Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

AP-42 Section Number: 9.11.1

Reference Number: 11

Title: Vegetable Oil Production (Meal Processing) Emission Test Report, Cargill Incorporated (East Plant), Cedar Rapids, Iowa

PEDCo Environmental Inc.

PEDCo Environmental Inc.

June 1979

United States
Environmental Protection
Agency

Office of Air Quality
Planning and Standards
Research Triangle Park NC 27711

EMB Report 79-VEG-6r
October 1979

Air

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EPA

Vegetable Oil Production (Meal Processing)

AP-42 Section 9.11.1
Reference 11
Report Sect. ____
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Emission Test Report Cargill, Incorporated (East Plant) Cedar Rapids, Iowa

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Office of Air Quality
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Research Triangle Park NC 27711

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October 1979

Air

EPA

Vegetable Oil Production (Meal Processing)

Emission Test Report Cargill, Incorporated (East Plant) Cedar Rapids, Iowa

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VEGETABLE OIL EXTRACTION PLANT
MEAL SAMPLING AND OPACITY TEST
CARGILL EAST
CEDAR RAPIDS, IOWA

JUNE 21, 1979

DRAFT

Prepared by:

PEDCo Environmental, Inc.
11499 Chester Road
Cincinnati, Ohio 45246

79-Veg-6F
Contract No. 68-02-2811
Task No. 19

PN 3333-S

Project Technical Manager: Nancy McLaughlin
U.S. Environmental Protection Agency
Emission Measurement Branch

BRANCH OFFICES

CHESTER TOWERS

DALLAS, TEXAS
KANSAS CITY, MISSOURI

COLUMBUS, OHIO
DURHAM, NORTH CAROLINA

TABLE 1. HEXANE CONCENTRATION IN MEAL VS. SAMPLE TIME

CARGILL EAST - CEDAR RAPIDS
Sample date: 6/21/79

Approximate sample time	Average[a] hexane concentration: μg/g of wet meal		
	D T [b]	Final milling	Meal cooler
10:00	403	89	91
11:00	405	80	98
12:00	423	75	104
1:00	220	99	107
2:00	120	73	133
3:00	63	61	127
4:00	71	78	103

[a] Average value of triplicate samples.

[b] D T - desolventizer-toaster.

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SECTI

INTRODU

On June 21, 1979 a site visi de to the Cargill East vegetable oil extraction plant in apids, Iowa for the purpose of collecting meal samples (alyzed for hexane content), monitoring process conditi reading visible emissions at selected sites. Personn PEDCo Environmental, Inc. conducted the meal sampling ity readings and personnel from Research Triangle Ins ere on hand to monitor the process conditions.

Meal samples were taken in t e each hour between 10:00 a.m. and 4:00 p.m. after ea e following processing stages:

1. Desolventizer - toaster
2. Meal cooler
3. Final milling area

Stack opacity was read at el ferent sites in the plant.

SECTI

SUMMARY OF ;

2.1 MEAL SAMPLES

Hexane concentration in the ; calculated on both a wet meal and dry meal basis. The .ght of the meal was determined by drying the sample i :n after analysis had been completed and reweighing the to determine the amount of moisture lost. Table 1 lists ·age hexane concentration for each set of triplicate sample during the day on a wet meal basis. The laboratory repor ıg all of the results on both a wet and dry meal basis is ıdix B of this report. The sampling log sheet is in Appe

The results in Table 1 show .te drop in hexane concentration after the desolventize :r (DT) in the afternoon samples. The samples from the mi ·ocess remained fairly constant all day with an average :oncentration of 79 μg/g of wet meal and the meal cooler s ;ere also consistant with an average hexane concentration c ;/g of wet meal. The sample log sheet indicates there special problems or deviations in sampling procedures the day.

2.2 OPACITY READINGS

Visible emissions were read ıg to the procedures of Method 9 of the Federal Register* following sites:

* Federal Register, Vol. 42, No. ıst 18, 1977.

TABLE 1. HEXANE CONCE IN MEAL VS. SAMPLE TIME

CARGILL EDAR RAPIDS
Sampl 6/21/79

Approximate sample time	Average[a] hex entration: µg/g of wet meal		
	D T [b]	milling	Meal cooler
10:00	403	89	91
11:00	405	80	98
12:00	423	75	104
1:00	220	99	107
2:00	120	73	133
3:00	63	61	127
4:00	71	78	103

[a] Average value of triplicat s.

[b] D T - desolventizer-toas

TABLE I. PLANT OPERATING PARAMETERS - CEDAR RAPIDS (EAST), JUNE 21, 1979

		1000	1100	1200	1300	1400	1500	1600	1700
Raw bean moisture (%)		12.5	12.7	12.2	12.3	12.2	12.7	12.6	
Cracked bean moisture (%)		ND[a]	ND	ND	ND	ND	ND	ND	
Cracked bean temperature (°F)		132	133	132	132	132	132	132	
Solvent to extractor temp (°F)	French	136	ND	ND	ND	138	135	136	
	Crown	138	138	ND	140	142	138	138	
Solvent flow rate (g pm)	French	220	could not check		ND	ND	220	ND	
	Crown	235	could not check		ND	ND	ND	ND	
Miscella flow rate (g pm)									
D-T meal temp - top tray (°F)		210	ND	208	ND	208	210	210	
2nd tray (°F)		216	ND	216	ND	218	ND	216	
bottom tray (°F)		210	ND	ND	ND	ND	ND	ND	
Final meal moisture (%)		12.5	12.5	12.5	12.5	12.6	12.3	ND	

~~Flake quality~~

~~Feedstock foreign material~~

~~Drainage~~

Inlet water to condensors 85°
Discharge water 103°

[a] ND signifies that no data was submitted for that particular time interval

Test site	on control device
Meal storage silo No. 10	Cyclone
Meal storage silo No. 5	Baghouse
Rail loadout station No. 7	Baghouse
Meal flaker No. 8	Cyclone
Cracked bean No. 6	Baghouse
No. 10 meal dryer	Cyclone
No. 9 meal cooler	Cyclone
No. 11 conditioner	Cyclone
Meal loadout station No. 2	Baghouse
Hull aspirator No. 3	Baghouse
Meal grinding No. 1	Baghouse

At all sites, there were no emissions and opacity was listed as zero. Opacity data are in Appendix C.

SECTION 3

SAMPLING AND ANALYTICAL PROCEDURES

3.1 MEAL SAMPLES

The meal sampling and analytical technique was adopted from a volitilization head-space sampling procedure developed at Texas A&M University.[1] Sample bottles used were 100 mℓ glass serum bottles with septum caps, tare weighed in the lab with two layers of filter paper in the bottom of each. In the field just prior to sampling, 0.5 mℓ of water was added to wet the filter paper, using an automatic pipette. A long handled scoop was used to take a sample from the conveyor belt. A small portion of this scoop was then transferred to each of the triplicate samples using a small spoon and a funnel. Septum caps were replaced immediately on the samples. An aluminum cap was then crimped tightly over the septum for a final seal. Each bottle was then weighed to determine the amount of sample collected. Meal samples were stored in a cooler with ice for shipment back to the PEDCo laboratory and stored in a refrigerator until analysis. Ideally a 2.0 gram sample should be taken each time. However, sampling had to be done quickly to prevent evaporation losses, and the actual sample weight varied from 1.5 g to 3.7 g.

---

[1] P. J. Wan, M. Chittwood, C. M. Cater, "Determination of Residual Hexane in Solvent Extracted Meal," Food Protein R&D Center, Texas A&M University.

Analysis was done by placing the sample bottle into a sand-bath for two hours at 125°C and then gradually cooling the sample to room temperature. A 1.0 mℓ head space sample is then injected into a gas chromatograph. Calibration standards are made by adding a known amount of 99 mole percent n-hexane to processed meal that has been completely dried. To determine the dry weight of the meal sampled after analysis, the samples were placed in a drying oven uncapped and reweighed after the moisture and hexane had been driven off.

3.2 OPACITY READINGS

Opacity was read by a qualified observer using the procedures of Federal Register* Method 9. Readings were taken every 15 seconds over a 12 minute period at each site.

*Federal Register, Vol. 42, No. 16, August 18, 1977.

DATA SHEET

Plant: Cargill East, Cedar Rapids Date: June 21, 1979

Date Analysis		Sample No.-Location		Sample Date	Time	Wet Wt. (g)	Wet (µg/g)	Dry (µg/g)
7/25/79		133	D.T.	6/21/79	10:00 pm	2.71	290	380
6/29/79		134	D.T.	6/21/79	10:00 pm	3.20	580	750
7/25/79		135	D.T.	6/21/79	10:00 pm	2.72	340	410
6/29/79		136	Milling	6/21/79	10:00 pm	3.57	110	140
7/18/79		137	Milling	6/21/79	10:00 pm	3.10	90	100
7/25/79		138	Milling	6/21/79	10:00 pm	3.36	66	73
7/25/79	(B)	139	Cooling	6/21/79	10:08 pm	3.28	91	110
7/31/79		140	Cooling	6/21/79	10:08 pm	3.66	73	87
7/18/79		141	Cooling	6/21/79	10:08 pm	2.96	110	130
7/18/79		142	D.T.	6/21/79	11:05 pm	3.01	34	44
7/18/79		143	D.T.	6/21/79	11:05 pm	2.39	310	380
6/29/79		144	D.T.	6/21/79	11:05 pm	3.34	500	640
7/18/79		145	Milling	6/21/79	11:08 pm	2.49	91	110
7/18/79		146	Milling	6/21/79	11:08 pm	2.51	73	82
7/18/79		147	Milling	6/21/79	11:08 pm	2.68	77	90
7/25/79		148	Cooling	6/21/79	11:12 pm	1.85	73	83
6/29/79		149	Cooling	6/21/79	11:12 pm	2.35	110	130
7/18/79		150	Cooling	6/21/79	11:12 pm	2.23	110	120
7/25/79		151	D.T.	6/21/79	12:02 pm	2.15	460	620
7/25/79		152	D.T.	6/21/79	12:02 pm	1.71	420	576
7/25/79		153	D.T.	6/21/79	12:02 pm	2.00	390	490
7/25/79		154	Milling	6/21/79	12:06 pm	2.67	81	100
7/25/79		155	Milling	6/21/79	12:06 pm	2.65	70	81
7/18/79		156	Milling	6/21/79	12:06 pm	3.02	74	85
7/31/79	(A)	157	Cooling	6/21/79	12:10 pm	1.96	92	120
7/18/79		158	Cooling	6/21/79	12:10 pm	2.20	120	140
7/25/79		159	Cooling	6/21/79	12:10 pm	1.71	100	120
7/25/79		160	D.T.	6/21/79	1:04 pm	3.12	170	210
6/29/79		161	D.T.	6/21/79	1:04 pm	1.54	260	340
7/18/79		162	D.T.	6/21/79	1:04 pm	2.06	230	290

(A) Duplicate injection of this sample produced a 5 to 10% difference.

(B) Duplicate injection of this sample produced a difference greater than 10%.

DATA SHEET

Plant: Cargill East, Cedar Rapids Date: June 21, 1979

Date Analysis		Sample No.-Location		Sample Date	Time	Wet Wt. (g)	Wet (µg/g)	Dry (µg/g)
6/29/79		163	Milling	6/21/79	1:08 pm	2.77	130	160
7/18/79	(A)	164	Milling	6/21/79	1:08 pm	2.62	84	95
7/25/79	(A)	165	Milling	6/21/79	1:08 pm	2.44	83	97
7/25/79		166	Cooling	6/21/79	1:13 pm	2.89	120	170
7/25/79	(A)	167	Cooling	6/21/79	1:13 pm	2.83	100	110
7/25/79		168	Cooling	6/21/79	1:13 pm	3.34	100	118
7/18/79		169	D.T.	6/21/79	2:00 pm	1.89	130	170
6/29/79		170	D.T.	6/21/79	2:00 pm	1.86	130	170
7/18/79		171	D.T.	6/21/79	2:00 pm	1.86	100	120
7/25/79		172	Milling	6/21/79	2:03 pm	2.11	67	77
7/18/79	(A)	173	Milling	6/21/79	2:03 pm	2.67	75	88
7/25/79		174	Milling	6/21/79	2:03 pm	1.95	76	87
7/31/79		175	Cooling	6/21/79	2:07 pm	1.54	170	240
7/18/79		176	Cooling	6/21/79	2:07 pm	2.11	130	150
7/31/79		177	Cooling	6/21/79	2:07 pm	2.09	100	130
7/18/79		178	D.T.	6/21/79	2:07 pm	1.97	51	64
7/25/79		179	D.T.	6/21/79	2:07 pm	2.18	52	71
6/29/79		180	D.T.	6/21/79	2:07 pm	1.94	87	120
7/31/79		181	Milling	6/21/79	3:04 pm	2.78	62	78
7/31/79		182	Milling	6/21/79	3:04 pm	2.50	60	74
7/25/79		183	Milling	6/21/79	3:04 pm	2.43	60	76
6/29/79		184	Cooling	6/21/79	3:00 pm	2.90	140	170
7/25/79		185	Cooling	6/21/79	3:00 pm	3.11	91	110
6/29/79		186	Cooling	6/21/79	3:00 pm	3.02	150	170
6/29/79		187	D.T.	6/21/79	4:00 pm	2.74	78	110
7/25/79		188	D.T.	6/21/79	4:00 pm	3.79	49	65
6/29/79		189	D.T.	6/21/79	4:00 pm	1.97	86	110
6/29/79		190	Milling	6/21/79	4:05 pm	2.69	110	140
7/25/79		191	Milling	6/21/79	4:05 pm	2.14	64	71
7/25/79		192	Milling	6/21/79	4:05 pm	2.51	61	67
7/25/79		193	Cooling	6/21/79	4:08 pm	3.32	79	87
6/29/79		194	Cooling	6/21/79	4:08 pm	2.74	150	170
7/31/79		195	Cooling	6/21/79	4:08 pm	3.51	79	100

(A) Duplicate injection of this sample produced a 5 to 10% difference.

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VEGETABLE OIL EXTRACTION PLANT
MEAL SAMPLING AND OPACITY TEST
CARGILL EAST
CEDAR RAPIDS, IOWA

JUNE 21, 1979

DRAFT

Prepared by:

PEDCo Environmental, Inc.
11499 Chester Road
Cincinnati, Ohio 45246

79-Veg-6F
Contract No. 68-02-2811
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Project Technical Manager: Nancy McLaughlin
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SECTION 1

INTRODUCTION

On June 21, 1979 a site visit was made to the Cargill East vegetable oil extraction plant in Cedar Rapids, Iowa for the purpose of collecting meal samples (to be analyzed for hexane content), monitoring process conditions, and reading visible emissions at selected sites. Personnel from PEDCo Environmental, Inc. conducted the meal sampling and opacity readings and personnel from Research Triangle Institute were on hand to monitor the process conditions.

Meal samples were taken in triplicate each hour between 10:00 a.m. and 4:00 p.m. after each of the following processing stages:

1. Desolventizer - toaster (DT)
2. Meal cooler
3. Final milling area

Stack opacity was read at eleven different sites in the plant.

SECTION 2

SUMMARY OF RESULTS

2.1 MEAL SAMPLES

Hexane concentration in the meal was calculated on both a wet meal and dry meal basis. The dry weight of the meal was determined by drying the sample in an oven after analysis had been completed and reweighing the sample to determine the amount of moisture lost. Table 1 lists the average hexane concentration for each set of triplicate samples taken during the day on a wet meal basis. The laboratory report listing all of the results on both a wet and dry meal basis is in Appendix B of this report. The sampling log sheet is in Appendix A.

The results in Table 1 show a definite drop in hexane concentration after the desolventizer-toaster (DT) in the afternoon samples. The samples from the milling process remained fairly constant all day with an average hexane concentration of 79 μg/g of wet meal and the meal cooler samples were also consistant with an average hexane concentration of 109 μg/g of wet meal. The sample log sheet indicates there were no special problems or deviations in sampling procedures during the day.

2.2 OPACITY READINGS

Visible emissions were read according to the procedures of Method 9 of the Federal Register* at the following sites:

* Federal Register, Vol. 42, No. 16, August 18, 1977.

TABLE 1. HEXANE CONCENTRATION IN MEAL VS. SAMPLE TIME

CARGILL EAST - CEDAR RAPIDS
Sample date: 6/21/79

Approximate sample time	Average[a] hexane concentration: μg/g of wet meal		
	D T [b]	Final milling	Meal cooler
10:00	403	89	91
11:00	405	80	98
12:00	423	75	104
1:00	220	99	107
2:00	120	73	133
3:00	63	61	127
4:00	71	78	103

[a] Average value of triplicate samples.

[b] D T - desolventizer-toaster.

Test site	Emission control device
Meal storage silo ~~No. 10~~ 11	Cyclone
Meal storage silo No. 5	Baghouse
Rail loadout station No. 7	Baghouse
Meal flaker No. 8	Cyclone
Cracked bean No. 6	Baghouse
No. 10 meal dryer	Cyclone
No. 9 meal cooler	Cyclone
No. 11 conditioner	Cyclone
Meal loadout station No. 2	Baghouse
Hull aspirator No. 3	Baghouse
Meal grinding No. 1	Baghouse

At all sites, there were no visible emissions and opacity was listed as zero. Opacity data sheets are in Appendix C.

SECTION 3

SAMPLING AND ANALYTICAL PROCEDURES

3.1 MEAL SAMPLES

The meal sampling and analytical technique was adopted from a volitilization head-space sampling procedure developed at Texas A&M University.[1] Sample bottles used were 100 mℓ glass serum bottles with septum caps, tare weighed in the lab with two layers of filter paper in the bottom of each. In the field just prior to sampling, 0.5 mℓ of water was added to wet the filter paper, using an automatic pipette. A long handled scoop was used to take a sample from the conveyor belt. A small portion of this scoop was then transferred to each of the triplicate samples using a small spoon and a funnel. Septum caps were replaced immediately on the samples. An aluminum cap was then crimped tightly over the septum for a final seal. Each bottle was then weighed to determine the amount of sample collected. Meal samples were stored in a cooler with ice for shipment back to the PEDCo laboratory and stored in a refrigerator until analysis. Ideally a 2.0 gram sample should be taken each time. However, sampling had to be done quickly to prevent evaporation losses, and the actual sample weight varied from 1.5 g to 3.7 g.

---

[1] P. J. Wan, M. Chittwood, C. M. Cater, "Determination of Residual Hexane in Solvent Extracted Meal," Food Protein R&D Center, Texas A&M University.

Analysis was done by placing the sample bottle into a sand-bath for two hours at 125°C and then gradually cooling the sample to room temperature. A 1.0 mℓ head space sample is then injected into a gas chromatograph. Calibration standards are made by adding a known amount of 99 mole percent n-hexane to processed meal that has been completely dried. To determine the dry weight of the meal sampled after analysis, the samples were placed in a drying oven uncapped and reweighed after the moisture and hexane had been driven off.

3.2 OPACITY READINGS

Opacity was read by a qualified observer using the procedures of Federal Register* Method 9. Readings were taken every 15 seconds over a 12 minute period at each site.

*Federal Register, Vol. 42, No. 16, August 18, 1977.

APPENDIX A

MEAL SAMPLING LOG

APPENDIX B

MEAL SAMPLE LABORATORY ANALYSIS REPORT

DATA SHEET

Plant: Cargill East, Cedar Rapids Date: June 21, 1979

Date Analysis		Sample No.-Location		Sample Date	Time	Wet Wt. (g)	Wet (µg/g)	Dry (µg/g)
7/25/79		133	D.T.	6/21/79	10:00 pm	2.71	290	380
6/29/79		134	D.T.	6/21/79	10:00 pm	3.20	580	750
7/25/79		135	D.T.	6/21/79	10:00 pm	2.72	340	410
6/29/79		136	Milling	6/21/79	10:00 pm	3.57	110	140
7/18/79		137	Milling	6/21/79	10:00 pm	3.10	90	100
7/25/79		138	Milling	6/21/79	10:00 pm	3.36	66	73
7/25/79	(B)	139	Cooling	6/21/79	10:08 pm	3.28	91	110
7/31/79		140	Cooling	6/21/79	10:08 pm	3.66	73	87
7/18/79		141	Cooling	6/21/79	10:08 pm	2.96	110	130
7/18/79		142	D.T.	6/21/79	11:05 pm	3.01	34	44
7/18/79		143	D.T.	6/21/79	11:05 pm	2.39	310	380
6/29/79		144	D.T.	6/21/79	11:05 pm	3.34	500	640
7/18/79		145	Milling	6/21/79	11:08 pm	2.49	91	110
7/18/79		146	Milling	6/21/79	11:08 pm	2.51	73	82
7/18/79		147	Milling	6/21/79	11:08 pm	2.68	77	90
7/25/79		148	Cooling	6/21/79	11:12 pm	1.85	73	83
6/29/79		149	Cooling	6/21/79	11:12 pm	2.35	110	130
7/18/79		150	Cooling	6/21/79	11:12 pm	2.23	110	120
7/25/79		151	D.T.	6/21/79	12:02 pm	2.15	460	620
7/25/79		152	D.T.	6/21/79	12:02 pm	1.71	420	576
7/25/79		153	D.T.	6/21/79	12:02 pm	2.00	390	490
7/25/79		154	Milling	6/21/79	12:06 pm	2.67	81	100
7/25/79		155	Milling	6/21/79	12:06 pm	2.65	70	81
7/18/79		156	Milling	6/21/79	12:06 pm	3.02	74	85
7/31/79	(A)	157	Cooling	6/21/79	12:10 pm	1.96	92	120
7/18/79		158	Cooling	6/21/79	12:10 pm	2.20	120	140
7/25/79		159	Cooling	6/21/79	12:10 pm	1.71	100	120
7/25/79		160	D.T.	6/21/79	1:04 pm	3.12	170	210
6/29/79		161	D.T.	6/21/79	1:04 pm	1.54	260	340
7/18/79		162	D.T.	6/21/79	1:04 pm	2.06	230	290

(A) Duplicate injection of this sample produced a 5 to 10% difference.

(B) Duplicate injection of this sample produced a difference greater than 10%.

DATA SHEET

Plant: Cargill East, Cedar Rapids Date: June 21, 1979

Date Analysis		Sample No.-Location		Sample Date	Time	Wet Wt. (g)	Wet (µg/g)	Dry (µg/g)
6/29/79		163	Milling	6/21/79	1:08 pm	2.77	130	160
7/18/79	(A)	164	Milling	6/21/79	1:08 pm	2.62	84	95
7/25/79	(A)	165	Milling	6/21/79	1:08 pm	2.44	83	97
7/25/79		166	Cooling	6/21/79	1:13 pm	2.89	120	170
7/25/79	(A)	167	Cooling	6/21/79	1:13 pm	2.83	100	110
7/25/79		168	Cooling	6/21/79	1:13 pm	3.34	100	118
7/18/79		169	D.T.	6/21/79	2:00 pm	1.89	130	170
6/29/79		170	D.T.	6/21/79	2:00 pm	1.86	130	170
7/18/79		171	D.T.	6/21/79	2:00 pm	1.86	100	120
7/25/79		172	Milling	6/21/79	2:03 pm	2.11	67	77
7/18/79	(A)	173	Milling	6/21/79	2:03 pm	2.67	75	88
7/25/79		174	Milling	6/21/79	2:03 pm	1.95	76	87
7/31/79		175	Cooling	6/21/79	2:07 pm	1.54	170	240
7/18/79		176	Cooling	6/21/79	2:07 pm	2.11	130	150
7/31/79		177	Cooling	6/21/79	2:07 pm	2.09	100	130
7/18/79		178	D.T.	6/21/79	2:07 pm	1.97	51	64
7/25/79		179	D.T.	6/21/79	2:07 pm	2.18	52	71
6/29/79		180	D.T.	6/21/79	2:07 pm	1.94	87	120
7/31/79		181	Milling	6/21/79	3:04 pm	2.78	62	78
7/31/79		182	Milling	6/21/79	3:04 pm	2.50	60	74
7/25/79		183	Milling	6/21/79	3:04 pm	2.43	60	76
6/29/79		184	Cooling	6/21/79	3:00 pm	2.90	140	170
7/25/79		185	Cooling	6/21/79	3:00 pm	3.11	91	110
6/29/79		186	Cooling	6/21/79	3:00 pm	3.02	150	170
6/29/79		187	D.T.	6/21/79	4:00 pm	2.74	78	110
7/25/79		188	D.T.	6/21/79	4:00 pm	3.79	49	65
6/29/79		189	D.T.	6/21/79	4:00 pm	1.97	86	110
6/29/79		190	Milling	6/21/79	4:05 pm	2.69	110	140
7/25/79		191	Milling	6/21/79	4:05 pm	2.14	64	71
7/25/79		192	Milling	6/21/79	4:05 pm	2.51	61	67
7/25/79		193	Cooling	6/21/79	4:08 pm	3.32	79	87
6/29/79		194	Cooling	6/21/79	4:08 pm	2.74	150	170
7/31/79		195	Cooling	6/21/79	4:08 pm	3.51	79	100

(A) Duplicate injection of this sample produced a 5 to 10% difference.

APPENDIX C

OPACITY DATA SHEETS

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY CARGILL EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79
TYPE FACILITY MEAL STORAGE
CONTROL DEVICE CYCLONE

HOURS OF OBSERVATION 12 68
OBSERVER ROGER M. SCHUMER
OBSERVER CERTIFICATION DATE 5-16-79
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS CYCLONE
HEIGHT OF DISCHARGE POINT 70'

	Initial			Final
CLOCK TIME 2:25-2:37				
OBSERVER LOCATION Distance to Discharge	50'			
Direction from Discharge	NORTH			
Height of Observation Point	60'			
BACKGROUND DESCRIPTION	WHITE METAL			
WEATHER CONDITIONS Wind Direction	FROM NORTH			
Wind Speed	6-9			
Ambient Temperature	80°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	CLEAR			
PLUME DESCRIPTION Color	NONE VISIBLE			
Distance Visible				
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Opacity Average

Readings ranged from ____ to ____ % opacity

The source was/was not in compliance with ____ at the time evaluation was made.

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CARGILL EAST OBSERVER Roger P Schumpp
LOCATION TYPE FACILITY
TEST NUMBER #1 meal Storage POINT OF EMISSIONS
DATE Bag house

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			
	1	0	0	0	0			
	2	0	0	0	0			
	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
	6							
	7	0	0	0	0			
	8	0	0	0	0			
	9	0	0	0	0			
	10	0	0	0	0			
	11	0	0	0	0			
	12	0	0	0	0			
	13							
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	29							

FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY OBSERVER
LOCATION TYPE FACILITY
TEST NUMBER POINT OF EMISSIONS
DATE

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							
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[FR Doc.74-26160 Filed 11-11-74;9:46 am]

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CARGILL
LOCATION EAST
TEST NUMBER #5
DATE 6-21-79

OBSERVER ROGER SCHUMER
TYPE FACILITY MEAL STORAGE
POINT OF EMISSIONS GAGHOUSE

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			
	1	0	0	0	0			
	2	0	0	0	0			
	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
	6							
	7	0	0	0	0			
	8	0	0	0	0			
	9	0	0	0	0			
	10	0	0	0	0			
	11	0	0	0	0			
	12	0	0	0	0			
	13							
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	29							

FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
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	57							
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[FR Doc.74-26160 Filed 11-11-74;8:45 am]

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79
TYPE FACILITY Rail Load out #7
CONTROL DEVICE Baghouse

HOURS OF OBSERVATION 12:00
OBSERVER ROGER H. SCHUMER
OBSERVER CERTIFICATION DATE 5-16-79
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS BAGHOUSE
HEIGHT OF DISCHARGE POINT 65'

	Initial			Final
CLOCK TIME 11:20-11:32				
OBSERVER LOCATION Distance to Discharge	50'			
Direction from Discharge	SOUTH			
Height of Observation Point	GROUND LEVEL			
BACKGROUND DESCRIPTION	BLUE SKY			
WEATHER CONDITIONS Wind Direction	FROM NORTH			
Wind Speed	6-9			
Ambient Temperature	80°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	CLEAR			
PLUME DESCRIPTION Color	NONE VISIBLE			
Distance Visible	—			
OTHER INFORMATION	—			

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Opacity Average

Readings ranged from ____ to ____ % opacity

The source was/was not in compliance with ____ at the time evaluation was made.

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-74
OBSERVER Roger H. Schuster
TYPE FACILITY RAIL LOADOUT
POINT OF EMISSIONS BAGHOUSE

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			
	1	0	0	0	0			
	2	0	0	0	0			
	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
	6							
	7	0	0	0	0			
	8	0	0	0	0			
	9	0	0	0	0			
	10	0	0	0	0			
	11	0	0	0	0			
	12	0	0	0	0			
	13							
	14							
	15							
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FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER
DATE
OBSERVER
TYPE FACILITY
POINT OF EMISSIONS

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
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[FR Doc.74-26150 Filed 11-11-74;8:45 am]

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79
TYPE FACILITY Haber #8
CONTROL DEVICE Cyclone

HOURS OF OBSERVATION ~~60~~ 12
OBSERVER ROGER H. SCHUMER
OBSERVER CERTIFICATION DATE 5-16-79
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS CYCLONE
HEIGHT OF DISCHARGE POINT 50'

	Initial			Final
CLOCK TIME	11:46 - 11:58			
OBSERVER LOCATION Distance to Discharge	30'			
Direction from Discharge	SOUTH			
Height of Observation Point	25'			
BACKGROUND DESCRIPTION	BLUE SKY			
WEATHER CONDITIONS Wind Direction	FROM SOUTH			
Wind Speed	6-9			
Ambient Temperature	80°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	CLEAR			
PLUME DESCRIPTION Color	NONE VISIBLE			
Distance Visible				
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Opacity Average

Readings ranged from ____ to ____ % opacity

The source was/was not in compliance with ____ at the time evaluation was made.

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CEDAR RAPIDS
LOCATION CARGILL-EAST
TEST NUMBER
DATE 6-21-79

OBSERVER ROGER H. SCHUMER
TYPE FACILITY FLASHER
POINT OF EMISSIONS CYCLONE

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			
	1	0	0	0	0			
	2	0	0	0	0			
	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
	6							
	7	0	0	0	0			
	8	0	0	0	0			
	9	0	0	0	0			
	10	0	0	0	0			
	11	0	0	0	0			
	12	0	0	0	0			
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FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
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[FR Doc.74-26150 Filed 11-11-74;8:46 am]

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2
12

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79
TYPE FACILITY #6 Cracked [illegible]
CONTROL DEVICE Bag house

HOURS OF OBSERVATION 60
OBSERVER ROGER H. SCHUMER
OBSERVER CERTIFICATION DATE 5-16-79
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS BAGHOUSE
HEIGHT OF DISCHARGE POINT 25'

	Initial			Final
CLOCK TIME 11:33 - 11:45				
OBSERVER LOCATION Distance to Discharge	30'			
Direction from Discharge	SOUTH			
Height of Observation Point	25'			
BACKGROUND DESCRIPTION	BLUE SKY			
WEATHER CONDITIONS Wind Direction	FROM SOUTH			
Wind Speed	6-9			
Ambient Temperature	80°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	CLEAR			
PLUME DESCRIPTION Color	NONE VISIBLE			
Distance Visible				
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Opacity Average

Readings ranged from ____ to ____ % opacity

The source was/was not in compliance with ____ at the time evaluation was made.

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CARGILL-EAST OBSERVER ROGER H SCHUMER
LOCATION CEDAR RAPIDS TYPE FACILITY CRACKED BEAN
TEST NUMBER POINT OF EMISSIONS BAGHOUSE
DATE 6-21-79

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			
	1	0	0	0	0			
	2	0	0	0	0			
	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
	6							
	7	0	0	0	0			
	8	0	0	0	0			
	9	0	0	0	0			
	10	0	0	0	0			
	11	0	0	0	0			
	12	0	0	0	0			
	13							
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FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY ___ OBSERVER ___
LOCATION ___ TYPE FACILITY ___
TEST NUMBER ___ POINT OF EMISSIONS ___
DATE ___

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
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[FR Doc.74-26160 Filed 11-11-74;8:45 am]

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79
TYPE FACILITY AIR DRYER
CONTROL DEVICE CYCLONE

HOURS OF OBSERVATION 12
OBSERVER ROGER A. SCHUMER
OBSERVER CERTIFICATION DATE 5-16-79
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS CYCLONE
HEIGHT OF DISCHARGE POINT 30'

	Initial			Final
CLOCK TIME 11:15 - 11:27				
OBSERVER LOCATION Distance to Discharge	100'			
Direction from Discharge	SOUTH			
Height of Observation Point	GROUND LEVEL			
BACKGROUND DESCRIPTION	BLUE SKY			
WEATHER CONDITIONS Wind Direction	FROM SOUTH			
Wind Speed	6-9			
Ambient Temperature	80°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	CLEAR			
PLUME DESCRIPTION Color	STEAM PLUME			
Distance Visible	—			
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Opacity Average

Readings ranged from ____ to ____ % opacity

The source was/was not in compliance with ____ at the time evaluation was made.

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CARGILL EAST
LOCATION CEDAR RAPIDS
TEST NUMBER 6-21-74
DATE

OBSERVER ROGER H. SCHUMER
TYPE FACILITY DRYER
POINT OF EMISSIONS CYCLONE

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0	✓		
	1	0	0	0	0	✓		
	2	0	0	0	0	✓		
	3	0	0	0	0	✓		
	4	0	0	0	0	✓		
	5	0	0	0	0	✓		
	6					✓		
	7	0	0	0	0	✓		
	8	0	0	0	0	✓		
	9	0	0	0	0	✓		
	10	0	0	0	0	✓		
	11	0	0	0	0	✓		
	12	0	0	0	0	✓		
	13							
	14							
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FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
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[FR Doc.74-26169 Filed 11-11-74;8:45 am]

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79
TYPE FACILITY #9 COOLER
CONTROL DEVICE CYCLONE

HOURS OF OBSERVATION 12 to
OBSERVER ROGER H. SCHUMER
OBSERVER CERTIFICATION DATE 5-16-79
OBSERVER AFFILIATION PET
POINT OF EMISSIONS CYCLONE
HEIGHT OF DISCHARGE POINT 40'

	Initial			Final
CLOCK TIME 11:41-11:53				
OBSERVER LOCATION Distance to Discharge	100'			
Direction from Discharge	SOUTH			
Height of Observation Point	GROUND LEVEL			
BACKGROUND DESCRIPTION	BLUE SKY			
WEATHER CONDITIONS Wind Direction	FROM SOUTH			
Wind Speed	6-9			
Ambient Temperature	80°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	CLEAR			
PLUME DESCRIPTION Color	NONE VISIBLE			
Distance Visible				
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Opacity Average

Readings ranged from ____ to ____ % opacity

The source was/was not in compliance with ____ at the time evaluation was made.

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CARGILL EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79

OBSERVER ROGER H. SCHUMER
TYPE FACILITY COOLER
POINT OF EMISSIONS CYCLONE

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			
	1	0	0	0	0			
	2	0	0	0	0			
	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
	6							
	7	0	0	0	0			
	8	0	0	0	0			
	9	0	0	0	0			
	10	0	0	0	0			
	11	0	0	0	0			
	12	0	0	0	0			
	13							
	14							
	15							
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	27							
	28							
	29							

FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
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[FR Doc.74-26150 Filed 11-11-74;8:45 am]

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79
TYPE FACILITY #11 CONDITIONER
CONTROL DEVICE CYCLONE

HOURS OF OBSERVATION 12
OBSERVER ROGER H. SCHUMER
OBSERVER CERTIFICATION DATE 5-16-79
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS CYCLONE
HEIGHT OF DISCHARGE POINT 201

	Initial			Final
CLOCK TIME	11:28 - 11:40			
OBSERVER LOCATION Distance to Discharge	100'			
Direction from Discharge	SOUTH			
Height of Observation Point	GROUND LEVEL			
BACKGROUND DESCRIPTION	GRAY METAL			
WEATHER CONDITIONS Wind Direction	FROM SOUTH			
Wind Speed	6-9			
Ambient Temperature	80°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	CLEAR			
PLUME DESCRIPTION Color	NONE VISIBLE			
Distance Visible				
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Average

Readings ranged from ____ to ____ % opacity

The source was/was not in compliance with ____ at the time evaluation was made.

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79

OBSERVER ROGER H. SCHUMER
TYPE FACILITY MEAL COPROCT
POINT OF EMISSIONS BAGHOUSE

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			
	1	0	0	0	0			
	2	0	0	0	0			
	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
	6							
	7	0	0	0	0			
	8	0	0	0	0			
	9	0	0	0	0			
	10	0	0	0	0			
	11	0	0	0	0			
	12	0	0	0	0			
	13							
	14							
	15							
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	26							
	27							
	28							
	29							

FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
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	59							

[FR Doc.74-26160 Filed 11-11-74;8:45 am]

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79

OBSERVER ROGER H. SCHUMER
TYPE FACILITY
POINT OF EMISSIONS

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			NO VISIBLE EMISSIONS
	1	0	0	0	0			
	2	0	0	0	0			
	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
	6							
	7	0	0	0	0			
	8	0	0	0	0			
	9	0	0	0	0			
	10	0	0	0	0			
	11	0	0	0	0			
	12	0	0	0	0			
	13							
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	27							
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	29							

FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
	34							
	35							
	36							
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[FR Doc.74-26160 Filed 11-11-74;8:45 am]

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

COMPANY CARGILL EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79
TYPE FACILITY #1 MEAL GRINDING
CONTROL DEVICE BAGHOUSE

HOURS OF OBSERVATION 12 to
OBSERVER ROGER SCHUMER
OBSERVER CERTIFICATION DATE 5-16-79
OBSERVER AFFILIATION PET
POINT OF EMISSIONS BAGHOUSE
HEIGHT OF DISCHARGE POINT 41'

	Initial			Final
CLOCK TIME 11:20-11:32				
OBSERVER LOCATION Distance to Discharge	30'			
Direction from Discharge	SOUTH			
Height of Observation Point	10' ABOVE ROOF			
BACKGROUND DESCRIPTION	GREY GRAIN ELEVATORS			
WEATHER CONDITIONS Wind Direction	FROM NORTH			
Wind Speed	6-9			
Ambient Temperature	80°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	CLEAR			
PLUME DESCRIPTION Color	NONE VISIBLE			
Distance Visible	—			
OTHER INFORMATION	—			

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Average

Readings ranged from ____ to ____ % opacity

The source was/was not in compliance with ____ at the time evaluation was made.

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY CARGILL-EAST
LOCATION CEDAR RAPIDS
TEST NUMBER
DATE 6-21-79

OBSERVER ROGER H SCHUMFA
TYPE FACILITY MEAL GRINDING
POINT OF EMISSIONS BAGHOUSE E

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			NO VISIBLE EMISSIONS
	1	0	0	0	0			
	2	0	0	0	0			
	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
	6							
	7	0	0	0	0			
	8	0	0	0	0			
	9	0	0	0	0			
	10	0	0	0	0			
	11	0	0	0	0			
	12	0	0	0	0			
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	29							

FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30							
	31							
	32							
	33							
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[FR Doc.74-26150 Filed 11-11-74;8:45 am]