled with baghouses, so the controlled emission factors were used. Emissions from the aggregate weigh hopper were calculated using AP-42 Section 13.2.4, Equation (1). Emissions from mixer loading/mix truck loading are controlled by a shroud vented to a baghouse, so the controlled emission factor was used.

Emissions from haul roads and vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.2 *Unpaved Roads*, November 2006. A 90% control efficiency for PM and PM<sub>10</sub> and a 40% control efficiency for PM<sub>2.5</sub> were applied to the emission calculations for the use of BMPs. Emissions from load-in and load-out of storage piles were calculated using the predictive equation from AP-42 Section 13.2.4. The moisture content of the aggregate is 0.7% by weight. Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8 *Storage Pile Worksheet*.

The following table provides an emissions summary for this project. Existing potential emissions were not determined because the plant is being replaced with similar equipment and a silo is being added. Therefore, the application potential will replace the existing potential, not compound with it. Existing actual emissions were taken from the installation's 2013 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year). The limited

potential of the application was calculated by taking into consideration all control devices, established limitations, and applicable special conditions.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	Limited Potential of the Application
PM	25.0	N/D	N/D	47.36	13.66
PM <sub>10</sub>	15.0	N/D	2.48	19.93	5.75
PM <sub>2.5</sub>	10.0	N/D	0.24	4.68	1.35
SO <sub>x</sub>	40.0	N/D	N/A	0.00	0.00
NO <sub>x</sub>	40.0	N/D	N/A	0.26	0.07
VOC	40.0	N/D	N/A	0.01	0.00
CO	100.0	N/D	N/A	0.22	0.06
GHG (CO <sub>2</sub> e)	75,000 / 100,000	N/D	N/A	328.34	94.71
HAPs	10.0/25.0	N/D	N/A	0.00	0.00

N/A = Not Applicable; N/D = Not Determined

The following table shows the ambient air quality impact of the project and the daily production limit required to comply with the NAAQS for PM<sub>10</sub>.

Table 2. Ambient Air Quality Impact Analysis

Pollutant	NAAQS (µg/m <sup>3</sup> )	Averaging Time	Maximum Modeled Impact <sup>1</sup> (µg/m <sup>3</sup> )	Limited Impact <sup>2</sup> (µg/m <sup>3</sup> )	Background (µg/m <sup>3</sup> )	Daily Limit <sup>3</sup> (tons/day)
PM <sub>10</sub>	150.0	24-hour	568.8	130.0	20.0	1038.4

<sup>1</sup>Modeled impact at maximum capacity

<sup>2</sup>Available maximum, not counting background emissions, necessary to comply

<sup>3</sup>Indirect limit based on compliance with NAAQS.

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.

## APPLICABLE REQUIREMENTS

SEMO Ready Mix - Advance shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110*
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, 10 CSR 10-6.170*
- *Restriction of Emission of Visible Air Contaminants, 10 CSR 10-6.220*
- *Restriction of Emission of Odors, 10 CSR 10-6.165*

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes, 10 CSR 10-6.400*

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

\_\_\_\_\_  
Ryan Schott  
New Source Review Unit

\_\_\_\_\_  
Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated July 7, 2014, received July 10, 2014, designating Obermann Concrete dba SEMO Ready Mix as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.



## Attachment AA – Best Management Practices

Haul roads and vehicular activity areas shall be maintained in accordance with at least one of the following options when the plant is operating.

1. Pavement
  - A. The operator shall pave the area with materials such as asphalt, concrete or other materials approved by the Air Pollution Control Program. The pavement will be applied in accordance with industry standards to achieve control of fugitive emissions while the plant is operating.
  - B. Maintenance and repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.
  - C. The operator shall periodically wash or otherwise clean all of the paved portions of the haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is operating.
  
2. Application of Chemical Dust Suppressants
  - A. The operator shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved areas.
  - B. The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacturer's recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
  - C. The operator shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the above areas. The operator shall keep these records with the plant for not less than five (5) years and make these records available to Department of Natural Resources personnel upon request.
  
3. Application of Water-Documented Daily
  - A. The operator shall apply water to unpaved areas. Water shall be applied at a rate of 100 gallons per day per 1,000 square feet of unpaved or untreated surface area while the plant is operating.
  - B. Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
  - C. Watering may also be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
  - D. The operator shall record the date, volume of water application, and total surface area of active haul roads or the amount of precipitation that day. The operators shall also record the rationale for not watering (e.g. freezing conditions or not operating).
  - E. The operator shall keep these records with the plant for not less than five (5) years, and the operator shall make these records available to Department of Natural Resources personnel upon request.

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....percent	<b>m/s</b> ..... meters per second
<b>°F</b> .....degrees Fahrenheit	<b>Mgal</b> ..... 1,000 gallons
<b>acfm</b> .....actual cubic feet per minute	<b>MW</b> ..... megawatt
<b>BACT</b> ..... Best Available Control Technology	<b>MHDR</b> ..... maximum hourly design rate
<b>BMPs</b> ..... Best Management Practices	<b>MMBtu</b> .... Million British thermal units
<b>Btu</b> ..... British thermal unit	<b>MMCF</b> ..... million cubic feet
<b>CAM</b> ..... Compliance Assurance Monitoring	<b>MSDS</b> ..... Material Safety Data Sheet
<b>CAS</b> ..... Chemical Abstracts Service	<b>NAAQS</b> ... National Ambient Air Quality Standards
<b>CEMS</b> ..... Continuous Emission Monitor System	<b>NESHAPs</b> ..... National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> ..... Code of Federal Regulations	<b>NO<sub>x</sub></b> ..... nitrogen oxides
<b>CO</b> ..... carbon monoxide	<b>NSPS</b> ..... New Source Performance Standards
<b>CO<sub>2</sub></b> ..... carbon dioxide	<b>NSR</b> ..... New Source Review
<b>CO<sub>2</sub>e</b> ..... carbon dioxide equivalent	<b>PM</b> ..... particulate matter
<b>COMS</b> ..... Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> ..... particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> ..... Code of State Regulations	<b>PM<sub>10</sub></b> ..... particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> ..... dry standard cubic feet	<b>ppm</b> ..... parts per million
<b>EQ</b> ..... Emission Inventory Questionnaire	<b>PSD</b> ..... Prevention of Significant Deterioration
<b>EP</b> ..... Emission Point	<b>PTE</b> ..... potential to emit
<b>EPA</b> ..... Environmental Protection Agency	<b>RACT</b> ..... Reasonable Available Control Technology
<b>EU</b> ..... Emission Unit	<b>RAL</b> ..... Risk Assessment Level
<b>fps</b> ..... feet per second	<b>SCC</b> ..... Source Classification Code
<b>ft</b> ..... feet	<b>scfm</b> ..... standard cubic feet per minute
<b>GACT</b> ..... Generally Available Control Technology	<b>SIC</b> ..... Standard Industrial Classification
<b>GHG</b> ..... Greenhouse Gas	<b>SIP</b> ..... State Implementation Plan
<b>gpm</b> ..... gallons per minute	<b>SMAL</b> ..... Screening Model Action Levels
<b>gr</b> ..... grains	<b>SO<sub>x</sub></b> ..... sulfur oxides
<b>GWP</b> ..... Global Warming Potential	<b>SO<sub>2</sub></b> ..... sulfur dioxide
<b>HAP</b> ..... Hazardous Air Pollutant	<b>tph</b> ..... tons per hour
<b>hr</b> ..... hour	<b>tpy</b> ..... tons per year
<b>hp</b> ..... horsepower	<b>VMT</b> ..... vehicle miles traveled
<b>lb</b> ..... pound	<b>VOC</b> ..... Volatile Organic Compound
<b>lbs/hr</b> ..... pounds per hour	
<b>MACT</b> ..... Maximum Achievable Control Technology	
<b>µg/m<sup>3</sup></b> .....micrograms per cubic meter	

Mr. Mike Johnston  
Compliance Manager  
SEMO Ready Mix - Advance  
P.O. Box 2045  
Cape Girardeau, MO 63730

RE: New Source Review Permit - Project Number: 2014-07-025

Dear Mr. Johnston:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Ryan Schott, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:rs1

Enclosures

c: Southeast Regional Office  
PAMS File: 2014-07-025

Permit Number: