

Marathon Ashland Petroleum LLC Civil Judicial Settlement

Fact Sheet

May 11, 2001

Overview: The settlement announced today commits seven refineries owned by Marathon Ashland Petroleum LLC (“Marathon Ashland”) to an ambitious program for assuring compliance with major provisions of the Clean Air Act. Marathon Ashland expects to spend nearly \$265 million over eight years to reduce emissions of nitrogen oxides by an estimated 8,000 per year and sulfur dioxide by an estimated 12,800 tons per year.

To enhance flexibility for producing fuels and to minimize permitting delays, especially for low sulfur gasoline and diesel projects, the agreement provides for the establishment of refinery-wide emission caps (SO₂, NO_X, PM and/or CO). These are the first refinery emission caps negotiated in a consent decree. They are expected to help eliminate production bottlenecks that could limit supply and raise prices and will be subject to review by state and local permit authorities.

Refinery Compliance Strategy: This is the fourth settlement under a federal strategy for achieving cooperative, across-the-board compliance by major U.S. refining companies. In the last four months the federal government reached similar and record settlements with BP, Koch Petroleum Group, Motiva, Equilon and Shell Deer Park, several of the nation’s largest oil refiners. Collectively, these settlements cover nearly 30 percent of U.S. refining capacity and will result in criteria pollutant emission reductions of nearly 150,000 tons per year.

EPA also is engaged in settlement negotiations with several other companies comprising over 20 percent of domestic refining capacity.

State and Local Partnerships: The states of Minnesota, Louisiana and Michigan (Wayne County), have joined in this settlement; others may join in the near future. The states of Minnesota and Louisiana will share in the civil penalty. The residents of Wayne County will also benefit from a supplemental environmental project under which Marathon Ashland will donate to it an island in the Rouge River (Fordson Island).

Companies/Affected Refineries: Marathon Ashland LLC owns and operates refineries located in seven states that collectively process about 935,000 barrels of oil a day, more than 5 percent of total domestic refining capacity. These seven refineries are located in:

- # Catlettsburg, KY - 222,000 barrels per day
- # Texas City, TX - 72,000 barrels per day
- # Robinson, IL - 192,000 barrels per day
- # Garyville, LA - 232,000 barrels per day
- # Detroit, MI - 74,000 barrels per day
- # Canton, OH - 73,000 barrels per day
- # St. Paul Park, MN - 70,000 barrels per day

Clean Air Act: This settlement addresses the most significant refinery emission sources and resolves violations associated with:

- # New Source Review (NSR) standards requiring facilities to apply best available technology (BACT) or lowest achievable emission reductions (LAER) when “grandfathered” units are expanded in a way that increases emissions;
- # New source performance standards and other pollution control practices applicable to most refinery processes and equipment, including the flaring of sulfur laden gases during process upsets;
- # Leak detection and repair (LDAR) requirements governing fugitive emissions from process components including valves, pumps, flanges; and
- # Benzene emissions from wastewater treatment plants.

Settlement Terms:

Civil Penalty: Marathon Ashland has agreed to pay a \$3.8 million civil penalty.

Environmental projects: The agreement includes \$6.5 million in supplemental environmental projects, including the donation of an island in the Rouge River to Wayne County, MI.

Enhanced Pollution Controls (\$263 Million): The agreement requires major capital expenditures at all refineries to install and operate technologies to control NO_x and SO₂ emissions at fluidized catalytic cracking units (FCCUs), which break crude oil down into major categories of refined product, and at heaters and boilers, which fuel the refining process. Marathon Ashland also will invest in controls and operating practices to minimize the excess flaring of sulfurous gases, reduce fugitive emissions from process components, including leaking valves and pumps, and control the release of benzene from wastewater treatment and conveyance systems.

Emission Caps, PALs and Credits: To enhance flexibility for producing fuels and to minimize permitting delays, especially for low sulfur gasoline and diesel projects, the agreement provides for the establishment of refinery-wide emission caps (SO₂, NO_x, PM and/or CO) and related plantwide applicability limits (PALs). It is anticipated that the use of these caps and PALs will facilitate efficiency improvements and production increases over the next eight years while simultaneously achieving significant emission reductions. In addition, Marathon Ashland will surrender any excess allowances/credits it receives under an EPA-approved No_x or ozone control program (i.e., allowances/credits that exceed the emission reductions required under this consent decree, as determined on a unit-by-unit basis).

ENHANCED POLLUTION CONTROLS

FCCU

NO_x: Install selective noncatalytic reduction (SNCR) at three and selective catalytic reduction (SCR) at one unit, or their equivalent. Aggressive use of catalyst additives at four other units in an effort to achieve similar levels of performance.

SO_x: Install a wet gas scrubber (WGS) at each of two units to reduce SOX (also reducing particulate emissions). Aggressive use of catalyst additives at three other units to achieve similar levels of performance. Establish emission limits at three existing scrubbers.

Heaters/Boilers

NO_x: Install “ultra-low NO_x” boilers to reduce overall NO_x emissions from heaters and boilers greater than 40 MMBTu by more than 4,000 tons per year.

SO_x: The use of liquid and solid fuels will be eliminated at five and reduced by 50% at two refineries, reducing SO₂ emissions by 1300 tons per year.

New Source Performance Standards and Flaring Events

Meet “new source” standards at all FCCUs, sulfur recovery plants, heaters, boilers and flares (with only one exception). Take appropriate action to reduce emissions from process upsets. Reroute and eliminate sulfur pit emissions. Implement a protocol for diagnosing and preventing upsets that result in significant releases of SO₂ and other gases.

Leak Detect/Repair

Implement an enhanced program for identifying and repairing leaking valves and pumps, a significant source of fugitive VOC emissions, through more frequent monitoring, the use of lower “leak” definitions and regular auditing of each facility’s LDAR program.

Benzene/Wastewater

Develop an enhanced program for ensuring compliance with benzene waste management practices through comprehensive auditing, regular monitoring, and improved emission controls (e.g., secondary carbon canisters).

REFINERY	FCCU CONTROL SCHEDULE		
	NOX	SO2	
CATLETTSBURG KY	<i>R C C U</i>	<i>CATALYST ADDITIVES and LNBS (2004) plus SNCR (2004 and 2008) plus optimization (2005 and 2009)</i>	<i>WGS (2004) or Optimize existing dry scrubber (if FCCU not shut down by 2004)</i>
	<i>F C C U</i>	<i>CATALYST ADDITIVES and SNCR (2004) plus optimization (2005)</i>	<i>WGS (2004)</i>
TEXAS CITY TX	<i>SCR (2005)</i>	<i>WGS (2002)</i>	
ROBINSON IL	<i>CATALYST ADDITIVES (2002) plus SNCR (2005) plus optimization (2006) at one FCCU; CATALYST ADDITIVES (up to 2%) at other two refineries (2002)</i>	<i>Existing WGS</i>	
GARYVILLE LA		<i>Existing WGS</i>	
DETROIT MI		<i>CATALYST ADDITIVES (up to 10%) (2002)</i>	
CANTON OH	<i>CATALYST ADDITIVES (up to 2%) (2002)</i>	<i>CATALYST ADDITIVES (up to 10%) (2002)</i>	
ST. PAUL PARK MN	<i>CATALYST ADDITIVES (up to 2%) (2002)</i>	<i>CATALYST ADDITIVES (up to 10%) (2002)</i>	

GLOSSARY OF TERMS

BACT/LAER: BACT, or Best Available Control Technology, calls for emission controls that are the best generally available while considering costs, and is required on major new or modified sources in clean areas (i.e., attainment areas). LAER, or Lowest Achievable Emission Rate, calls for the best control technology ever applied in practice, without consideration of costs. LAER is required on major new or modified sources in non-attainment areas.

Benzene: Benzene is a colorless gas and is one of the many chemicals that make up gasoline. A known carcinogen, benzene can cause drowsiness, dizziness, headaches and vomiting. Death may result from high exposures. Leukemia is the form of cancer most commonly associated with benzene exposure. About 90 percent of airborne benzene results from gasoline. Benzene enters the air through tailpipe emissions and through evaporation, such as during refueling. Refineries are the single largest industrial source of benzene emissions.

Catalyst: A chemical compound that promotes the reaction among other compounds without undergoing chemical change or being expended in the process.

Cracking: The breakup of heavy petroleum molecules into shorter ones through the application of heat and pressure or catalysts.

Flaring: The process of disposing of waste gas streams by burning them in the open atmosphere.

Fluid Catalytic Cracking Unit (FCCU): A vessel used for cracking petroleum products by using a powdered catalyst in suspension in a moving stream of oil vapor.

Leak Detection and Repair (LDAR): A regulatory requirement to check valves and flanges throughout a refinery for leaks using portable monitoring equipment, and repairing any leaks above a certain rate within a set timeframe.

National Emission Standards for Hazardous Air Pollutants: Specific air pollution requirements designed to target sources of emissions deemed especially hazardous to public health.

New Source Performance Standards (NSPS): Requirements aimed at ensuring that newly built or significantly refurbished sources of air pollution apply modern control technology upon construction or reconstruction.

Nitrogen Oxides (NO_x): Burning fossil fuels, such as coal and gasoline, releases NO_x into the atmosphere. Nitrogen oxide emissions contribute to the formation of ground level ozone, acid rain, nitrogen deposits in lakes and coastal waters, crop damage, and reduced visibility. Ground level ozone can cause premature mortality, reduced lung function and aggravate existing respiratory problems such as asthma. Major sources of NO_x include oil refineries, power plants and automobiles.

Prevention of Significant Deterioration/New Source Review(PSD/NSR): Provisions in the Clean Air Act that require that permits and pollution controls be applied to major sources of air pollution when they are first built or undergo modifications that can increase emissions.

Selective Catalytic Reduction (SCR): An add-on control device that reduces NO_x emissions by converting them to nitrogen and water through the intervention of ammonia and a non-reacting catalyst that remains in place for continued reuse. The NO_x reduction reactions occur in a narrow temperature range, generally 550-900° F. SCR is capable of NO_x emission reductions of 90 percent or greater.

Selective Non-catalytic Reduction (SNCR): An add-on control device that reduces NO_x emissions by converting them to nitrogen and water using ammonia or urea injection without a catalyst. In the absence of a catalyst, higher temperatures in the range 1600 to 2000° F are required for ammonia to selectively react with nitric oxide to form molecular nitrogen and water.

Sulfur Dioxide (SO₂): Colorless gas, odorless at low concentrations but pungent at very high concentrations. One of the major pollutants that cause acid rain. Harmful to humans and vegetation when concentrations are sufficiently high. Major sources of this pollutant are petroleum refineries, coal or oil burning power plants and diesel engines.

Volatile organic compounds (VOCs): Carbon-containing compounds that evaporate into the air. May be toxic. Volatile organic compounds directly contribute to smog, which aggravates respiratory diseases such as asthma, particularly in the young and elderly. Refineries are the single largest stationary source of VOCs, the primary precursor of urban smog. EPA has estimated that oil refineries may be releasing as much as 80 million pounds of undetected VOCs from leaking valves each year.