Commonwealth of Kentucky
Division for Air Quality

PERMIT APPLICATION SUMMARY FORM

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GENERAL INFORMATION:

Name:	Catlettsburg Refining, L.L.C.
Address:	Catlettsburg, KY 41129
Date application received:	September 25, 2003
SIC/Source description:	2911/Petroleum Refining
EIS #:	21-019-00004
Application log number:	56022
Permit number:	VF-02-001 (Revision 2)

APPLICATION TYPE/PERMIT ACTIVITY:

[ ] Initial issuance
[X] Permit modification
__Administrative
__Minor
X Significant
[ ] Permit renewal

[ ] General permit
[ ] Conditional major
[X] Title V
[X] Synthetic minor
[ ] Operating
[X] Construction/operating

COMPLIANCE SUMMARY:

[ ] Source is out of compliance
[ ] Compliance schedule included
[ ] Compliance certification signed

APPLICABLE REQUIREMENTS LIST:

[ ] NSR
[X] NSPS
[X] SIP
[ ] PSD
[ ] NESHAPS
[ ] Other
[X] Netted out of PSD/NSR
[ ] Not major modification per 401 KAR 51:017, 1(23)(b) or 51:052,1(14)(b)

MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[X] Source applied for federally enforceable emissions cap
[X] Source provided terms for alternative operating scenarios
[X] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[X] Certified by responsible official
[X] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[X] Area is non-attainment (list pollutants): SO_2

EMISSIONS SUMMARY:

The Refinery Modernization Project involves installation of new emissions units, modifications to some existing emissions units, and removal of some existing emissions units. The total past actual emissions from the existing units and the future potential emissions from the future units are as follows. The change in emissions with revision 2 are listed in parentheses:

Pollutant	Potential (tpy)	Actual (tpy)
PM	370 (-0.7)	335.5
PM10	370 (-0.7)	335.5
SO_2	4,525.2 (-1.2)	773.2
NOx	1,847.4 (-1.8)	929.1
CO	1,194.8 (-3.7)	1,148.7
VOC	205.1 (-0.2)	167.8

SOURCE PROCESS DESCRIPTION:

The site of the proposed project is the petroleum refinery operated by Catlettsburg Refining, LLC, a subsidiary of Marathon Ashland Petroleum LLC. This refinery is located on the Big Sandy River in Catlettsburg, Boyd County, Kentucky.

The proposed Refinery Modernization Project involves installation of new equipment and upgrading of existing equipment. This will allow the refinery to produce cleaner-burning transportation fuels, to improve yields, to utilize a wider range of purchased feed materials, and to reduce fixed and operating costs. In addition, the project will substantially reduce emissions of sulfur dioxide and nitrogen oxides from the refining operations.

This permit covers minor changes to the Refinery Modernization Project scope that have occurred subsequent to the issuance of Synthetic minor construction permit number VF-02-001 Revision 1 on July 25, 2003, as well as changes to permit terms relating to monitoring requirements. As documented in permit number VF-02-001 Revision 1, the project will not result in a significant net emissions increase for any regulated air pollutant. Thus, the Prevention of Significant Deterioration (PSD) regulations codified at 401 KAR 51:017 and the major nonattainment area NSR regulations codified at 401 KAR 51:052 are not applicable. The proposed changes at the refinery include the following:

The synthetic minor emission limits for the following units have been revised. As shown in Emissions Analysis (Statement of Basis), these changes have been incorporated into the PSD netting analysis, and do not cause the refinery modernization project to become a major modification.

a. Fluidized Catalytic Cracking Unit (ID No. 2-116-B)
   The synthetic minor NOx emission limit for the Fluidized Catalytic Cracking Unit is revised from 237.0 tons per year to 365.0 tons per year.

b. No. 4 Vacuum Charge Heaters (ID No. 2-26-B-2 and 2-23-B-6)

The heat input limit for the 2-26-B-2 heater is revised from 138 MMBtu/hr to 112 MMBtu/hr. The synthetic minor emission limits for the 2-26-B-2 heater reflect the decreased heat input capacity. The new and old (in parenthesis) synthetic minor emission limits are listed in the following table.

Affected Units	**Maximum emissions (tons/yr)**				
	SO_2	**NO_x**	**VOC**	**CO**	**PM_{10}**
No. 4 Vacuum Charge Heater (2-26-B-2)	15.1 (16.2)	39.9 (42.8)	3.1 (3.3)	47.1 (50.6)	4.3 (4.6)

c. HPVGO Hydrotreater Heaters (ID No. 2-104-B-1 and 2-104-B-2)

The synthetic minor NOx emission limit for both HPVGO Hydrotreater Heaters is revised from 19.5 tons per year to 23.8 tons per year.

In addition to changes in the synthetic minor emission limits, existing permit terms for combustion devices have been revised. Catlettsburg Refining, LLC proposed to use CEMS for large, controlled units. Also, CRLLC proposed to relax the method of compliance demonstration for NOx and CO synthetic minor emission limits for several other combustion devices. The Division determined that each of these combustion devices has a potential to emit (PTE) for NOx and CO that is very close to the synthetic minor permit emission limits. CRLLC calculates for each day, in tons per year, the rolling 365-day emissions of each pollutant and maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the combustion devices. CRLLC also calculates and maintains daily records of 365-day rolling sum emissions of each pollutant from the combustion devices. Permit number VF-02-001 (Revision 1) contains an hourly heat input capacity operating limit for each combustion device. CRLLC determines the Gross Calorific Value of the fuel combusted by using ASTM methods on a weekly basis. CRLLC measures the rate of fuel burned for each fuel daily or at shorter intervals.

EMISSION AND OPERATING CAPS DESCRIPTION:

To preclude applicability of 401 KAR 51:017, Prevention of Significant Deterioration of Air Quality, and 401 KAR 51:052, Nonattainment New Source Review, Catlettsburg Refining has requested that the net emissions increases from the modification be limited to the following:

PM	- 33 tons per year (decrease)
PM_{10}	- 33 tons per year (decrease)
SO_2	- 3,605 tons per year (decrease)
NO_X	- 730 tons per year (decrease)
CO	- 4 tons per year (decrease)
VOC	- 64 tons per year (decrease)

The net emissions decreases listed above are accomplished through netting analyses for each pollutant, in conjunction with emission limits on each of the emission units that are modified or debottlenecked by this project. The total annual allowable emissions from these emission units are as follows:

PM	370 tons per year
PM_{10}	370 tons per year
SO_2	4525.2 tons per year
NO_X	1847.4 tons per year
CO	1,194.8 tons per year
VOC	205.1 tons per year