

## STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2103-AR-1 AFIN: 65-00232

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Royal Oak Enterprises, Inc. (Oxley Kilns)  
382 Harry Brown Road  
Leslie, Arkansas 72645

3. PERMIT WRITER:

Patty Campbell, P.E.

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Cyclic Crude, Intermediate, and Gum and Wood Chemical  
Manufacturing  
NAICS Code: 325194

5. SUBMITTALS:

7/9/2013 (first application), 9/12/13 (second application), and 9/25/2013

6. REVIEWER'S NOTES:

Royal Oak Enterprises, Inc. owns and operates Oxley Kilns a charcoal manufacturing facility located at 382 Harry Brown Road Leslie, Searcy County, Arkansas 72645. This permitting action is necessary to:

1. Increase permitted emission limits for Charcoal Kilns #1 through #8 with Thermal Oxidizer (SN-01) based on the latest performance test results;
2. Install four (4) Missouri-type, charcoal kilns (SN-02) and one thermal oxidizer (CD-02) in-line, relocated from another facility;
3. Clarify off-site opacity not to exceed 5%;
4. No more than eight (8) kilns shall be vented through SN-01 thermal oxidizer and no more than four (4) kilns shall be vented through SN-02 thermal oxidizer;
5. Conduct performance tests for SN-01 and SN-02 for PM/PM<sub>10</sub>, CO, NO<sub>x</sub>, and opacity in accordance with General Condition #7 and every 5 years thereafter; and

6. Add General Conditions #19 through #21.

Total permitted annual emission changes associated with this modification are: 1.9 tpy (tons per year) PM/PM<sub>10</sub>, 0.5 tpy VOC, 4.1 tpy CO, 5.6 tpy NO<sub>x</sub>, and 0.46 tpy Methanol.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

Oxley Kilns conducted a performance test on 01/11/2013. NO<sub>x</sub> test results were 4.87 lb/hr versus the NO<sub>x</sub> permit limit of 4.40 lb/hr. Thus, NO<sub>x</sub> emissions exceeded the permit limit. An enforcement action is pending.

8. PSD APPLICABILITY:

- a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
- b) Is the facility categorized as a major source for PSD? N
- *Single pollutant  $\geq 100$  tpy and on the list of 28 or single pollutant  $\geq 250$  tpy and not on list, or*
  - *CO<sub>2</sub>e potential to emit  $\geq 100,000$  tpy and  $\geq 100$  tpy/ $\geq 250$  tpy of combined GHGs?*

If yes, explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
None identified.		

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. NAAQS EVALUATIONS AND NON-CRITERIA POLLUTANTS:

a) NAAQS:

Pursuant to Act 1302 of the Regular Session of the 89th General Assembly of the State of Arkansas, no dispersion modeling was performed by ADEQ because it was not voluntarily proposed and agreed to by the facility. No other information was submitted by the applicant. Criteria pollutants were not evaluated for impacts on the NAAQS.

b) Non-Criteria Pollutants:

1<sup>st</sup> Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value ( $\text{mg}/\text{m}^3$ ), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV ( $\text{mg}/\text{m}^3$ )	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
Methanol	262.09	28.83	0.11*	Yes

\* SN-02 = 0.032 lb/hr methanol, rounds to 0.04 lb/hr in permit

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01	Stack Testing 01/11/13 <u>Lb/hr</u> PM/PM <sub>10</sub> : 0.32 CO: 0.007 NO <sub>x</sub> : 4.87	<u>Lb/hr</u> PM/PM <sub>10</sub> : 0.9 VOC: 0.2 CO: 0.2 NO <sub>x</sub> : 6.08 Methanol: 0.07	Afterburner	99.98%	On 1/11/13 a performance test was conducted on SN-01. The NO <sub>x</sub> limit was exceeded. TPY are calculated at full load, continuous operation, 8,760 hr/yr.
02	<i>Estimate by Facility</i> based on previous Stacks Test plus safety factor <u>Lb/hr</u> PM <sub>10</sub> : 0.162 VOC: 0.007 CO: 0.09 NO <sub>x</sub> : 1.59	<u>Permitted Lb/hr</u> PM/PM <sub>10</sub> : 0.81 VOC: 0.035 CO: 0.90 NO <sub>x</sub> : 3.98 Methanol: 0.032	Afterburner	99.98%	Permitted emissions include safety factors. Sulfur content of propane is negligible. Calculated at full load, continuous operation, 8,760 hr/yr.

## 13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01	PM <sub>10</sub> CO NO <sub>x</sub>	5 & 202 10 7E	Test shall take place every 5 years in accordance with GC # 7	§19.702 and A.C.A.
	Opacity	9		
02	PM <sub>10</sub> CO NO <sub>x</sub>	5 & 202 10 7E	Within 180 days after initial start-up of SN-02 and every 5 years in accordance with GC # 7	§19.702 and A.C.A.
	Opacity	9		

## 14. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
01 & 02	Afterburner outlet Temperature	Temperature Gauge and chart recorder	Continuous	N

## 15. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility	Charcoal Production	19,272 tons of charcoal per rolling 12 months	Monthly	No

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01 & 02	After-burners Outlet Gas Temperature	Minimum 1200°F with residence times of ½ second or greater	Continuous (Once every 15 minutes for a period of consecutive observations)	No
01 & 02 After- burners	Original Spec/ Doc & process parameters, which indicates proper operate & maint. of device	As specified in Manufacturing Specifications	On-going	N (Keep on- site for Life of unit)
Kilns #1 - #8 & #9 - #12	Time and date of ignition individual kilns	Limit one ignition per afterburner per calendar day	As performed	No
01 After- burner	Performance Tests	PM/PM <sub>10</sub> : 0.9 lb/hr CO: 0.2 lb/hr NO <sub>x</sub> : 6.08 lb/hr Opacity:10%	Every 5 years per GC #7	Yes
02 After- burner	Performance Tests	PM/PM <sub>10</sub> : 0.81 lb/hr CO: 0.9 lb/hr NO <sub>x</sub> : 3.98 lb/hr Opacity:10%	IPT & Every 5 years per GC #7	Yes

## 16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01 & 02	10%	§18.501 and A.C.A.	Annual Inspection
Off-site – Dust/ash Extend beyond the property line of the facility.	5%	§18.501 and A.C.A.	Daily Observation

## 17. DELETED CONDITIONS:

There are no deleted conditions.

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18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	A	Emissions (tpy)						
		PM/ PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							S	T
1 Used Motor Oil Tank, 250 gallon capacity (TK5)	A-2	0.0	0.0	insig	0.0	0.0	0.0	0.0
1 Diesel Fuel Tank, 2,000 gallon capacity (TK1)	A-3	0.0	0.0	0.00005	0.0	0.0	0.0	0.0
1 Propane Tank, 500 gallon capacity (TK4)	A-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 Propane Tanks, 1,000 gallon capacity (TK2, TK3, TK6, & TK7)	A-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haul Roads	A-13	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Loading Kilns	A-13	Insig.	0.0	0.0	0.0	0.0	0.0	0.0
Charcoal Storage Pile Handling (Indoors)	A-13	0.01	0.0	0.0	0.0	0.0	0.0	0.0
Lump Coal Processing	A-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
2103-A

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.



Paula Parker, P.E.

## APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Minor Source

Revised 08-26-13

Facility Name: Royal Oaks  
Enterprises, Inc. - Oxley Kilns  
Permit Number: 2103-AR-1  
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			Old Permit	New Permit
\$/ton factor	23.42	Permit Predominant Air Contaminant	38.6	44.2
Minimum Fee \$	400	Net Predominant Air Contaminant Increase	5.6	
Minimum Initial Fee \$	500			
Check if Administrative Amendment	<input type="checkbox"/>	Permit Fee \$	400	
		Annual Chargeable Emissions (tpy)	44.2	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	5.6	7.5	1.9
PM <sub>10</sub>	5.6	7.5	1.9
SO <sub>2</sub>	0	0	0
VOC	0.6	1.1	0.5
CO	0.8	4.9	4.1
NO <sub>x</sub>	38.6	44.2	5.6
Methanol	0.56	1.02	0.46
pc 10/02/13	0	0	0