AP-42 Section Number: 9.11.1

Reference Number: 13

Title: Vegetable Oil Production (Meal Processing) Emission Test Report, AGRI Industries, Mason City, 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-6b
October 1979

11534

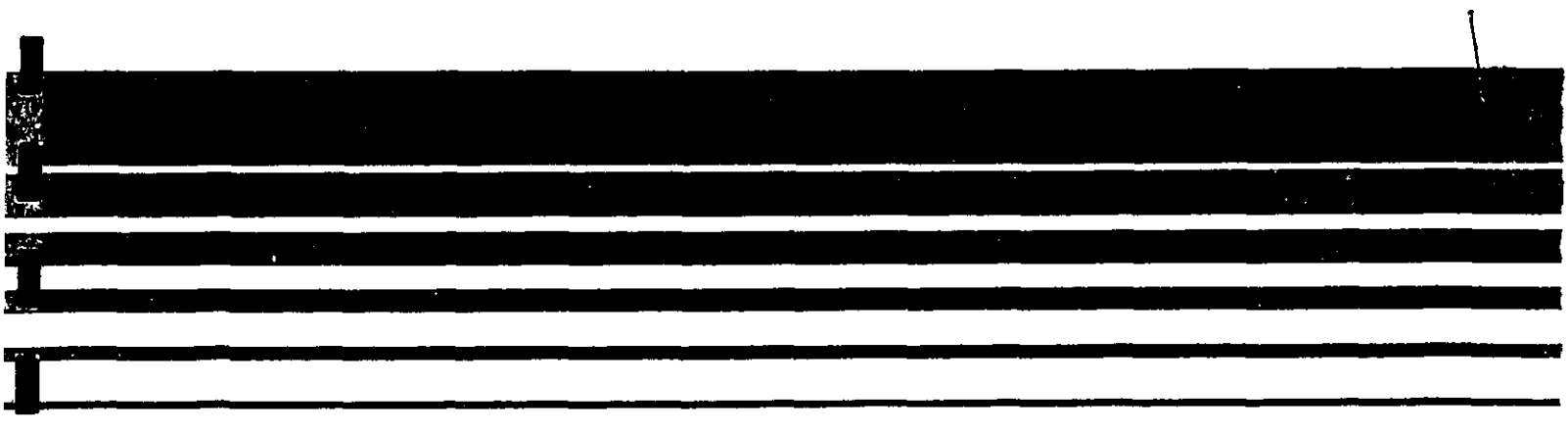
Air

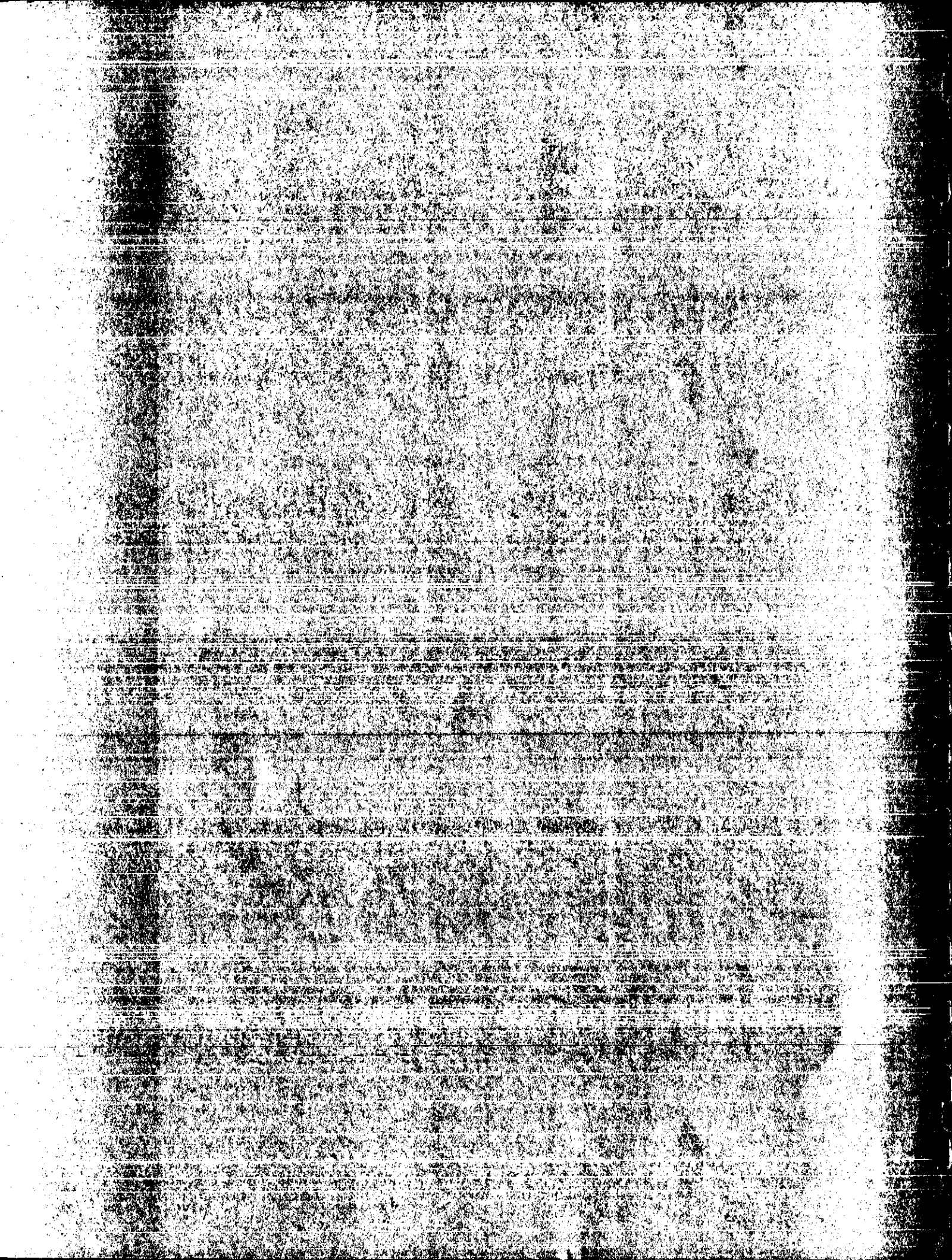
EPA

Vegetable Oil Production (Meal Processing)

AP-42 Section 9.11.1
Reference 13
Report Sect. ____
Reference ____

Emission Test Report
AGRI Industries
Mason City, Iowa





United States
Environmental Protection
Agency

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

EMB Report 79-VEG-6b
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1153

Air

EPA

Vegetable Oil Production (Meal Processing)

Emission Test Report AGRI Industries Mason City, Iowa

PEDCo ENVIRONMENTAL, INC.
11499 CHESTER ROAD
CINCINNATI, OHIO 45246
(513) 782-4700
TELEX (513) 782-4807

MEAL SAMPLING AND OPACITY TEST
AGRI
Vegetable Oil Extraction Plant
Mason City, Iowa
June 18, 1979

by

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

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

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1. Meal Sample Log
2. Opacity Data Sheets
3. Meal Sample Laboratory Analysis Report

SECTION 1

INTRODUCTION

On June 18, 1979, a site visit was conducted at the AGRI vegetable oil extraction plant in Mason City, Iowa for the purpose of collecting meal samples, monitoring process conditions, and checking selected sites for visible emissions.

Personnel from PEDCo Environmental, Inc. conducted the meal sampling and analysis and the opacity readings. Personnel from Research Triangle Institute were on hand to monitor and gather process data. RTI will issue a separate report concerning the process data gathered during the period.

Meal samples were taken in triplicate every hour for a seven hour period after the following processing stages:

Desolventizer-toaster (DT)

Meal cooler

Final milling.

Triplicate samples were taken at each site to provide better data and to test the reproducibility of the test method.

Opacity readings were taken at 10 sites in the plant selected by RTI.

SECTION 2

SUMMARY OF RESULTS

Table 1 lists the mean value of hexane concentration for each of the triplicate meal samples taken. Concentration is listed as µg/gram of wet meal and µg/gram of dry meal. The dry meal weight was determined by taking the samples after analysis, baking off all of the moisture and hexane in a drying oven, and reweighing the sample. Hexane concentrations of each of the triplicate samples are listed in the laboratory report in the appendix of this report. Figure 1 shows the change in average concentration (wet meal basis) through the test day for each sampling site. Values for the final milling and cooler samples remained fairly constant throughout the day with concentrations ranging from 84 µg/g to 100 µg/g at the final milling site and from 95 µg/g to 134 µg/g at the cooler site. DT sample concentrations were low at the beginning and end of the day (160-180 µg/g) but were between 250 and 280 µg/g during the middle four hours.

Opacity readings were taken according to Method 9 of the Federal Register* at the following sites:

*Federal Register, Vol. 42, No. 160, August 18, 1977.

TABLE 1. HEXANE CONCENTRATION[a] IN MEAL

AGRI - Mason City, Iowa
Sample date - June 18, 1979

Approximate sample time (p.m.)	Hexane concentration DT Wet meal µg/g	DT Dry meal µg/g	Cooler Wet meal µg/g	Cooler Dry meal µg/g	Milling Wet meal µg/g	Milling Dry meal µg/g
1:00	160	200	95	119	90	130
2:00	280	450	107	130	84	101
3:00	263	393	112	133	100	121
4:00	247	363	134	157	97	118
5:00	273	435	105	124	97	121
6:00	157	177	122	136	95	111
7:00	183	230	112	136	84	100
Average	223	321	112	134	92	115

[a]Concentration listed is the mean value of triplicate samples.

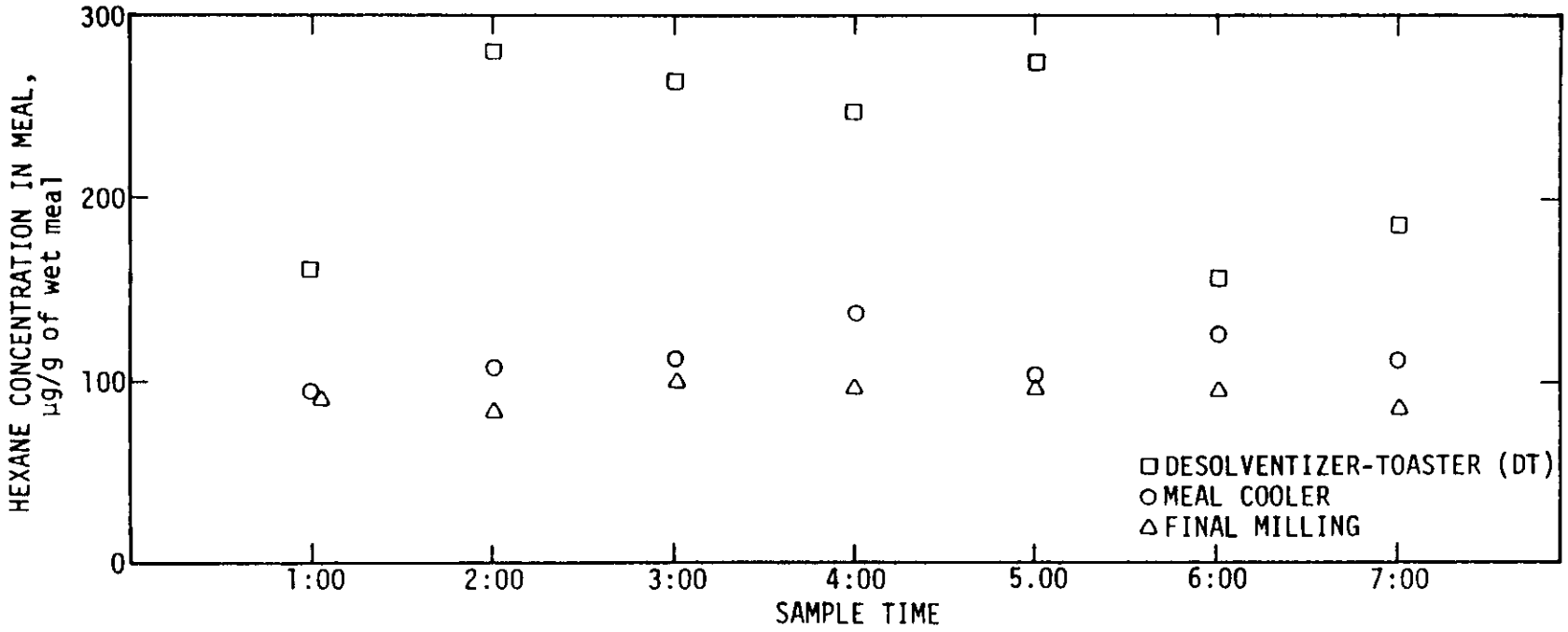

Figure 1. Hexane concentration in meal vs. time AGRI, Mason City, Iowa.

Site	Control device
Dryer vent	Settling chamber
Flake aspirator	Cyclone
Soybean extraction facility	
Roof vent	None
West plant vent No. 9	None
East plant vent No. 8	None
Cooler vent	Cyclone
Prep. bldg. exhaust fan	None
Cracked bean vent No. 4	None
No. 10 bean conditioner	Settling chamber
Bean cleaner No. 3	Cyclone

At the bean cleaner No. 3, the average opacity reading was 5 percent. At the cracked bean vent No. 4 site, the opacity averaged 15 percent. At all other sites, there were no visible emissions.

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. 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 1.34 g to 3.11 g.

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

---

[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.

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.

PEDCo ENVIRONMENTAL, INC.
11499 CHESTER ROAD
CINCINNATI, OHIO 45246
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MEAL SAMPLING AND OPACITY TEST
AGRI
Vegetable Oil Extraction Plant
Mason City, Iowa
June 18, 1979

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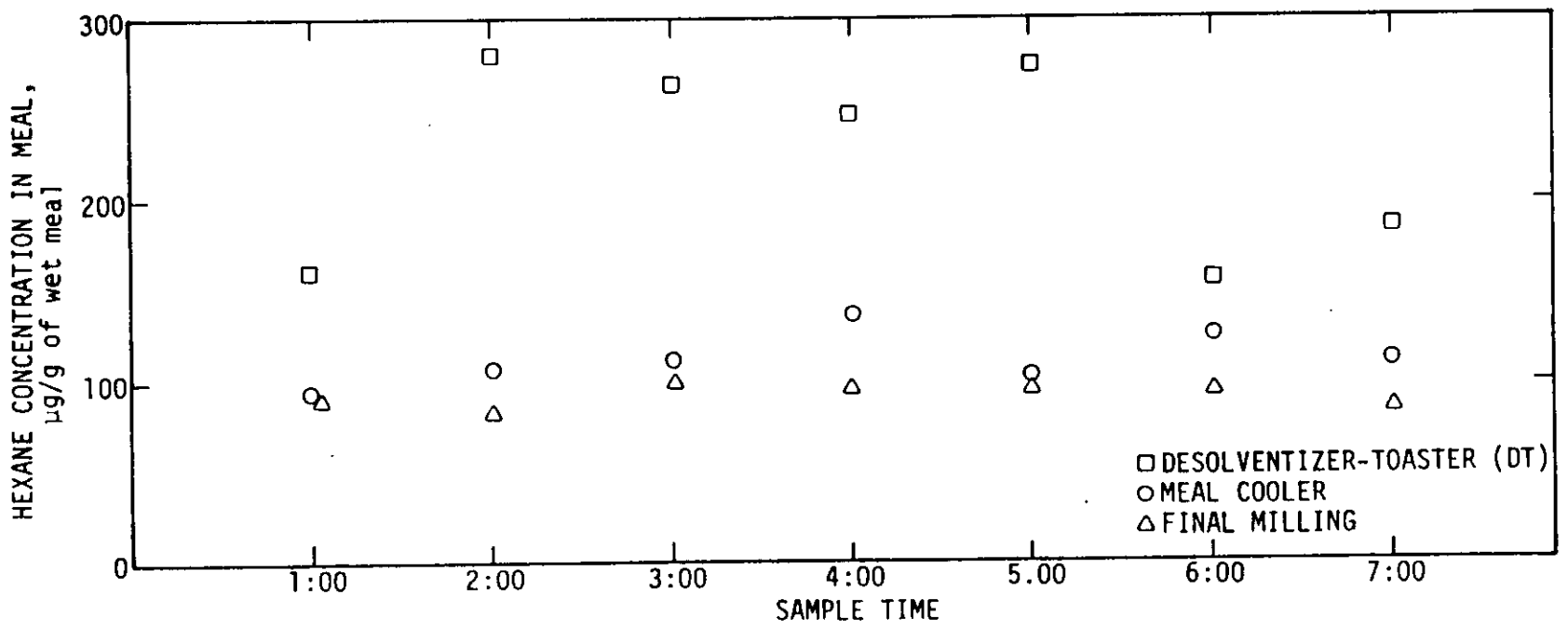

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*Federal Register, Vol. 42, No. 16, August 18, 1977.

APPENDIX A

1.0 Meal Sample Log

6-29-11-74

Cap Weights (g): 0.4213 0.4307
used to weigh bottles: 0.4284 0.4273 0.4317

CASCADE® L1-C2462 PRINTED IN U.S.A.

HEXANE PROJECT - SOY BEAN MEAL

PLANT	Bottle Number	Weight (gm)	DATE	TIME	LOCATION	REMARKS
AGRI-MASON 1		91.79	6-18-79	1:05	D.T.	
CITY, IOWA		92.23	"	"	"	LONG SAMPLE TIME
	3	91.97	"	"	"	
	4	92.11	"	1:05	COOLER	
	5	92.49	"	"	"	
	6	92.17	"	"	"	
	7	92.46	"	1:14	MILLING	
	8	91.94	"	"	"	
	9	92.07	"	"	"	
	10	92.32	"	1:58	D.T.	
	11	92.07	"	"	D.T.	
	12	92.29	"	"	D.T.	
	13	92.35	"	2:03	COOLER	
	14	91.98	"	"	"	
	15	92.54	"	"	"	
	16	92.39	"	2:05	MILLING	
	17	92.68	"	"	"	
	18	92.18	"	"	"	
	19	92.19	"	3:00	D.T.	
	20	92.18	"	"		
	21	92.04	"	"		
	22	92.17	"	3:04	COOLER	
	23	92.48	"	"	"	
	24	92.53	"	"	"	
	25	92.25	"	3:06	MILLING	
	26	92.05	"	"	"	
	27	92.42	"	"	"	
	28	93.22	"	4:00	D.T.	
	29	92.31	"	"	"	
	30	92.03	"	"	"	
	31	92.46	"	4:02	COOLER	
	32	92.11	"	"	"	
	33	92.07	"	"	"	
	34	92.27	"	4:04	MILLING	
	35	92.08	"	"	"	
	36	92.19	"	"	"	
	37	92.17	"	4:58	D.T.	
	38	91.99	"	"	"	

6-11-79

LI-C2462 HEXANE PROJECT - SOY BEAN MEAL

PRINTED IN U.S.A.

Bottle Number	Weight(gm)	DATE	TIME	LOCATION	REMARKS
AGRI PLAN 39	92.50	6/18	4:58	D.T.	LONG-SAMPLE TIME
MASON CITY 40	92.35	"	5:04	COOLER	
IOWA 41	92.06	"	"	"	
42	91.96	"	"	"	
43	92.14	"	5:06	MILLING	
44	92.35	"	"	"	
45	92.13	"	"	"	
46	92.28	"	6:02	D.T.	
47	91.80	"	"	"	
48	92.13	"	"	"	
49	92.32	"	6:06	COOLER	
50	92.14	"	"	"	
51	92.62	"	"	"	
52	92.02	"	6:03	MILLING	
53	92.48	"	"	"	
54	91.99	"	"	"	
55	91.53	"	7:06	DT	
56	91.74	"	"	"	
57	92.42	"	"	"	
58	92.09	"	7:09	COOLER	
59	92.32	"	"	"	
60	92.16	"	"	"	
61	92.15	"	7:11	MILLING	
62	92.05	"	"	"	
63	91.73	"	"	"	

2.0. Opacity Data Sheets

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY AGRI
LOCATION MASONCITY
TEST NUMBER
DATE 6-18-79 CRACKED BEAN
TYPE FACILITY [redacted]
CONTROL DEVICE NONE

HOURS OF OBSERVATION 1300
OBSERVER ROGER SCHUMER
OBSERVER CERTIFICATION DATE 5/16/79
OBSERVER AFFILIATION PEL
POINT OF EMISSIONS CRACKED BEAN #4
HEIGHT OF DISCHARGE POINT 50'

	Initial			Final
CLOCK TIME 5:28-5:40				
OBSERVER LOCATION Distance to Discharge	[redacted] 25'			
Direction from Discharge	WEST			
Height of Observation Point	[redacted] ROOF TOP (45')			
BACKGROUND DESCRIPTION	[redacted] GRAY METAL			
WEATHER CONDITIONS Wind Direction	FROM EAST			
Wind Speed	12-15			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	100%			
PLUME DESCRIPTION Color	DUSTY GRAY/WHITE			
Distance Visible	10'			
OTHER INFORMATION	EXHAUSTED ALONG HORIZONTAL 200 F TCK			

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 AGPI
LOCATION MASON CITY
TEST NUMBER
DATE 6-18-74

OBSERVER ROGER SCHUMER
TYPE FACILITY ~~ELEC~~ GENERATED BEAN
POINT OF EMISSIONS 4-1

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	15	15	15	15			
	1	20	15	15	15			
	2	15	15	15	15			
	3	15	20	20	20			
	4	20	20	20	15			
	5	15	15	15	15			
	6							
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FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS 3-4

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30	15	15	15	15			
	31	15	10	15	15			
	32	10	15	15	10			
	33	15	15	25	10			
	34	15	10	10	10			
	35	10	15	15	10			
	36							
	37							
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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 AGRI
LOCATION MASON CITY
TEST NUMBER
DATE 6-18-79
TYPE FACILITY BEAN CLEANER
CONTROL DEVICE CYCLONE

HOURS OF OBSERVATION 12 to
OBSERVER ROGER SCHUMER
OBSERVER CERTIFICATION DATE 5/16/77
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS BEAN CLEANER #3
HEIGHT OF DISCHARGE POINT ~~80~~ 50'

	Initial			Final
CLOCK TIME 5:15 - 5:27				
OBSERVER LOCATION Distance to Discharge	25'			
Direction from Discharge	NE			
Height of Observation Point	45'			
BACKGROUND DESCRIPTION	GRAY CLOUDS			
WEATHER CONDITIONS Wind Direction	FROM EAST			
Wind Speed	12 75			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	10% Clouds			
PLUME DESCRIPTION Color	—			
Distance Visible	10'			
OTHER INFORMATION	—			

SUMMARY OF AVERAGE OPACITY

Set Number	Time	Opacity	
	Start--End	Sum	Average

Readings ranged from ___ to ___ % opacity

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

FEDERAL REGISTER, VOL. 39, NO. 219—TUESDAY, NOVEMBER 12, 1974

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY AGCI
LOCATION MASON CITY
TEST NUMBER
DATE 6-18-79

OBSERVER ROGER SCHUMER
TYPE FACILITY
POINT OF EMISSIONS #5 REAN COOLER

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	5	5	5	5			
	1	5	5	5	5			
	2	5	5	5	5			
	3	5	5	5	5			
	4	5	5	5	5			
	5	5	5	5	5			
	6							
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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	5	5	5	5			
	31	5	5	5	5			
	32	5	5	5	5			
	33	5	5	5	5			
	34	5	5	5	5			
	35	5	5	5	5			
	36							
	37							
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[FR Doc.74-26160 Filed 11-11-74;8:45 am]

4 5 PM

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY AGRI.
LOCATION MASON CITY
TEST NUMBER
DATE 6-18-79
TYPE FACILITY DRYER VENT
CONTROL DEVICE SETTLING CHAMBER

HOURS OF OBSERVATION 12 TO
OBSERVER ROGER SCHUMER
OBSERVER CERTIFICATION DATE 5/16/79
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS DRYER VENT
HEIGHT OF DISCHARGE POINT ~~50'~~ 50'

SITE #1

	Initial			Final
CLOCK TIME 4:45 - 4:46				
OBSERVER LOCATION Distance to Discharge	300'			
Direction from Discharge	SOUTH			
Height of Observation Point	~~50'~~	GROUND LEVEL		
BACKGROUND DESCRIPTION	CLEAR SKY			
WEATHER CONDITIONS Wind Direction	~~FROM~~ EAST			
Wind Speed	12-15			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	100% CLOUDS			
PLUME DESCRIPTION Color	ATTACHED 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. N/A

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY AGRI
LOCATION MASON CITY
TEST NUMBER
DATE 6-18-74

OBSERVER ROGER SCHUMER
TYPE FACILITY
POINT OF EMISSIONS DRYER VENT SITE #1

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							
	8							
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FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE 2 OF 2

COMPANY
LOCATION
TEST NUMBER
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS DRYER VENT SITE #1

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30	0	0	0	0			
	31	0	0	0	0			
	32	0	0	0	0			
	33	0	0	0	0			
	34	0	0	0	0			
	35	0	0	0	0			
	36							
	37							
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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 AGRI
LOCATION MASON CITY - IOWA
TEST NUMBER
DATE 6-18-79
TYPE FACILITY FLAKE ASPIRATION
CONTROL DEVICE CYCLONE

HOURS OF OBSERVATION 12 1.E
OBSERVER EDGEE SCHUMER
OBSERVER CERTIFICATION DATE 5/16/79
OBSERVER AFFILIATION FEL
POINT OF EMISSIONS FLAKE ASPIRATION
HEIGHT OF DISCHARGE POINT 50'

	Initial			Final
CLOCK TIME 6:45 - 6:57				
OBSERVER LOCATION Distance to Discharge	300'			
Direction from Discharge	150'			
Height of Observation Point	GROUND LEVEL			
BACKGROUND DESCRIPTION	GREY			
WEATHER CONDITIONS Wind Direction	FROM EAST			
Wind Speed	12-15			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	100% OVERCAST			
PLUME DESCRIPTION Color	NONE			
	—	—	—	
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 AGRI
LOCATION MACON CITY
TEST NUMBER 6-15-74
DATE

OBSERVER ROGER H SCHMER
TYPE FACILITY
POINT OF EMISSIONS FLARE ASPIRATION P.5

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							
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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	0	0	0	0			
	31	0	0	0	0			
	32	0	0	0	0			
	33	0	0	0	0			
	34	0	0	0	0			
	35	0	0	0	0			
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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 AGRI
LOCATION MASON CITY
TEST NUMBER
DATE 6-18-79
TYPE FACILITY SOYBEAN EXTRACTION
CONTROL DEVICE NONE

HOURS OF OBSERVATION 42/60
OBSERVER ROGER H. SCHUMER
OBSERVER CERTIFICATION DATE 5/16/79
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS ROOF VENT NO 1
HEIGHT OF DISCHARGE POINT 50'

	Initial			Final
CLOCK TIME 6:25-6:37				
OBSERVER LOCATION Distance to Discharge	300'			
Direction from Discharge	~~300~~	NORTH		
Height of Observation Point	50			
BACKGROUND DESCRIPTION	GRAY SKY			
WEATHER CONDITIONS Wind Direction	FROM EAST			
Wind Speed	12-15			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	100% OVERCAST			
PLUME DESCRIPTION Color	NONE			
	—			
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.

FEDERAL REGISTER, VOL. 39, NO. 219—TUESDAY, NOVEMBER 12, 1974

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY AGCI
LOCATION MASON CITY
TEST NUMBER
DATE 6-18-79

OBSERVER ROGER SCHUMER
TYPE FACILITY
POINT OF EMISSIONS ROOF VENT No. 7

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							
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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	0	0	0	0			
	31	0	0	0	0			
	32	0	0	0	0			
	33	0	0	0	0			
	34	0	0	0	0			
	35	0	0	0	0			
	36							
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[FR Doc.74-26160 Filed 11-11-74;8:46 am]

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY AGRI
LOCATION MASON CITY
TEST NUMBER 1 + 2
DATE 6-18-79
TYPE FACILITY SOY BEAN EXTRACTION
CONTROL DEVICE NONE

HOURS OF OBSERVATION 12 to 60
OBSERVER ROGER H. SCHUMER
OBSERVER CERTIFICATION DATE
OBSERVER AFFILIATION PEDCO ENVIR.
POINT OF EMISSIONS WEST EXTRACTION PLANT EXHAUST VENT #9
HEIGHT OF DISCHARGE POINT 50'

	Initial			Final
CLOCK TIME 2:15 PM				
OBSERVER LOCATION – 2:27 Distance to Discharge	100'			
Direction from Discharge	NORTH			
Height of Observation Point	GROUND LEVEL			
BACKGROUND DESCRIPTION	WHITE GRAIN ELEVATOR			
WEATHER CONDITIONS Wind Direction	E→W			
Wind Speed	8-12			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	100%			
PLUME DESCRIPTION Color	NONE			
Distance Visible				
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Opacity Average
1	2:15 – 2:21	0	0
2	2:22 – 2:27	0	0

Readings ranged from 0 to 0 % opacity

The source was/was not in compliance with ___ at the time evaluation was made. N/A

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY AGRI
LOCATION MASON CITY
TEST NUMBER 1
DATE 6-15-79

OBSERVER ROGER H. SCHUMER
TYPE FACILITY
POINT OF EMISSIONS SITE #9
EXTRACTION BLDG - EXHAUST FAN (WEST)

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
2:15	0	0	0	0	0			NO VISIBLE EMISSIONS
	1	0	0	0	0			
	2	0	0	0	0			
2:18	3	0	0	0	0			
	4	0	0	0	0			
	5	0	0	0	0			
2:21	6	0	0	0	0			
	7							
	8							
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FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY AGRI
LOCATION MASON CITY, IOWA
TEST NUMBER 2
DATE 6/18/79

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS SITE #9

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
2:22	30	0	0	0	0			
	31	0	0	0	0			
	32	0	0	0	0			
2:25	33	0	0	0	0			
	34	0	0	0	0			
2:27	35	0	0	0	0			
	36							
	37							
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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 AGRI
LOCATION MASON CITY
TEST NUMBER 1 + 2
DATE 6-18-79
TYPE FACILITY SOY BEAN EXTRACTION
CONTROL DEVICE NONE

HOURS OF OBSERVATION 12/60
OBSERVER ROGER H. SCHUMER
OBSERVER CERTIFICATION DATE ____
OBSERVER AFFILIATION PEDCO ENVIR.
POINT OF EMISSIONS ~~Roof~~ EAST EXTRACTION PLANT EXHAUST #8 VENT
HEIGHT OF DISCHARGE POINT 50'

CLOCK TIME 2:30PM – 2:42	Initial			Final
OBSERVER LOCATION Distance to Discharge	100'			
Direction from Discharge	NORTH			
Height of Observation Point	~~50~~ GROUND LEVEL			
BACKGROUND DESCRIPTION	WHITE GRAIN ELEVATORS			
WEATHER CONDITIONS Wind Direction	E→W			
Wind Speed	12-15			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	100%			
PLUME DESCRIPTION Color	NONE VISIBLE			
Distance Visible				
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time Start--End	Opacity Sum	Opacity Average
1	2:30 - 2:35	0	0
2	2:36 - 2:42	0	0

Readings ranged from 0 to 0 % opacity

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

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY AGRI
LOCATION MASON CITY
TEST NUMBER 1
DATE 6-18-74

OBSERVER ROGER H. SCHEMEF
TYPE FACILITY
POINT OF EMISSIONS SITE #8
EXTRACTION BLDG
EXHAUST FAN (EAST)

	Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
PM	2:30	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			"
	2:35	5	0	0	0	0			"
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FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY
LOCATION
TEST NUMBER 2
DATE

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS SITE #8

	Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	2:36	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			"
	2:41	5	0	0	0	0			"
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[FR Doc.74-26150 Filed 11-11-74;8:46 am]

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FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY AGRI
LOCATION MASON CITY, IOWA
TEST NUMBER 1 & 2
DATE 6-18-79
TYPE FACILITY SOY OIL
CONTROL DEVICE CYCLONE

HOURS OF OBSERVATION 12/60
OBSERVER ROGER SCHUMER
OBSERVER CERTIFICATION DATE
OBSERVER AFFILIATION PEDCo
POINT OF EMISSIONS SITE #2 COOLER VENT
HEIGHT OF DISCHARGE POINT

	Initial			Final
CLOCK TIME 4:20 - 4:32				
OBSERVER LOCATION Distance to Discharge	25'	1		
Direction from Discharge	SE			
Height of Observation Point	ROOF TOP #5			
BACKGROUND DESCRIPTION	GRAY SKY			
WEATHER CONDITIONS Wind Direction	FROM EAST			
Wind Speed	12-13			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	100% CLOUDS			
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. N/A

FEDERAL REGISTER, VOL. 39, NO. 219—TUESDAY, NOVEMBER 12, 1974

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY AGRI
LOCATION MASON CITY, IOWA
TEST NUMBER 1
DATE 6-18-79

OBSERVER R. SCHUMER
TYPE FACILITY SOY OIC
POINT OF EMISSIONS COOLER VENT
SITE #2

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

COMPANY AGRI
LOCATION MASON CITY, IOWA
TEST NUMBER 2
DATE 6-18-79

OBSERVER R. SCHUMER
TYPE FACILITY SOY OIC
POINT OF EMISSIONS #2 COOLER VENT

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

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FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE 1 of 2

COMPANY AGC I
LOCATION MASON CITY
TEST NUMBER
DATE 6-18-79
TYPE FACILITY PREP BLDG.
CONTROL DEVICE NONE

HOURS OF OBSERVATION 1200
OBSERVER ROGER SCHUMER
OBSERVER CERTIFICATION DATE 5/16/79
OBSERVER AFFILIATION PEPCO
POINT OF EMISSIONS SITE #6 PREP BLDG - EXHAUST FAN
HEIGHT OF DISCHARGE POINT 50'

	Initial			Final
CLOCK TIME 4:35-4:47				
OBSERVER LOCATION Distance to Discharge	100'			
Direction from Discharge	NORTH			
Height of Observation Point	GROUND LEVEL			
BACKGROUND DESCRIPTION	GRAY GRAIN WHITE ELEVATOR			
WEATHER CONDITIONS Wind Direction	FROM EAST			
Wind Speed	12-15			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	100% CLOUDS			
PLUME DESCRIPTION Color	NONE			
	—	—		
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. N/A

FEDERAL REGISTER, VOL. 39, NO. 219—TUESDAY, NOVEMBER 12, 1974

FIGURE 9-2 OBSERVATION RECORD PAGE 2 OF 2

COMPANY AGRI
LOCATION MASON CITY, IOWA
TEST NUMBER 1
DATE 6-18-79

OBSERVER ROGER SCHUMER
TYPE FACILITY
POINT OF EMISSIONS EXHAUST VENT #6

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	0	0	0	0	0			NO VISIBLE EMISSION
	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			
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FIGURE 9-2 OBSERVATION RECORD (Continued) PAGE ___ OF ___

COMPANY AGRI
LOCATION MASON CITY, IOWA
TEST NUMBER 2
DATE 6-18-79

OBSERVER
TYPE FACILITY
POINT OF EMISSIONS PREP ~~BLDG~~ BLDG EXHAUST FAN SITE #6

Hr.	Min.	Seconds 0	15	30	45	STEAM PLUME (check if applicable) Attached	Detached	COMMENTS
	30	0	0	0	0			NO VISIBLE EMISSION
	31	0	0	0	0			
	32	0	0	0	0			
	33	0	0	0	0			
	34	0	0	0	0			
	35	0	0	0	0			
	36							
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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 AGRI
LOCATION MASONCITY
TEST NUMBER
DATE 6-18-79
TYPE FACILITY BEAN CONDITIONER
CONTROL DEVICE SETTLING CHAMBER

HOURS OF OBSERVATION 12 to 6
OBSERVER ROGER SCHUMER
OBSERVER CERTIFICATION DATE 5/16/79
OBSERVER AFFILIATION PEI
POINT OF EMISSIONS #10 BEAN CONDITIONER
HEIGHT OF DISCHARGE POINT 50'

	Initial			Final
CLOCK TIME 5:40 - 5:52				
OBSERVER LOCATION Distance to Discharge	20'			
Direction from Discharge	NE			
Height of Observation Point	45'			
BACKGROUND DESCRIPTION	GRAY CLOUDS			
WEATHER CONDITIONS Wind Direction	FROM EAST			
Wind Speed	12-15			
Ambient Temperature	66°F			
SKY CONDITIONS (clear, overcast, % clouds, etc.)	100% CLOUDS			
PLUME DESCRIPTION Color	—	—		
Distance Visible	—	—		
OTHER INFORMATION	—	—		

SUMMARY OF AVERAGE OPACITY

Set Number	Time	Opacity	
	Start--End	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 AGRI
LOCATION MISSOURI CITY
TEST NUMBER 1
DATE 6-18-79

OBSERVER ROGER SCHUMER
TYPE FACILITY
POINT OF EMISSIONS BEAN CONDITIONER

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			
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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	0	0	0	0			
	31	0	0	0	0			
	32	0	0	0	0			
	33	0	0	0	0			
	34	0	0	0	0			
	35	0	0	0	0			
	36							
	37							
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[FR Doc.74-26150 Filed 11-11-74;8:45 am]

3.0. Meal Sample Laboratory Analysis Report

DATA SHEET

Plant: AGRI, Mason City, Iowa Date: June 18, 1979

Date Analysis		Sample No.	Location	Sample Date	Time	Wet Wt. (g)	Wet (µg/g)	Dry (µg/g)
7/17/79		1	D.T.	6/18/79	1:05 pm	1.77	150	190
7/17/79		2	D.T.	6/18/79	1:05 pm	1.34	170	210
7/17/79	(A)	3	D.T.	6/18/79	1:05 pm	1.84	160	200
7/17/79		4	Cooler	6/18/79	1:10 pm	2.13	70	87
7/17/79	(A)	5	Cooler	6/18/79	1:10 pm	2.31	140	180
7/17/79		6	Cooler	6/18/79	1:10 pm	2.50	75	89
7/17/79	(A)	7	Milling	6/18/79	1:14 pm	2.90	74	91
7/11/79		8	Milling	6/18/79	1:14 pm	2.47	130	150
7/17/79	(A)	9	Milling	6/18/79	1:14 pm	2.54	67	150
7/11/79		10	D.T.	6/18/79	1:58 pm	1.92	370	610
7/11/79		11	D.T.	6/18/79	1:58 pm	2.06	300	530
7/19/79		12	D.T.	6/18/79	1:58 pm	1.95	170	210
7/19/79	(A)	13	Cooler	6/18/79	2:03 pm	2.72	83	99
7/17/79		14	Cooler	6/18/79	2:03 pm	2.38	77	90
7/11/79	(A)	15	Cooler	6/18/79	2:03 pm	2.05	160	200
7/19/79		16	Milling	6/18/79	2:05 pm	2.74	96	120
7/19/79		17	Milling	6/18/79	2:05 pm	2.71	80	93
7/19/79		18	Milling	6/18/79	2:05 pm	2.68	76	91
7/11/79		19	D.T.	6/18/79	3:00 pm	1.75	280	430
7/11/79		20	D.T.	6/18/79	3:00 pm	1.60	320	510
7/19/79	(A)	21	D.T.	6/18/79	3:00 pm	1.36	190	240
7/11/79	(B)	22	Cooler	6/18/79	3:04 pm	2.80	130	150
7/19/79		23	Cooler	6/18/79	3:04 pm	3.11	89	110
7/11/79	(A)	24	Cooler	6/18/79	3:04 pm	2.26	116	140
7/29/79		25	Milling	6/18/79	3:06 pm	2.87	130	160
7/19/79	(A)	26	Milling	6/18/79	3:06 pm	2.51	86	110
7/19/79		27	Milling	6/18/79	3:06 pm	2.77	84	94
7/19/79	(A)	28	D.T.	6/18/79	4:00 pm	1.28	270	410
7/11/79	(B)	29	D.T.	6/18/79	4:00 pm	2.58	240	320
7/11/79		30	D.T.	6/18/79	4:00 pm	1.59	230	360

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

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

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Date Analysis		Sample No.-Location		Sample Date	Time	Wet Wt. (g)	Wet (µg/g)	Dry (µg/g)
7/19/79		61	Milling	6/18/79	7:11 pm	2.15	88	100
7/19/79	(A)	62	Milling	6/18/79	7:11 pm	2.29	79 ②	100 ②
—		63	Milling	6/18/79	7:11 pm	2.25	- ②	- ②

② Sample bottle cracked during heating step.

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