UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENFORCEMENT

EPA-330/1-80-007

OMEGA-I LIDAR: DATA ANALYSIS REPORT
OLIN CORPORATION

Covington, Indiana

October 1980

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
Denver, Colorado

EPA

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I. INTRODUCTION

The National Enforcement Investigations Center (NEIC) conducted an investigation of visible emissions from two stationary sources at the Olin Corporation facility, located in Covington, Indiana, during early morning and late afternoon hours of June 12, 1980. Opacities of observed visible emissions were measured remotely with a new instrumentation method* using the NEIC Omega-1 Lidar. Figure 1 depicts the location of the Lidar during the observations.

The Olin facility, which manufactures cellophane as its principal product, contains three coal-fired boilers. The particulate emissions from boilers 1 and 2 are discharged through the East Stack and those from boiler 3 through the West Stack. The height of each stack is 225 ft.

On April 21, 1980, the Enforcement Division of EPA, Region V, Chicago, Illinois, requested assistance from NEIC in documenting the opacity of emissions from the Olin Corporation facility during both early morning and afternoon hours.

To provide the requested assistance to Region V, NEIC conducted the investigation with the following objectives:

1. Document the opacity of the visible emissions from the East Stack and the West Stack.
2. Evaluate the compliance of the observed emissions with the Indiana SIP.
3. Evaluate if emissions from the Olin facility were greater in early morning hours than during the afternoon time period.

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* This method has been proposed in the Federal Register, Vol. 45, No. 128, Tuesday, July 1, 1980, pages 44329 through 44351, as an alternate method to Reference Method 9.

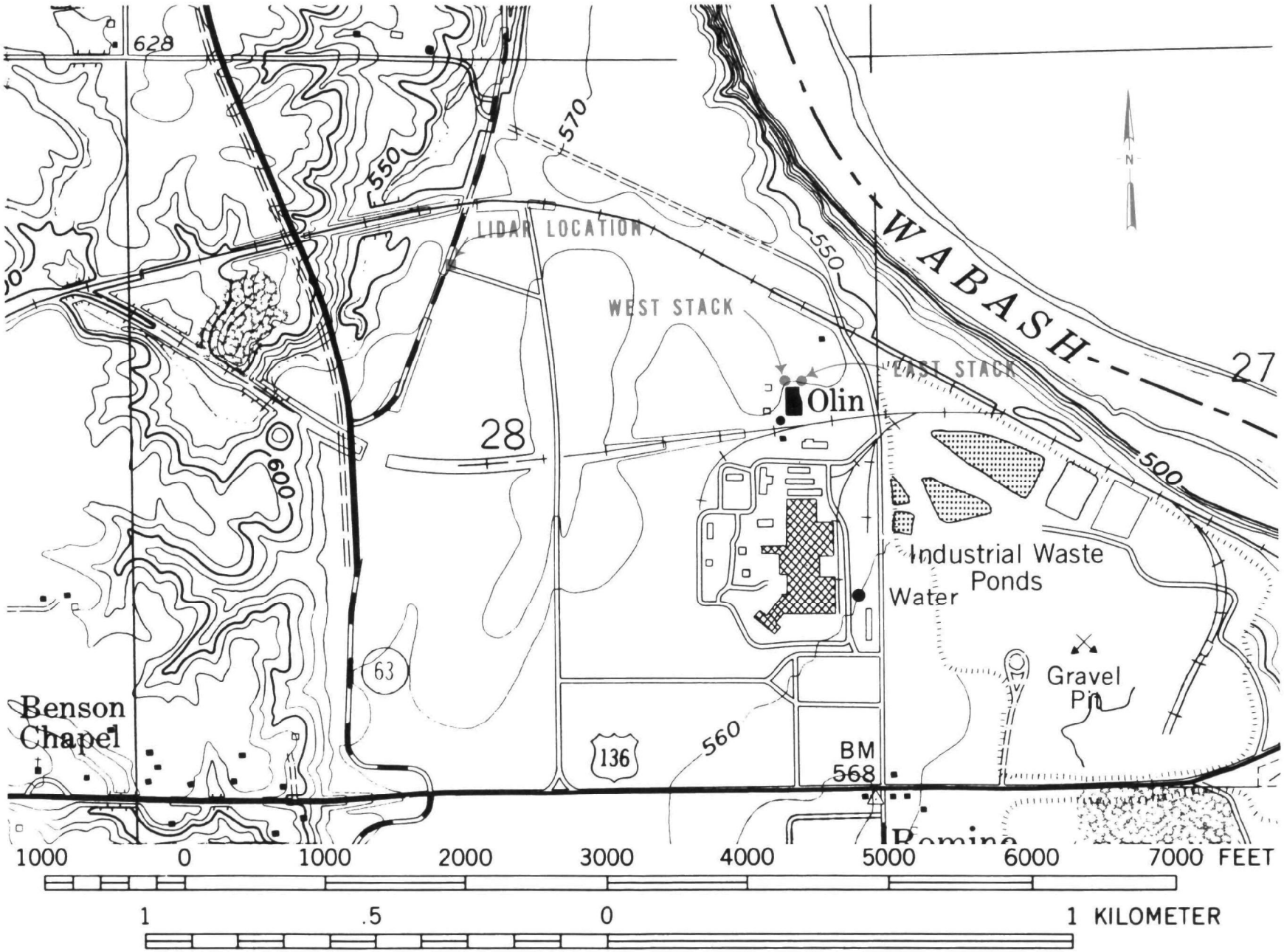

Figure 1. Location Map

II. SUMMARY AND CONCLUSIONS

SUMMARY OF INVESTIGATION

The opacity of visible emissions from the two stationary sources within the Olin Corporation facility, Covington, Indiana, was measured during early morning and afternoon hours on June 12, 1980. The sources investigated were the East Stack and the West Stack. All measurements were conducted remotely from off the plant site.

Opacities were measured remotely with the NEIC Omega-1 Lidar which is a new instrumentation method. The method has been proposed in the Federal Register as Alternate Method 1 to Reference Method 9.

Eleven sets of opacity measurements were made, the total of which was about 3.1 hours of observation and about 1,180 individual measurements. The sets of measurements ranged in length from 14 to 29 minutes. Measurements were made at a temporal frequency range from once about every 8 to 10 seconds.

All opacity measurements were subsequently analyzed and reduced with the NEIC laboratory computer using the methods given in Alternate Method 1 (proposed).

The results of the Lidar observations are summarized in Table 1 according to the official designation of each stationary source.

CONCLUSIONS

The visible emissions from the West Stack exceeded the maximum allowable limit of the Indiana State Implementation Plan (40% for a 6-minute average) during the second run (Table 1) recorded in early morning. The

Table 1

OLIN CORPORATION
Covington, Indiana

Source Designation	Applicable Opacity Limit (%)	Date June 1980	Time Interval (hr min sec)	Approx. length of Observation (min)	Approx. Time Exceeding Limit (min)	% of Time in Excess of limit	± Max. Lidar Calibration	
							Peak Opacity (6-min avg.)	Error Mag (%) [From 0% to 80%]
West Stack	40	12	6 23.29 6 38·23	15	0	0	34	-0 1, +0 7
West Stack	40	12	6 45 11 6 59 50	15	15	100	64	-0 1, +0 7
East Stack	40	12	7 17 50 7 32.21	15	15	100	53	-0 5, +0 4
East Stack	40	12	7.39 55 7:54·38	15	6	40	41	-0 5, +0.4
East Stack	40	12	7 58.09 8·12.55	15	15	100	48	-0.5, +0 4
West Stack	40	12	13.39 38 13·53 53	15	0	0	39	-0.6, +0.3
West Stack	40	12	13 55 39 14 10 20	15	0	0	37	-0.6, +0.3
West Stack	40	12	14 22.34 14 51·47	29	0	0	35	-0.6, +0.3
East Stack	40	12	15.00.09 15 25.32	25	0	0	36	-0.6, +0 6
West Stack	40	12	15·35 29 15 49 43	14	6	43	40	-0 6, +0 6
East Stack	40	12	15 53.45 16.08 18	15	0	0	31	-0 6, + 0 6

opacity of the emissions exceeded the limit for the entire 15-minute observation period with the peak average opacity being 64%. During the tenth run, the emissions from the West Stack exceeded the 40% limit for about 6 minutes of the observation time with a peak average opacity of 40%. The three remaining runs did not exceed the limit. The data showed that the opacity of the early morning emissions were greater than that of the afternoon. In the early morning the data from one out of two data runs exceeded the limit while in the afternoon only one in four exceeded the limit.

The emissions from the East Stack were observed through three observation periods, each 15 minutes in length, during the early morning and through two periods, 15 and 25 minutes in length, in the afternoon. The emissions did exceed the SIP opacity limit (40% for a 6-minute average) during each period in the morning while the limit was not exceeded in the afternoon. These data clearly show that the opacity of the early morning emissions was greater than that of the afternoon.

III. METHODS

LIDAR OPACITY MEASUREMENTS

Alternate Method 1 (proposed) employs a lidar (lasar radar) which is an optical system installed in a truck-mounted van enclosure. This mobile lidar is specifically designed and fabricated for measuring the opacity of visible emissions from a given stationary source during both day and nighttime ambient lighting conditions. The laser transmitter within the lidar emits a short pulse of light. The lidar receiver collects the laser light backscattered from the atmospheric aerosols before and beyond the visible plume as well as that from the aerosols (particulates) within the plume. The lidar receiver converts the backscattered optical signals to electronic signals or data. The lidar has an inherent data processing capability that calculates the opacity values from the backscatter data from just before and beyond the plume. It subsequently records these opacity values in hard copy form, and also records the original lidar receiver data (signal amplitude vs range) on magnetic tape for future reference or use.

The nominal data gathering rate of the lidar is an opacity measurement or determination once every 10 seconds. This data rate can be maintained in continuous operation for minutes or even hours. The lidar method is intended for use during nighttime, as well as during the day.

The Omega-1 Lidar is internally calibrated in the field periodically over the opacity values of 0, 10, 20, 40, 60, and 80%.

DATA ANALYSIS AND REDUCTION

The lidar data were analyzed in accordance with Section 2 of Alternate Method 1 (proposed) using the NEIC PDP-11-70 laboratory computer. The

individual opacity values were calculated using the backscatter data recorded on magnetic tape, with the opacity equation given in Section 2.4.1. The associated statistics which includes the standard deviation, S_o, of each individual opacity value, were calculated using the appropriate equations in Section 2.4.1. The running- or sliding-average, $\bar{O}p$, of the individual opacity values was calculated over the 6-minute averaging interval, given in the Indiana State Implementation Plan (SIP), according to the requirements of Section 2.4.2.

The number of opacity values included in the running-average is nominally 36 (six measurements/minute for 6 minutes according to the SIP). The 6-minute interval remains constant although the number of opacity values may vary above or below the nominal. In accordance with the Opacity Data Acceptance/Rejection Criterion in Section 2.4.3, if the standard deviation, S_o, for a given opacity value is greater than 8% (full scale) then that value is discarded from the running-average set decreasing the total number by one. The number of opacity values in the 6-minute interval may be greater than 36 which is caused by the lidar data rate being set faster than six opacity measurements/minute (one opacity measurement every 10 seconds).

DATA PRESENTATION

The opacity values are presented in two separate formats in Section IV of this data analysis report. For each data run the values are given in tabular form followed by graphic plots. An identification header is located across the top of the tabular form which provides the following information:

- EPA-NEIC identification block.
- EPA-NEIC Omega control number (evidentiary parameter).
- Official designation for the stationary source.
- Facility name.
- Facility location.
- Location of the lidar during tests.
- Length of the running average interval.

This tabular presentation provides the applicable data in columns identified as follows:

- Date of data run.
- Time of the opacity measurement (nearest second).
- Opacity values as calculated in %.
- Standard deviation SO (S_0 in Alternate Method 1) in %.
- Individual violation flags, not applicable in Indiana.
- Average opacity (%) calculated over the running-average interval.
- Average standard deviation (%) calculated over the running-average interval.
- Average opacity violation flag, applicable in Indiana.
- Number of opacity values discarded due to the Opacity Data Acceptance/Rejection Criterion (§ 2.4.3 of the Alternate Method 1).

In the average opacity violation column, any violations that occurred over and above the 40% (SIP) average opacity limit are indicated with a flag of four asterisks.

Referring to the first sheet of the tabular data output, Section IV, for the second data run, (Omega-0059), the average opacity violation flag (column 8 in the tabular format) does not show up until 6 minutes of data has been averaged. If the average opacity is greater than 40%, then the first violation flag occurs at the end of the first 6-minute interval and continues until the average opacity drops below the regulation limit or the data run is completed. This data run began at 6:45:11, and the individual opacity values were all above 40% (column 3). The average opacity (column 6) reads zero until 6 minutes of data has been recorded. At the end of the first 6-minute interval (6:45:11 to 6:50:55) the average opacity was calculated to be 62%, and the first average opacity violation flag is indicated.

The running-average permits one to easily locate the 6-minute interval(s) which has the highest average opacity. In the example of the second

data run, (Omega-0059), the highest average occurred for the 6-minute interval ending at 6:51:59 (sheet 1) and continued until 6:54:15. However, the first violation occurred for the 6-minute time interval ending at 6:50:55. The next violation does not occur until 6 minutes after 6:50:55 or 6:56:58, which had an average opacity of 60%.

A note of explanation is provided for an occasional zero that may occur in the "Average Opacity" and the "Average SO" columns (columns 6 and 7 in the tabular form) after the initital 6 minutes' worth of data required for the running average has been recorded. The computer data analysis software is programmed so that the 6-minute interval must be maintained to within ± 15 seconds or the running-average is not calculated for that particular interval. An example is provided in the second data run for the West Stack (6-12-80), run beginning at 6:45:11. The running-average violation flag (column 8) is missing at 6:52:26 and the Average Opacity = 0 and Average SO = 0. This occurred because the temporal spacing between 6:46:24 and 6:46:51 was 27 seconds rather than 15 seconds or less. There should have been two additional opacity values recorded in this interval. During this particular run, the lidar's laser was being manually fired (laser usually is fired automatically) and the operator missed activating the laser at the proper time. This can also occur when, in accordance with § 2.2.3 of Alternate Method 1, lidar operation is temporarily suspended to obtain another reference measurement. The computer software places zero for the two average parameters rather than performing the running-average with opacity values of zero for the missing data.

The computer graphical plots, located in Section IV immediately after each respective tabular data set, show the individual opacity values (column 3 of the tabular data set) along with their respective standard deviations as error bars (column 4 of the tabular data set). The standard deviation gives an indication of the magnitude of the error associated with each opacity value due to atmospheric noise along the lidar line-of-sight. The magnitude of the average opacity established in the SIP is indicated on each plot by the dashed line at the 40% value. Each graphical plot is fixed in time along the horizontal axis, being 10 minutes in length.

The lidar internal calibration data are presented in Table 1 of Section II for each respective observation period as the extreme values that occurred throughout the opacity range given above. A negative value indicates that the lidar was determining opacity low or below the respective standard while a positive value indicates a high value with respect to the standard.

IV. DATA ANALYSIS PRESENTATION

OMEGA-0059

OLIN CORPORATION

COVINGTON, INDIANA

WEST STACK

June 12, 1980, 6:23:29 to 6:38:23

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0059, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	6 23 29	37	3		0	0		0 OF 0
6/12/80	6 23 38	30	3		0	0		0 OF 0
6/12/80	6 23 46	32	3		0	0		0 OF 0
6/12/80	6 23 55	37	4		0	0		0 OF 0
6/12/80	6 24 4	29	3		0	0		0 OF 0
6/12/80	6 24 13	29	3		0	0		0 OF 0
6/12/80	6 24 30	41	3		0	0		0 OF 0
6/12/80	6 24 39	21	4		0	0		0 OF 0
6/12/80	6 24 48	34	2		0	0		0 OF 0
6/12/80	6 24 56	33	3		0	0		0 OF 0
6/12/80	6 25 5	41	3		0	0		0 OF 0
6/12/80	6 25 14	32	3		0	0		0 OF 0
6/12/80	6 25 23	36	3		0	0		0 OF 0
6/12/80	6 25 40	30	2		0	0		0 OF 0
6/12/80	6 25 49	17	3		0	0		0 OF 0
6/12/80	6 25 58	45	3		0	0		0 OF 0
6/12/80	6 26 7	46	3		0	0		0 OF 0
6/12/80	6 26 16	40	3		0	0		0 OF 0
6/12/80	6 26 25	36	3		0	0		0 OF 0
6/12/80	6 26 34	42	3		0	0		0 OF 0
6/12/80	6 26 43	45	2		0	0		0 OF 0
6/12/80	6 26 52	38	4		0	0		0 OF 0
6/12/80	6 27 0	32	4		0	0		0 OF 0
6/12/80	6 27 9	29	4		0	0		0 OF 0
6/12/80	6 27 18	34	4		0	0		0 OF 0
6/12/80	6 27 27	41	3		0	0		0 OF 0
6/12/80	6 27 45	44	2		0	0		0 OF 0
6/12/80	6 27 54	38	2		0	0		0 OF 0
6/12/80	6 28 3	27	3		0	0		0 OF 0
6/12/80	6 28 12	31	3		0	0		0 OF 0
6/12/80	6 28 20	47	3		0	0		0 OF 0
6/12/80	6 28 29	16	4		0	0		0 OF 0
6/12/80	6 28 38	42	3		0	0		0 OF 0
6/12/80	6 28 56	27	3		0	0		0 OF 0
6/12/80	6 29 5	39	3		0	0		0 OF 0
6/12/80	6 29 14	23	3		34	3		0 OF 36
6/12/80	6 29 23	29	3		34	3		0 OF 37
6/12/80	6 29 32	26	2		34	3		0 OF 37
6/12/80	6 29 41	22	3		34	3		0 OF 37
6/12/80	6 29 50	34	3		34	3		0 OF 37
6/12/80	6 29 59	29	4		34	3		0 OF 37
6/12/80	6 30 8	34	3		34	3		0 OF 37
6/12/80	6 30 17	8	5		33	3		0 OF 37
6/12/80	6.30 26	34	3		33	3		0 OF 38
6/12/80	6 30 35	36	2		33	3		0 OF 38
6/12/80	6·30 44	23	4		33	3		0 OF 38
6/12/80	6.30 52	35	4		33	3		0 OF 38
6/12/80	6 31 1	34	4		33	3		0 OF 38
6/12/80	6 31 10	29	2		33	3		0 OF 38
6/12/80	6 31 19	32	3		33	3		0 OF 38

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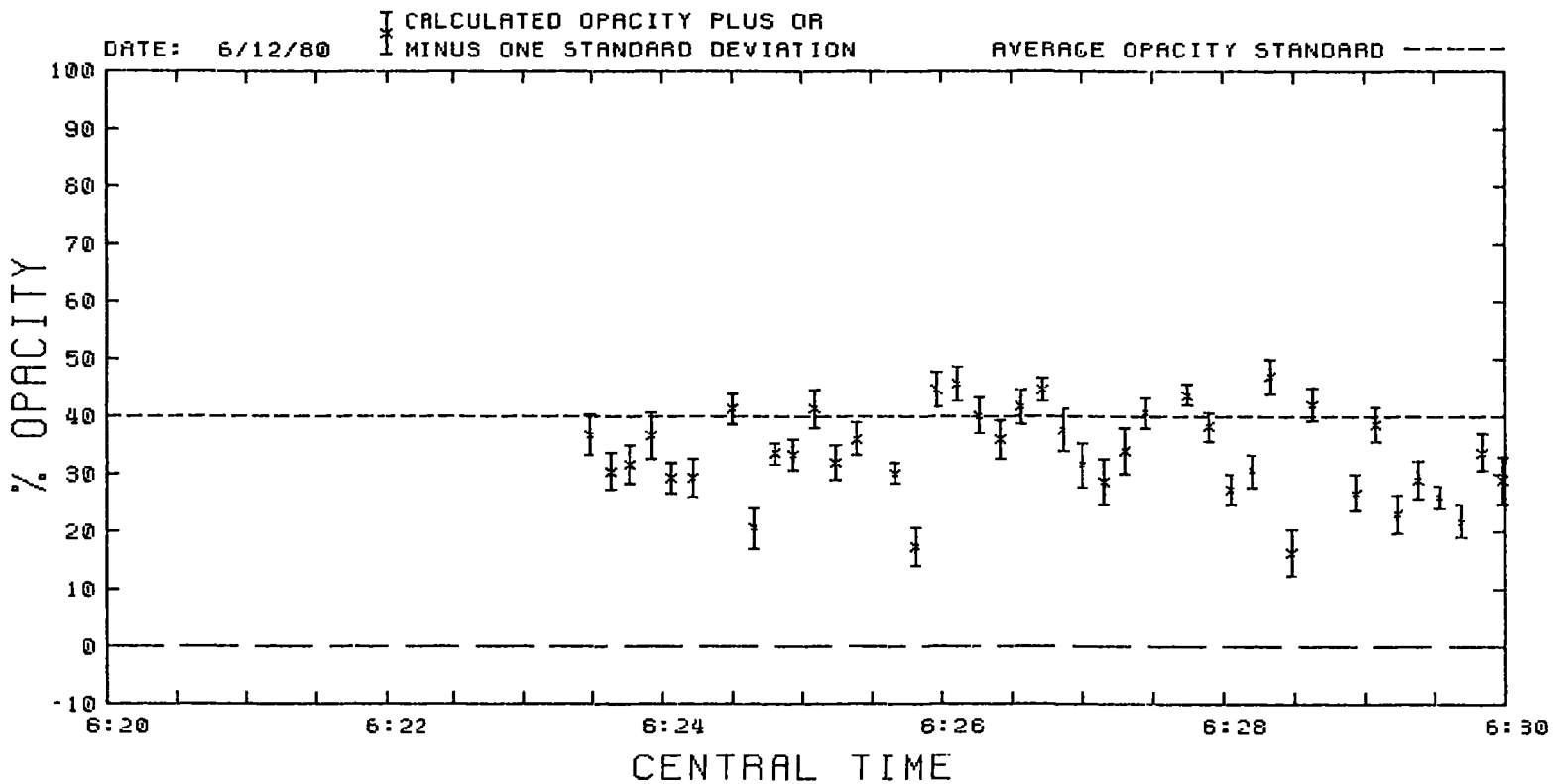
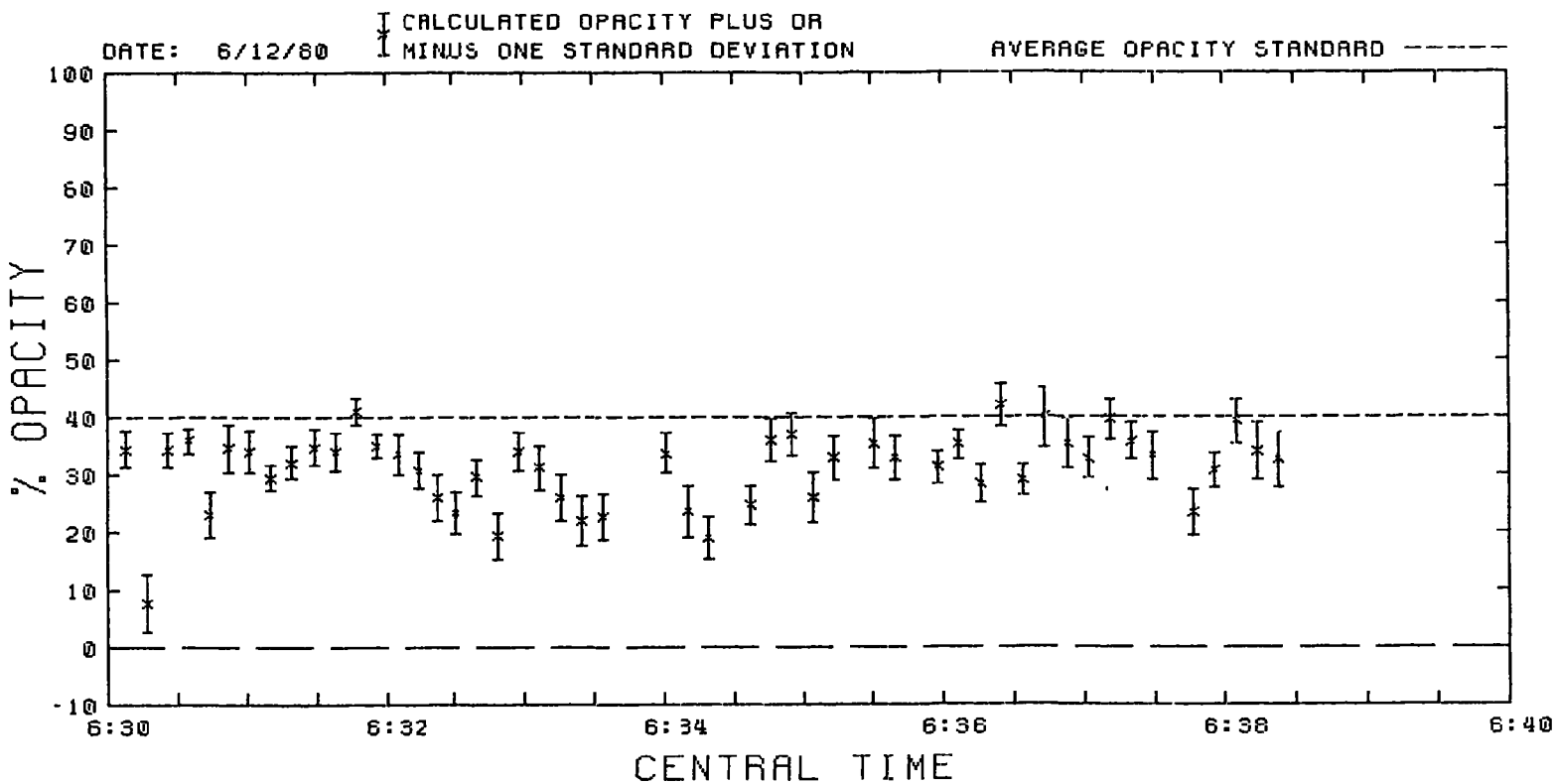
DENVER, COLORADO 80225

OMEGA-0059, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	6 31 29	35	3		33	3		0 OF 38
6/12/80	6 31 38	34	3		33	3		0 OF 39
6/12/80	6 31 47	41	2		33	3		0 OF 39
6/12/80	6 31 56	35	2		34	3		0 OF 39
6/12/80	6 32 5	34	3		33	3		0 OF 39
6/12/80	6 32 14	31	3		33	3		0 OF 39
6/12/80	6 32 23	26	4		33	3		0 OF 39
6/12/80	6 32 31	23	4		32	3		0 OF 39
6/12/80	6 32 40	30	3		32	3		0 OF 39
6/12/80	6 32 49	19	4		31	3		0 OF 39
6/12/80	6 32 58	34	3		31	3		0 OF 39
6/12/80	6 33 7	31	4		31	3		0 OF 39
6/12/80	6 33 16	26	4		31	3		0 OF 39
6/12/80	6 33 25	22	4		31	3		0 OF 39
6/12/80	6 33 34	23	4		30	3		0 OF 39
6/12/80	6 34 1	34	3		30	3		0 OF 38
6/12/80	6 34 10	24	4		30	3		0 OF 38
6/12/80	6 34 19	19	4		29	3		0 OF 38
6/12/80	6 34 37	25	3		29	3		0 OF 37
6/12/80	6 34 46	36	4		29	3		0 OF 37
6/12/80	6 34 55	37	4		29	3		0 OF 38
6/12/80	6 35 4	26	4		29	3		0 OF 38
6/12/80	6 35 13	33	4		29	3		0 OF 38
6/12/80	6 35 31	35	4		29	4		0 OF 37
6/12/80	6 35 40	33	4		30	4		0 OF 37
6/12/80	6 35 58	31	3		30	4		0 OF 36
6/12/80	6 36 7	35	2		30	4		0 OF 36
6/12/80	6 36 16	28	3		30	4		0 OF 36
6/12/80	6 36 25	42	4		31	4		0 OF 36
6/12/80	6 36 34	29	3		31	4		0 OF 36
6/12/80	6.36 43	40	5		31	4		0 OF 36
6/12/80	6 36 53	35	4		31	4		0 OF 35
6/12/80	6 37 2	33	4		31	4		0 OF 35
6/12/80	6 37 11	40	3		31	4		0 OF 35
6/12/80	6·37 20	36	3		31	4		0 OF 35
6/12/80	6 37 29	33	4		31	4		0 OF 36
6/12/80	6 37 47	23	4		31	4		0 OF 35
6/12/80	6 37 56	31	3		31	4		0 OF 35
6/12/80	6 38 5	39	4		31	4		0 OF 35
6/12/80	6 38 14	34	5		31	4		0 OF 35
6/12/80	6 38 23	33	5		31	4		0 OF 35



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEGA-0059

OLIN CORPORATION

COVINGTON, INDIANA

WEST STACK

June 12, 1980, 6:45:11 to 6:59:50

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OMEGA-0059, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	6 45 11	65	2		0	0		0 OF 0
6/12/80	6 45 20	64	2		0	0		0 OF 0
6/12/80	6 45 38	45	4		0	0		0 OF 0
6/12/80	6 45 47	53	5		0	0		0 OF 0
6/12/80	6 45 56	52	3		0	0		0 OF 0
6/12/80	6.46 6	47	2		0	0		0 OF 0
6/12/80	6 46 15	54	2		0	0		0 OF 0
6/12/80	6 46 24	54	3		0	0		0 OF 0
6/12/80	6 46 51	67	1		0	0		0 OF 0
6/12/80	6 47 0	62	1		0	0		0 OF 0
6/12/80	6 47 9	65	1		0	0		0 OF 0
6/12/80	6 47 18	59	2		0	0		0 OF 0
6/12/80	6 47 36	58	1		0	0		0 OF 0
6/12/80	6 47 45	60	2		0	0		0 OF 0
6/12/80	6 47 54	68	2		0	0		0 OF 0
6/12/80	6 48 31	69	1		0	0		0 OF 0
6/12/80	6 48 40	66	2		0	0		0 OF 0
6/12/80	6 48 49	70	1		0	0		0 OF 0
6/12/80	6 48 58	69	1		0	0		0 OF 0
6/12/80	6 49 16	71	1		0	0		0 OF 0
6/12/80	6 49 25	66	1		0	0		0 OF 0
6/12/80	6 49 43	61	2		0	0		0 OF 0
6/12/80	6 49 52	62	2		0	0		0 OF 0
6/12/80	6 50 1	66	1		0	0		0 OF 0
6/12/80	6 50 10	65	1		0	0		0 OF 0
6/12/80	6 50 19	66	2		0	0		0 OF 0
6/12/80	6 50 28	62	1		0	0		0 OF 0
6/12/80	6 50 37	62	1		0	0		0 OF 0
6/12/80	6 50 46	65	1		0	0		0 OF 0
6/12/80	6 50 55	62	2		62	2	****	0 OF 30
6/12/80	6 51 4	64	1		62	2	****	0 OF 31
6/12/80	6 51 13	64	1		62	2	****	0 OF 31
6/12/80	6 51 22	67	1		62	2	****	0 OF 31
6/12/80	6 51 41	65	1		63	2	****	0 OF 31
6/12/80	6 51 50	66	1		63	2	****	0 OF 31
6/12/80	6 51 59	68	1		64	1	****	0 OF 31
6/12/80	6 52 17	57	2		64	1	****	0 OF 30
6/12/80	6 52 26	60	1		0	0		0 OF 0
6/12/80	6 52 35	54	2		64	1	****	0 OF 31
6/12/80	6 52 44	63	1		64	1	****	0 OF 32
6/12/80	6 52 53	60	2		64	1	****	0 OF 32
6/12/80	6 53 2	64	2		64	1	****	0 OF 32
6/12/80	6 53 20	60	2		64	1	****	0 OF 31
6/12/80	6 53 29	66	2		64	1	****	0 OF 32
6/12/80	6 53 38	64	3		64	2	****	0 OF 32
6/12/80	6 53 47	66	2		64	2	****	0 OF 32
6/12/80	6 54 15	54	3		64	2	****	0 OF 32
6/12/80	6 54 42	52	4		63	2	****	0 OF 31
6/12/80	6 55 0	40	3		62	2	****	0 OF 30
6/12/80	6 55 27	48	2		61	2	****	0 OF 29

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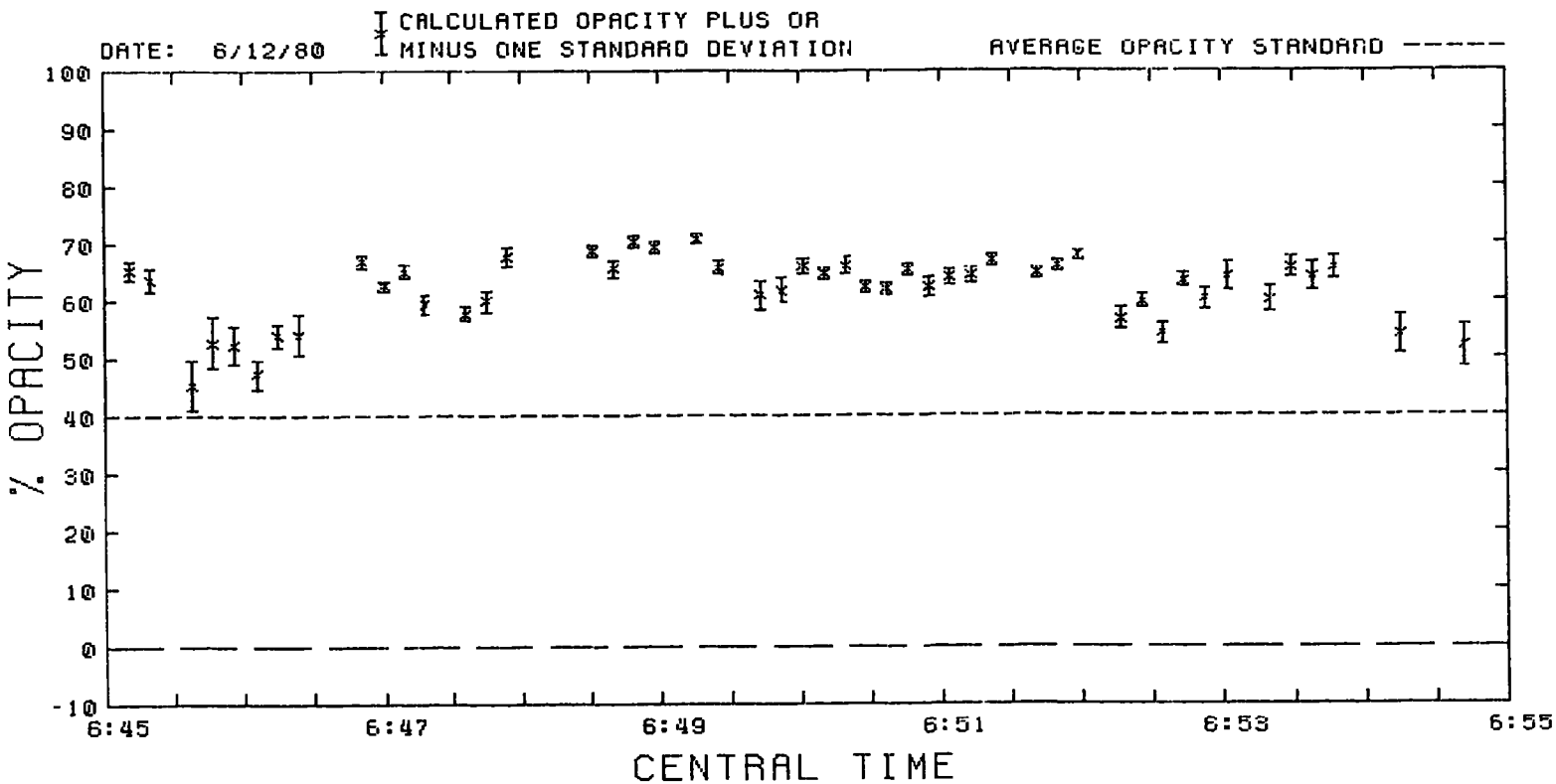
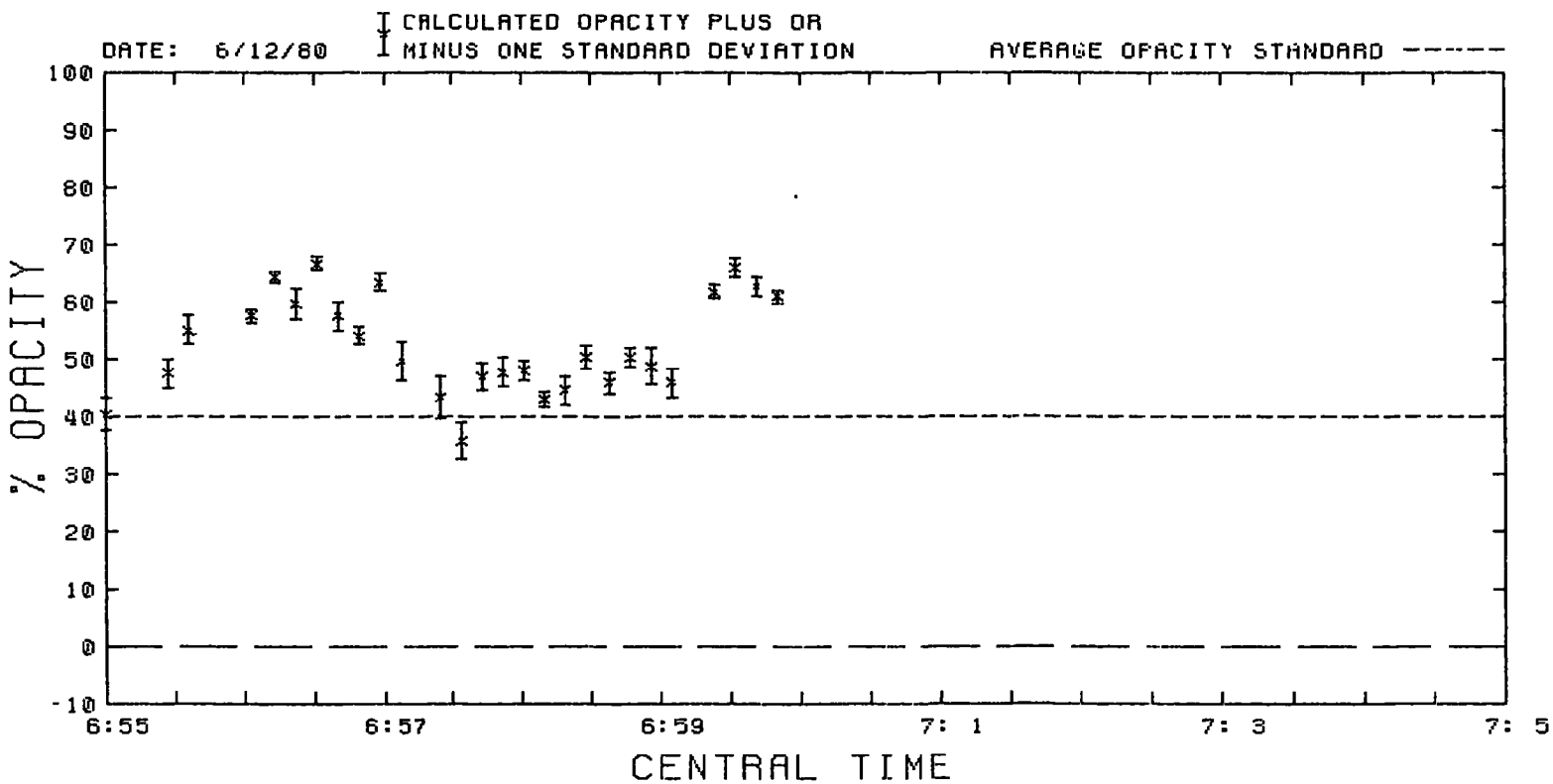
OMEGA-0059, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	6 55 36	55	2		61	2	****	0 OF 30
6/12/80	6 56 3	58	1		61	2	****	0 OF 28
6/12/80	6 56 13	64	1		61	2	****	0 OF 28
6/12/80	6 56 22	60	3		60	2	****	0 OF 28
6/12/80	6 56 31	67	1		61	2	****	0 OF 28
6/12/80	6 56 40	58	2		60	2	****	0 OF 28
6/12/80	6 56 49	54	2		60	2	****	0 OF 28
6/12/80	6 56 58	63	2		60	2	****	0 OF 28
6/12/80	6 57 7	50	3		60	2	****	0 OF 28
6/12/80	6 57 25	43	4		59	2	****	0 OF 27
6/12/80	6 57.34	36	3		58	2	****	0 OF 28
6/12/80	6 57 43	47	2		57	2	****	0 OF 28
6/12/80	6 57 52	48	2		56	2	****	0 OF 28
6/12/80	6 58 1	48	2		56	2	****	0 OF 28
6/12/80	6 58 10	43	1		55	2	****	0 OF 29
6/12/80	6 58 19	45	2		55	2	****	0 OF 29
6/12/80	6 58 28	50	2		55	2	****	0 OF 29
6/12/80	6 58 38	46	2		54	2	****	0 OF 29
6/12/80	6 58 47	50	2		54	2	****	0 OF 29
6/12/80	6 58 56	49	3		53	2	****	0 OF 29
6/12/80	6 59 5	46	2		53	2	****	0 OF 29
6/12/80	6 59 23	62	1		53	2	****	0 OF 29
6/12/80	6 59 32	66	2		53	2	****	0 OF 29
6/12/80	6 59 41	63	2		53	2	****	0 OF 29
6/12/80	6 59 50	61	1		0	0		0 OF 0



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEGA-0060

OLIN CORPORATION

COVINGTON, INDIANA

EAST STACK

June 12, 1980, 7:17:50 to 7:32:21

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

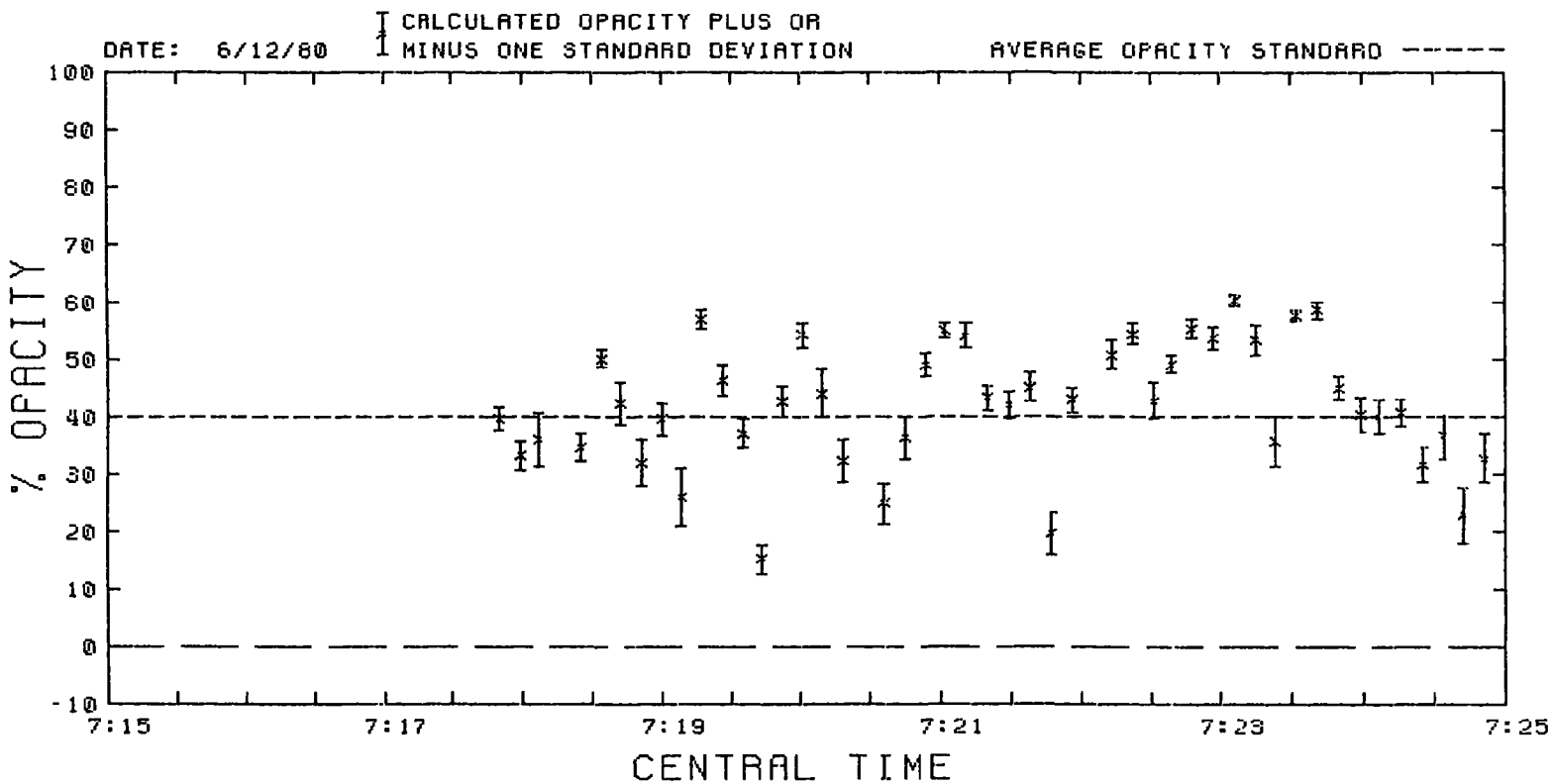
OMEGA-0060, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	7 17 50	40	2		0	0		0 OF 0
6/12/80	7 17 59	33	2		0	0		0 OF 0
6/12/80	7 18 7	36	5		0	0		0 OF 0
6/12/80	7 18 25	35	2		0	0		0 OF 0
6/12/80	7 18 34	50	2		0	0		0 OF 0
6/12/80	7 18 42	42	4		0	0		0 OF 0
6/12/80	7 18 51	32	4		0	0		0 OF 0
6/12/80	7 19 0	40	3		0	0		0 OF 0
6/12/80	7 19 8	26	5		0	0		0 OF 0
6/12/80	7 19 17	57	2		0	0		0 OF 0
6/12/80	7 19 26	46	3		0	0		0 OF 0
6/12/80	7 19 35	37	2		0	0		0 OF 0
6/12/80	7 19 43	15	3		0	0		0 OF 0
6/12/80	7 19 52	43	3		0	0		0 OF 0
6/12/80	7 20 1	54	2		0	0		0 OF 0
6/12/80	7 20 9	44	4		0	0		0 OF 0
6/12/80	7 20 18	32	4		0	0		0 OF 0
6/12/80	7 20 36	25	4		0	0		0 OF 0
6/12/80	7 20 45	36	4		0	0		0 OF 0
6/12/80	7 20 54	49	2		0	0		0 OF 0
6/12/80	7 21 2	55	1		0	0		0 OF 0
6/12/80	7 21 11	54	2		0	0		0 OF 0
6/12/80	7 21 20	43	2		0	0		0 OF 0
6/12/80	7 21 29	42	2		0	0		0 OF 0
6/12/80	7 21 38	45	2		0	0		0 OF 0
6/12/80	7 21 47	20	4		0	0		0 OF 0
6/12/80	7 21 56	43	2		0	0		0 OF 0
6/12/80	7 22 13	51	2		0	0		0 OF 0
6/12/80	7 22 22	54	2		0	0		0 OF 0
6/12/80	7 22 31	43	3		0	0		0 OF 0
6/12/80	7 22 39	49	1		0	0		0 OF 0
6/12/80	7 22 48	55	2		0	0		0 OF 0
6/12/80	7 22 57	54	2		0	0		0 OF 0
6/12/80	7 23 6	60	1		0	0		0 OF 0
6/12/80	7 23 15	53	3		0	0		0 OF 0
6/12/80	7 23 23	36	4		0	0		0 OF 0
6/12/80	7 23 32	58	1		43	3	****	0 OF 37
6/12/80	7 23 41	59	2		43	3	****	0 OF 38
6/12/80	7 23 50	45	2		43	3	****	0 OF 39
6/12/80	7 23 59	40	3		43	3	****	0 OF 39
6/12/80	7 24 7	40	3		44	3	****	0 OF 39
6/12/80	7 24 16	41	2		44	3	****	0 OF 39
6/12/80	7 24 25	32	3		43	3	****	0 OF 40
6/12/80	7 24 34	37	4		43	3	****	0 OF 40
6/12/80	7 24 42	23	5		43	3	****	0 OF 40
6/12/80	7 24 51	33	4		43	3	****	0 OF 40
6/12/80	7 25 0	47	2		43	3	****	0 OF 40
6/12/80	7 25 9	50	2		44	3	****	0 OF 39
6/12/80	7 25 17	55	2		44	3	****	0 OF 40
6/12/80	7 25 26	42	2		44	3	****	0 OF 40

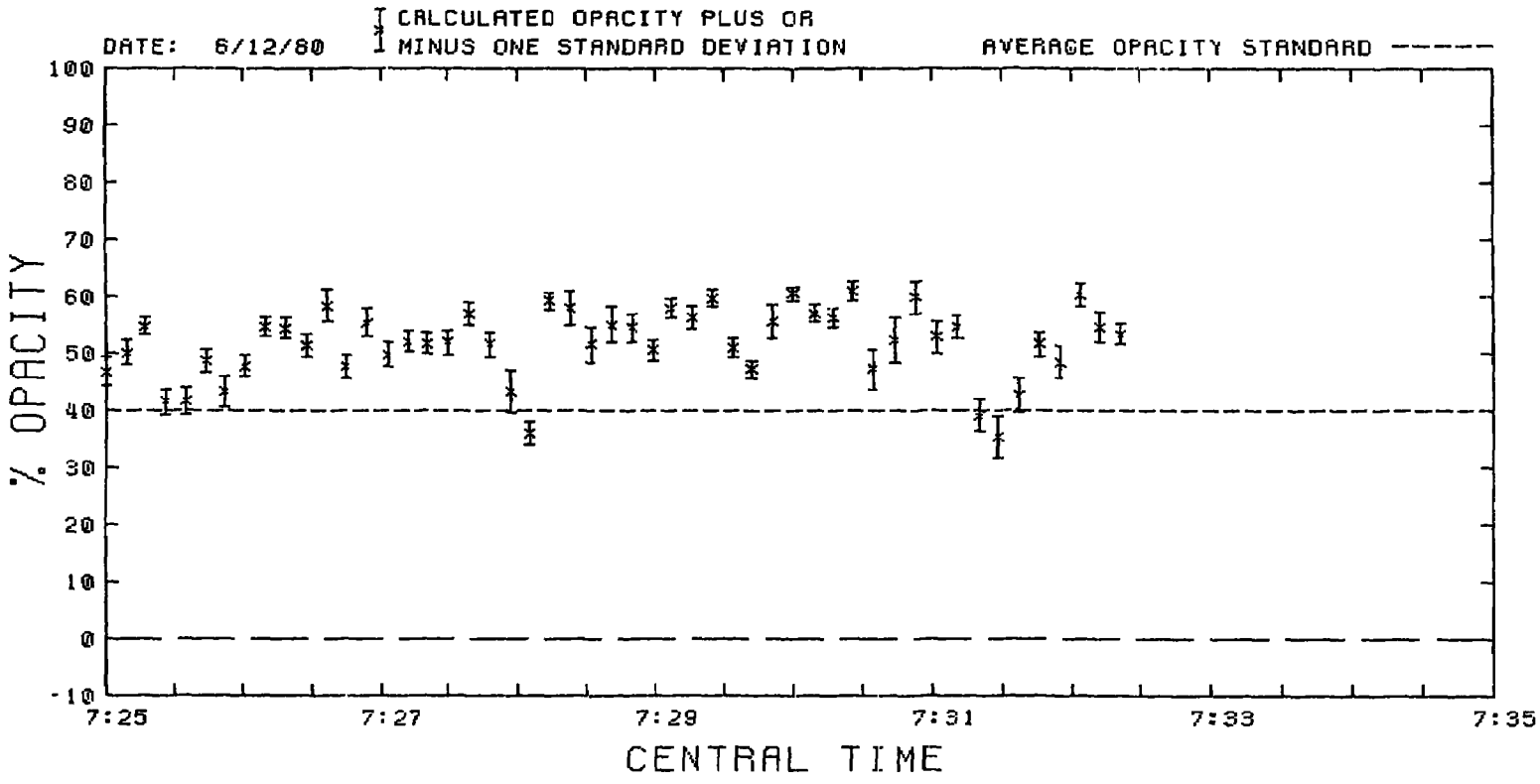
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0060, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	7 25 35	42	2		43	3	****	0 OF 40
6/12/80	7 25 44	49	2		44	3	****	0 OF 39
6/12/80	7 25 52	43	3		44	3	****	0 OF 40
6/12/80	7 26 1	48	2		45	2	****	0 OF 40
6/12/80	7 26 10	55	2		45	2	****	0 OF 39
6/12/80	7 26 19	54	2		45	2	****	0 OF 39
6/12/80	7 26 28	51	2		45	2	****	0 OF 40
6/12/80	7 26 37	58	3		46	2	****	0 OF 40
6/12/80	7 26 45	48	2		46	2	****	0 OF 41
6/12/80	7 26 54	55	2		47	2	****	0 OF 41
6/12/80	7 27 3	50	2		46	2	****	0 OF 40
6/12/80	7 27 12	52	2		46	2	****	0 OF 40
6/12/80	7 27 21	52	2		47	2	****	0 OF 40
6/12/80	7 27 30	52	2		47	2	****	0 OF 40
6/12/80	7 27 39	57	2		47	2	****	0 OF 40
6/12/80	7 27 48	52	2		48	2	****	0 OF 40
6/12/80	7 27 57	43	4		48	2	****	0 OF 40
6/12/80	7 28 5	36	2		48	2	****	0 OF 41
6/12/80	7 28 14	59	1		48	2	****	0 OF 41
6/12/80	7 28 23	58	3		48	2	****	0 OF 41
6/12/80	7 28 32	52	3		48	2	****	0 OF 41
6/12/80	7 28 41	55	3		48	2	****	0 OF 41
6/12/80	7 28 50	55	2		48	2	****	0 OF 41
6/12/80	7 28 59	51	2		48	2	****	0 OF 41
6/12/80	7 29 7	58	2		48	2	****	0 OF 41
6/12/80	7 29 16	56	2		48	2	****	0 OF 41
6/12/80	7 29 25	60	2		49	2	****	0 OF 41
6/12/80	7 29 34	51	2		49	2	****	0 OF 41
6/12/80	7 29 42	47	1		48	2	****	0 OF 41
6/12/80	7 29 51	56	3		49	2	****	0 OF 41
6/12/80	7 30 0	61	1		49	2	****	0 OF 41
6/12/80	7 30 9	57	2		50	2	****	0 OF 41
6/12/80	7 30 17	56	2		50	2	****	0 OF 41
6/12/80	7 30 26	61	2		51	2	****	0 OF 41
6/12/80	7 30 35	47	4		51	2	****	0 OF 41
6/12/80	7 30 44	52	4		52	2	****	0 OF 41
6/12/80	7 30 53	60	3		52	2	****	0 OF 41
6/12/80	7 31 2	53	3		52	2	****	0 OF 41
6/12/80	7 31 11	55	2		53	2	****	0 OF 41
6/12/80	7 31 20	39	3		52	2	****	0 OF 41
6/12/80	7 31 28	35	4		52	2	****	0 OF 41
6/12/80	7 31 37	43	3		52	2	****	0 OF 41
6/12/80	7 31 46	52	2		52	2	****	0 OF 41
6/12/80	7 31 55	48	3		52	2	****	0 OF 41
6/12/80	7 32 4	60	2		53	2	****	0 OF 41
6/12/80	7 32 12	55	3		53	2	****	0 OF 41
6/12/80	7 32 21	53	2		52	2	****	0 OF 41



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEGA-0060

OLIN CORPORATION

COVINGTON, INDIANA

EAST STACK

June 12, 1980, 7:39:55 to 7:54:38

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

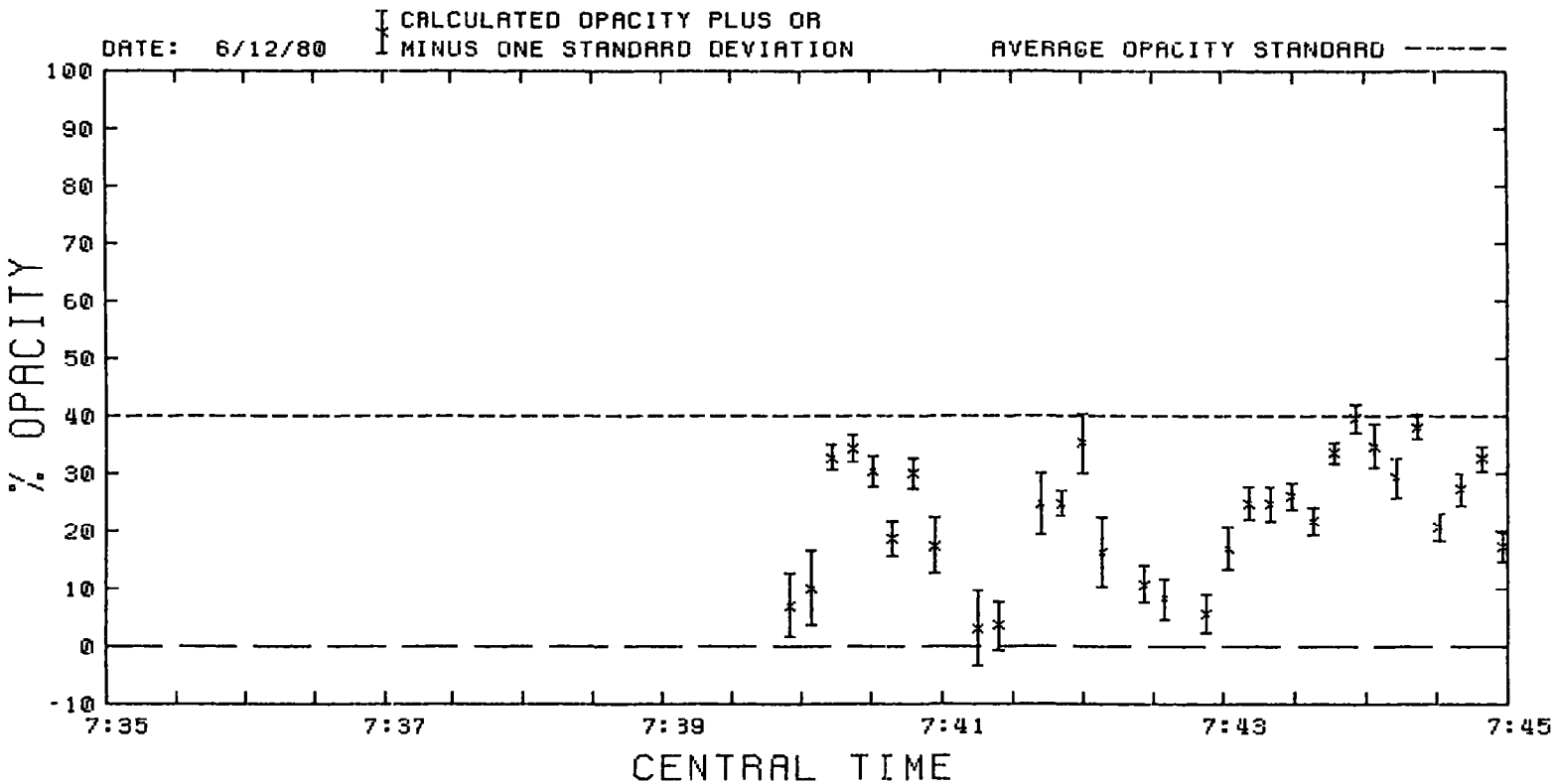
OMEGA-0060, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	7 39 55	7	6		0	0		0 OF 0
6/12/80	7 40 4	10	7		0	0		0 OF 0
6/12/80	7 40 13	33	2		0	0		0 OF 0
6/12/80	7 40 22	34	2		0	0		0 OF 0
6/12/80	7 40 31	30	3		0	0		0 OF 0
6/12/80	7 40 39	19	3		0	0		0 OF 0
6/12/80	7 40 48	30	3		0	0		0 OF 0
6/12/80	7 40 57	17	5		0	0		0 OF 0
6/12/80	7 41 15	3	7		0	0		0 OF 0
6/12/80	7 41 24	4	4		0	0		0 OF 0
6/12/80	7 41 42	25	5		0	0		0 OF 0
6/12/80	7 41 51	25	2		0	0		0 OF 0
6/12/80	7 42 0	35	5		0	0		0 OF 0
6/12/80	7 42 8	16	6		0	0		0 OF 0
6/12/80	7 42 26	11	3		0	0		0 OF 0
6/12/80	7 42 35	8	4		0	0		0 OF 0
6/12/80	7 42 53	6	3		0	0		0 OF 0
6/12/80	7 43 2	17	4		0	0		0 OF 0
6/12/80	7 43 11	25	3		0	0		0 OF 0
6/12/80	7 43 20	25	3		0	0		0 OF 0
6/12/80	7 43 29	26	2		0	0		0 OF 0
6/12/80	7 43 38	22	2		0	0		0 OF 0
6/12/80	7 43 47	34	2		0	0		0 OF 0
6/12/80	7 43 56	40	2		0	0		0 OF 0
6/12/80	7 44 4	35	4		0	0		0 OF 0
6/12/80	7 44 13	29	3		0	0		0 OF 0
6/12/80	7 44 22	38	2		0	0		0 OF 0
6/12/80	7 44 31	21	2		0	0		0 OF 0
6/12/80	7 44 40	27	3		0	0		0 OF 0
6/12/80	7 44 49	33	2		0	0		0 OF 0
6/12/80	7 44 58	17	2		0	0		0 OF 0
6/12/80	7 45 7	29	2		0	0		0 OF 0
6/12/80	7 45 16	24	2		0	0		0 OF 0
6/12/80	7 45 25	19	2		0	0		0 OF 0
6/12/80	7 45 34	22	2		0	0		0 OF 0
6/12/80	7 45 42	14	3		22	3		0 OF 36
6/12/80	7 45 51	15	2		22	3		0 OF 37
6/12/80	7 46 0	41	2		23	3		0 OF 37
6/12/80	7 46 9	26	3		24	3		0 OF 37
6/12/80	7 46 18	32	2		24	3		0 OF 37
6/12/80	7 46 27	31	2		23	3		0 OF 37
6/12/80	7 46 36	30	2		23	3		0 OF 37
6/12/80	7 46 45	25	2		24	3		0 OF 37
6/12/80	7 46 54	21	2		23	3		0 OF 37
6/12/80	7 47 3	17	2		23	3		0 OF 37
6/12/80	7 47 12	24	2		23	3		0 OF 38
6/12/80	7 47 21	23	2		24	3		0 OF 38
6/12/80	7 47 30	34	3		25	3		0 OF 38
6/12/80	7 47 38	27	2		25	3		0 OF 39
6/12/80	7 47 47	12	2		24	3		0 OF 39

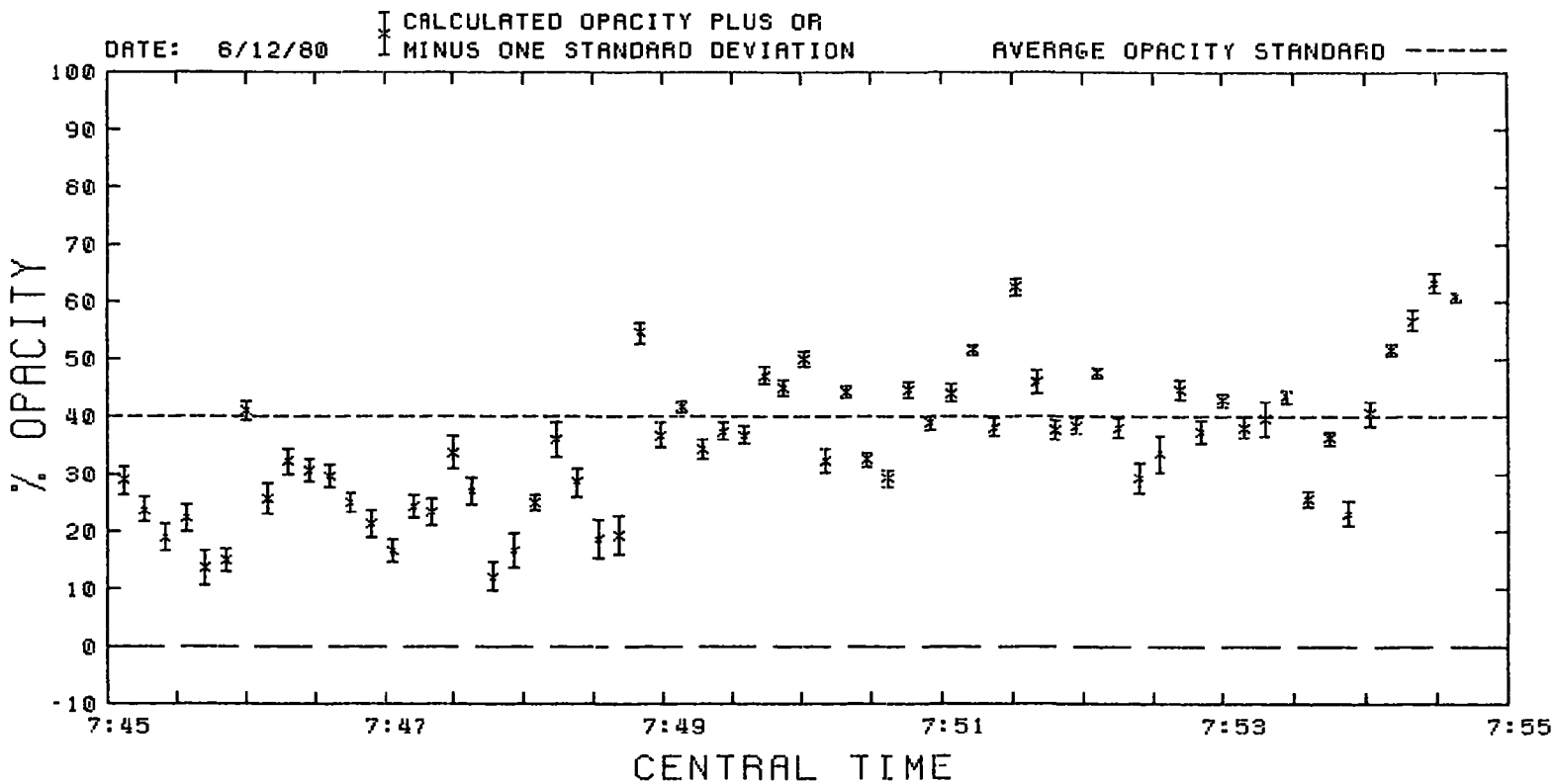
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0060, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	7 47 56	17	3		24	3		0 OF 39
6/12/80	7 48 5	25	1		24	3		0 OF 39
6/12/80	7 48 14	36	3		25	2		0 OF 39
6/12/80	7 48 23	29	2		25	2		0 OF 40
6/12/80	7 48 32	19	3		25	2		0 OF 40
6/12/80	7 48 41	19	3		25	2		0 OF 40
6/12/80	7 48 50	55	2		26	2		0 OF 41
6/12/80	7 48 59	37	2		27	2		0 OF 41
6/12/80	7 49 8	42	1		27	2		0 OF 41
6/12/80	7 49 17	34	2		27	2		0 OF 41
6/12/80	7 49 26	37	2		28	2		0 OF 41
6/12/80	7 49 35	37	2		28	2		0 OF 41
6/12/80	7 49 44	47	2		29	2		0 OF 41
6/12/80	7 49 52	45	1		29	2		0 OF 41
6/12/80	7 50 1	50	1		29	2		0 OF 41
6/12/80	7 50 10	32	2		29	2		0 OF 41
6/12/80	7 50 19	44	1		29	2		0 OF 41
6/12/80	7 50 28	33	1		29	2		0 OF 41
6/12/80	7 50 37	29	2		30	2		0 OF 41
6/12/80	7 50 46	45	1		30	2		0 OF 41
6/12/80	7 50 55	39	1		30	2		0 OF 41
6/12/80	7 51 4	44	1		31	2		0 OF 41
6/12/80	7 51 13	52	1		31	2		0 OF 41
6/12/80	7 51 22	38	2		32	2		0 OF 41
6/12/80	7 51 31	62	1		33	2		0 OF 41
6/12/80	7 51 40	46	2		33	2		0 OF 41
6/12/80	7 51 48	38	2		34	2		0 OF 41
6/12/80	7 51 57	38	1		34	2		0 OF 41
6/12/80	7 52 6	48	1		35	2		0 OF 41
6/12/80	7 52 15	38	2		35	2		0 OF 41
6/12/80	7 52 24	29	3		35	2		0 OF 41
6/12/80	7 52 33	34	3		35	2		0 OF 41
6/12/80	7 52 42	45	2		35	2		0 OF 41
6/12/80	7 52 51	37	2		36	2		0 OF 41
6/12/80	7 53 0	43	1		36	2		0 OF 41
6/12/80	7 53 9	38	2		37	2		0 OF 41
6/12/80	7 53 18	40	3		37	2		0 OF 41
6/12/80	7 53 27	44	1		37	2		0 OF 41
6/12/80	7 53 36	26	1		37	2		0 OF 41
6/12/80	7 53 45	36	1		37	2		0 OF 41
6/12/80	7 53 53	23	2		38	2		0 OF 41
6/12/80	7 54 2	41	2		38	2		0 OF 41
6/12/80	7 54 11	52	1		39	2		0 OF 41
6/12/80	7 54 20	57	2		40	2		0 OF 41
6/12/80	7 54 29	63	2		40	2	****	0 OF 41
6/12/80	7 54 38	61	1		41	2	****	0 OF 41



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEGA-0060

OLIN CORPORATION

COVINGTON, INDIANA

EAST STACK

June 12, 1980, 7:58:09 to 8:12:55

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0060, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	7 58 9	47	2		0	0		0 OF 0
6/12/80	7 58 18	40	2		0	0		0 OF 0
6/12/80	7 58 27	48	1		0	0		0 OF 0
6/12/80	7 58 36	50	2		0	0		0 OF 0
6/12/80	7 58 44	43	1		0	0		0 OF 0
6/12/80	7 58 53	49	1		0	0		0 OF 0
6/12/80	7 59 2	44	1		0	0		0 OF 0
6/12/80	7 59 11	44	1		0	0		0 OF 0
6/12/80	7 59 20	56	1		0	0		0 OF 0
6/12/80	7 59 29	33	2		0	0		0 OF 0
6/12/80	7 59 38	45	3		0	0		0 OF 0
6/12/80	7 59 47	42	2		0	0		0 OF 0
6/12/80	7 59 56	42	2		0	0		0 OF 0
6/12/80	8 0 5	31	3		0	0		0 OF 0
6/12/80	8 0 14	51	1		0	0		0 OF 0
6/12/80	8 0 23	45	2		0	0		0 OF 0
6/12/80	8 0 32	33	1		0	0		0 OF 0
6/12/80	8 0 40	46	2		0	0		0 OF 0
6/12/80	8 0 49	39	2		0	0		0 OF 0
6/12/80	8 0 58	57	2		0	0		0 OF 0
6/12/80	8 1 7	40	1		0	0		0 OF 0
6/12/80	8 1 16	35	2		0	0		0 OF 0
6/12/80	8 1 25	53	1		0	0		0 OF 0
6/12/80	8 1 34	47	1		0	0		0 OF 0
6/12/80	8 1 43	50	1		0	0		0 OF 0
6/12/80	8 1 52	35	2		0	0		0 OF 0
6/12/80	8 2 1	73	3		0	0		0 OF 0
6/12/80	8 2 10	56	2		0	0		0 OF 0
6/12/80	8 2 19	63	1		0	0		0 OF 0
6/12/80	8 2 28	46	2		0	0		0 OF 0
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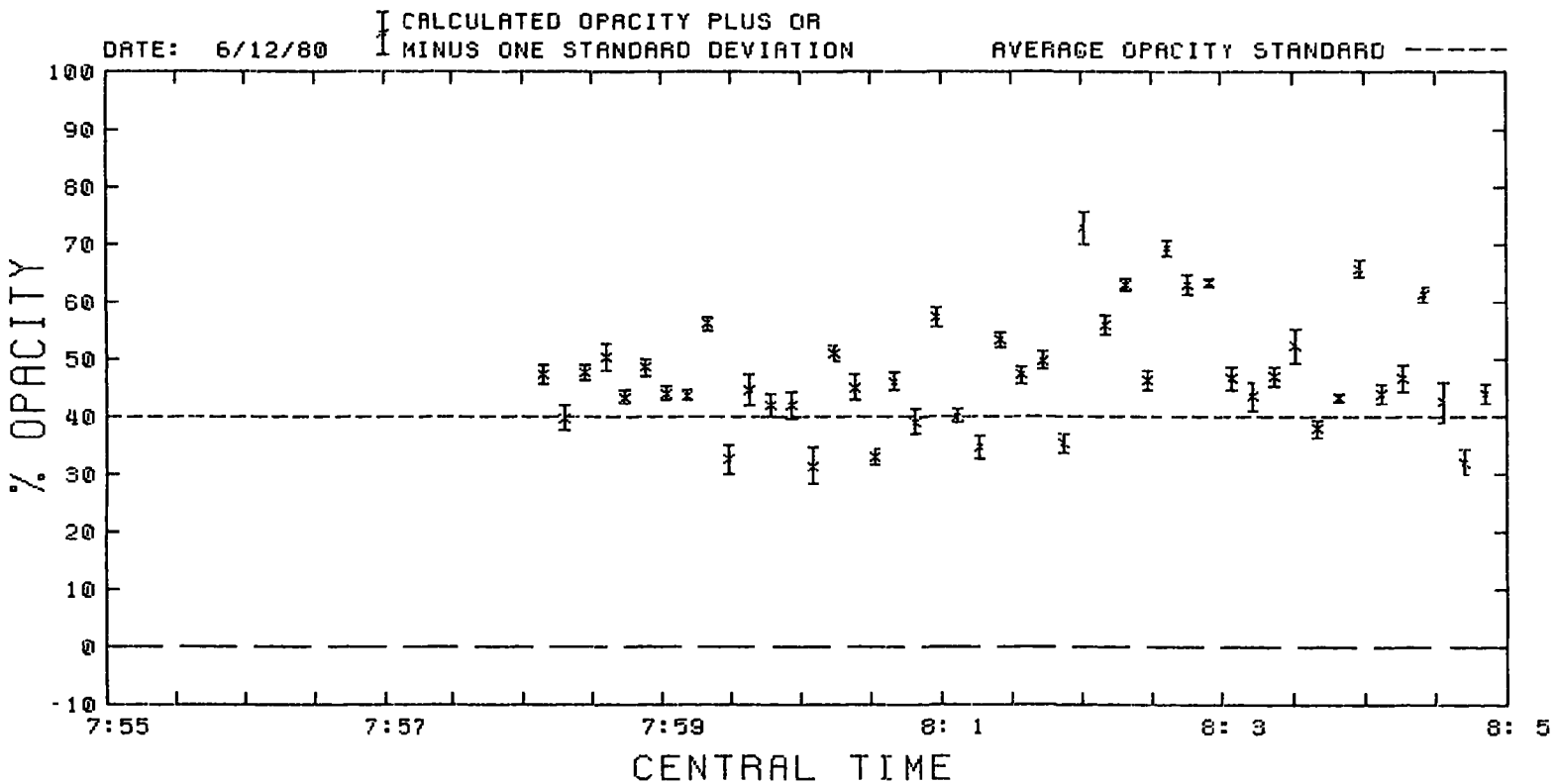
6/12/80	8 3 4	47	2		0	0		0 OF 0
6/12/80	8 3 13	44	2		0	0		0 OF 0
6/12/80	8 3 22	47	2		0	0		0 OF 0
6/12/80	8 3 31	52	3		0	0		0 OF 0
6/12/80	8 3 40	38	2		0	0		0 OF 0
6/12/80	8 3 49	43	1		0	0		0 OF 0
6/12/80	8 3 58	66	2		48	2	****	0 OF 40
6/12/80	8 4 7	44	2		48	2	****	0 OF 41
6/12/80	8 4 16	47	2		48	2	****	0 OF 41
6/12/80	8 4:25	61	1		48	2	****	0 OF 41
6/12/80	8 4 33	43	4		48	2	****	0 OF 41
6/12/80	8 4 42	32	2		48	2	****	0 OF 41
6/12/80	8 4 51	44	2		48	2	****	0 OF 41
6/12/80	8 5 0	33	4		47	2	****	0 OF 41
6/12/80	8 5 9	41	2		47	2	****	0 OF 41
6/12/80	8 5 18	58	3		48	2	****	0 OF 41
6/12/80	8 5 27	35	2		47	2	****	0 OF 41

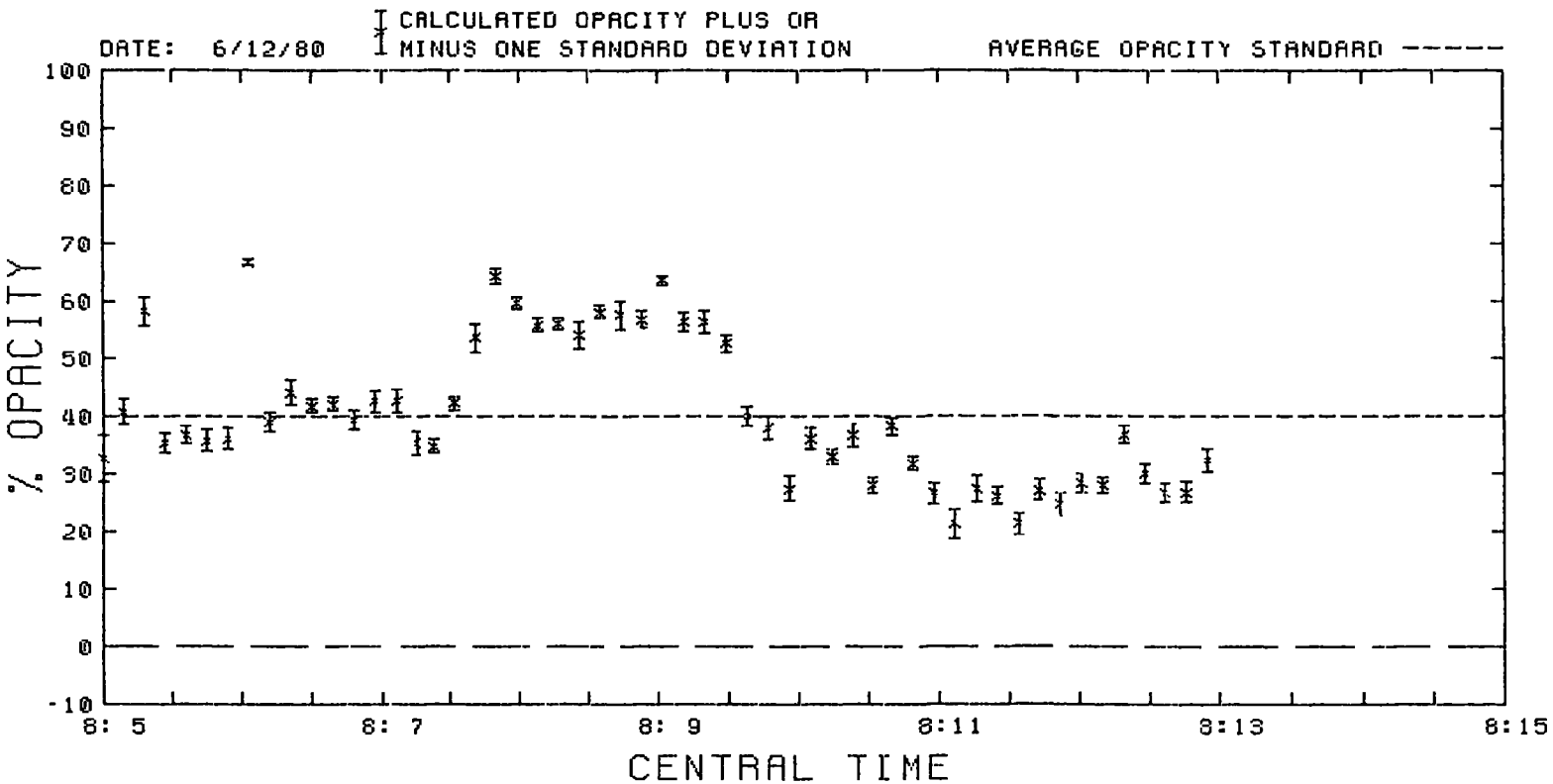
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0060, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF PLANT SIX MINUTE AVERAGE

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	8 5 36	37	2		47	2	****	0 OF 41
6/12/80	8 5 45	36	2		47	2	****	0 OF 41
6/12/80	8 5 54	36	2		47	2	****	0 OF 41
6/12/80	8 6 3	67	0		47	2	****	0 OF 41
6/12/80	8 6 12	39	2		48	2	****	0 OF 41
6/12/80	8 6 21	44	2		48	2	****	0 OF 41
6/12/80	8 6 30	42	1		47	2	****	0 OF 41
6/12/80	8 6 39	42	1		48	2	****	0 OF 41
6/12/80	8 6 48	39	2		47	2	****	0 OF 41
6/12/80	8 6 57	43	2		48	2	****	0 OF 41
6/12/80	8 7 6	43	2		47	2	****	0 OF 41
6/12/80	8 7 15	35	2		47	2	****	0 OF 41
6/12/80	8 7 23	35	1		47	2	****	0 OF 41
6/12/80	8 7 32	42	1		47	2	****	0 OF 41
6/12/80	8 7 41	54	2		47	2	****	0 OF 41
6/12/80	8 7 50	64	1		47	2	****	0 OF 41
6/12/80	8 7 59	60	1		48	2	****	0 OF 41
6/12/80	8 8 8	56	1		47	2	****	0 OF 41
6/12/80	8 8 17	56	1		47	2	****	0 OF 41
6/12/80	8 8 26	54	2		47	2	****	0 OF 41
6/12/80	8 8 35	58	1		48	2	****	0 OF 41
6/12/80	8 8 44	58	2		47	2	****	0 OF 41
6/12/80	8 8 53	57	2		47	2	****	0 OF 41
6/12/80	8 9 2	64	1		47	2	****	0 OF 41
6/12/80	8 9 11	56	2		47	2	****	0 OF 41
6/12/80	8 9 20	56	2		48	2	****	0 OF 41
6/12/80	8 9 29	53	2		48	2	****	0 OF 41
6/12/80	8 9 38	40	2		48	2	****	0 OF 41
6/12/80	8 9 47	38	2		48	2	****	0 OF 41
6/12/80	8 9 56	27	2		47	2	****	0 OF 41
6/12/80	8 10 5	36	2		46	2	****	0 OF 41
6/12/80	8 10 14	33	1		46	2	****	0 OF 41
6/12/80	8 10.23	37	2		46	2	****	0 OF 41
6/12/80	8 10 32	28	1		45	2	****	0 OF 41
6/12/80	8 10 40	38	1		45	2	****	0 OF 41
6/12/80	8 10 49	32	1		45	2	****	0 OF 41
6/12/80	8 10·58	27	2		45	2	****	0 OF 41
6/12/80	8 11 7	21	2		44	2	****	0 OF 41
6/12/80	8 11·16	27	2		44	2	****	0 OF 41
6/12/80	8 11 25	26	2		43	2	****	0 OF 41
6/12/80	8 11 34	21	2		43	2	****	0 OF 41
6/12/80	8 11 43	27	2		43	2	****	0 OF 41
6/12/80	8 11 52	25	2		42	2	****	0 OF 41
6/12/80	8 12 1	28	2		42	2	****	0 OF 41
6/12/80	8 12.10	28	1		41	2	****	0 OF 41
6/12/80	8 12 19	37	2		41	2	****	0 OF 41
6/12/80	8 12 28	30	2		41	2	****	0 OF 41
6/12/80	8 12:37	27	2		40	2	****	0 OF 41
6/12/80	8 12·46	27	2		40	2	****	0 OF 41
6/12/80	8 12 55	32	2		40	2		0 OF 41



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEAG-0061

OLIN CORPORATION

COVINGTON, INDIANA

WEST STACK

June 12, 1980, 13:39:38 to 13:53:53

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

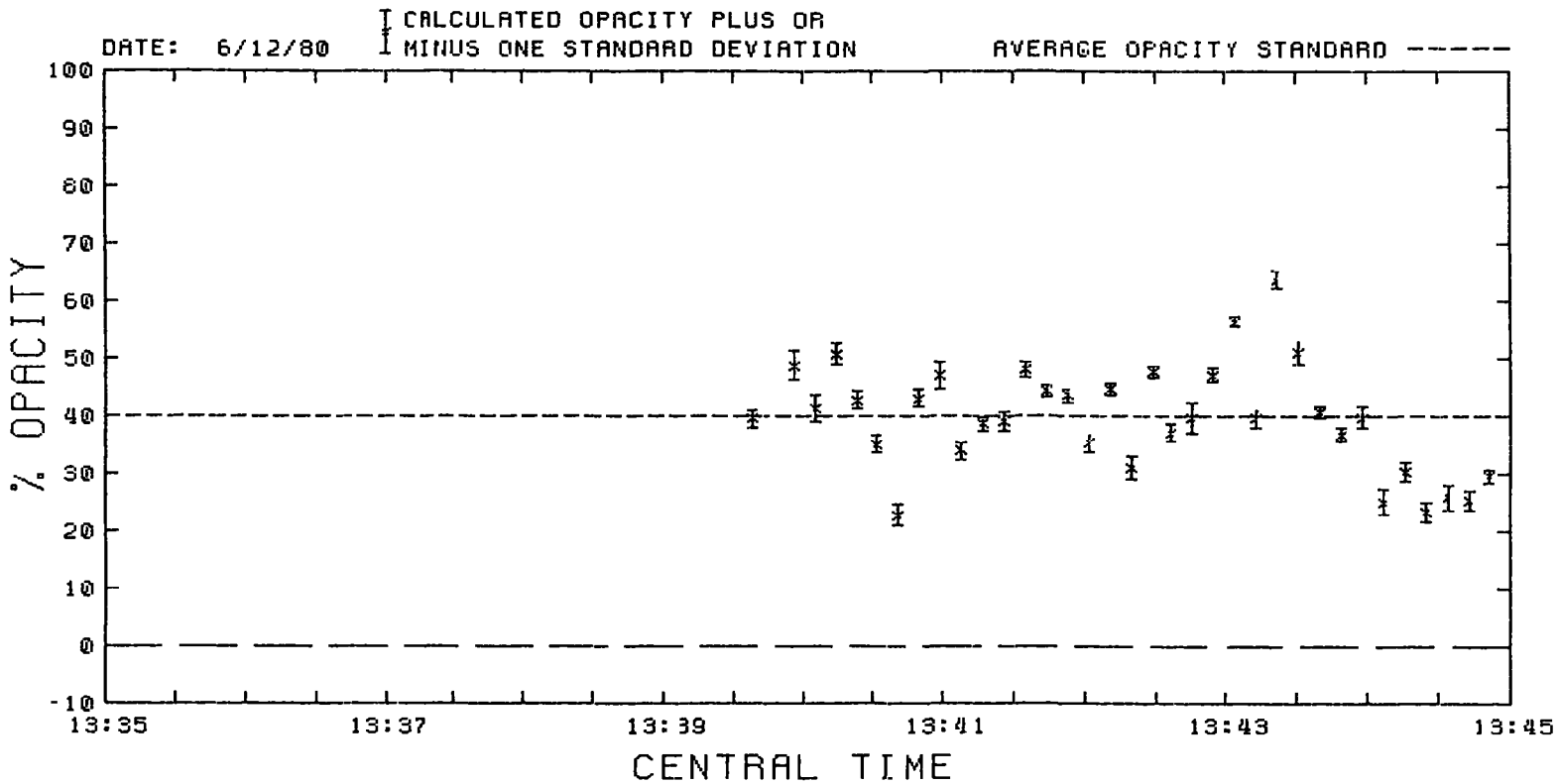
OMEGA-0061, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER	DISCARDED
6/12/80	13 39 38	40	1		0	0		0	OF 0
6/12/80	13 39 56	49	2		0	0		0	OF 0
6/12/80	13 40 5	41	2		0	0		0	OF 0
6/12/80	13 40 14	51	2		0	0		0	OF 0
6/12/80	13 40 23	43	1		0	0		0	OF 0
6/12/80	13 40 32	35	2		0	0		0	OF 0
6/12/80	13 40 41	23	2		0	0		0	OF 0
6/12/80	13 40 50	43	2		0	0		0	OF 0
6/12/80	13 40 59	47	2		0	0		0	OF 0
6/12/80	13 41 8	34	2		0	0		0	OF 0
6/12/80	13 41 17	39	1		0	0		0	OF 0
6/12/80	13 41 26	39	2		0	0		0	OF 0
6/12/80	13 41 35	48	1		0	0		0	OF 0
6/12/80	13 41 44	44	1		0	0		0	OF 0
6/12/80	13 41 53	44	1		0	0		0	OF 0
6/12/80	13 42 2	35	2		0	0		0	OF 0
6/12/80	13 42 11	45	1		0	0		0	OF 0
6/12/80	13 42 20	31	2		0	0		0	OF 0
6/12/80	13 42 29	48	1		0	0		0	OF 0
6/12/80	13 42 37	37	2		0	0		0	OF 0
6/12/80	13 42 46	40	3		0	0		0	OF 0
6/12/80	13 42 55	47	1		0	0		0	OF 0
6/12/80	13 43 4	56	1		0	0		0	OF 0
6/12/80	13 43 13	40	2		0	0		0	OF 0
6/12/80	13 43 22	64	2		0	0		0	OF 0
6/12/80	13 43 31	51	2		0	0		0	OF 0
6/12/80	13 43 40	41	1		0	0		0	OF 0
6/12/80	13 43 49	37	1		0	0		0	OF 0
6/12/80	13 43 58	40	2		0	0		0	OF 0
6/12/80	13 44 7	25	2		0	0		0	OF 0
6/12/80	13 44 16	30	2		0	0		0	OF 0
6/12/80	13 44 25	23	2		0	0		0	OF 0
6/12/80	13 44 34	26	2		0	0		0	OF 0
6/12/80	13 44 43	25	2		0	0		0	OF 0
6/12/80	13 44 51	30	1		0	0		0	OF 0
6/12/80	13 45 0	36	2		0	0		0	OF 0
6/12/80	13 45 9	44	1		0	0		0	OF 0
6/12/80	13 45 18	29	1		0	0		0	OF 0
6/12/80	13 45 27	26	2		39	2		0	OF 39
6/12/80	13 45 36	23	2		39	2		0	OF 40
6/12/80	13 45 45	31	2		38	2		0	OF 40
6/12/80	13 45 54	30	2		38	2		0	OF 41
6/12/80	13 46 3	32	2		38	2		0	OF 41
6/12/80	13 46 12	37	2		38	2		0	OF 41
6/12/80	13 46 20	32	2		37	2		0	OF 41
6/12/80	13 46 29	32	2		37	2		0	OF 41
6/12/80	13 46 38	21	2		37	2		0	OF 41
6/12/80	13 46 47	35	2		37	2		0	OF 41
6/12/80	13 46 56	27	2		37	2		0	OF 41
6/12/80	13 47 5	31	2		36	2		0	OF 41

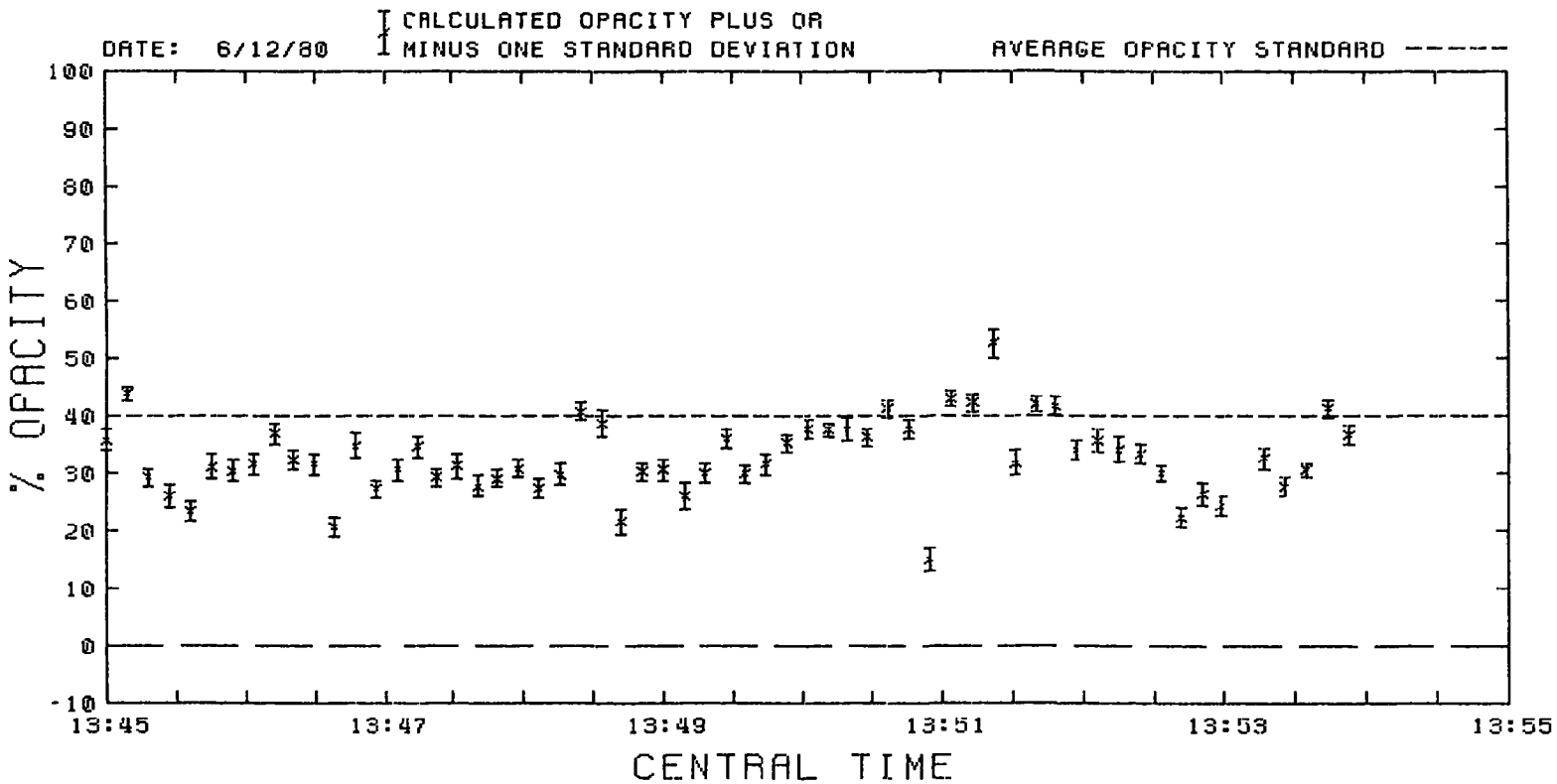
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0061, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	13 47 14	35	2		36	2		0 OF 41
6/12/80	13 47 23	29	2		36	2		0 OF 41
6/12/80	13 47 32	31	2		36	2		0 OF 41
6/12/80	13 47 41	28	2		35	2		0 OF 41
6/12/80	13 47 49	29	2		35	2		0 OF 41
6/12/80	13 47 58	31	1		35	2		0 OF 41
6/12/80	13 48 7	27	2		34	2		0 OF 41
6/12/80	13 48 16	30	2		34	2		0 OF 41
6/12/80	13 48 25	41	2		34	2		0 OF 41
6/12/80	13 48 34	39	2		34	2		0 OF 41
6/12/80	13 48 42	22	2		34	2		0 OF 41
6/12/80	13 48 51	30	2		33	2		0 OF 41
6/12/80	13 49 0	31	2		33	2		0 OF 41
6/12/80	13 49 9	26	2		32	2		0 OF 41
6/12/80	13 49 18	30	2		32	2		0 OF 41
6/12/80	13 49 27	36	2		31	2		0 OF 41
6/12/80	13 49 35	30	2		31	2		0 OF 41
6/12/80	13 49 44	32	2		31	2		0 OF 41
6/12/80	13 49 53	35	2		31	2		0 OF 41
6/12/80	13 50 2	38	2		31	2		0 OF 41
6/12/80	13 50 11	38	1		31	2		0 OF 41
6/12/80	13 50 19	38	2		31	2		0 OF 41
6/12/80	13 50 28	36	1		31	2		0 OF 41
6/12/80	13 50 37	41	2		32	2		0 OF 41
6/12/80	13 50 46	38	2		32	2		0 OF 41
6/12/80	13 50 55	15	2		32	2		0 OF 41
6/12/80	13 51 4	43	1		32	2		0 OF 41
6/12/80	13 51 13	42	1		32	2		0 OF 41
6/12/80	13 51 22	53	2		32	2		0 OF 41
6/12/80	13 51 31	32	2		33	2		0 OF 41
6/12/80	13 51 40	42	1		33	2		0 OF 41
6/12/80	13 51 48	42	1		33	2		0 OF 41
6/12/80	13 51 57	34	2		33	2		0 OF 41
6/12/80	13 52 6	36	2		33	2		0 OF 41
6/12/80	13 52 15	34	2		33	2		0 OF 41
6/12/80	13 52 24	33	2		33	2		0 OF 41
6/12/80	13 52 33	30	1		33	2		0 OF 41
6/12/80	13 52 42	22	2		33	2		0 OF 41
6/12/80	13 52 51	26	2		33	2		0 OF 41
6/12/80	13 52 59	24	2		33	2		0 OF 41
6/12/80	13 53 17	33	2		33	2		0 OF 40
6/12/80	13 53 26	28	2		33	2		0 OF 40
6/12/80	13 53 35	31	1		33	2		0 OF 40
6/12/80	13 53 44	41	2		33	2		0 OF 40
6/12/80	13 53 53	37	2		34	2		0 OF 40



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEGA-0061

OLIN CORPORATION

COVINGTON, INDIANA

WEST STACK

June 12, 1980, 13:55:39 to 14:10:20

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

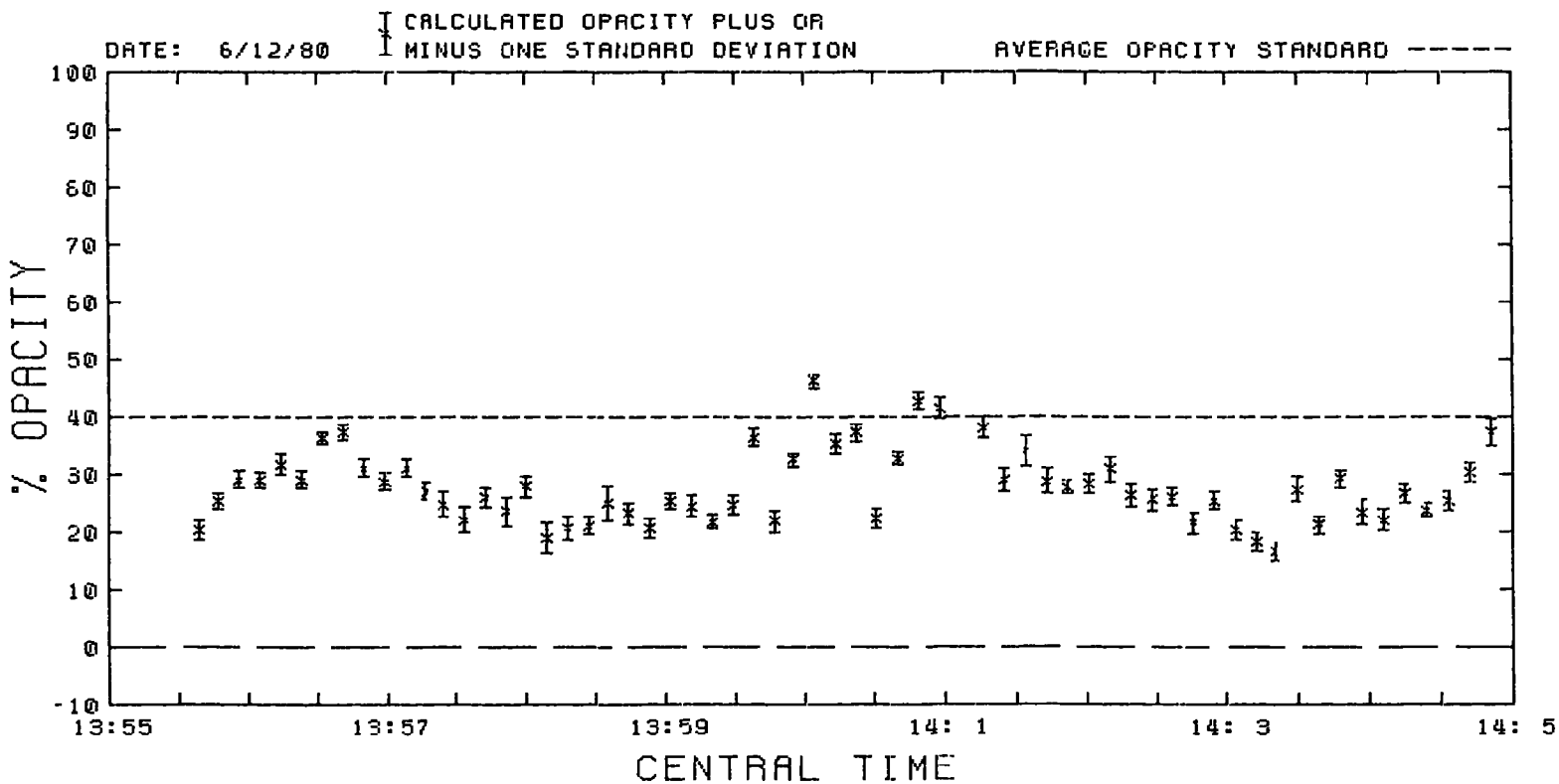
OMEGA-0061, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER	DISCARDED
6/12/80	13 55 39	20	2		0	0		0	OF 0
6/12/80	13 55 47	25	1		0	0		0	OF 0
6/12/80	13 55 56	29	1		0	0		0	OF 0
6/12/80	13 56 5	29	1		0	0		0	OF 0
6/12/80	13 56 14	32	2		0	0		0	OF 0
6/12/80	13 56 23	29	2		0	0		0	OF 0
6/12/80	13 56 32	36	1		0	0		0	OF 0
6/12/80	13 56 41	37	1		0	0		0	OF 0
6/12/80	13 56 50	31	2		0	0		0	OF 0
6/12/80	13 56 59	29	1		0	0		0	OF 0
6/12/80	13 57 8	31	1		0	0		0	OF 0
6/12/80	13 57 17	27	2		0	0		0	OF 0
6/12/80	13 57 25	25	2		0	0		0	OF 0
6/12/80	13 57 34	22	2		0	0		0	OF 0
6/12/80	13 57 43	26	2		0	0		0	OF 0
6/12/80	13 57 52	24	2		0	0		0	OF 0
6/12/80	13 58 0	28	2		0	0		0	OF 0
6/12/80	13 58 9	19	3		0	0		0	OF 0
6/12/80	13 58 18	21	2		0	0		0	OF 0
6/12/80	13 58 27	21	2		0	0		0	OF 0
6/12/80	13 58 35	25	3		0	0		0	OF 0
6/12/80	13 58 44	23	2		0	0		0	OF 0
6/12/80	13 58 53	21	2		0	0		0	OF 0
6/12/80	13 59 2	25	1		0	0		0	OF 0
6/12/80	13 59 11	24	2		0	0		0	OF 0
6/12/80	13 59 20	22	1		0	0		0	OF 0
6/12/80	13 59 29	25	2		0	0		0	OF 0
6/12/80	13 59 38	36	2		0	0		0	OF 0
6/12/80	13 59 47	22	2		0	0		0	OF 0
6/12/80	13 59 55	33	1		0	0		0	OF 0
6/12/80	14 0 4	46	1		0	0		0	OF 0
6/12/80	14 0 13	35	2		0	0		0	OF 0
6/12/80	14 0 22	37	2		0	0		0	OF 0
6/12/80	14 0 31	22	2		0	0		0	OF 0
6/12/80	14 0 40	33	1		0	0		0	OF 0
6/12/80	14 0 49	43	2		0	0		0	OF 0
6/12/80	14 0 58	41	2		0	0		0	OF 0
6/12/80	14 1 16	38	2		0	0		0	OF 0
6/12/80	14 1 25	29	2		29	2		0	OF 39
6/12/80	14 1 34	34	3		29	2		0	OF 40
6/12/80	14 1 43	29	2		29	2		0	OF 40
6/12/80	14 1 52	28	1		29	2		0	OF 40
6/12/80	14 2 1	28	2		29	2		0	OF 40
6/12/80	14 2 10	31	2		29	2		0	OF 40
6/12/80	14 2 19	26	2		29	2		0	OF 40
6/12/80	14 2 28	26	2		29	2		0	OF 40
6/12/80	14 2 37	26	1		29	2		0	OF 40
6/12/80	14 2 46	22	2		28	2		0	OF 40
6/12/80	14 2 55	25	2		28	2		0	OF 40
6/12/80	14 3 4	20	2		28	2		0	OF 40

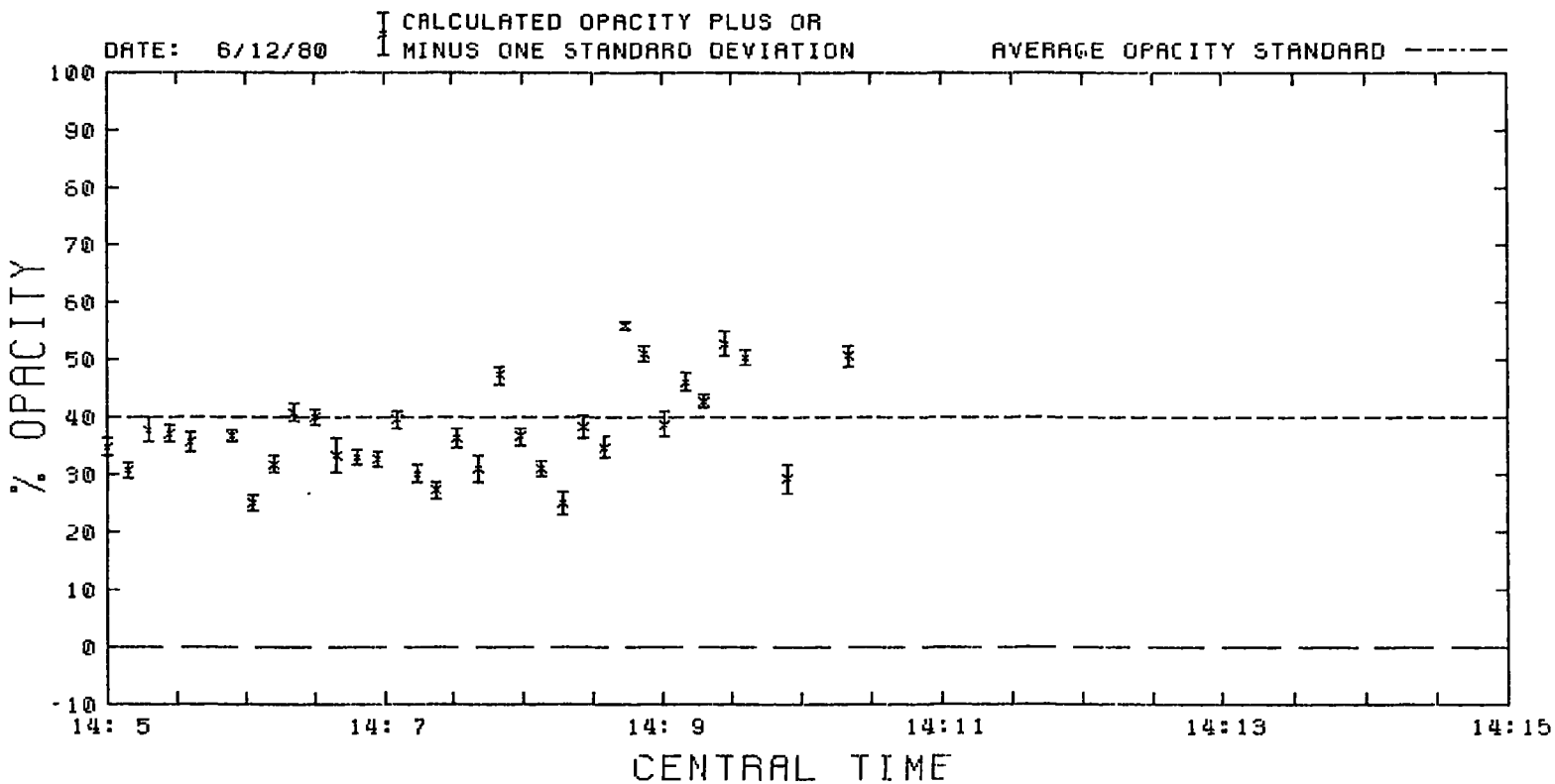
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0061, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	14 3 13	18	2		28	2		0 OF 40
6/12/80	14 3 21	17	2		27	2		0 OF 40
6/12/80	14 3 30	27	2		28	2		0 OF 40
6/12/80	14 3 39	21	2		27	2		0 OF 40
6/12/80	14 3 48	29	2		28	2		0 OF 40
6/12/80	14 3 57	23	2		28	2		0 OF 40
6/12/80	14 4 6	22	2		27	2		0 OF 40
6/12/80	14 4 15	27	2		28	2		0 OF 40
6/12/80	14 4 24	24	1		28	2		0 OF 40
6/12/80	14 4 33	25	2		28	2		0 OF 40
6/12/80	14 4 42	30	2		28	2		0 OF 40
6/12/80	14 4 51	37	2		28	2		0 OF 40
6/12/80	14 5 0	35	2		29	2		0 OF 40
6/12/80	14 5 9	31	1		29	2		0 OF 40
6/12/80	14 5 18	38	2		29	2		0 OF 40
6/12/80	14 5 27	37	1		29	2		0 OF 40
6/12/80	14 5 36	36	2		30	2		0 OF 40
6/12/80	14 5 54	37	1		30	2		0 OF 39
6/12/80	14 6 3	25	1		30	2		0 OF 39
6/12/80	14 6 12	32	2		29	2		0 OF 39
6/12/80	14 6 21	41	2		30	2		0 OF 39
6/12/80	14 6 30	40	1		30	2		0 OF 39
6/12/80	14 6 39	33	3		30	2		0 OF 39
6/12/80	14 6 48	33	1		30	2		0 OF 39
6/12/80	14 6 57	33	1		30	2		0 OF 39
6/12/80	14 7 5	40	1		30	2		0 OF 39
6/12/80	14 7 14	30	2		30	2		0 OF 40
6/12/80	14 7 23	27	2		29	2		0 OF 40
6/12/80	14 7 32	36	2		30	2		0 OF 40
6/12/80	14 7 41	31	2		29	2		0 OF 40
6/12/80	14 7 50	47	2		30	2		0 OF 40
6/12/80	14 7 59	37	2		30	2		0 OF 40
6/12/80	14 8 8	31	1		30	2		0 OF 40
6/12/80	14 8 17	25	2		30	2		0 OF 40
6/12/80	14 8 26	38	2		30	2		0 OF 40
6/12/80	14 8 35	35	2		31	2		0 OF 40
6/12/80	14 8 44	56	1		31	2		0 OF 40
6/12/80	14 8 52	51	1		32	2		0 OF 40
6/12/80	14 9 1	39	2		32	2		0 OF 40
6/12/80	14 9 10	46	1		33	2		0 OF 40
6/12/80	14 9 18	43	1		34	2		0 OF 40
6/12/80	14. 9 27	53	2		35	2		0 OF 40
6/12/80	14 9 36	50	1		35	2		0 OF 40
6/12/80	14 9 54	29	2		35	2		0 OF 39
6/12/80	14 10 20	51	2		37	2		0 OF 37



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEGA-0061

OLIN CORPORATION

COVINGTON, INDIANA

WEST STACK

June 12, 1980, 14:22:34 to 14:51:47

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0061, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER	DISCARDED
6/12/80	14 22 34	31	2		0	0		0 OF	0
6/12/80	14 22 42	30	1		0	0		0 OF	0
6/12/80	14 22 51	31	1		0	0		0 OF	0
6/12/80	14 23 9	22	2		0	0		0 OF	0
6/12/80	14 23 18	34	1		0	0		0 OF	0
6/12/80	14 23 27	25	1		0	0		0 OF	0
6/12/80	14 23 36	24	2		0	0		0 OF	0
6/12/80	14 23 45	21	2		0	0		0 OF	0
6/12/80	14 23 53	27	1		0	0		0 OF	0
6/12/80	14 24 2	27	2		0	0		0 OF	0
6/12/80	14 24 11	20	2		0	0		0 OF	0
6/12/80	14 24 20	28	2		0	0		0 OF	0
6/12/80	14 24 29	25	1		0	0		0 OF	0
6/12/80	14 24 38	31	1		0	0		0 OF	0
6/12/80	14 24 47	26	1		0	0		0 OF	0
6/12/80	14 24 56	38	2		0	0		0 OF	0
6/12/80	14 25 4	25	2		0	0		0 OF	0
6/12/80	14 25 13	27	2		0	0		0 OF	0
6/12/80	14 25 22	38	2		0	0		0 OF	0
6/12/80	14 25 31	33	2		0	0		0 OF	0
6/12/80	14 25 40	34	2		0	0		0 OF	0
6/12/80	14 25 49	25	2		0	0		0 OF	0
6/12/80	14 25 58	24	2		0	0		0 OF	0
6/12/80	14 26 7	27	1		0	0		0 OF	0
6/12/80	14 26 15	25	2		0	0		0 OF	0
6/12/80	14 26 24	23	1		0	0		0 OF	0
6/12/80	14 26 33	11	1		0	0		0 OF	0
6/12/80	14 26 42	15	2		0	0		0 OF	0
6/12/80	14 26 51	20	2		0	0		0 OF	0
6/12/80	14 27 0	40	2		0	0		0 OF	0
6/12/80	14 27 9	27	1		0	0		0 OF	0
6/12/80	14 27 18	28	2		0	0		0 OF	0
6/12/80	14 27 27	20	1		0	0		0 OF	0
6/12/80	14 27 35	23	2		0	0		0 OF	0
6/12/80	14 27 44	28	1		0	0		0 OF	0
6/12/80	14 27 53	28	2		0	0		0 OF	0
6/12/80	14 28 2	29	1		0	0		0 OF	0
6/12/80	14 28 11	23	2		0	0		0 OF	0
6/12/80	14 28 20	27	2		27	2		0 OF	39
6/12/80	14 28 29	25	2		27	2		0 OF	40
6/12/80	14 28 38	21	2		26	2		0 OF	40
6/12/80	14 28 47	23	1		26	2		0 OF	40
6/12/80	14 28 56	23	2		26	2		0 OF	40
6/12/80	14 29 4	17	2		26	2		0 OF	41
6/12/80	14 29 13	19	3		26	2		0 OF	41
6/12/80	14 29 22	12	1		25	2		0 OF	41
6/12/80	14 29 31	23	2		25	2		0 OF	41
6/12/80	14 29 40	12	2		25	2		0 OF	41
6/12/80	14 29 49	28	1		25	2		0 OF	41
6/12/80	14 29 58	26	2		25	2		0 OF	41

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0051, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	14 30 7	26	2		25	2		0 OF 41
6/12/80	14 30 16	26	2		25	2		0 OF 41
6/12/80	14 30 25	26	2		25	2		0 OF 41
6/12/80	14 30 34	24	2		25	2		0 OF 41
6/12/80	14 30 42	30	2		25	2		0 OF 41
6/12/80	14 30 51	32	1		25	2		0 OF 41
6/12/80	14 31 0	28	2		25	2		0 OF 41
6/12/80	14 31 9	23	2		25	2		0 OF 41
6/12/80	14 31 18	23	2		25	2		0 OF 41
6/12/80	14 31 27	12	1		24	2		0 OF 41
6/12/80	14 31 36	28	2		24	2		0 OF 41
6/12/80	14 31 45	28	2		24	2		0 OF 41
6/12/80	14 31 54	27	2		24	2		0 OF 41
6/12/80	14 32 2	28	2		24	2		0 OF 41
6/12/80	14 32 11	29	2		24	2		0 OF 41
6/12/80	14 32 20	22	1		24	2		0 OF 41
6/12/80	14 32 29	32	1		24	2		0 OF 41
6/12/80	14 32 47	26	2		25	2		0 OF 40
6/12/80	14 32 56	29	1		25	2		0 OF 40
6/12/80	14 33 5	30	1		25	2		0 OF 40
6/12/80	14 33 14	30	2		25	2		0 OF 40
6/12/80	14 33 23	24	2		25	2		0 OF 40
6/12/80	14 33 31	23	2		25	2		0 OF 40
6/12/80	14 33 40	26	1		25	2		0 OF 40
6/12/80	14 33 49	24	1		25	2		0 OF 40
6/12/80	14 33 58	30	1		25	2		0 OF 40
6/12/80	14 34 7	32	2		25	2		0 OF 40
6/12/80	14 34 16	20	2		25	2		0 OF 40
6/12/80	14 34 25	36	1		25	2		0 OF 40
6/12/80	14 34 33	24	2		25	2		0 OF 40
6/12/80	14 34 42	32	1		25	2		0 OF 40
6/12/80	14 34 51	29	2		25	2		0 OF 40
6/12/80	14 35 0	35	1		26	2		0 OF 40
6/12/80	14 35 9	32	2		26	2		0 OF 40
6/12/80	14 35 18	34	1		27	2		0 OF 40
6/12/80	14 35 27	37	2		27	2		0 OF 40
6/12/80	14 35 36	31	1		27	2		0 OF 40
6/12/80	14 35 44	31	2		28	2		0 OF 40
6/12/80	14 35 53	33	2		28	2		0 OF 40
6/12/80	14 36 2	31	2		28	2		0 OF 40
6/12/80	14 36 11	27	2		28	2		0 OF 40
6/12/80	14 36 20	37	2		28	2		0 OF 40
6/12/80	14 36 29	25	2		28	2		0 OF 40
6/12/80	14 36 38	7	2		28	2		0 OF 40
6/12/80	14 36 47	17	2		28	2		0 OF 40
6/12/80	14 36 55	26	2		27	2		0 OF 40
6/12/80	14 37 4	22	1		27	2		0 OF 40
6/12/80	14 37 13	29	1		28	2		0 OF 40
6/12/80	14 37 22	24	2		28	2		0 OF 40
6/12/80	14 37 31	22	1		28	2		0 OF 40

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

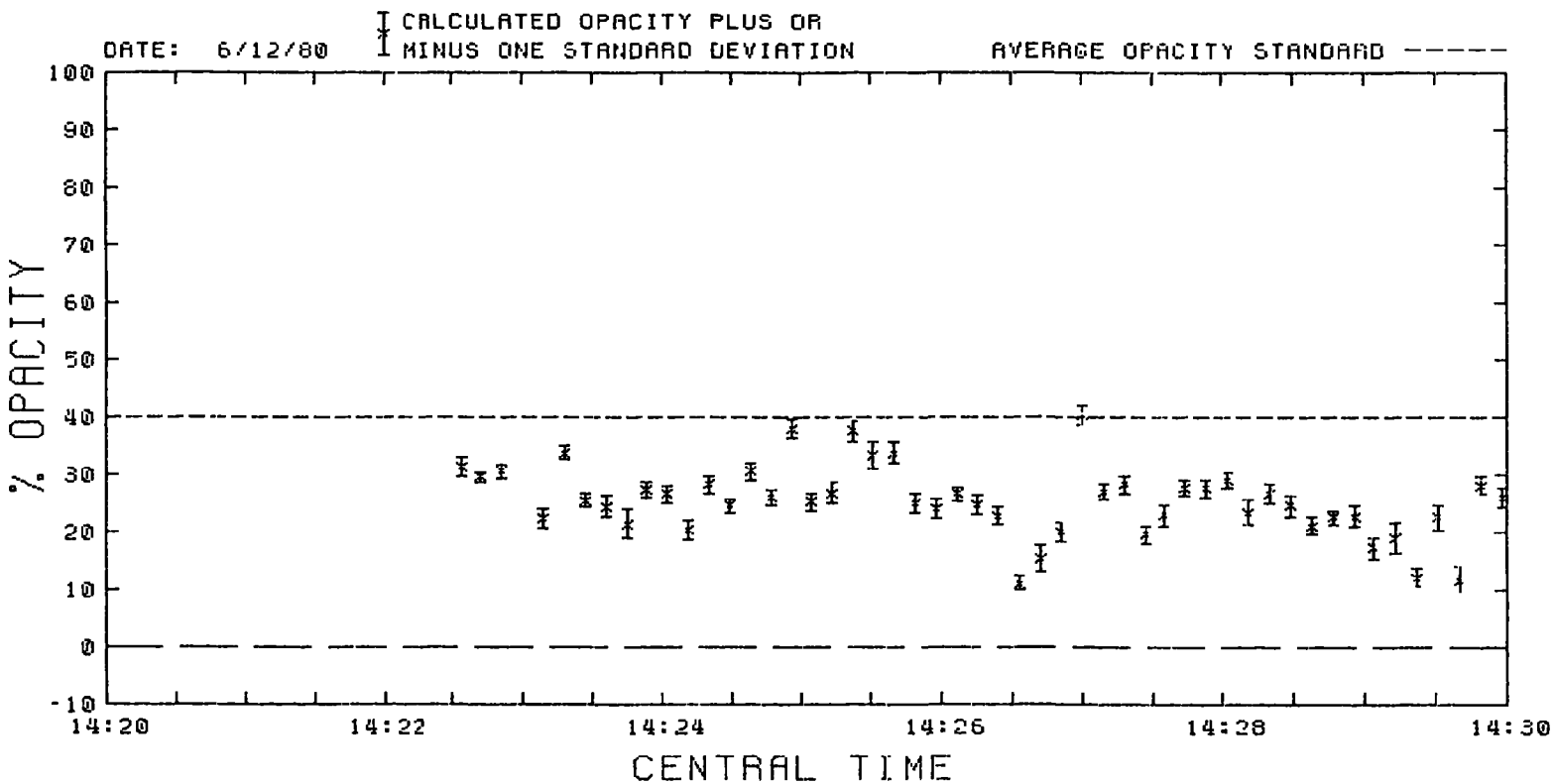
OMEGA-0061, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	14 37 39	30	2		28	2		0 OF 40
6/12/80	14 37 48	23	1		28	2		0 OF 40
6/12/80	14 37 57	22	2		28	2		0 OF 40
6/12/80	14 38 6	26	2		28	2		0 OF 40
6/12/80	14 38 15	28	2		28	2		0 OF 40
6/12/80	14 38 23	19	2		27	2		0 OF 40
6/12/80	14 38 32	20	2		27	2		0 OF 40
6/12/80	14 38 41	29	2		27	2		0 OF 41
6/12/80	14 38 50	22	2		27	2		0 OF 41
6/12/80	14 38 59	32	2		27	2		0 OF 41
6/12/80	14 39 8	29	3		27	2		0 OF 41
6/12/80	14 39 17	37	1		27	2		0 OF 41
6/12/80	14 39 26	35	1		28	2		0 OF 41
6/12/80	14 39 35	22	1		28	2		0 OF 41
6/12/80	14 39 43	28	2		28	2		0 OF 41
6/12/80	14 39 52	22	1		28	2		0 OF 41
6/12/80	14 40 1	32	2		28	2		0 OF 41
6/12/80	14 40 10	38	2		28	2		0 OF 41
6/12/80	14 40 28	31	2		28	2		0 OF 40
6/12/80	14 40 37	30	2		28	2		0 OF 40
6/12/80	14 40 46	27	2		28	2		0 OF 40
6/12/80	14 40 55	25	2		28	2		0 OF 40
6/12/80	14 41 3	31	2		28	2		0 OF 40
6/12/80	14 41 12	22	1		27	2		0 OF 40
6/12/80	14 41 21	27	2		27	2		0 OF 40
6/12/80	14 41 38	18	2		27	2		0 OF 39
6/12/80	14 41 47	43	2		27	2		0 OF 39
6/12/80	14 41 56	29	2		27	2		0 OF 39
6/12/80	14 42 5	25	2		27	2		0 OF 39
6/12/80	14 42 14	24	1		27	2		0 OF 39
6/12/80	14 42 22	35	2		26	2		0 OF 39
6/12/80	14 42 31	41	2		27	2		0 OF 39
6/12/80	14 42 40	38	1		28	2		0 OF 39
6/12/80	14 42 49	35	2		28	2		0 OF 39
6/12/80	14 42 58	47	2		29	2		0 OF 39
6/12/80	14 43 7	57	1		30	2		0 OF 39
6/12/80	14 43 16	50	2		30	2		0 OF 39
6/12/80	14 43 25	29	2		30	2		0 OF 39
6/12/80	14 43 33	35	2		31	2		0 OF 39
6/12/80	14 43 42	26	2		30	2		0 OF 39
6/12/80	14 43 51	27	2		31	2		0 OF 39
6/12/80	14 44 0	32	2		31	2		0 OF 39
6/12/80	14 44 9	26	2		31	2		0 OF 39
6/12/80	14 44 27	34	1		31	2		0 OF 38
6/12/80	14 44 36	34	1		32	2		0 OF 38
6/12/80	14 44 44	29	2		32	2		0 OF 38
6/12/80	14 44 53	34	2		32	2		0 OF 38
6/12/80	14 45 2	28	2		32	2		0 OF 38
6/12/80	14 45 11	25	2		32	2		0 OF 38
6/12/80	14 45 20	24	2		31	2		0 OF 38

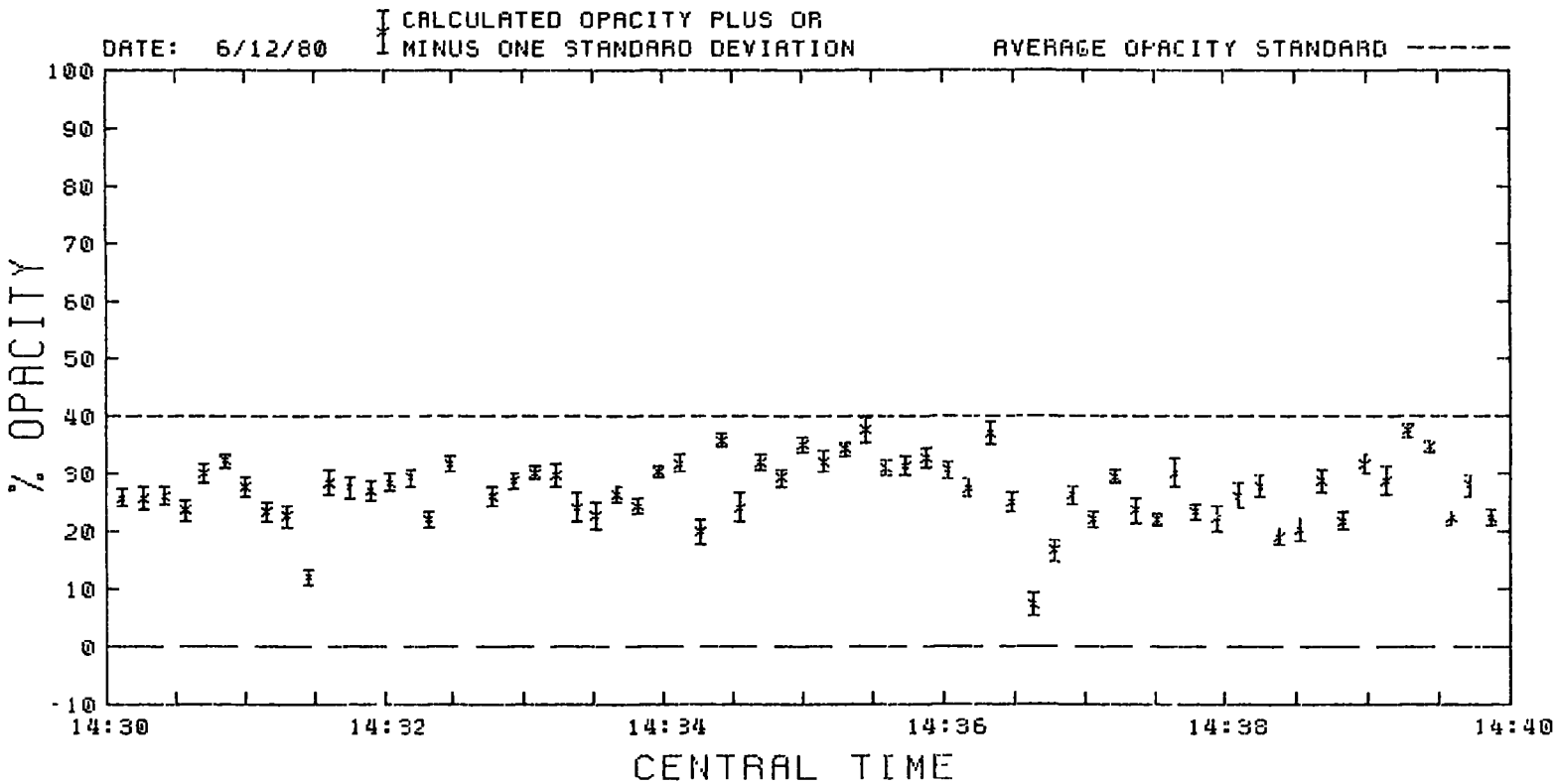
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0061, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

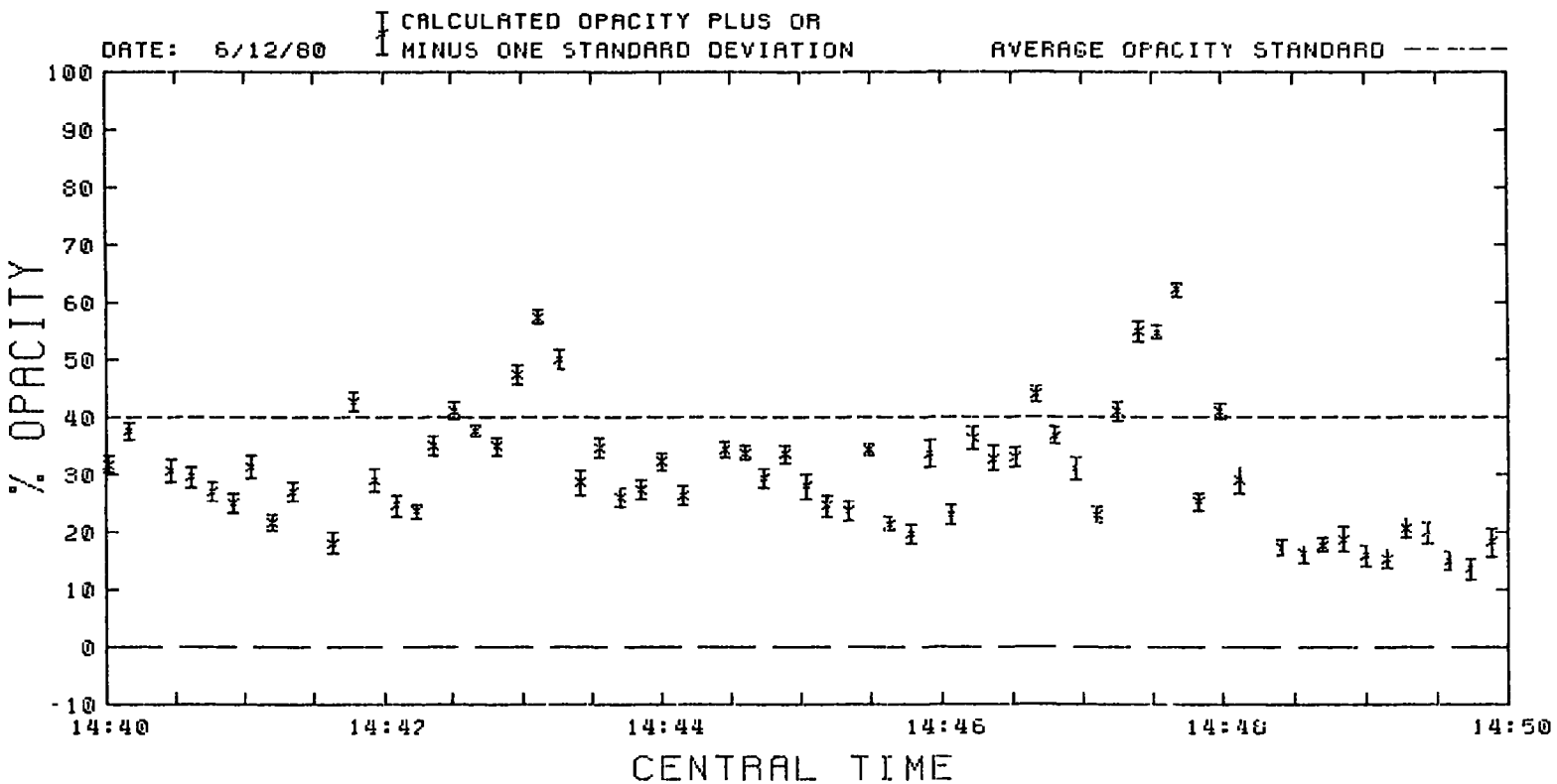
DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	14 45 29	34	1		31	2		0 OF 38
6/12/80	14 45 38	21	1		31	2		0 OF 38
6/12/80	14 45 47	20	2		31	2		0 OF 38
6/12/80	14 45 55	34	2		31	2		0 OF 38
6/12/80	14 46 4	23	2		31	2		0 OF 38
6/12/80	14 46 13	36	2		31	2		0 OF 38
6/12/80	14 46 22	33	2		31	2		0 OF 39
6/12/80	14 46 31	33	2		31	2		0 OF 39
6/12/80	14 46 40	44	1		32	2		0 OF 39
6/12/80	14 46 48	37	2		32	2		0 OF 39
6/12/80	14 46 57	31	2		32	2		0 OF 39
6/12/80	14 47 6	23	1		32	2		0 OF 39
6/12/80	14 47 15	41	2		32	2		0 OF 39
6/12/80	14 47 24	55	2		33	2		0 OF 39
6/12/80	14 47 32	55	1		34	2		0 OF 40
6/12/80	14.47 41	62	1		35	2		0 OF 40
6/12/80	14 47 50	25	1		34	2		0 OF 40
6/12/80	14 47 59	41	1		35	2		0 OF 40
6/12/80	14 48 7	29	2		35	2		0 OF 40
6/12/80	14 48 25	17	1		35	2		0 OF 39
6/12/80	14 48 34	16	2		34	2		0 OF 39
6/12/80	14 48 42	18	1		33	2		0 OF 39
6/12/80	14 48 51	19	2		33	2		0 OF 39
6/12/80	14 49 0	16	2		32	2		0 OF 39
6/12/80	14 49 9	15	2		31	2		0 OF 39
6/12/80	14 49 17	21	2		30	2		0 OF 39
6/12/80	14 49 26	20	2		30	2		0 OF 39
6/12/80	14 49 35	15	2		30	2		0 OF 39
6/12/80	14 49 44	14	2		29	2		0 OF 39
6/12/80	14 49 53	18	2		29	2		0 OF 39
6/12/80	14 50 2	16	2		29	2		0 OF 39
6/12/80	14 50 11	25	2		29	2		0 OF 39
6/12/80	14 50 20	19	2		28	2		0 OF 40
6/12/80	14 50 28	27	2		28	2		0 OF 40
6/12/80	14 50 37	28	2		28	2		0 OF 40
6/12/80	14 50 46	12	2		28	2		0 OF 40
6/12/80	14 50 55	22	1		27	2		0 OF 40
6/12/80	14 51 3	28	2		27	2		0 OF 40
6/12/80	14 51 30	20	2		27	2		0 OF 38
6/12/80	14 51 38	23	2		27	2		0 OF 39
6/12/80	14 51 47	24	2		27	2		0 OF 39



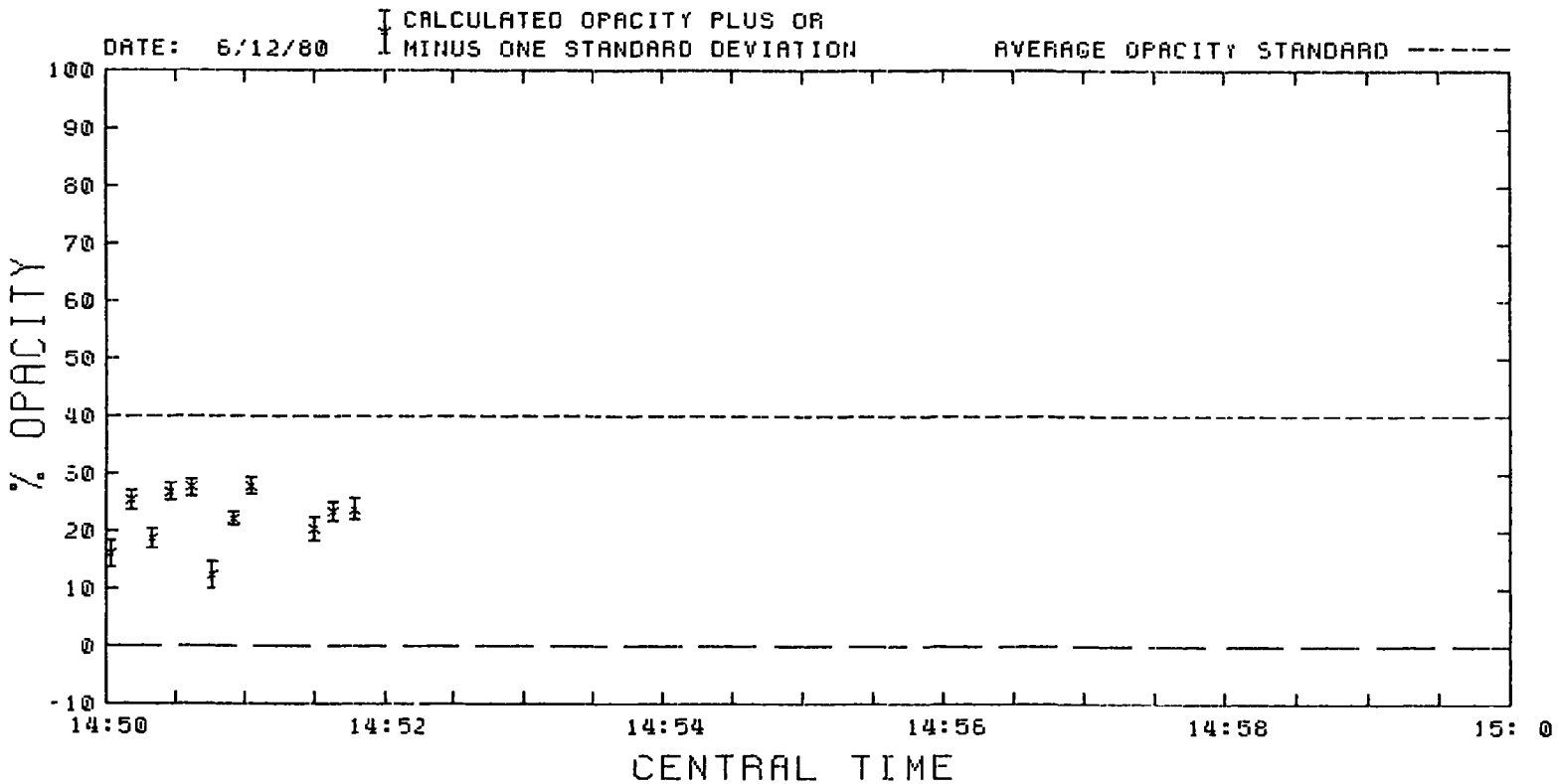
WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEGA-0062

OLIN CORPORATION

COVINGTON, INDIANA

EAST STACK

June 12, 1980, 15:00:09 to 15:25:32

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0062, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER	DISCARDED
6/12/80	15 0 9	30	2		0	0		0	OF 0
6/12/80	15 0 17	32	2		0	0		0	OF 0
6/12/80	15 0 26	30	2		0	0		0	OF 0
6/12/80	15 0 35	32	2		0	0		0	OF 0
6/12/80	15 0 44	29	2		0	0		0	OF 0
6/12/80	15 0 53	31	1		0	0		0	OF 0
6/12/80	15 1 1	29	2		0	0		0	OF 0
6/12/80	15 1 10	32	2		0	0		0	OF 0
6/12/80	15 1 19	28	3		0	0		0	OF 0
6/12/80	15 1 28	28	2		0	0		0	OF 0
6/12/80	15 1 37	28	2		0	0		0	OF 0
6/12/80	15 1 46	30	2		0	0		0	OF 0
6/12/80	15 1 55	34	2		0	0		0	OF 0
6/12/80	15 2 3	32	2		0	0		0	OF 0
6/12/80	15 2 12	40	2		0	0		0	OF 0
6/12/80	15 2 21	36	2		0	0		0	OF 0
6/12/80	15 2 30	40	1		0	0		0	OF 0
6/12/80	15 2 39	44	2		0	0		0	OF 0
6/12/80	15 2 47	31	2		0	0		0	OF 0
6/12/80	15 2 56	42	2		0	0		0	OF 0
6/12/80	15 3 5	44	2		0	0		0	OF 0
6/12/80	15 3 14	49	2		0	0		0	OF 0
6/12/80	15 3 23	39	1		0	0		0	OF 0
6/12/80	15 3 32	35	2		0	0		0	OF 0
6/12/80	15 3 41	36	2		0	0		0	OF 0
6/12/80	15 3 49	37	2		0	0		0	OF 0
6/12/80	15 3 58	47	3		0	0		0	OF 0
6/12/80	15 4 7	20	3		0	0		0	OF 0
6/12/80	15 4 16	26	2		0	0		0	OF 0
6/12/80	15 4 25	22	2		0	0		0	OF 0
6/12/80	15 4 34	30	2		0	0		0	OF 0
6/12/80	15 4 42	13	3		0	0		0	OF 0
6/12/80	15 4 51	31	2		0	0		0	OF 0
6/12/80	15 5 0	25	2		0	0		0	OF 0
6/12/80	15 5 9	12	3		0	0		0	OF 0
6/12/80	15 5 18	40	2		0	0		0	OF 0
6/12/80	15 5 27	37	2		0	0		0	OF 0
6/12/80	15 5 36	35	2		0	0		0	OF 0
6/12/80	15 5 44	34	2		0	0		0	OF 0
6/12/80	15 5 53	32	2		32	2		0	OF 40
6/12/80	15 6 2	49	2		33	2		0	OF 41
6/12/80	15 6 11	44	4		33	2		0	OF 41
6/12/80	15 6 20	33	3		33	2		0	OF 41
6/12/80	15 6 28	46	2		34	2		0	OF 41
6/12/80	15 6 37	42	2		34	2		0	OF 41
6/12/80	15 6 46	40	2		34	2		0	OF 41
6/12/80	15 7 3	38	2		34	2		0	OF 40
6/12/80	15 7 12	36	3		35	2		0	OF 40
6/12/80	15 7 21	54	2		35	2		0	OF 40
6/12/80	15 7 30	41	4		36	2		0	OF 40

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0062, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	15 7 38	43	2		36	2		0 OF 40
6/12/80	15 7 47	34	2		36	2		0 OF 40
6/12/80	15 7 56	31	2		36	2		0 OF 40
6/12/80	15 8 5	30	2		36	2		0 OF 40
6/12/80	15 8 14	28	2		36	2		0 OF 40
6/12/80	15 8 23	32	3		35	2		0 OF 40
6/12/80	15 8 31	27	2		35	2		0 OF 40
6/12/80	15 8 40	34	2		35	2		0 OF 40
6/12/80	15 8 49	49	3		35	2		0 OF 40
6/12/80	15 9 7	37	3		35	2		0 OF 39
6/12/80	15 9 16	45	2		35	2		0 OF 39
6/12/80	15 9 25	36	3		35	2		0 OF 39
6/12/80	15 9 33	52	2		35	2		0 OF 39
6/12/80	15 9 42	38	2		35	2		0 OF 39
6/12/80	15 9 51	43	1		35	2		0 OF 39
6/12/80	15 10 0	31	2		35	2		0 OF 39
6/12/80	15 10 9	12	2		35	2		0 OF 39
6/12/80	15 10 17	13	2		35	2		0 OF 39
6/12/80	15 10 26	16	2		34	2		0 OF 39
6/12/80	15 10 35	16	1		34	2		0 OF 39
6/12/80	15 10 44	18	2		34	2		0 OF 39
6/12/80	15 10 52	38	2		34	2		0 OF 39
6/12/80	15 11 1	32	3		35	2		0 OF 39
6/12/80	15 11 10	20	1		35	2		0 OF 39
6/12/80	15 11 19	23	2		34	2		0 OF 39
6/12/80	15 11 28	18	2		34	2		0 OF 39
6/12/80	15 11 36	19	2		33	2		0 OF 40
6/12/80	15 11 45	21	3		33	2		0 OF 39
6/12/80	15 11 54	13	2		33	2		0 OF 39
6/12/80	15 12 3	18	2		32	2		0 OF 39
6/12/80	15 12 12	29	2		31	2		0 OF 39
6/12/80	15 12 21	40	2		32	2		0 OF 39
6/12/80	15 12 30	21	2		31	2		0 OF 39
6/12/80	15 12 38	21	2		30	2		0 OF 39
6/12/80	15 12 47	34	2		30	2		0 OF 39
6/12/80	15 12 56	41	2		30	2		0 OF 40
6/12/80	15 13 5	32	2		30	2		0 OF 40
6/12/80	15 13 14	13	2		30	2		0 OF 40
6/12/80	15 13 23	28	2		29	2		0 OF 40
6/12/80	15 13 31	44	1		29	2		0 OF 40
6/12/80	15 13 40	51	2		29	2		0 OF 40
6/12/80	15 13 49	58	1		30	2		0 OF 40
6/12/80	15 13 58	33	3		30	2		0 OF 40
6/12/80	15 14 7	12	4		30	2		0 OF 40
6/12/80	15 14 16	11	5		29	2		0 OF 40
6/12/80	15 14 24	20	3		29	2		0 OF 40
6/12/80	15 14 33	26	3		29	2		0 OF 40
6/12/80	15 14 42	22	2		29	2		0 OF 40
6/12/80	15 14 51	11	2		28	2		0 OF 40
6/12/80	15 15 0	31	2		28	2		0 OF 41

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

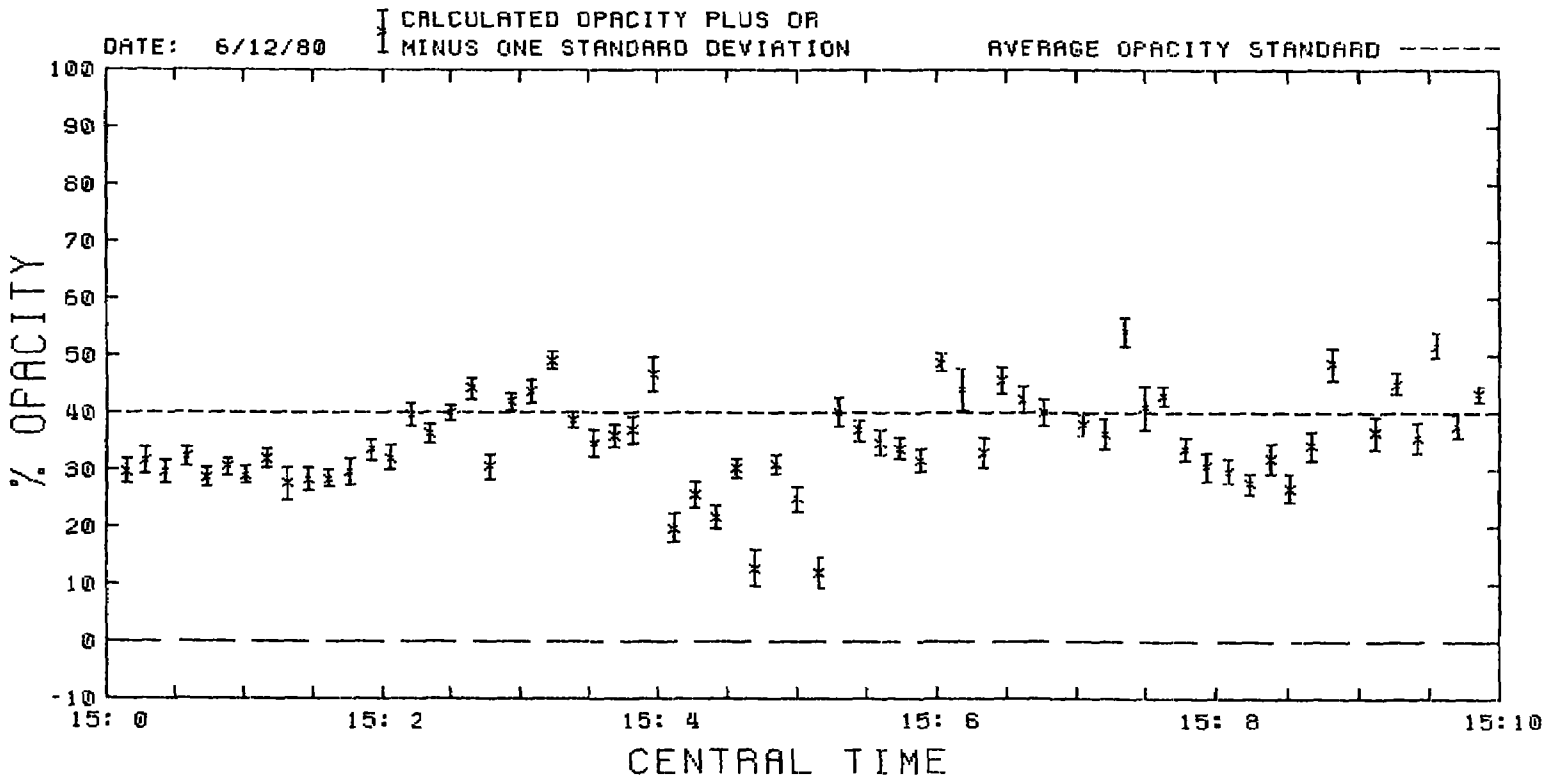
OMEGA-0062, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	15 15 8	31	3		28	2		0 OF 41
6/12/80	15 15 17	19	2		27	2		0 OF 41
6/12/80	15 15 26	21	4		27	2		0 OF 41
6/12/80	15 15 35	23	2		26	2		0 OF 41
6/12/80	15 15 43	22	2		25	2		0 OF 41
6/12/80	15 15 52	23	2		25	2		0 OF 41
6/12/80	15 16 1	26	2		25	2		0 OF 41
6/12/80	15 16 10	19	3		25	2		0 OF 41
6/12/80	15 16 18	18	1		25	2		0 OF 41
6/12/80	15 16 27	19	2		25	2		0 OF 41
6/12/80	15 16 36	17	2		25	2		0 OF 41
6/12/80	15 16 44	14	2		25	2		0 OF 42
6/12/80	15 16 53	21	2		25	2		0 OF 41
6/12/80	15 17 1	17	2		24	2		0 OF 42
6/12/80	15 17 10	18	2		24	2		0 OF 42
6/12/80	15 17 19	20	1		24	2		0 OF 42
6/12/80	15 17 28	19	2		24	2		0 OF 42
6/12/80	15 17 37	18	2		24	2		0 OF 41
6/12/80	15 17 45	26	2		24	2		0 OF 42
6/12/80	15 17 54	25	2		24	2		0 OF 42
6/12/80	15 18 3	52	1		25	2		0 OF 42
6/12/80	15 18 12	54	2		26	2		0 OF 42
6/12/80	15 18 20	26	2		26	2		0 OF 42
6/12/80	15 18 29	43	1		26	2		0 OF 42
6/12/80	15 18 38	40	2		27	2		0 OF 42
6/12/80	15 18 47	34	2		27	2		0 OF 42
6/12/80	15 18 55	41	1		27	2		0 OF 42
6/12/80	15 19 4	40	1		27	2		0 OF 42
6/12/80	15 19 13	48	1		27	2		0 OF 42
6/12/80	15 19 22	50	1		28	2		0 OF 42
6/12/80	15 19 30	33	2		28	2		0 OF 42
6/12/80	15 19 39	44	2		28	2		0 OF 42
6/12/80	15 19 48	47	1		28	2		0 OF 42
6/12/80	15 19 57	51	1		28	2		0 OF 42
6/12/80	15 20 6	32	2		28	2		0 OF 42
6/12/80	15 20 14	34	2		29	2		0 OF 42
6/12/80	15 20 23	21	2		29	2		0 OF 42
6/12/80	15 20 32	44	1		30	2		0 OF 42
6/12/80	15 20 41	20	2		29	2		0 OF 42
6/12/80	15 20 49	37	2		30	2		0 OF 42
6/12/80	15 20 58	38	2		30	2		0 OF 42
6/12/80	15 21 7	32	2		30	2		0 OF 42
6/12/80	15 21 16	18	2		30	2		0 OF 42
6/12/80	15 21 24	18	2		30	2		0 OF 42
6/12/80	15 21 33	11	2		30	2		0 OF 42
6/12/80	15 21 42	18	2		30	2		0 OF 42
6/12/80	15 21 51	15	2		30	2		0 OF 42
6/12/80	15 22 0	7	2		29	2		0 OF 42
6/12/80	15 22 8	7	2		29	2		0 OF 42
6/12/80	15 22 17	20	2		29	2		0 OF 42

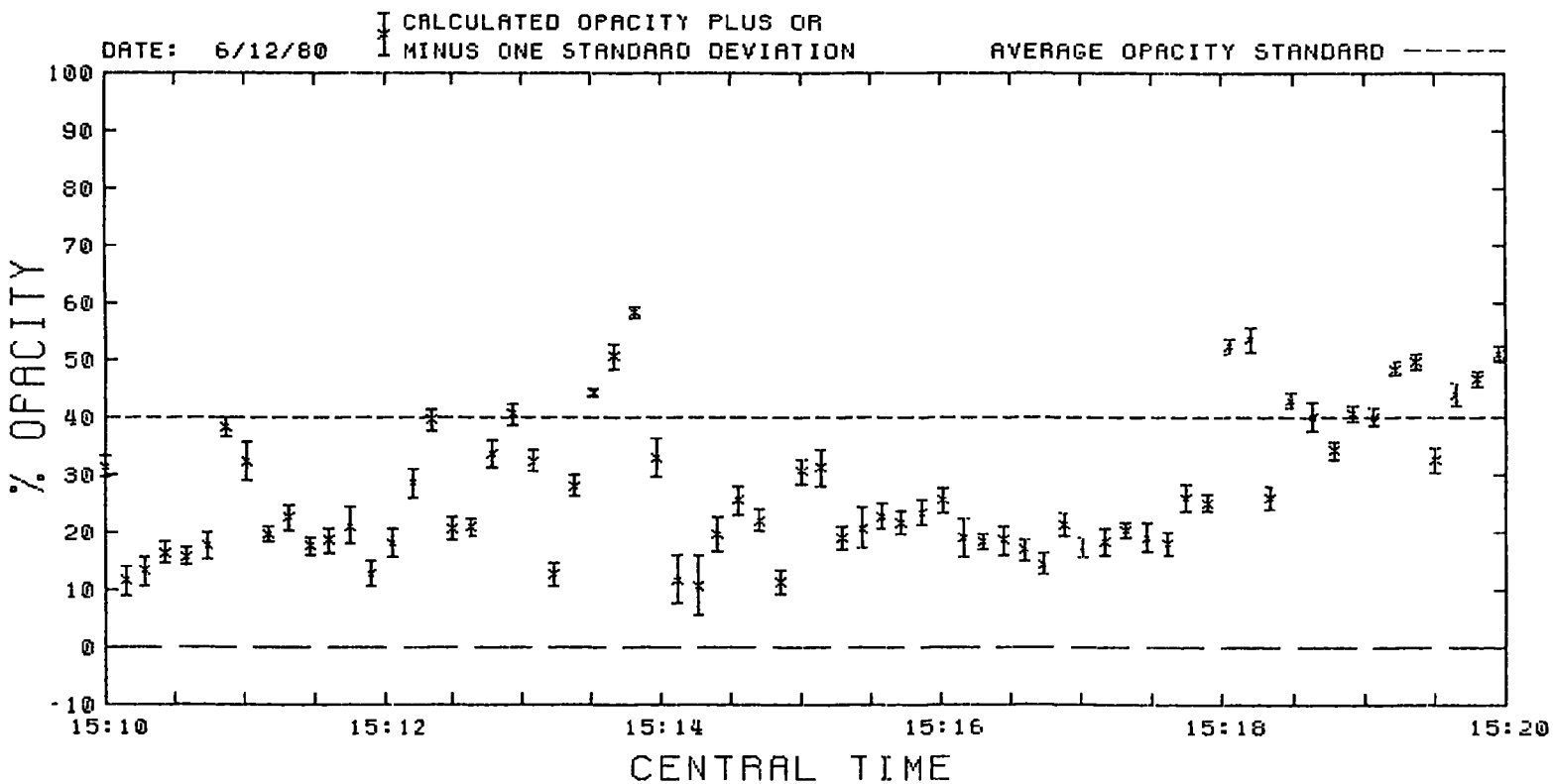
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0062, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

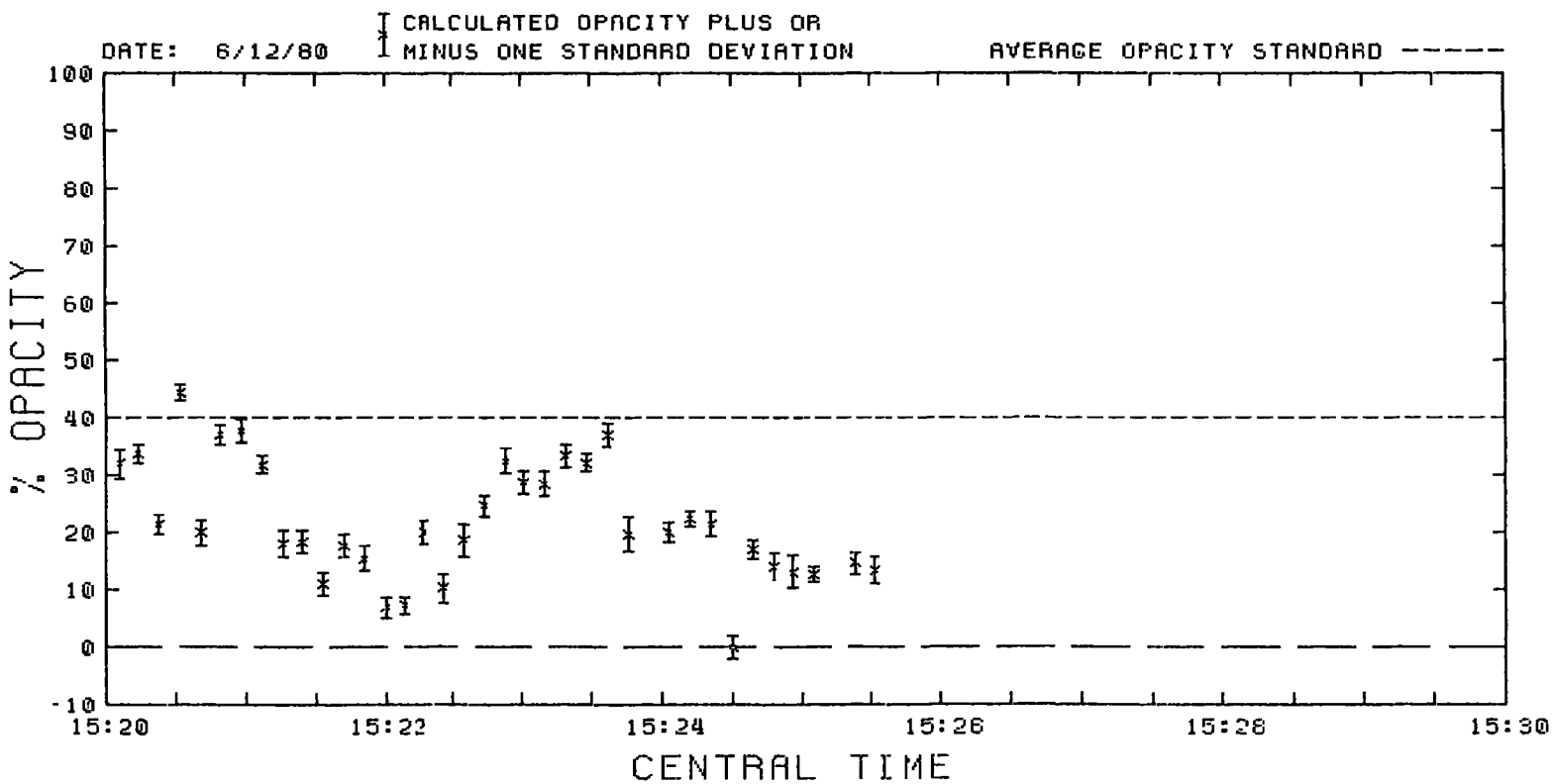
DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	15 22 26	10	2		29	2		0 OF 42
6/12/80	15 22 35	19	3		29	2		0 OF 42
6/12/80	15 22 44	25	2		29	2		0 OF 42
6/12/80	15 22 53	32	2		29	2		0 OF 42
6/12/80	15 23 1	29	2		29	2		0 OF 42
6/12/80	15 23 10	28	2		30	2		0 OF 42
6/12/80	15 23 19	33	2		30	2		0 OF 42
6/12/80	15 23 28	32	2		30	2		0 OF 42
6/12/80	15 23 37	37	2		31	2		0 OF 42
6/12/80	15 23 46	20	3		31	2		0 OF 41
6/12/80	15 24 3	20	2		31	2		0 OF 41
6/12/80	15 24 12	22	1		30	2		0 OF 41
6/12/80	15 24 21	21	2		29	2		0 OF 40
6/12/80	15 24 30	0	2		28	2		0 OF 40
6/12/80	15 24 39	17	2		27	2		0 OF 40
6/12/80	15 24 48	14	2		27	2		0 OF 40
6/12/80	15 24 56	13	3		26	2		0 OF 40
6/12/80	15 25 5	13	1		25	2		0 OF 40
6/12/80	15 25 23	15	2		24	2		0 OF 39
6/12/80	15 25 32	13	2		23	2		0 OF 39



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEGA-0063

OLIN CORPORATION

COVINGTON, INDIANA

WEST STACK

June 12, 1980, 15:35:29 to 15:49:43

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

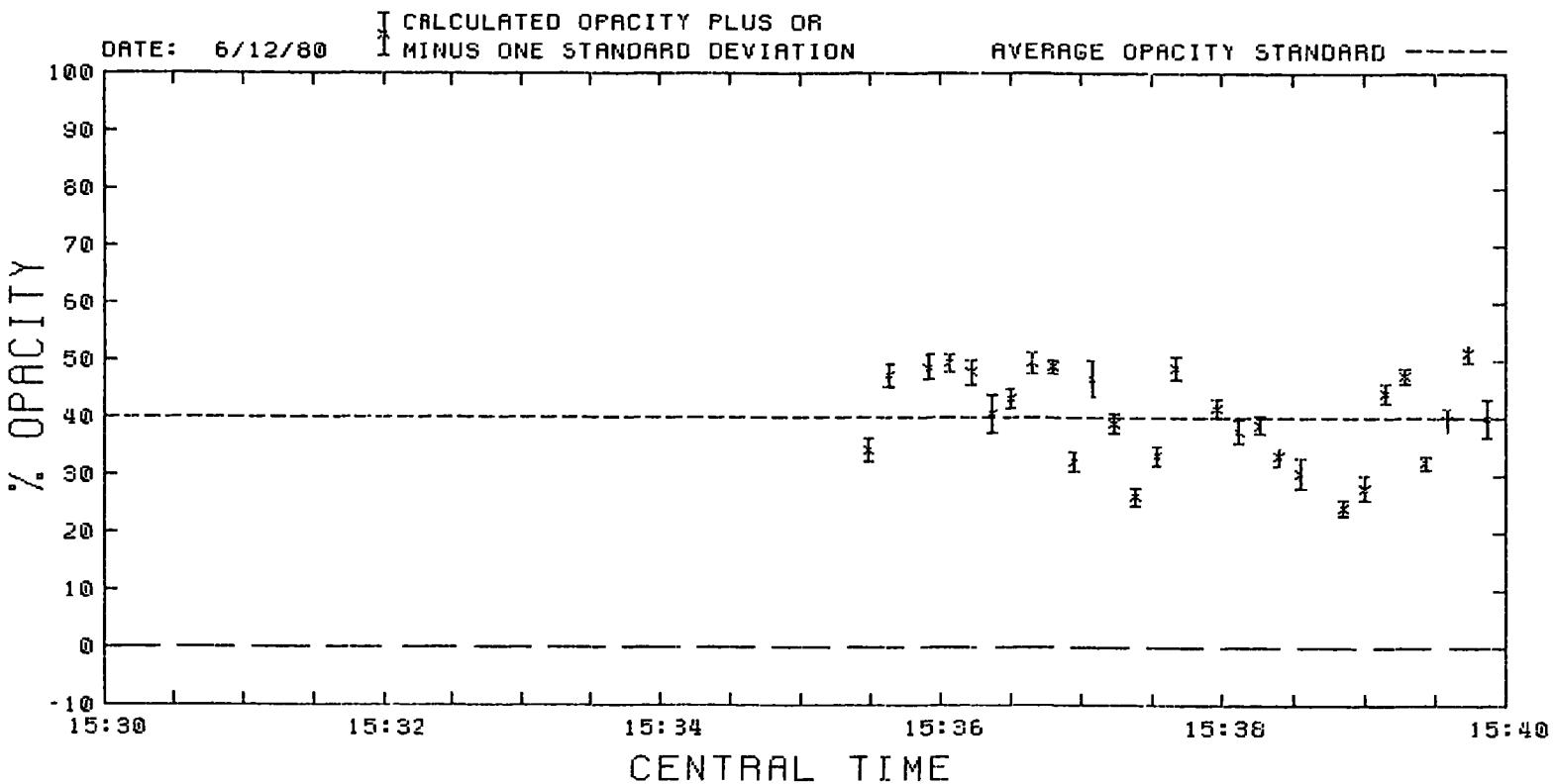
OMEGA-0063, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER	DISCARDED
6/12/80	15 35 29	34	2		0	0		0 OF	0
6/12/80	15 35 38	47	2		0	0		0 OF	0
6/12/80	15 35 55	49	2		0	0		0 OF	0
6/12/80	15 36 4	50	2		0	0		0 OF	0
6/12/80	15 36 13	48	2		0	0		0 OF	0
6/12/80	15 36 22	41	3		0	0		0 OF	0
6/12/80	15 36 30	43	2		0	0		0 OF	0
6/12/80	15 36 39	50	2		0	0		0 OF	0
6/12/80	15 36 48	49	1		0	0		0 OF	0
6/12/80	15 36 57	32	2		0	0		0 OF	0
6/12/80	15 37 5	47	3		0	0		0 OF	0
6/12/80	15 37 14	39	2		0	0		0 OF	0
6/12/80	15 37 23	26	2		0	0		0 OF	0
6/12/80	15 37 32	33	2		0	0		0 OF	0
6/12/80	15 37 41	49	2		0	0		0 OF	0
6/12/80	15 37 58	42	2		0	0		0 OF	0
6/12/80	15 38 7	38	2		0	0		0 OF	0
6/12/80	15 38 16	39	2		0	0		0 OF	0
6/12/80	15 38 24	33	2		0	0		0 OF	0
6/12/80	15 38 33	30	3		0	0		0 OF	0
6/12/80	15 38 51	24	1		0	0		0 OF	0
6/12/80	15 39 0	28	2		0	0		0 OF	0
6/12/80	15 39 9	44	2		0	0		0 OF	0
6/12/80	15 39 17	47	1		0	0		0 OF	0
6/12/80	15 39 26	32	1		0	0		0 OF	0
6/12/80	15 39 35	40	2		0	0		0 OF	0
6/12/80	15 39 44	51	2		0	0		0 OF	0
6/12/80	15 39 52	40	3		0	0		0 OF	0
6/12/80	15 40 1	41	1		0	0		0 OF	0
6/12/80	15 40 27	40	3		0	0		0 OF	0
6/12/80	15 40 45	51	1		0	0		0 OF	0
6/12/80	15 40 54	43	2		0	0		0 OF	0
6/12/80	15 41 2	35	3		0	0		0 OF	0
6/12/80	15 41 11	40	2		40	2	****	0 OF	34
6/12/80	15 41 20	28	2		40	2	****	0 OF	35
6/12/80	15 41 38	16	3		40	2		0 OF	35
6/12/80	15 41 47	14	2		39	2		0 OF	35
6/12/80	15 41 56	29	3		38	2		0 OF	35
6/12/80	15 42 4	32	3		38	2		0 OF	36
6/12/80	15 42 13	29	4		37	2		0 OF	36
6/12/80	15 42 22	38	6		37	2		0 OF	36
6/12/80	15 42 40	37	2		36	2		0 OF	34
6/12/80	15 42 49	26	2		36	2		0 OF	34
6/12/80	15 43 6	37	6		36	2		0 OF	33
6/12/80	15 43 15	22	7		35	2		0 OF	33
6/12/80	15 43 24	22	3		35	3		0 OF	33
6/12/80	15 43 33	30	2		35	3		0 OF	33
6/12/80	15 43 51	35	2		34	3		0 OF	33
6/12/80	15 44 0	41	3		34	3		0 OF	33
6/12/80	15 44 8	42	3		34	3		0 OF	33

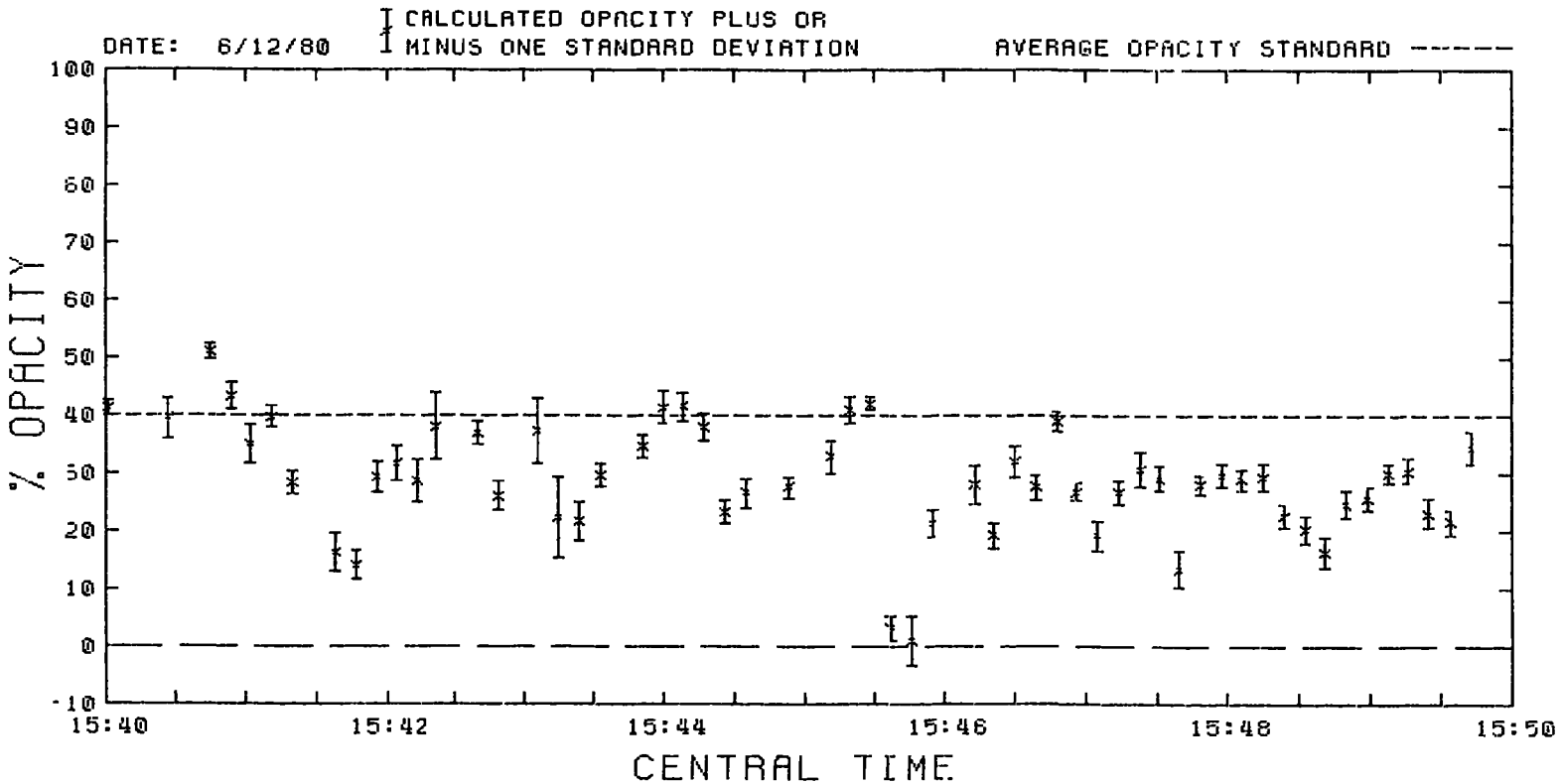
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0063, WEST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	15 44 17	38	2		34	3		0 OF 33
6/12/80	15 44 26	23	2		34	3		0 OF 33
6/12/80	15 44 35	27	2		34	3		0 OF 33
6/12/80	15 44 53	28	2		34	3		0 OF 33
6/12/80	15 45 11	33	3		34	3		0 OF 32
6/12/80	15 45 19	41	2		34	3		0 OF 32
6/12/80	15 45 28	42	1		34	3		0 OF 32
6/12/80	15 45 37	3	2		33	3		0 OF 32
6/12/80	15 45 46	1	4		31	3		0 OF 32
6/12/80	15 45 55	21	2		31	3		0 OF 32
6/12/80	15 46 13	28	3		30	3		0 OF 32
6/12/80	15 46 21	19	2		30	3		0 OF 33
6/12/80	15 46 30	32	3		30	3		0 OF 33
6/12/80	15 46 39	28	2		30	3		0 OF 34
6/12/80	15 46 48	39	2		29	3		0 OF 34
6/12/80	15 46 56	27	2		29	3		0 OF 34
6/12/80	15 47 5	19	2		28	3		0 OF 34
6/12/80	15 47 14	27	2		28	3		0 OF 34
6/12/80	15 47 23	31	3		28	3		0 OF 34
6/12/80	15 47 31	29	2		28	3		0 OF 35
6/12/80	15 47 40	13	3		28	3		0 OF 35
6/12/80	15.47 49	28	2		28	3		0 OF 35
6/12/80	15 47 58	30	2		29	3		0 OF 35
6/12/80	15 48 6	29	2		28	3		0 OF 35
6/12/80	15 48 15	29	2		28	3		0 OF 35
6/12/80	15 48 24	23	2		28	3		0 OF 35
6/12/80	15 48 33	20	2		28	2		0 OF 36
6/12/80	15 48 41	16	3		27	3		0 OF 36
6/12/80	15 48 50	25	2		27	3		0 OF 36
6/12/80	15 48 59	26	2		27	2		0 OF 37
6/12/80	15 49 8	30	2		27	2		0 OF 37
6/12/80	15 49 16	30	2		27	2		0 OF 37
6/12/80	15 49 25	23	3		27	2		0 OF 37
6/12/80	15 49 34	22	2		27	2		0 OF 37
6/12/80	15 49 43	34	3		27	2		0 OF 38



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA



WEST STACK, OLIN CORPORATION, COVINGTON, INDIANA

OMEGA-0064

OLIN CORPORATION

COVINGTON, INDIANA

EAST STACK

June 12, 1980, 15:53:45 to 16:08:18

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

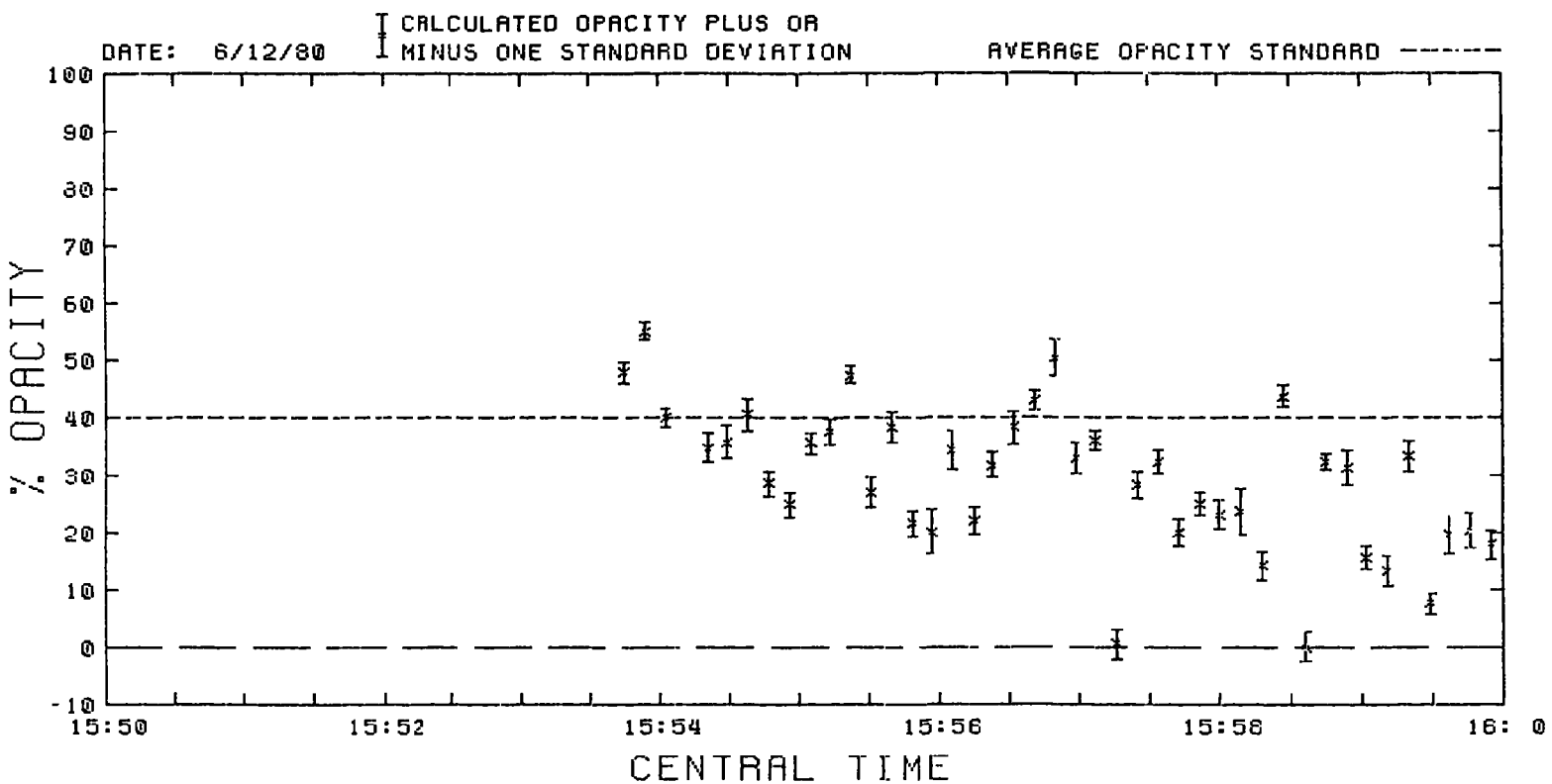
OMEGA-0064, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER	DISCARDED
6/12/80	15 53 45	48	2		0	0		0	OF 0
6/12/80	15 53 54	55	1		0	0		0	OF 0
6/12/80	15 54 3	40	2		0	0		0	OF 0
6/12/80	15 54 21	35	2		0	0		0	OF 0
6/12/80	15 54 29	36	3		0	0		0	OF 0
6/12/80	15 54 38	41	3		0	0		0	OF 0
6/12/80	15 54 47	29	2		0	0		0	OF 0
6/12/80	15 54 56	25	2		0	0		0	OF 0
6/12/80	15 55 5	36	2		0	0		0	OF 0
6/12/80	15 55 13	37	2		0	0		0	OF 0
6/12/80	15 55 22	47	2		0	0		0	OF 0
6/12/80	15 55 31	27	3		0	0		0	OF 0
6/12/80	15 55 40	38	3		0	0		0	OF 0
6/12/80	15 55 49	22	2		0	0		0	OF 0
6/12/80	15 55 57	20	4		0	0		0	OF 0
6/12/80	15 56 6	34	3		0	0		0	OF 0
6/12/80	15 56 15	22	2		0	0		0	OF 0
6/12/80	15 56 23	32	2		0	0		0	OF 0
6/12/80	15 56 32	38	3		0	0		0	OF 0
6/12/80	15 56 41	43	2		0	0		0	OF 0
6/12/80	15 56 50	50	3		0	0		0	OF 0
6/12/80	15 56 59	33	3		0	0		0	OF 0
6/12/80	15 57 7	36	2		0	0		0	OF 0
6/12/80	15 57 16	0	2		0	0		0	OF 0
6/12/80	15 57 25	28	2		0	0		0	OF 0
6/12/80	15 57 34	32	2		0	0		0	OF 0
6/12/80	15 57 43	20	2		0	0		0	OF 0
6/12/80	15 57 52	25	2		0	0		0	OF 0
6/12/80	15 58 0	23	3		0	0		0	OF 0
6/12/80	15 58 9	24	4		0	0		0	OF 0
6/12/80	15 58 18	14	2		0	0		0	OF 0
6/12/80	15 58 27	44	2		0	0		0	OF 0
6/12/80	15 58 36	0	2		0	0		0	OF 0
6/12/80	15 58 45	32	1		0	0		0	OF 0
6/12/80	15 58 54	31	3		0	0		0	OF 0
6/12/80	15 59 2	16	2		0	0		0	OF 0
6/12/80	15 59 11	13	3		0	0		0	OF 0
6/12/80	15 59 20	33	3		0	0		0	OF 0
6/12/80	15 59 29	7	2		30	2		0	OF 39
6/12/80	15 59 37	20	3		30	2		0	OF 40
6/12/80	15 59 46	20	3		29	2		0	OF 40
6/12/80	15 59 55	18	2		28	2		0	OF 40
6/12/80	16 0 4	18	2		28	2		0	OF 40
6/12/80	16 0 12	19	2		27	2		0	OF 41
6/12/80	16 0 21	14	4		27	2		0	OF 42
6/12/80	16 0 30	12	2		26	2		0	OF 41
6/12/80	16 0 39	26	4		26	2		0	OF 41
6/12/80	16 0 48	18	3		26	2		0	OF 41
6/12/80	16 0 57	7	3		25	2		0	OF 41
6/12/80	16 1 6	19	2		25	2		0	OF 41

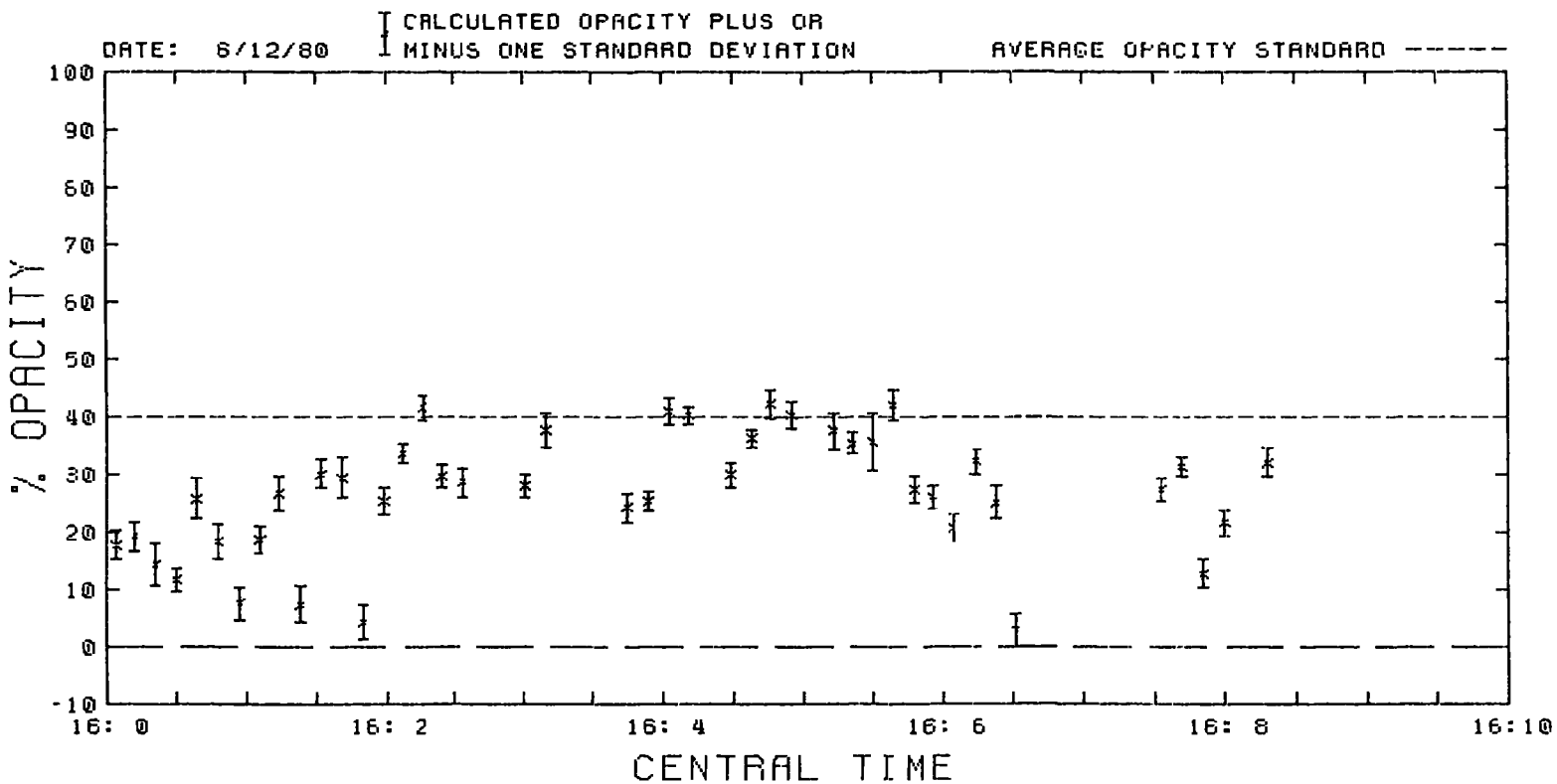
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
DENVER, COLORADO 80225

OMEGA-0064, EAST STACK, OLIN CORPORATION, COVINGTON, IN FROM WEST OF THE PLANT SIX MINUTE AVERAGES

DATE	TIME	OPACITY	SO	VIOLATION	AVERAGE OPACITY	AVERAGE SO	VIOLATION	NUMBER DISCARDED
6/12/80	16 1 14	27	3		25	3		0 OF 41
6/12/80	16 1 23	7	3		24	3		0 OF 41
6/12/80	16 1 32	30	2		24	3		0 OF 41
6/12/80	16 1 41	29	4		23	3		0 OF 41
6/12/80	16 1 50	4	3		23	3		0 OF 41
6/12/80	16 1 59	25	2		23	3		0 OF 41
6/12/80	16 2 7	34	2		23	2		0 OF 41
6/12/80	16 2 16	42	2		24	2		0 OF 41
6/12/80	16 2 25	30	2		24	2		0 OF 41
6/12/80	16. 2 34	29	3		23	2		0 OF 41
6/12/80	16 3 1	28	2		22	2		0 OF 39
6/12/80	16 3 10	38	3		22	2		0 OF 39
6/12/80	16 3 45	24	2		22	3		0 OF 36
6/12/80	16 3 54	25	2		22	3		0 OF 36
6/12/80	16 4 3	41	2		23	3		0 OF 36
6/12/80	16 4 11	40	2		23	2		0 OF 36
6/12/80	16 4 29	30	2		23	2		0 OF 35
6/12/80	16 4 38	36	2		24	2		0 OF 35
6/12/80	16 4 46	42	3		24	2		0 OF 35
6/12/80	16 4 55	40	2		25	2		0 OF 35
6/12/80	16 5 13	37	3		26	2		0 OF 34
6/12/80	16 5 21	35	2		26	2		0 OF 34
6/12/80	16 5 30	36	5		27	3		0 OF 34
6/12/80	16 5 39	42	3		27	3		0 OF 34
6/12/80	16 5 48	27	2		27	2		0 OF 34
6/12/80	16 5 56	26	2		28	2		0 OF 34
6/12/80	16 6 5	21	2		28	2		0 OF 34
6/12/80	16 6 14	32	2		28	2		0 OF 34
6/12/80	16 6 23	25	3		28	2		0 OF 34
6/12/80	16 6 31	3	3		28	2		0 OF 34
6/12/80	16 7 33	27	2		30	2		0 OF 28
6/12/80	16 7 42	31	2		30	2		0 OF 28
6/12/80	16 7 51	13	2		31	2		0 OF 28
6/12/80	16 8 0	22	2		31	2		0 OF 28
6/12/80	16 8 18	32	3		30	2		0 OF 27



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA



EAST STACK, OLIN CORPORATION, COVINGTON, INDIANA