



Missouri Department of dnr.mo.gov

# NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

December 29, 2020

Evan Bryant  
Area Director  
Royal Oak Enterprises, LLC- Summersville Plant  
6425 State Hwy ZZ  
West Plains, MO 65775

RE: New Source Review Permit - Project Number: 2020-09-008

Dear Evan Bryant:

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 and your new source review permit application 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.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).



Evan Bryant  
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If you have any questions regarding this permit, please do not hesitate to contact Kathy Kolb, 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

A handwritten signature in blue ink, appearing to read "S. Heckenkamp".

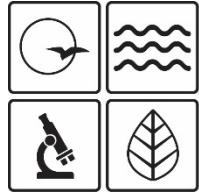
Susan Heckenkamp  
New Source Review Unit Chief

SH:kka

Enclosures

c: Southeast Regional Office  
PAMS File: 2020-09-008

Permit Number: 122020-008



**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: 122020-008                      Project Number: 2020-09-008  
Installation Number: 203-0006

Owner / Operator: Royal Oak Enterprises, LLC

Owner / Operator Address: 1 Royal Oak Avenue, Roswell, GA 30076


Installation Name: Royal Oak Enterprises, LLC- Summersville Plant

Installation Address: Shannon County Road 341, Summersville, MO 65571

Location Information: Shannon County, S7, T29N, R6W

Application for Authority to Construct was made for:  
Construction of 16 kilns and four thermal oxidizers. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

  
\_\_\_\_\_  
Director or Designee  
Department of Natural Resources

\_\_\_\_\_  
December 29, 2020  
Effective Date

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 Enforcement and Compliance Section of 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 Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's 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 source(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 using the contact information below.

Contact Information:  
Missouri Department of Natural Resources  
Air Pollution Control Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
(573) 751-4817

The regional office information can be found at the following website:  
<http://dnr.mo.gov/regions/>

**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 to 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 (3)(E). "Conditions required by permitting authority."*

Royal Oak Enterprises, LLC- Summersville Plant  
Shannon County, S7, T29N, R6W

1. Charcoal Kiln Processing Requirements
  - A. The permittee shall not simultaneously operate more than two (2) kilns during the burn cycle in each bank of four kilns known as Kilns #81-84 (EU-81 through 84 routed to EP-67/Thermal Oxidizer), Kilns #85-88 (EU-85 through 88 routed to EP-68/Thermal Oxidizer), Kilns #89-92 (EU-89 through 92 routed to EP-69/Thermal Oxidizer) and Kilns #93-96 (EU-93 through 96 routed to EP-70/Thermal Oxidizer).
  - B. Royal Oak Enterprises, LLC-Ellsinore Facility shall maintain a daily log for each charcoal kiln that includes start-up time, cool-down time, and re-light time to demonstrate compliance with Special Conditions 1.A.
2. Emission Requirements for PM<sub>10</sub> and NO<sub>x</sub>
  - A. The permittee shall emit less than 2.25 pound per hour of NO<sub>x</sub> from each 4-kiln system (EP-67, EP-68, EP-69 and EP-70). This emission rate will be verified through stack testing as required in Special Condition 6.
  - B. The permittee shall emit less than 0.35 pound per hour of PM<sub>10</sub> from each 4-kiln system (EP-67, EP-68, EP-69 and EP-70). This emission rate will be verified through stack testing as required in Special Condition 6.
  - C. The permittee shall amend this permit if either Special Condition 2.A. or 2.B. is not achieved.
3. Control Device Requirements
  - A. The permittee shall control emissions from each bank of four kilns with a thermal oxidizer as specified in the permit application:
    - 1) Kilns #81-84 (EU-81 through 84 routed to EP-67/Thermal Oxidizer)
    - 2) Kilns #85-88 (EU-85 through 88 routed to EP-68/ Thermal Oxidizer)
    - 3) Kilns #89-92 (EU-89 through 92 routed to EP-69/ Thermal Oxidizer)
    - 4) Kilns #93-96 (EU-93 through 96 routed to EP-70/ Thermal Oxidizer)
  - B. The thermal oxidizers shall be operated and maintained in accordance with the manufacturer's specifications.

**SPECIAL CONDITIONS:**

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

- C. The permittee shall continuously monitor and record the temperature of the Thermal Oxidizers EP-67, EP-68, EP-69 and EP-70 any time any of the charcoal kilns in the associated kiln bank are in operation.
  - D. The permittee shall ensure that the temperature of the Thermal Oxidizers EP-67, EP-68, EP-69 and EP-70 are maintained within the normal operating range established in the emissions test reports that were provided with the application. A minimum temperature of 1600°F must be maintained to ensure continued compliance.
  - E. The permittee may propose to use a lower minimum temperature than the one stated in Special Condition 3.D by submitting subsequent testing to the Director of the Air Pollution Control Program as allowed by 10 CSR 10-6.330(3)(F). Upon approval by the Director, an alternate temperature control plan may be implemented.
  - F. The permittee shall maintain an operating and maintenance log for Thermal Oxidizer EP-67, EP-68, EP-69 and EP-70, 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.
4. Fuel Requirements  
Thermal Oxidizers EP-67, EP-68, EP-69 and EP-70 shall be fueled exclusively by propane (LPG).
5. Record Keeping and Reporting Requirements
- A. The permittee 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. The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 and by e-mail at [AirComplianceReporting@dnr.mo.gov](mailto:AirComplianceReporting@dnr.mo.gov), no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.
6. Performance Testing
- A. The permittee shall conduct performance tests on Thermal Oxidizers EP-67, EP-68, EP-69 or EP-70 with two kilns burning simultaneously sufficient to demonstrate compliance with the emission rates of PM, VOCs and CO set forth in 10 CSR 10-6.330 and Special Condition 2. VOC emissions

**SPECIAL CONDITIONS:**

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

shall be calculated as pounds of VOC per hour, not reported on a carbon or propane basis. Nitrogen Oxide emissions shall be tested as pounds of NO<sub>x</sub> per hour. A VOC control efficiency shall be determined using the thermal oxidizer. In conjunction with the performance test, the permittee shall determine the hourly charcoal production rate. The rate shall be based on the weight of charcoal produced from all four kilns in the charcoal kiln control system being tested and the number of hours to complete one complete batch for the system. Each kiln shall be filled to at least 90% of fill capacity, in accordance with 10 CSR 10-6.330 (3)(F)(2). The production rate of the system shall be equal to or less than 0.5 tons of charcoal per hour.

- B. The permittee shall conduct tests on one (or more) out of the four Thermal Oxidizers EP-67, EP-68, EP-69, or EP-70 in order to comply with 10 CSR 10-6.330 (3)(F)7.C.
- C. These tests shall be performed within 60 days after achieving the maximum production rate of the installation, but not later than 180 days after initial start-up for commercial operation and shall be conducted in accordance with the proposed stack test plan outlined in this Special Condition 6.A and performance testing and compliance procedures in 10 CSR 10-6.330 (3)(F).
- D. Testing shall be conducted during periods of representative conditions at the maximum process/production rates, not to include periods of startup, shutdown, or malfunction. A description of the representative conditions for the performance tests is listed in 10 CSR 10-6.330 (3)(F).
- E. A completed Proposed Test Plan Form (enclosed) must be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.
- F. An electronic copy of the performance test results shall be sent to [Stacktesting@dnr.mo.gov](mailto:Stacktesting@dnr.mo.gov) within 30 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one sample run.
- G. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.

**SPECIAL CONDITIONS:**

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

- H. Actual conditions under which performance testing is conducted shall be recorded throughout each of the test runs as stipulated in 10 CSR 10-6.330 (3)(F) and this Special Condition. These conditions are to include all relevant process/production parameters, all parameters relating to the status of emission controls, and all parameters set forth in 10 CSR 10-6.330 (3)(F). This data is to be included in the emissions test report. In addition, the report shall include emission factors for PM, VOCs and CO which shall be determined using emission rates and recorded charcoal production rates that have occurred during testing. No maintenance or upgrade of emission control efficiency shall be undertaken during emission testing.
- I. Emission testing results, in “mass of pollutant/volume of air,” shall be reported for the pollution source airstream, free from any extraneous source of dilution air. Potential dilution air streams shall either be sealed off prior to testing or else be measured by appropriate EPA test methods and subtracted from the total airflow at the sampling location. Failure to account for dilution air can lead to cancellation of testing and/or a violation notice for “circumvention”.
- J. The permittee shall receive approval from the Air Pollution Control Program prior to any changes in the process or throughput allowed at this installation other than that which is tested at the time of performance test.



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

Project Number: 2020-09-008  
Installation ID Number: 203-0006  
Permit Number:122020-008

Installation Address:

Royal Oak Enterprises, LLC-  
Summersville Plant  
Shannon County Road 341  
Summersville, MO 65571

Parent Company:

Royal Oak Enterprises, LLC  
1 Royal Oak Avenue  
Roswell, GA 30076

Shannon County, S7, T29N, R6W

REVIEW SUMMARY

- The permittee has applied for authority to construct 16 kilns and four thermal oxidizers.
- The application was deemed complete on September 23, 2020.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are methanol and Polycyclic Organic Matter (POM). HAPs of concern from this process are below major source level and individual SMALs.
- 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.
- Four thermal oxidizers (EP-67, EP-68, EP-69 and EP-70) are being used to control the PM, PM<sub>10</sub>, PM<sub>2.5</sub>, VOCs, HAPs and CO 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 NO<sub>x</sub> and PM<sub>10</sub> are conditioned below de minimis levels.
- This installation is located in Shannon County, an attainment/unclassifiable area for all criteria pollutants.
- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation is classified as item number 25, Charcoal production facilities. The installation's major source level is 100 tons per year and fugitive emissions are counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is required for at least one of the Thermal Oxidizers (EP-67, EP-68, EP-69 or EP-70) as a part of this permit. Testing is also required as part of 10 CSR 10-6.330. Testing may be required as part of other state, federal or applicable rules.
- No operating permit is required for this installation because installation wide emissions are below major source thresholds.
- Approval of this permit is recommended with special conditions.

### INSTALLATION DESCRIPTION

Royal Oak Enterprises, LLC operates a charcoal production facility in Summersville, Missouri. According to Air Pollution Control Program's permit history, Royal Oak submitted its first Part 70 Operating Permit application in 1996, which was completed in 1999. A screening operation (CP 0197-019) was added in 1997. In 2004, Craig Industries purchased the Summersville plant and in 2005, permitted 40 new kilns (CP 072005-018) with ten thermal oxidizers. Testing was required. After testing was completed, Craig Industries' Part 70 Operating Permit was terminated in 2007 and they obtained a Basic Operating permit. In 2010, Royal Oak Enterprises, LLC obtained ownership once again. Prior to the ownership change, Craig Industries added screening and bagging equipment to the facility. They made an internal calculation determining that particulate emissions were below the permitting threshold. Over time, they increased the equipment and capacity of the screening/bagging operation without a permit determination. Royal Oak is currently preparing a permit application for the screening/bagging operation and associated fugitive emissions to properly permit the process.

Currently, the facility is operating the screening/bagging operation, one bank of four (4) metal charcoal kilns with a single pass "pot burner" thermal oxidizer, and 16 Missouri-style kilns with two triple pass thermal oxidizers.

The following is a list of kilns currently at the site:

- Kilns #1-26 Dismantled
- Kilns #27-30 Dismantled
- Kilns #31-48 Dismantled
- Kilns # 49-52 Operational steel kilns with thermal oxidizer AB-1 (Last of the 40 kilns that were permitted under CP 062005-018)
- Kilns #53-56 Dismantled and removed
- Kilns #57-60 Dismantled and removed
- Kilns #61-64 Dismantled and removed
- Kilns #65-72 Concrete kilns with AB-5 from CP 122014-008
- Kilns # 73-80 Concrete kilns with AB-6 from CP 122014-008

The following New Source Review permits have been issued to Royal Oak Enterprises, LLC- Summersville Plant from the Air Pollution Control Program.

Table 1: Permit History

| Permit Number | Description  |
|---------------|--|
| 1097-019      | Charcoal Screening                                     |
| 072005-018    | 40 New Charcoal Kilns with 10 Thermal oxidizers        |
| 122014-008    | 16 Charcoal Kilns with 2 Triple Pass Thermal oxidizers |

## PROJECT DESCRIPTION

This application is for the construction of four (4) banks of four (4) metal charcoal kilns to be labeled EU81 through EU96. The kilns will be flat-roofed metal kilns with internal dimensions of approximately 20'W x 40' x 15'H. A barrel-type or "pot burner" single pass thermal oxidizers with stacks labeled AB-7, AB-8, AB-9 and AB-10 will control emissions. The emission inventory numbers will be EP-67, EP-68, EP-69 and EP-70. Each bank of kilns with thermal oxidizer control will be operated with a maximum of two (2) kilns in the burn phase of production. The lighting of each kiln will be staggered. The burn time will be approximately 108 hours; the cooling time will be 84 hours; unloading of the charcoal will be 12 hours; and the loading of slab wood will be 12 hours. The total batch length will be 216 hours. The maximum hourly design rate for a 4-kiln system is based on the minimum batch length (allowing for only 2 kilns in the burn phase at a time) to be 216 hours. The maximum charcoal production from a kiln is 27 tons. Therefore, the MHDR for each 4-kiln system is 0.5 tons per hour.

Thermal oxidizers will use propane to maintain the minimum allowable temperature if the kilns do not provide adequate combustion gases. Propane emissions are not calculated separately because they will be included in stack testing results and subsequently developed emission factors. Testing is required on one of the four stacks according to 10 CSR 10-6.330.

## EMISSIONS/CONTROLS EVALUATION

Emissions from the sixteen charcoal kilns #81-96 will be controlled by single pass propane-fired thermal oxidizers (Thermal oxidizers EP-68, EP-68, EP-69 and EP-70). PM<sub>10</sub> and NO<sub>x</sub> emission rates for this project were calculated to result with a potential to emit below de minimis. These factors were compared to prior stack testing performed on units at Licking, Missouri of similar design but the capacity is unknown. According to Missouri State Rule 10 CSR 10-6.330, *Restriction of Emissions from Batch-Type Charcoal Kilns*, new charcoal kilns may operate without initial performance testing if three (3) separate and similar systems have successfully demonstrated compliance with the emission limit requirements of the rule. The Licking stack test was conducted while two kilns were operating at the same time but their capacity (MHDR) at the time of the test is unknown. Therefore, that test cannot count as one of the three tests that is required by 10 CSR 10-6.330. Royal Oak is required to test at least one of the four

thermal oxidizers in this permit. If the results from this test exceed the pound per hour of the pollutants listed below, then this permit shall be amended.

Table 2. Emission Rates Used

| Pollutant        | Emission Rate Used for the Permit | Licking Test | 10 CSR 10-6.330 Requirement |
|------------------|-----------------------------------|--------------|-----------------------------|
| PM <sub>10</sub> | 0.35 lb/hr                        | 0.13 lb/hr   | 1.5 lb/hr                   |
| NO <sub>x</sub>  | 2.25 lb/hr                        | Not tested   | No requirement              |
| VOC              | 0.24 lb/hr                        | 0.008 lb/hr  | 0.24 lb/hr                  |
| CO               | 1.75 lb/hr                        | 0.5 lb/hr    | 1.75 lb/hr                  |

The potential emissions of methanol and POM were determined using emission factors from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 10.7 *Charcoal* (September, 1995). The expected control efficiency for VOCs and HAPs is 99.7% or greater, resulting in potential emissions of 0.03 tons per year for methane, 3.94 tons per year for methanol and an insignificant level ( $2.0E^{-6}$ ) of POM. Sulfur oxides (SO<sub>x</sub>) emissions are expected to be negligible and were not determined.

CO<sub>2</sub> emissions were not able to be calculated since there is no stack test data available and therefore greenhouse cases could not be determined.

The emission factors used in the analysis of the haul roads (EP-51), and the charcoal load in/load out activity (EP-49) were obtained from the following Sections of AP-42: Section 13.2.2 *Unpaved Roads* (November 2006) and Section 13.2.4 *Aggregate Handling and Storage Piles* (November 2006).

The following table provides an emissions summary for this project. Existing potential emissions were taken from CP 072005-018 and CP 122014-008. Only one bank of four kilns exist that were permitted under CP072005-018, therefore the PTE from that permit was divided by 10 (40 kilns/4 kilns) and added to the PTE from CP 122014-008. Existing actual emissions were taken from the installation's 2018 EIQ (last full EIQ). Potential emissions of the application represent the potential of the 16 kilns that are controlled by four thermal oxidizers (4 banks of 4 kilns; each bank of kilns is controlled by one thermal oxidizer), assuming continuous operation (8760 hours per year).

Table 3: Emissions Summary (tpy)

| Pollutant         | Regulatory <i>De Minimis</i> Levels | Existing Potential Emissions <sup>a</sup> | Existing Actual Emissions (2018 EIQ) | Potential Emissions of the Project | New Installation Conditioned Potential |
|-------------------|-------------------------------------|---|--------------------------------------|------------------------------------|--|
| PM                | 25.0                                | >24.45 <sup>b</sup>                       | N/D                                  | 36.29                              | >60.74                                 |
| PM <sub>10</sub>  | 15.0                                | 18.42                                     | 15.86                                | 14.79                              | 33.21                                  |
| PM <sub>2.5</sub> | 10.0                                | 9.37                                      | 6.09                                 | 7.01                               | 16.37                                  |
| SO <sub>x</sub>   | 40.0                                | 0.0                                       | 0.0                                  | 0.0                                | 0.0                                    |
| NO <sub>x</sub>   | 40.0                                | 52.27                                     | 52.27                                | 39.42                              | 91.69                                  |
| VOC               | 40.0                                | 1.72                                      | 2.58                                 | 4.20                               | 6.79                                   |

| Pollutant               | Regulatory<br><i>De Minimis</i><br>Levels | Existing<br>Potential<br>Emissions <sup>a</sup> | Existing<br>Actual<br>Emissions<br>(2018 EIQ) | Potential<br>Emissions of<br>the Project | New<br>Installation<br>Conditioned<br>Potential |
|-------------------------|---|---|---|--|---|
| CO                      | 100.0                                     | 0.63  | 8.22  | 30.66                                    | 38.88   |
| HAPs                    | 10.0/25.0                                 | >0.22 <sup>c</sup>                              | 0.0   | 3.97                                     | >4.19   |
| Methane CH <sub>4</sub> | N/A                                       | >0.16 <sup>c</sup>                              | N/D   | 0.029                                    | >0.19   |
| Methanol                | N/A                                       | >0.22 <sup>c</sup>                              | N/D   | 3.94                                     | >4.16   |
| HAPs-POM                | N/A                                       | >6.96E-06 <sup>c</sup>                          | N/D   | 2.5E-06                                  | >9.46E-06                                       |

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

<sup>a</sup>Calculated from the PTE from CP 062005-018 (40 kilns divided by 10 for the last remaining bank of 4 kilns from this permit) and CP 122014-008.

<sup>b</sup>PM was not calculated for CP 062005-018; only 4 kilns out of the 40 kilns on this permit remain; estimated that the installation PTE for PM is less than 100 tons

<sup>c</sup>HAPs (Methanol and POMS) and Methane were not calculated for CP 062005-018 and therefore the existing PTE for HAPs and Methane would include those (if calculated) from CP 062005-018 and 0.22 tons from CP 122014-008.

### 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 are calculated below de minimis levels.

### APPLICABLE REQUIREMENTS

Royal Oak Enterprises, LLC- Summersville Plant 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.

### GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
  - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *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 Emissions From Batch-Type Charcoal Kilns*, 10 CSR 10-6.330

#### 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*, it is recommended that this permit be granted with special conditions.

#### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 8, 2020, received September 15, 2020, designating Royal Oak Enterprises, LLC as the owner and operator of the installation.

## APPENDIX A

### Abbreviations and Acronyms

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

## Air Pollution Control Program

### Table of Hazardous Air Pollutants and Screening Model Action Levels

| Chemical                    | CAS #      | SMAL tons/yr | Group ID | VOC | PM | Chemical                             | CAS #     | SMAL tons/yr | Group ID | VOC | PM |
|-----------------------------|------------|--------------|----------|-----|----|--------------------------------------|-----------|--------------|----------|-----|----|
| ACETALDEHYDE                | 75-07-0    | 9            |          | Y   | N  | CHLOROMETHYL METHYL ETHER            | 107-30-2  | 0.1          |          | Y   | N  |
| ACETAMIDE                   | 60-35-5    | 1            |          | Y   | N  | CHLOROPRENE                          | 126-99-8  | 1            |          | Y   | N  |
| ACETONITRILE                | 75-05-8    | 4            |          | Y   | N  | CHROMIUM (VI) COMPOUNDS              |           | 0.002        | L        | N   | Y  |
| ACETOPHENONE                | 98-86-2    | 1            |          | Y   | N  | CHROMIUM COMPOUNDS                   |           | 5            | L        | N   | Y  |
| ACETYLAMINOFLUORINE, [2-]   | 53-96-3    | 0.005        | V        | Y   | Y  | CHRYSENE                             | 218-01-9  | 0.01         | V        | Y   | N  |
| ACROLEIN                    | 107-02-8   | 0.04         |          | Y   | N  | COBALT COMPOUNDS                     |           | 0.1          | M        | N   | Y  |
| ACRYLAMIDE                  | 79-06-1    | 0.02         |          | Y   | N  | COKE OVEN EMISSIONS                  | 8007-45-2 | 0.03         | N        | Y   | N  |
| ACRYLIC ACID                | 79-10-7    | 0.6          |          | Y   | N  | CRESOL, [META-]                      | 108-39-4  | 1            | B        | Y   | N  |
| ACRYLONITRILE               | 107-13-1   | 0.3          |          | Y   | N  | CRESOL, [ORTHO-]                     | 95-48-7   | 1            | B        | Y   | N  |
| ALLYL CHLORIDE              | 107-05-1   | 1            |          | Y   | N  | CRESOL, [PARA-]                      | 106-44-5  | 1            | B        | Y   | N  |
| AMINOBIHENYL, [4-]          | 92-67-1    | 1            | V        | Y   | N  | CRESOLS (MIXED ISOMERS)              | 1319-77-3 | 1            | B        | Y   | N  |
| ANILINE                     | 62-53-3    | 1            |          | Y   | N  | CUMENE                               | 98-82-8   | 10           |          | Y   | N  |
| ANISIDINE, [ORTHO-]         | 90-04-0    | 1            |          | Y   | N  | CYANIDE COMPOUNDS                    |           | 0.1          | O        | Y   | N  |
| ANTHRACENE                  | 120-12-7   | 0.01         | V        | Y   | N  | DDE                                  | 72-55-9   | 0.01         | V        | Y   | Y  |
| ANTIMONY COMPOUNDS          |            | 5            | H        | N   | Y  | DI(2-ETHYLHEXYL) PHTHALATE, (DEHP)   | 117-81-7  | 5            |          | Y   | N  |
| ANTIMONY PENTAFLUORIDE      | 7783-70-2  | 0.1          | H        | N   | Y  | DIAMINOTOLUENE, [2,4-]               | 95-80-7   | 0.02         |          | Y   | N  |
| ANTIMONY POTASSIUM TARTRATE | 28300-74-5 | 1            | H        | N   | Y  | DIAZOMETHANE                         | 334-88-3  | 1            |          | Y   | N  |
| ANTIMONY TRIOXIDE           | 1309-64-4  | 1            | H        | N   | Y  | DIBENZ(A,H)ANTHRACENE                | 53-70-3   | 0.01         | V        | Y   | N  |
| ANTIMONY TRISULFIDE         | 1345-04-6  | 0.1          | H        | N   | Y  | DIOXINS/FURANS                       |           | 6E-07        | D,V      | Y   | N  |
| ARSENIC COMPOUNDS           |            | 0.005        | I        | N   | Y  | DIBENZOFURAN                         | 132-64-9  | 5            | V        | Y   | N  |
| ASBESTOS                    | 1332-21-4  | 0            | A        | N   | Y  | DIBROMO-3-CHLOROPROPANE, [1,2-]      | 96-12-8   | 0.01         |          | Y   | N  |
| BENZ(A)ANTHRACENE           | 56-55-3    | 0.01         | V        | Y   | N  | DIBROMOETHANE, [1,2-]                | 106-93-4  | 0.1          |          | Y   | N  |
| BENZENE                     | 71-43-2    | 2            |          | Y   | N  | DIBUTYL PHTHALATE                    | 84-74-2   | 10           |          | Y   | Y  |
| BENZIDINE                   | 92-87-5    | 0.0003       | V        | Y   | N  | DICHLOROBENZENE, [1,4-]              | 106-46-7  | 3            |          | Y   | N  |
| BENZO(A)PYRENE              | 50-32-8    | 0.01         | V        | Y   | N  | DICHLOROBENZIDENE, [3,3-]            | 91-94-1   | 0.2          | V        | Y   | Y  |
| BENZO(B)FLUORANTHENE        | 205-99-2   | 0.01         | V        | Y   | N  | DICHLOROETHANE, [1,1-]               | 75-34-3   | 1            |          | Y   | N  |
| BENZO(K)FLUORANTHENE        | 207-08-9   | 0.01         | V        | Y   | N  | DICHLOROETHANE, [1,2-]               | 107-06-2  | 0.8          |          | Y   | N  |
| BENZOTRICHLORIDE            | 98-07-7    | 0.006        |          | Y   | N  | DICHLOROETHYLENE, [1,1-]             | 75-35-4   | 0.4          |          | Y   | N  |
| BENZYL CHLORIDE             | 100-44-7   | 0.1          |          | Y   | N  | DICHLOROMETHANE                      | 75-09-2   | 10           |          | N   | N  |
| BERYLLIUM COMPOUNDS         |            | 0.008        | J        | N   | Y  | DICHLOROPHENOXY ACETIC ACID, [2,4-]  | 94-75-7   | 10           | C        | Y   | Y  |
| BERYLLIUM SALTS             |            | 2E-05        | J        | N   | Y  | DICHLOROPROPANE, [1,2-]              | 78-87-5   | 1            |          | Y   | N  |
| BIPHENYL, [1,1-]            | 92-52-4    | 10           | V        | Y   | N  | DICHLOROPROPENE, [1,3-]              | 542-75-6  | 1            |          | Y   | N  |
| BIS(CHLOROETHYL)ETHER       | 111-44-4   | 0.06         |          | Y   | N  | DICHLORVOS                           | 62-73-7   | 0.2          |          | Y   | N  |
| BIS(CHLOROMETHYL)ETHER      | 542-88-1   | 0.0003       |          | Y   | N  | DIETHANOLAMINE                       | 111-42-2  | 5            |          | Y   | N  |
| BROMOFORM                   | 75-25-2    | 10           |          | Y   | N  | DIETHYL SULFATE                      | 64-67-5   | 1            |          | Y   | N  |
| BROMOMETHANE                | 74-83-9    | 10           |          | Y   | N  | DIETHYLENE GLYCOL MONOBUTYL ETHER    | 112-34-5  | 5            | P        | Y   | N  |
| BUTADIENE, [1,3-]           | 106-99-0   | 0.07         |          | Y   | N  | DIMETHOXYBENZIDINE, [3,3-]           | 119-90-4  | 0.1          | V        | Y   | Y  |
| BUTOXYETHANOL ACETATE, [2-] | 112-07-2   | 5            | P        | Y   | N  | DIMETHYL BENZIDINE, [3,3-]           | 119-93-7  | 0.008        | V        | Y   | Y  |
| BUTYLENE OXIDE, [1,2-]      | 106-88-7   | 1            |          | Y   | N  | DIMETHYL CARBAMOYL CHLORIDE          | 79-44-7   | 0.02         |          | Y   | N  |
| CADMIUM COMPOUNDS           |            | 0.01         | K        | N   | Y  | DIMETHYL FORMAMIDE                   | 68-12-2   | 1            |          | Y   | N  |
| CALCIUM CYANAMIDE           | 156-62-7   | 10           |          | Y   | Y  | DIMETHYL HYDRAZINE, [1,1-]           | 57-14-7   | 0.008        |          | Y   | N  |
| CAPROLACTAM (Delisted)      | 105-60-2   |              |          |     |    | DIMETHYL PHTHALATE                   | 131-11-3  | 10           |          | Y   | N  |
| CAPTAN                      | 133-06-2   | 10           |          | Y   | Y  | DIMETHYL SULFATE                     | 77-78-1   | 0.1          |          | Y   | N  |
| CARBARYL                    | 63-25-2    | 10           | V        | Y   | Y  | DIMETHYLAMINOAZOBENZENE, [4-]        | 60-11-7   | 1            |          | Y   | N  |
| CARBON DISULFIDE            | 75-15-0    | 1            |          | Y   | N  | DIMETHYLANILINE, [N-N-]              | 121-69-7  | 1            |          | Y   | N  |
| CARBON TETRACHLORIDE        | 56-23-5    | 1            |          | Y   | N  | DINITRO-O-CRESOL, [4,6-] (Note 6)    | 534-52-1  | 0.1          | E        | Y   | Y  |
| CARBONYL SULFIDE            | 463-58-1   | 5            |          | Y   | N  | DINITROPHENOL, [2,4-]                | 51-28-5   | 1            |          | Y   | N  |
| CATECHOL                    | 120-80-9   | 5            |          | Y   | N  | DINITROTOLUENE, [2,4-]               | 121-14-2  | 0.02         |          | Y   | N  |
| CHLORAMBEN                  | 133-90-4   | 1            |          | Y   | Y  | DIOXANE, [1,4-]                      | 123-91-1  | 6            |          | Y   | N  |
| CHLORDANE                   | 57-74-9    | 0.01         |          | Y   | Y  | DIPHENYLHYDRAZINE, [1,2-]            | 122-66-7  | 0.09         | V        | Y   | Y  |
| CHLORINE                    | 7782-50-5  | 0.1          |          | N   | N  | DIPHENYLMETHANE DIISOCYANATE, [4,4-] | 101-68-8  | 0.1          | V        | Y   | N  |
| CHLOROACETIC ACID           | 79-11-8    | 0.1          |          | Y   | N  | EPICHLOROHYDRIN                      | 106-89-8  | 2            |          | Y   | N  |
| CHLOROACETOPHENONE, [2-]    | 532-27-4   | 0.06         |          | Y   | N  | ETHOXYETHANOL, [2-]                  | 110-80-5  | 10           | P        | Y   | N  |
| CHLOROBENZENE               | 108-90-7   | 10           |          | Y   | N  | ETHOXYETHYL ACETATE, [2-]            | 111-15-9  | 5            | P        | Y   | N  |
| CHLOROBENZILATE             | 510-15-6   | 0.4          | V        | Y   | Y  | ETHYL ACRYLATE                       | 140-88-5  | 1            |          | Y   | N  |
| CHLOROFORM                  | 67-66-3    | 0.9          |          | Y   | N  | ETHYL BENZENE                        | 100-41-4  | 10           |          | Y   | N  |



**Air Pollution Control Program**  
**Table of Hazardous Air Pollutants and Screening Model Action Levels**

|  |            |       |   |   |   |  |           |        |     |   |   |
|--|------------|-------|---|---|---|--|-----------|--------|-----|---|---|
| ETHYL CHLORIDE                             | 75-00-3    | 10    |   | Y | N | NITROBENZENE                           | 98-95-3   | 1      |     | Y | N |
| ETHYLENE GLYCOL                            | 107-21-1   | 10    |   | Y | N | NITROBIPHENYL, [4-]                    | 92-93-3   | 1      | V   | Y | N |
| ETHYLENE GLYCOL MONOBUTYL ETHER (Delisted) | 111-76-2   |       |   |   |   | NITROPHENOL, [4-]                      | 100-02-7  | 5      |     | Y | N |
| ETHYLENE GLYCOL MONOHEXYL ETHER            | 112-25-4   | 5     | P | Y | N | NITROPROPANE, [2-]                     | 79-46-9   | 1      |     | Y | N |
| ETHYLENE IMINE [AZIRIDINE]                 | 151-56-4   | 0.003 |   | Y | N | NITROSODIMETHYLAMINE, [N-]             | 62-75-9   | 0.001  |     | Y | N |
| ETHYLENE OXIDE                             | 75-21-8    | 0.1   |   | Y | N | NITROSOMORPHOLINE, [N-]                | 59-89-2   | 1      |     | Y | N |
| ETHYLENE THIOUREA                          | 96-45-7    | 0.6   |   | Y | Y | NITROSO-N-METHYLUREA, [N-]             | 684-93-5  | 0.0002 |     | Y | N |
| FORMALDEHYDE                               | 50-00-0    | 2     |   | Y | N | OCTACHLORONAPHTHALENE                  | 2234-13-1 | 0.01   | V   | Y | N |
| GLYCOL ETHER (ETHYLENE GLYCOL ETHERS)      |            | 5     | P | Y | N | PARATHION                              | 56-38-2   | 0.1    |     | Y | Y |
| GLYCOL ETHER (DIETHYLENE GLYCOL ETHERS)    |            | 5     | P | Y | N | PCB [POLYCHLORINATED BIPHENYLS]        | 1336-36-3 | 0.009  | X   | Y | Y |
| HEPTACHLOR                                 | 76-44-8    | 0.02  |   | Y | N | PENTACHLORONITROBENZENE                | 82-68-8   | 0.3    |     | Y | N |
| HEXACHLORO BENZENE                         | 118-74-1   | 0.01  |   | Y | N | PENTACHLOROPHENOL                      | 87-86-5   | 0.7    |     | Y | N |
| HEXACHLOROBUTADIENE                        | 87-68-3    | 0.9   |   | Y | N | PHENOL                                 | 108-95-2  | 0.1    |     | Y | N |
| HEXACHLOROCYCLOHEXANE, [ALPHA-]            | 319-84-6   | 0.01  | F | Y | N | PHENYLENEDIAMINE, [PARA-]              | 106-50-3  | 10     |     | Y | N |
| HEXACHLOROCYCLOHEXANE, [BETA-]             | 319-85-7   | 0.01  | F | Y | N | PHOSGENE                               | 75-44-5   | 0.1    |     | Y | N |
| HEXACHLOROCYCLOHEXANE, [DELTA-]            | 319-86-8   | 0.01  | F | Y | N | PHOSPHINE                              | 7803-51-2 | 5      |     | N | N |
| HEXACHLOROCYCLOHEXANE, [TECHNICAL]         | 608-73-1   | 0.01  | F | Y | N | PHOSPHOROUS (YELLOW OR WHITE)          | 7723-14-0 | 0.1    |     | N | N |
| HEXACHLOROCYCLOPENTADIENE                  | 77-47-4    | 0.1   |   | Y | N | PHTHALIC ANHYDRIDE                     | 85-44-9   | 5      |     | Y | N |
| HEXACHLOROETHANE                           | 67-72-1    | 5     |   | Y | N | POLYCYLIC ORGANIC MATTER               |           | 0.01   | V   | Y | N |
| HEXAMETHYLENE,-1,6-DIISOCYANATE            | 822-06-0   | 0.02  |   | Y | N | PROPANE SULTONE, [1,3-]                | 1120-71-4 | 0.03   |     | Y | Y |
| HEXAMETHYLPHOSPHORAMIDE                    | 680-31-9   | 0.01  |   | Y | N | PROPIOLACTONE, [BETA-]                 | 57-57-8   | 0.1    |     | Y | N |
| HEXANE, [N-]                               | 110-54-3   | 10    |   | Y | N | PROPIONALDEHYDE                        | 123-38-6  | 5      |     | Y | N |
| HYDRAZINE                                  | 302-01-2   | 0.004 |   | N | N | PROPOXUR [BAYGON]                      | 114-26-1  | 10     |     | Y | Y |
| HYDROGEN CHLORIDE                          | 7647-01-0  | 10    |   | N | N | PROPYLENE OXIDE                        | 75-56-9   | 5      |     | Y | N |
| HYDROGEN FLUORIDE                          | 7664-39-3  | 0.1   |   | N | N | PROPYLENEIMINE, [1,2-]                 | 75-55-8   | 0.003  |     | Y | N |
| HYDROQUINONE                               | 123-31-9   | 1     |   | Y | N | QUINOLINE                              | 91-22-5   | 0.006  |     | Y | N |
| INDENO(1,2,3CD)PYRENE                      | 193-39-5   | 0.01  | V | Y | N | QUINONE                                | 106-51-4  | 5      |     | Y | N |
| ISOPHORONE                                 | 78-59-1    | 10    |   | Y | N | RADIONUCLIDES                          |           | Note 1 | Y   | N | Y |
| LEAD COMPOUNDS                             |            | 0.01  | Q | N | Y | SELENIUM COMPOUNDS                     |           | 0.1    | W   | N | Y |
| LINDANE [GAMMA-HEXACHLOROCYCLOHEXANE]      | 58-89-9    | 0.01  | F | Y | N | STYRENE                                | 100-42-5  | 1      |     | Y | N |
| MALEIC ANHYDRIDE                           | 108-31-6   | 1     |   | Y | N | STYRENE OXIDE                          | 96-09-3   | 1      |     | Y | N |
| MANGANESE COMPOUNDS                        |            | 0.8   | R | N | Y | TETRACHLORO DIBENZO-P-DIOXIN,[2,3,7,8] | 1746-01-6 | 6E-07  | D,V | Y | Y |
| MERCURY COMPOUNDS                          |            | 0.01  | S | N | N | TETRACHLOROETHANE, [1,1,2,2-]          | 79-34-5   | 0.3    |     | Y | N |
| METHANOL                                   | 67-56-1    | 10    |   | Y | N | TETRACHLOROETHYLENE                    | 127-18-4  | 10     |     | N | N |
| METHOXYCHLOR                               | 72-43-5    | 10    | V | Y | Y | TITANIUM TETRACHLORIDE                 | 7550-45-0 | 0.1    |     | N | N |
| METHOXYETHANOL, [2-]                       | 109-86-4   | 10    | P | Y | N | TOLUENE                                | 108-88-3  | 10     |     | Y | N |
| METHYL CHLORIDE                            | 74-87-3    | 10    |   | Y | N | TOLUENE DIISOCYANATE, [2,4-]           | 584-84-9  | 0.1    |     | Y | N |
| METHYL ETHYL KETONE (Delisted)             | 78-93-3    |       |   |   |   | TOLUIDINE, [ORTHO-]                    | 95-53-4   | 4      |     | Y | N |
| METHYL HYDRAZINE                           | 60-34-4    | 0.06  |   | Y | N | TOXAPHENE                              | 8001-35-2 | 0.01   |     | Y | N |
| METHYL IODIDE                              | 74-88-4    | 1     |   | Y | N | TRICHLORO BENZENE, [1,2,4-]            | 120-82-1  | 10     |     | Y | N |
| METHYL ISOBUTYL KETONE                     | 108-10-1   | 10    |   | Y | N | TRICHLOROETHANE, [1,1,1,1-]            | 71-55-6   | 10     |     | N | N |
| METHYL ISOCYANATE                          | 624-83-9   | 0.1   |   | Y | N | TRICHLOROETHANE, [1,1,2-]              | 79-00-5   | 1      |     | Y | N |
| METHYL METHACRYLATE                        | 80-62-6    | 10    |   | Y | N | TRICHLOROETHYLENE                      | 79-01-6   | 10     |     | Y | N |
| METHYL TERT-BUTYL ETHER                    | 1634-04-4  | 10    |   | Y | N | TRICHLOROPHENOL, [2,4,5-]              | 95-95-4   | 1      |     | Y | N |
| METHYLCYCLOPENTADIENYL MANGANESE           | 12108-13-3 | 0.1   | R | N | Y | TRICHLOROPHENOL, [2,4,6-]              | 88-06-2   | 6      |     | Y | N |
| METHYLENE BIS(2-CHLOROANILINE), [4,4-]     | 101-14-4   | 0.2   | V | Y | Y | TRIETHYLAMINE                          | 121-44-8  | 10     |     | Y | N |
| METHYLENEDIANILINE, [4,4-]                 | 101-77-9   | 1     | V | Y | N | TRIFLURALIN                            | 1582-09-8 | 9      |     | Y | Y |
| METHYLNAPHTHALENE, [2-]                    | 91-57-6    | 0.01  | V | Y | N | TRIMETHYLPENTANE, [2,2,4-]             | 540-84-1  | 5      |     | Y | N |
| MINERAL FIBERS                             |            | 0     | T | N | Y | URETHANE [ETHYL CARBAMATE]             | 51-79-6   | 0.8    |     | Y | N |
| NAPHTHALENE                                | 91-20-3    | 10    | V | Y | N | VINYL ACETATE                          | 108-05-4  | 1      |     | Y | N |
| NAPHTHYLAMINE, [ALPHA-]                    | 134-32-7   | 0.01  | V | Y | N | VINYL BROMIDE                          | 593-60-2  | 0.6    |     | Y | N |
| NAPHTHYLAMINE, [BETA-]                     | 91-59-8    | 0.01  | V | Y | N | VINYL CHLORIDE                         | 75-01-4   | 0.2    |     | Y | N |
| NICKEL CARBONYL                            | 13463-39-3 | 0.1   | U | N | Y | XYLENE, [META-]                        | 108-38-3  | 10     | G   | Y | N |
| NICKEL COMPOUNDS                           |            | 1     | U | N | Y | XYLENES (MIXED ISOMERS)                | 1330-20-7 | 10     | G   | Y | N |
| NICKEL REFINERY DUST                       |            | 0.08  | U | N | Y |  |           |        |     |   |   |
| NICKEL SUBSULFIDE                          | 12035-72-2 | 0.04  | U | N | Y |  |           |        |     |   |   |

## Air Pollution Control Program Table of Hazardous Air Pollutants and Screening Model Action Levels

| Legend   |   |
|----------|---|
| Group ID |   |
| A        | Asbestos  |
| B        | Cresols/Cresylic Acid (isomers and mixtures)  |
| C        | 2,4 - D, Salts and Esters   |
| D        | Dibenzofurans, Dibenzodioxins   |
| E        | 4, 6 Dinitro-o-cresol, and Salts  |
| F        | Lindane (all isomers)   |
| G        | Xylenes (all isomers and mixtures)  |
| H        | Antimony Compounds  |
| I        | Arsenic Compounds   |
| J        | Beryllium Compounds   |
| K        | Cadmium Compounds   |
| L        | Chromium Compounds  |
| M        | Cobalt Compounds  |
| N        | Coke Oven Emissions   |
| O        | Cyanide Compounds   |
| P        | Glycol Ethers   |
| Q        | Lead Compounds (except elemental Lead)  |
| R        | Manganese Compounds   |
| S        | Mercury Compounds   |
| T        | Fine Mineral Fibers   |
| U        | Nickel Compounds  |
| V        | Polycyclic Organic Matter   |
| W        | Selenium Compounds  |
| X        | Polychlorinated Biphenyls (Aroclors)  |
| Y        | Radionuclides   |
|          |   |
|          |   |
| Notes    | The SMAL for radionuclides is defined as the effective dose equivalent to 0.3 millirems per year for 7 years exposure associated with a cancer risk of 1 in 1 million |