

SPOKANE COUNTY OXYGENATED FUEL PROGRAM

2004-2005 CONTROL PERIOD

Annual Summary

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INTRODUCTION

The Spokane County Air Pollution Control Authority (SCAPCA) continued its oxygenated fuel program for all of Spokane County during the 2004-2005 winter months; the period when there is a high probability of elevated levels of carbon monoxide (CO). SCAPCA staff randomly inspected gasoline dispensing facilities, including fleets, to verify compliance with the oxygenate requirement.

All gasoline distributed in Spokane County, was required to meet 3.5% by weight of oxygen for ethanol or 2.7% by weight of oxygen for methyl tertiary butyl ether (MTBE), which is the maximum amount allowed by law. The oxygenate helps to ensure more complete combustion and thereby reduces CO emissions.

BACKGROUND

The Federal Clean Air Act Amendments of 1990 mandated the use of oxygenated fuel in 39 metropolitan areas that were in non-attainment for CO air quality standards. The objective of the oxygenated fuel program was to help bring these areas into attainment with the CO standard and stay in attainment.

Portions of Spokane County were designated as non-attainment for CO. Therefore, Washington State regulations required gasoline sold within Spokane County during the wintertime to contain oxygenates, starting November 1, 1992. Four exceedances of the CO standard (9 parts per million for an 8-hour average) in 1995 triggered a contingency measure in the SCAPCA rules to ensure wintertime gasoline contained the maximum allowable amount of oxygenate under the law. SCAPCA worked with the Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology) to expedite the necessary findings so that gasoline blenders were given sufficient notice to increase their stock of oxygenates for the 1996-97 control period.

In July 1998, the EPA approved a request by SCAPCA to shorten the oxygenated fuel season by one month. The request was based on air quality data that showed no exceedances of the CO standard occurred in Spokane during the month of September for seven years. Beginning in 1998, Spokane County's oxygenate control period has run from October 1 through February 29.

COMPLIANCE INSPECTIONS

Oxygenated fuel samples are typically collected during the first month of the season (October). Samples of regular unleaded gasoline are collected for analysis. Station managers that adequately plan ahead (i.e. drawing down volume of non-oxygenated gasoline; receiving oxygenated gasoline loads well in advance of October 1st) for the oxygenated fuel control period are better able to ensure the fuel they are dispensing will be in compliance.

Beginning in the year 2002, SCAPCA entered into an interagency agreement with the Washington State Department of Agriculture to provide gasoline sampling services in Spokane County.

General Sampling Protocol

- The Washington State Department of Agriculture inspector introduces himself/herself to the gasoline dispensing facility manager or representative and explains the purpose of the inspection.
- A quart sample of gasoline is purchased for analysis.
- Samples are tested for compliance by a third party analytical lab.
- Test results are reported to and evaluated by SCAPCA.
- A Notice of Corrective Action and/or a Notice of Violation may be issued if the facility needs to take corrective action or if the facility is out of compliance with regulations.
- Analytical lab results are retained by SCAPCA.

OXYGENATED FUEL REQUIREMENTS

All gasoline dispensed in Spokane County during the control period of October 1 through February 29, must contain 3.5% by weight of oxygen for ethanol or 2.7% by weight of oxygen for MTBE (methyl tertiary butyl ether).

WAC 173-492-080(3) specifies that the range of accuracy of the testing method is +/- 0.3% oxygen by weight. SCAPCA uses the +/- 0.3% in evaluating compliance. Samples with test results less than 3.2% are determined to be out of compliance, and field Notices of Violation typically are issued to the owners and/or operators of the facilities distributing the fuel.

State regulations require that pumps in Spokane County be labeled to inform the public that oxygenated gasoline is being dispensed during the control period.

BLENDERS

Blenders are required to register with SCAPCA, prior to the beginning of the control period, as stated in Chapter 173-492 WAC. Blenders complete registration forms provided by SCAPCA and submit the forms at least 30 days prior to the beginning of the control period.

Five blenders registered with SCAPCA for the 2004-2005 control period. A total of \$8,615 in registration fees was received. All blenders stated they would use ethanol as the oxygenate. Blenders reported that 76,212,851 gallons of gasoline were blended with 7,632,372 gallons of ethanol over the control period in Spokane County.

<u>Blender Name</u>	<u>Registration category*</u>
CHS, Inc.	Medium
ConocoPhillips	Large
ExxonMobil	Large
ChevronTexaco	Large
Shell Oil	Large

TOTAL VOLUME BLENDED: **76,212,851 gallons****

*Registration categories are based on the following:

- Small volume blender (<100,000 gallons per month)
- Medium volume blender (100,000 - 999,999 gallons per month)
- Large volume blender (1,000,000 - 14,999,999 gallons per month)
- Very large volume blender (>14,999,999 gallons per month)

* **Total volume of gasoline blended during control period (10/1/04 – 2/28/05)

SAMPLING AND RESULTS

Approximately 200 retail facilities are located in Spokane County. The Ecology Oxygenated Gasoline Program Implementation Guidelines suggest inspection of 20% of the retail facilities in a control area during a control period. Forty-five retail distribution points were sampled during the 2004-2005 season. The Washington State Department of Agriculture submitted forty-five gasoline samples to Saybolt labs for oxygenated fuel testing during the control period. The test method used to analyze samples was the ASTM D4815-89 "Standard Test Method for Determination of C1 to C4 Alcohols and MTBE in Gasoline by Gas Chromatography".

2004-2005 Oxygenated Fuel Sample Information – Monthly Averages

<u>Month</u>	<u># Samples</u>	<u>ASTM - Monthly Avg</u>
October, 2004	39	3.38% Oxygen by weight
January, 2005	6	3.465% Oxygen by weight

2004-2005 Program Summary: 45 ASTM samples

2004-2005 Oxygenated Fuel Sample Information – Monthly Low/High

<u>Month</u>	<u>Monthly Low</u> <u>ASTM</u>	<u>Monthly High</u> <u>ASTM</u>
October, 2004	3.19% Oxygen by weight*	3.51% Oxygen by weight
January, 2005	3.33% “	3.56% “

**Corrective action is required by the station manager when gasoline is dispensed that does not meet the oxygenate requirement (3.5 +/- 0.3%). Enforcement action is taken by SCAPCA.*

No Notices of Violation were issued for dispensing gasoline that did not meet the minimum oxygenate requirement of 3.5 ± 0.3%.

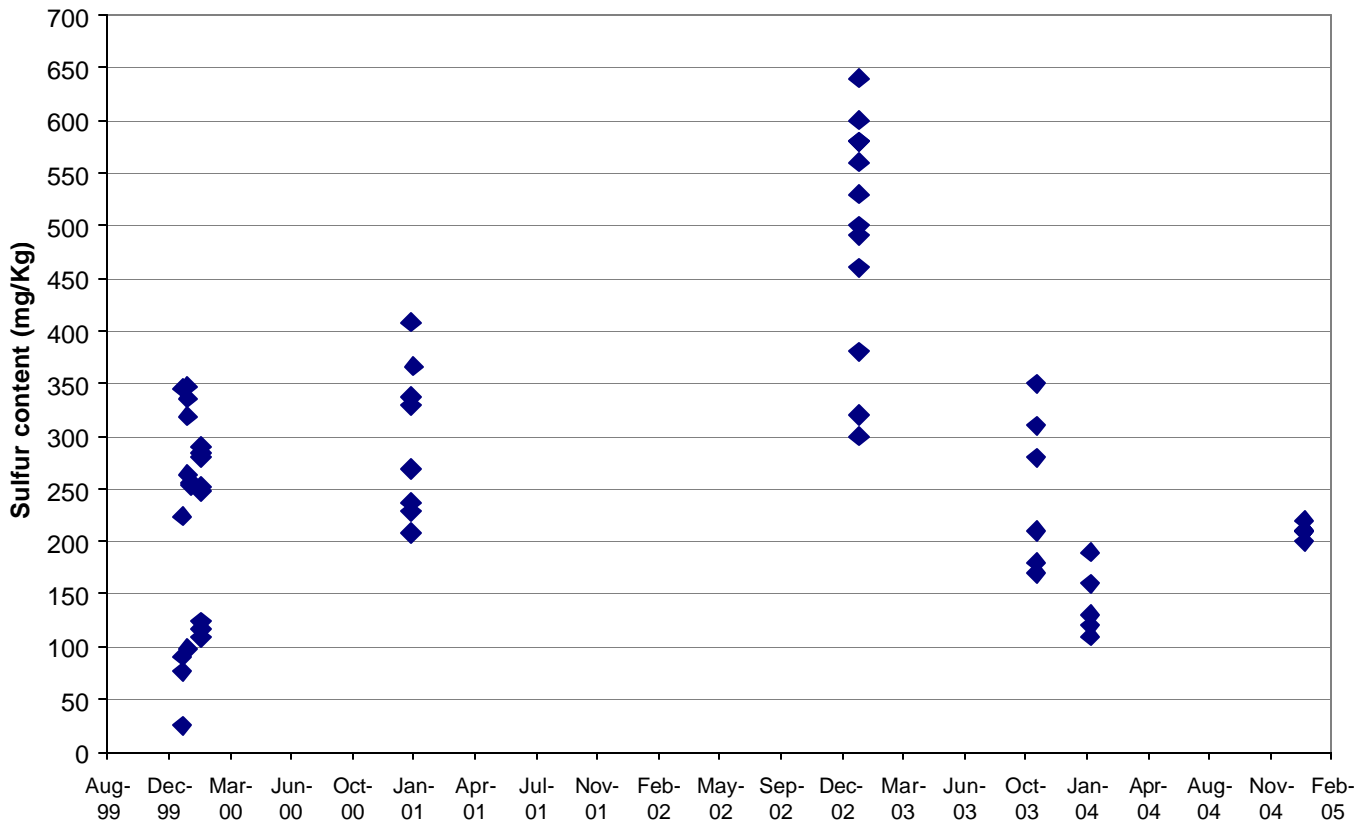
GASOLINE SULFUR ANALYSIS

For the last few years sulfur testing has been done on gasoline samples to assess the progress of refiners to meet upcoming federal sulfur standards. Six regular unleaded gasoline samples were tested this season for sulfur content using ASTM D 4294 sample method. The test results are given below.

Sample Number	Sample Date	Sulfur Content mg/kg
GS501-001	1/3/05	210
GS501-002	"	210
GS501-003	"	200
GS501-004	"	220
GS501-005	"	210
GS501-006	"	210

A graph comparing gasoline sulfur test results from year to year is given in the chart below. (Note – Regular unleaded gasoline sampled for sulfur analysis in each year shown.)

Gasoline Sulfur Analysis Spokane, WA



GASOLINE SULFUR ANALYSIS CONTINUED

Beginning January 2005, new limits were established for the sulfur content of gasoline including; a Refinery Average Limit of 30ppm, a Corporate Pool Average limit of 90ppm, and a Per-Gallon Cap of 300ppm.

There is a tier 2 gasoline sulfur program which provides significant flexibility during the phase-in years of the program (2004 and 2005) to refiners for complying with the sulfur standards, particularly for those refiners who primarily sell their gasoline in the Geographic Phase in Area (GPA) which includes Montana, where the gasoline used in Spokane County is produced. The applicable standard is 150ppm average sulfur in the GPA.

Large refiners have many refineries with which to average sulfur reductions to meet the 90ppm corporate limit mentioned above. Next year, the option to comply using the corporate pool average no longer applies so the sulfur levels are expected to be lower, although refineries could still be higher than the 150ppm average standard which applies in the GPA, if they are purchasing sulfur credits from refineries which are producing gasoline lower than 30ppm.

In an effort to monitor for required changes in sulfur content of gasoline, SCAPCA will continue minimal testing of gasoline for sulfur content over the next two years.

SUMMARY

SCAPCA has determined that the oxygenated fuel program is no longer critical to further attainment of the carbon monoxide (CO) standard, and that reductions in carbon monoxide emissions achieved through other control measures or strategies, are sufficient to prevent exceedances of the federal air quality standards for CO. In 2004, a maintenance plan was drafted by SCAPCA that proposes to eliminate the program. The drafted maintenance plan is currently being reviewed for approval by the USEPA.

Where can I obtain more information regarding the oxygenated fuel program or other programs implemented by SCAPCA?

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