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AP-42 Section Number: 9.9.1

Reference Number: 36

**Title: Final Report Atmospheric Emission
Testing Busch Agricultural Resources
Inc.**

Industrial Hygiene Resources, Ltd.

October 1991

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Final Report
Atmospheric Emission Testing
Busch Agricultural Resources, Inc.
Idaho Falls Malt Plant

Sources Sampled:

- System 100 Dust Collector
- System 200 Dust Collector
- #2 Kiln Exhaust

Presented to:

Donald DeHart
Senior Environmental Engineer
Anheuser-Busch Companies

Presented by:

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Senior Scientist

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INTRODUCTION

1. Test Purpose

Busch Agricultural Resources, Inc. (BARI) of Idaho Falls, Idaho filed a construction permit application to the State of Idaho Bureau of Air Quality for air pollutant emitting sources. In an agreement with the Air Quality Bureau, Anheuser-Busch agreed to perform emission testing of two dust collection systems and one of the malt kiln exhaust plenums. Anheuser-Busch contracted with Industrial Hygiene Resources to perform standard Method 1-5 (EPA) particulate sampling as well as Method 9 Visual Emission opacity reading of these three sources of emission to determine compliance with the permit.

Industrial Hygiene Resources (IHR) submitted a "sampling protocol" to the Idaho Air Quality Bureau (August 29 and September 9 letters from IHR to the Idaho Bureau of Air Quality, Appendix A), and agency personnel responded by letter indicating tentative approval with specific qualifiers. Verbal agreement was made on October 3, 1991 between Tim Trumbell (State of Idaho) and Harry Beaulieu (IHR) on the issue of reading visual emissions for only one representative process cycle of the #2 malt kiln.

2. Test Location, Process Type and Dates

All three sources are located at the BARI malt plant, about 4 miles south of Idaho Falls, Idaho. The two dust collector systems pull air from the top of grain loading/unloading operations (railroad cars), and move the particulate laden air into and through bag house filters. The malt kiln operation is designed to dry the green malt on large, flat beds. Heated air is blown up through the barley to dry it, and heat is recovered in a heat exchange unit at the top of the kiln.

3. Test dates:

Dust Collection System 100: October 1, 1991
Dust Collection System 200: October 2, 1991
Malt Kiln #2: October 3-6, 1991

4. Pollutants tested:

The facility receives barley by railcar or truck. The grain is transported to storage silos. After the grain has been cleaned and graded it is transferred to the malthouses for steeping and germination. Germinated or green malt drying occurs in both kilns. Drying is accomplished indirectly, using natural gas fired heaters. Exhaust from the heaters and the drying process enters a common plenum and then exits the building through the kiln exhaust stack.

Grain dust generated into air from these grain handling processes is dust and chaff from the barley or malt. The material is organic, plant matter, and fairly large in particle size (probe wash weights were significantly greater than filter weights). The three (3) sources tested were the Dust Collector System 100, Dust Collector System 200, and the exhaust from the #2 Malt kiln.

5. Observers present:

Testing was conducted by Industrial Hygiene Resources, Inc. (IHR), under the direct supervision of Harry Beaulieu, PhD, CIH, CSP. Field work was conducted by Dr. Beaulieu, Chip Matejka and Judy Peters Stevenson. Mr. Donald DeHart represented Anheuser-Busch during this testing. No representative of the Idaho Air Quality Bureau were present during this sampling effort.

6. Important background information:

For the Dust Collection Systems #100-200, a baghouse, reverse jet control system was utilized. No air cleaning system was employed in the exhaust above the malt kiln heat exchange unit.

7. EPA test methods used:

EPA Reference Methods 1-5 (total particulates) and Method 9 (visual emissions) were conducted on October 1, 1991 for Dust System 100, October 2 for Dust System 200, and October 3-6, 1991 for the Kiln #2 Exhaust (Method 9 was conducted during the first run only for the kiln). All sampling was done in accordance with the sampling protocol (and addendum).

8. Visual emission readings was conducted throughout the entire process cycle of the first run on the #2 malt kiln (nearly 24 hours). No other visual emission reading was performed for this system (the other two runs).

SUMMARY OF RESULTS

1. Emission Results:

Table I documents stack characteristics and sampling isokineticity for this study. Stacks for system 100 and 200 were quite reproducible in terms of air flow rate. The #2 exhaust kiln was difficult in sampling because of logistics, and air flow rate data does have substantial variance in run #7 as compared to the other runs (8 & 9).

Table II documents the volume of air sampled and the concentration of particulates in the stacks of the three systems. In all cases, it can be easily seen that the greatest portion of

the particulate matter is found in the probe wash, with little mass deposited upon the filter media. This is confirmed by visual inspection of the front end glass ware and the resultant probe wash material.

Table III documents the emission rate of particulates from these stacks in pounds of particulate matter (grain dust) per hour (lbs/hr). The (Idaho) Summary Format tables for the test of these three sources is also presented here. The average emission rate (n = 3) for System 100 is 2.97 lbs/hr, 1.22 lbs/hr for System 200, and 4.24 lbs/hr for the #2 malt kiln. Run #3 of the System 100 measured 5.93 lbs/hr (exceeding the 3.6 lbs/hr permit limit), and Run 9 of the malt kiln measured 9.91 lbs/hr (exceeding the 5.22 lbs/hr permit limit).

2. Process Data:

Appendix B delineates the process rates for grain handling for the three emission sources tested. All testing was performed with representative process volumes. For System 100, an average of 7,085 bushels/hour of barley was loaded/unloaded. The average value of malt for System 200 was 5,777 bushels per hour.

The same amount of germinated barley (green malt) was loaded into the #2 malt kiln in one bed in each of three process cycles of approximately 24 hour duration (9,400 bushels per bed, or layer). The kiln contains two beds (layers), of which at the end of one cycle, the bottom bed is removed and the top bed of grain is lowered to the bottom location. Actual fan status (air movement) is recorded for the #2 kiln for the three sampling runs.

*measured
in bushels
rather than
weight
in tons/hr*

3. Allowable Emissions:

An appendix of the operating emission permit lists the maximum emission rates for the three sources measured:

System 100	3.6 lbs/hr TSP
System 200	2.8 lbs/hr TSP
Kiln #2 Exhaust	5.22 lbs/hr TSP

4. Visual Emission Summary: (Opacity Worksheets in the Appendix)

System 100: Visual emissions were sporadic, and typically read as 0%. When visual emissions were present, the maximum opacity was 15% with a duration of only 1-5 seconds.

System 200: Visual emissions were sporadic, and typically read as 0%. When visual emissions were present, the maximum opacity was 5% with a duration of only 1-5 seconds.

#2 Kiln: Visual emissions were read during the entire cycle of

run #1 only, and not the additional sampling runs. The opacity of 0% was read during all of the readings except for one during this process cycle. On that one occasion, the readings ranged from 5-10% for a period of 10 minutes. The emission was unique in that it originated only near portal #8 and within approximately an 8" width of distance.

5. Discussion of Errors, real and apparent:

Process data indicates that operations were being conducted in a representative fashion during the time of emission testing. Sampling runs for the dust collection systems (100, and 200) showed consistency in flow rates of air, and acceptable isokinetic values were achieved during sampling.

Process grain handling was representative during work with the malt kiln, but run # 7 (R-7) did indicate a substantially greater air flow rate than in the other two runs. Also, sample run#8 was marginal relative to isokineticity (88%). Considering the sampling limitations of attempting to measure air pollutants from a common plenum fed by four different fans, this variance should be considered acceptable.

SOURCE OPERATION

1. Sampling port description:

System 100: Sampling was conducted downstream from the baghouse, but yet upstream from the fan and silencer (A = 1.0, B = 2.5).

System 200: Sampling was conducted downstream from the baghouse, but yet upstream from the fan and silencer (A = 1.0, and B = 2.5).

#2 Malt Kiln: Sampling was conducted across the "face" of the exhaust air plenum above the heat exchanger on the top of the kiln. The ports were located at a height of 18" above the roof line of the building.

2. Sampling point description:

System 100: Marginal sampling conditions were present, and the maximum (24 pt) number of traverse points were utilized for both of the two portals (90° from each other). Two minute sampling times per point, with a total of 96 minutes sampled.

System 200: Marginal sampling conditions were present, and the maximum (24 pt) number of traverse points were utilized for both of the two portals (90° from each other). Two minute sampling times per point, with a total of 96 minutes sampled.

Malt Kiln Exhaust: The large sampling area was sectioned into 24 sampling locations, with one-hour sampling conducted at each location.

3. Sample train description: Sampling was designed to sample gas stream particulate effluent isokinetically in accordance with the Environmental Protection Agency standards as outlined in the Federal Register Vol. 42, No. 160 (August 18, 1977). This procedure is referred to as standard Method 1-5.

The Anderson Universal Stack Sampler was utilized for this study, with a generic schematic of the system presented in Figure 1. The sampling train extracted stack (total) particles via a nozzle and a heated probe, followed by a heated filter chamber where particulates were removed. The hot gases were then passed through a series of cold impingers where condensibles were removed and the gases were cooled before going to the pump, dry gas meter, and the flow sensing device.

4. Deviations from sampling protocol:

Without a combustion source, the molecular weight of dry, stack air was estimated to be 29, as opposed to calculating this via measuring the CO₂ and O₂ of the stack (Orsat).

The stack effluent sampled was pulled from the probe, directly into the filter and holder without any cyclone separator in line.

5. Deviations from analytical protocol:

None

Table I
 Stack Characteristics and Sample Isokineticity—
 Busch Agricultural Resources, Inc.
 Idaho Falls Malt Plant
 October, 1991

<u>Sample Number</u>	<u>Stack velocity (ft/sec)</u>	<u>Flow Rate (m3/hr)</u>	<u>Percent Water</u>	<u>Percent Isokinetic</u>
System 100				
R-1	51.130	66,593.0	1.02(10) ⁻²	93.4
R-2	50.616	66,141.0	5.40(10) ⁻³	93.5
R-3	50.230	64,607.0	5.80(10) ⁻³	96.7
System 200				
R-4	39.603	46,123.6	4.80(10) ⁻³	96.2
R-5	42.205	50,005.7	5.10(10) ⁻³	95.5
R-6	42.258	49,975.4	3.80(10) ⁻³	98.6
Kiln #2 Exhaust				
R-7	13.287	1,020,582.6	2.20(10) ⁻¹	94.7
R-8	8.507	641,890.2	1.98(10) ⁻²	88.4
R-9	6.549	516,257.5	1.52(10) ⁻²	105.8

ft/sec - feet per second
 m3/hr - cubic meter of air per hour

Table II
 Concentrations of Particulates in Stack
 Busch Agricultural Resources, Inc.
 Idaho Falls Malt Plant
 October, 1991

Sample Number	Sample Volume (ft ³)	Wt (gr)		Total Wt		Conc'n (lbs/ft ³)
		PW	Filter	(gr)	(lbs)	
System 100						
R-1	87.007	0.0266	ND	0.0266	5.864(10) ⁻⁵	6.735 ⁹ (10) ⁻⁷
R-2	86.483	0.0233	0.0003	0.0236	5.200(10) ⁻⁵	6.012(10) ⁻⁷ ✓
R-3	86.007	0.0979	0.0035	0.1014	2.235(10) ⁻⁴	<u>2.600(10)⁻⁶</u> 2.599 ₁ does not agree w/ value in Table III.
System 200						
R-4	65.663	0.0334	0.0042	0.0376	8.289(10) ⁻⁵	1.262(10) ⁻⁵ ✓
R-5	71.890	0.0101	0.0031	0.0132	2.910(10) ⁻⁵	4.040(10) ⁻⁷ 4.04 ₂
R-6	73.031	0.0112	0.0055	0.0167	3.682(10) ⁻⁵	5.040(10) ⁻⁷ 5.041 ₆
Kiln #2 Exhaust						
R-7	647.920	0.0124	0.0034	0.0158	3.4833(10) ⁻⁵	5.400(10) ⁻³ 5.37 ₆
R-8	383.242	0.0055	0.0011	0.0066	1.4551(10) ⁻⁵	3.800(10) ⁻³ 3.796 ₆
R-9	335.458	0.0828	ND	0.0828	1.8254(10) ⁻⁴	5.440(10) ⁻⁷ 5.441 ₅

WT - weight
 gr - gram
 PW - probe wash
 lbs - pounds
 ft³ - cubic feet of air
 Conc'n - concentration of particulates
 ND - no change detected

Table III
Emission Rate of Particulates
Busch Agricultural Resources, Inc.
Idaho Falls Malt Plant
October, 1991

<u>Sample Number</u>	<u>Con'c lbs/ft³</u>	<u>Stack Flow Rate (dscf/hr)</u>	<u>Emission Rate lbs/hr</u>
System 100			
R-1	6.735(10) ⁻⁷ †	2,350,618.29	1.58 ₃
R-2	6.012(10) ⁻⁷	2,334,664.44	1.40 ₃
R-3	2.599(10) ⁻⁶	2,280,516.30	5.93✓
System 200			
R-4	1.262(10) ⁻⁶	1,628,083.92	2.06 _{2.054}
R-5	4.040(10) ⁻⁷	1,765,113.09	0.71✓
R-6	5.050(10) ⁻⁷	1,764,045.45	0.89
Kiln #2 Exhaust			
R-7	5.400(10) ⁻⁸	36,024,799.88	1.94 _{1.94₅}
R-8	3.800(10) ⁻⁸	22,657,611.99	0.86 _{0.86₀}
R-9	5.440(10) ⁻⁷	18,222,979.41	9.91 _{9.91₃} ✓

lbs/hr - pounds per hour
 lbs/ft³ - pounds per cubic feet of air
 dscf/hr - dry standard cubic feet of air per hour

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Viable Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME			
Buwch			10-1-91 (18)				12:20 p				12:30			
			MIN	0	15	30	45	MIN	0	15	30	45		
CITY			STATE				ZIP							
Idaho Falls			Id											
PHONE			SOURCE ID NUMBER											
PROCESS EQUIPMENT			OPERATING MODE											
			unloading											
CONTROL EQUIPMENT			OPERATING MODE											
Dust Collector														
DESCRIBE EMISSION POINT														
START 8" DIA. NORTH STOP SAME														
HEIGHT ABOVE GROUND LEVEL			HEIGHT RELATIVE TO OBSERVER											
START ~ 30' STOP ~ 30'			START ~ 30' STOP ~ 30'											
DISTANCE FROM OBSERVER			DIRECTION FROM OBSERVER											
START ~ 90' STOP ~ 90'			START N STOP N											
DESCRIBE EMISSIONS														
START Sporadic STOP Sporadic														
EMISSION COLOR			PLUME TYPE CONTINUOUS <input type="checkbox"/>											
START N STOP N			FUGITIVE <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/>											
WATER DROPLETS PRESENT			IF WATER DROPLET PLUME											
NONE YES <input type="checkbox"/>			ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>											
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED														
START 4" from stack STOP 4" from stack														
DESCRIBE BACKGROUND														
START Sky STOP Sky														
BACKGROUND COLOR			SKY CONDITIONS											
START Blue STOP Blue			START Clear STOP Clear											
WIND SPEED			WIND DIRECTION											
START 25 STOP 25			START NW STOP NW											
AMBIENT TEMP			WET BULB TEMP				AM. ABOVE							
START 70 STOP 70			57											
<p style="text-align: center;">Source Level Sketch Draw North Arrow</p>			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE							
			0 % was 3				0 % was 1							
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE							
			0 % was 0				0 % was 5 to 15							
			COMMENTS			OBSERVER'S NAME								
						Nancy Stevenson								
						OBSERVER'S SIGNATURE				DATE				
						[Signature]				10-1-91				
			I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			CERTIFIED BY				DATE				
			SIGNATURE											
TITLE			DATE				DATE							
			VERIFIED BY				DATE							

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Visible Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME						
AWH/BUSCH			R-28 10-1-91				2:25pm				2:35pm						
ADDRESS			SEC				SEC				SEC						
			MIN	0	15	30	45	MIN	0	15	30	45	MIN	0	15	30	45
			1	0	0	0	0	31									
			2	0	0	0	0	32									
			3	0	0	0	10	33									
			4	0	0	0	0	34									
			5	0	0	5	0	35									
			6	0	0	0	0	36									
			7	5	0	0	0	37									
			8	10	5	0	0	38									
			9	0	0	0	0	39									
			10	5	0	0	0	40									
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			25					55									
			26					56									
			27					57									
			28					58									
			29					59									
			30					60									
			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE										
			0 % was 6				0 % was 2										
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE										
			0 % was 0				0 % was 5 to 10										
CITY			STATE		ZIP												
Id Falls			ID														
PHONE			SOURCE ID NUMBER														
PROCESS EQUIPMENT			OPERATING MODE														
			Unloading														
CONTROL EQUIPMENT			OPERATING MODE														
#1 Dust Coll.			Unloading														
DESCRIBE EMISSION POINT																	
START 4" dia WCKZ STOP same																	
HEIGHT ABOVE GROUND LEVEL			HEIGHT RELATIVE TO OBSERVER														
START 30' STOP 30'			START 30' STOP 30'														
DISTANCE FROM OBSERVER			DIRECTION FROM OBSERVER														
START 90' STOP 90'			START N STOP N														
DESCRIBE EMISSIONS																	
START Spinning STOP Spinning																	
EMISSION COLOR			PLUME TYPE CONTINUOUS <input type="checkbox"/>														
START tan STOP tan			FUGITIVE <input type="checkbox"/> INTERMITTENT <input type="checkbox"/>														
WATER DROPLETS PRESENT			IF WATER DROPLET PLUME														
NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>			ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>														
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED																	
START 4" from sk STOP 4" from sk																	
DESCRIBE BACKGROUND																	
START Sky STOP Sky																	
BACKGROUND COLOR			SKY CONDITIONS														
START Blue STOP Blue			START Clear STOP Clear														
WIND SPEED			WIND DIRECTION														
START 15 STOP 15			START NW STOP NW														
AMBIENT TEMP			WET BULB TEMP		RH. %												
START 80 STOP 80			58														
<p>Source Location Sketch</p> <p>Draw North Arrow</p>																	
COMMENTS			OBSERVER'S NAME														
			Judy Stevenson														
			OBSERVER'S SIGNATURE				DATE										
			Judy Stevenson				10-1-91										
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			CERTIFIED BY				DATE										
SIGNATURE																	

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Visible Emission Observation Form

SOURCE NAME <i>A/B</i>			OBSERVATION DATE <i>3A</i> <i>10-1-91</i>				START TIME <i>4:50pm</i>		STOP TIME <i>5:00pm</i>																			
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SOURCE ID NUMBER _____			3				23																					
PROCESS EQUIPMENT _____			4				24																					
OPERATING MODE <i>Unloading</i>			5				25																					
CONTROL EQUIPMENT <i>Dust Coll #1</i>			6				26																					
OPERATING MODE _____			7				27																					
DESCRIBE EMISSION POINT			8				28																					
START <i>~48" dia box</i> STOP <i>same</i>			9				29																					
HEIGHT ABOVE GROUND LEVEL		HEIGHT RELATIVE TO OBSERVER		10		30		40																				
START <i>~30'</i> STOP <i>30'</i>		START <i>~30'</i> STOP <i>~30'</i>		11		31		41																				
DISTANCE FROM OBSERVER		DIRECTION FROM OBSERVER		12		32		42																				
START <i>~60'</i> STOP <i>60'</i>		START <i>S</i> STOP <i>S</i>		13		33		43																				
DESCRIBE EMISSIONS			14				34																					
START <i>Sporadic</i> STOP <i>Sporadic</i>			15				35																					
EMISSION COLOR		PLUME TYPE		16		36		44																				
START <i>White</i> STOP <i>White</i>		<input type="checkbox"/> CONTINUOUS <input checked="" type="checkbox"/> FUGITIVE <input type="checkbox"/> INTERMITTENT		17		37		45																				
WATER DROPLETS PRESENT		# WATER DROPLET PLUME		18		38		46																				
<input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/>		<input type="checkbox"/> ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>		19		39		47																				
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED			20				40																					
START <i>4" from shk</i> STOP <i>4" from shk</i>			21				41																					
DESCRIBE BACKGROUND			22				42																					
START <i>SKY</i> STOP <i>SKY</i>			23				43																					
BACKGROUND COLOR		SKY CONDITIONS		24		44		48																				
START <i>Blue</i> STOP <i>Blue</i>		START <i>Clear</i> STOP <i>Clear</i>		25		45		49																				
WIND SPEED		WIND DIRECTION		26		46		50																				
START <i>30</i> STOP <i>20</i>		START <i>NW</i> STOP <i>NW</i>		27		47		51																				
AMBIENT TEMP		WET BULB TEMP		28		48		52																				
START _____ STOP <i>79</i>		START _____ STOP <i>50</i>		29		49		53																				
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			31				55																					
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			33				57																					
<p style="text-align: center;">Sun ↓ Wind ↓</p> <p style="text-align: center;">Plume and ↓</p> <p style="text-align: center;">Shade</p> <p style="text-align: center;">Observer Position</p> <p style="text-align: center;">Sun Shadow Line</p> <p style="text-align: center;">100°</p>			34				58																					
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<p style="text-align: center;">Sun ← Wind ←</p> <p style="text-align: center;">Plume and ←</p> <p style="text-align: center;">Shade</p> <p style="text-align: center;">Observer Position</p> <p style="text-align: center;">Sun Shadow Line</p> <p style="text-align: center;">100°</p>			36				60																					
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			39				63																					
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<p style="text-align: center;">Sun ↓ Wind ↓</p> <p style="text-align: center;">Plume and ↓</p> <p style="text-align: center;">Shade</p> <p style="text-align: center;">Observer Position</p> <p style="text-align: center;">Sun Shadow Line</p> <p style="text-align: center;">100°</p>			42				66																					
			43				67																					
<p style="text-align: center;">Sun ← Wind ←</p> <p style="text-align: center;">Plume and ←</p> <p style="text-align: center;">Shade</p> <p style="text-align: center;">Observer Position</p> <p style="text-align: center;">Sun Shadow Line</p> <p style="text-align: center;">100°</p>			44				68																					
			45				69																					
<p style="text-align: center;">Sun ↑ Wind ↑</p> <p style="text-align: center;">Plume and ↑</p> <p style="text-align: center;">Shade</p> <p style="text-align: center;">Observer Position</p> <p style="text-align: center;">Sun Shadow Line</p> <p style="text-align: center;">100°</p>			46				70																					
			47				71																					
COMMENTS			48				72																					
OBSERVER'S NAME			49				73																					
<i>Judy Stevenson</i>			50				74																					
OBSERVER'S SIGNATURE			51				75																					
<i>Judy Stevenson</i>			52				76																					
DATE			53				77																					
<i>10-1-91</i>			54				78																					
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS SIGNATURE			55				79																					
CERTIFICATE			56				80																					
			57				81																					
			58				82																					
			59				83																					
			60				84																					
			61				85																					
			62				86																					
			63				87																					
			64				88																					
			65				89																					
			66				90																					
			67				91																					
			68				92																					
			69				93																					
			70				94																					
			71				95																					
			72				96																					
			73				97																					
			74				98																					
			75				99																					
			76				100																					

NUMBER OF READINGS ABOVE		NUMBER OF MINUTES ABOVE	
<i>0</i>	% <i>0</i>	<i>6</i>	% <i>2</i>
AVERAGE OF READINGS ABOVE		RANGE OF READINGS ABOVE	
<i>0</i>	% <i>0</i>	<i>0</i>	% <i>5 10</i>

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Visible Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME					
710			10-2-91 4A				11:50 A				12:00 P					
ADDRESS			SEC				SEC									
			MIN	0	15	30	45	MIN	0	15	30	45				
CITY			1				2				3					
STATE			2				3				4					
ZIP			3				4				5					
PHONE			4				5				6					
SOURCE ID NUMBER			5				6				7					
PROCESS EQUIPMENT			6				7				8					
OPERATING MODE			7				8				9					
CONTROL EQUIPMENT			8				9				10					
OPERATING MODE			9				10				11					
DESCRIBE EMISSION POINT			10				11				12					
START			11				12				13					
STOP			12				13				14					
HEIGHT ABOVE GROUND LEVEL			13				14				15					
START			14				15				16					
STOP			15				16				17					
HEIGHT RELATIVE TO OBSERVER			16				17				18					
START			17				18				19					
STOP			18				19				20					
DISTANCE FROM OBSERVER			19				20				21					
START			20				21				22					
STOP			21				22				23					
DIRECTION FROM OBSERVER			22				23				24					
START			23				24				25					
STOP			24				25				26					
DESCRIBE EMISSIONS			25				26				27					
START			26				27				28					
STOP			27				28				29					
EMISSION COLOR			28				29				30					
START			29				30				31					
STOP			30				31				32					
PLUME TYPE CONTINUOUS <input type="checkbox"/>			31				32				33					
FUGITIVE <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/>			32				33				34					
WATER DROPLETS PRESENT			33				34				35					
NO <input type="checkbox"/> YES <input type="checkbox"/>			34				35				36					
# WATER DROPLET PLUME			35				36				37					
ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>			36				37				38					
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED			37				38				39					
START			38				39				40					
STOP			39				40				41					
DESCRIBE BACKGROUND			40				41				42					
START			41				42				43					
STOP			42				43				44					
BACKGROUND COLOR			43				44				45					
START			44				45				46					
STOP			45				46				47					
SKY CONDITIONS			46				47				48					
START			47				48				49					
STOP			48				49				50					
WIND SPEED			49				50				51					
START			50				51				52					
STOP			51				52				53					
WIND DIRECTION			52				53				54					
START			53				54				55					
STOP			54				55				56					
WET BULB TEMP			55				56				57					
START			56				57				58					
AM. WINDSPEED			57				58				59					
START			58				59				60					
STOP			59				60				61					
SOURCE LAYOUT SKETCH			60				61				62					
Draw North Arrow			61				62				63					
			62				63				64					
Sun \rightarrow Wind \rightarrow Plane and \rightarrow Side 100' Sun's Position Line			63				64				65					
NUMBER OF READINGS ABOVE			64				65				66					
NUMBER OF MINUTES ABOVE			65				66				67					
AVERAGE OF READINGS ABOVE			66				67				68					
RANGE OF READINGS ABOVE			67				68				69					
COMMENTS			68				69				70					
OBSERVER'S NAME			69				70				71					
OBSERVER'S SIGNATURE			70				71				72					
DATE			71				72				73					
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			72				73				74					
SIGNATURE			73				74				75					
DATE			74				75				76					

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Visible Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME						
A/E			10-2-91				2:45				2:50						
ADDRESS			SEC				SEC										
			MIN	0	15	30	45	MIN	0	15	30	45					
			1	0	0	5	0	31									
CITY			STATE				ZIP										
Idaho Falls			Id														
PHONE			SOURCE ID NUMBER														
PROCESS EQUIPMENT			OPERATING MODE														
			Loading														
CONTROL EQUIPMENT			OPERATING MODE														
Dust Coll #2																	
DESCRIBE EMISSION POINT																	
START ~ 1/8" dia horz STOP SAME																	
HEIGHT ABOVE GROUND LEVEL			HEIGHT RELATIVE TO OBSERVER														
START ~ 28' STOP ~ 28'			START ~ 28' STOP ~ 28'														
DISTANCE FROM OBSERVER			DIRECTION FROM OBSERVER														
START ~ 60' STOP ~ 60'			START NE STOP NE														
DESCRIBE EMISSIONS																	
START Sporadic STOP Sporadic																	
EMISSION COLOR			PLUME TYPE CONTINUOUS <input type="checkbox"/>														
START White STOP White			VAUGHINE <input type="checkbox"/> INTERMITTENT <input type="checkbox"/>														
WATER DROPLETS PRESENT			IF WATER DROPLET PLUME														
NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>			ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>														
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED																	
START 4" dia stl STOP 4" dia stl																	
DESCRIBE BACKGROUND																	
START Concrete silo STOP Concrete silo																	
BACKGROUND COLOR			SKY CONDITIONS														
START Gray STOP Gray			START Clear STOP Clear														
WIND SPEED			WIND DIRECTION														
START 40 STOP 35			START W STOP														
AMBIENT TEMP			WET BULB TEMP				RH. % ABOVE										
START 16 STOP 66			54														
<div style="text-align: center;"> <p>SOURCE LAYOUT SKETCH</p> <p>Draw North Arrow</p> </div>																	
			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE										
			0 % 000 7				0 % 000 2										
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE										
			0 % 000 0				0 % 000 5 10 5										
			COMMENTS			OBSERVER'S NAME											
						Judy Stevenson											
						OBSERVER'S SIGNATURE				DATE							
						(Judy Stevenson)				10-2-91							
			I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			CERTIFIED BY				DATE							
SIGNATURE																	

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Visible Emission Observation Form

SOURCE NAME <i>Bunch Agricultural Res.</i>			OBSERVATION DATE <i>10-2-91 R6A</i>				START TIME <i>5:05p</i>				STOP TIME <i>5:15p</i>						
ADDRESS <i>HFB</i>			SEC				SEC				SEC						
			MIN	0	15	30	45	MIN	0	15	30	45					
CITY <i>Madison Falls</i>			STATE <i>Id</i>				ZIP										
PHONE			SOURCE ID NUMBER														
PROCESS EQUIPMENT <i>Load. bin</i>			OPERATING MODE <i>loading</i>														
CONTROL EQUIPMENT <i>Dust Coll #2</i>			OPERATING MODE														
DESCRIBE EMISSION POINT START <i>48" dia. Horiz STOP SAME</i>																	
HEIGHT ABOVE GROUND LEVEL START <i>~28'</i> STOP <i>~28'</i>			HEIGHT RELATIVE TO OBSERVER START <i>~28'</i> STOP <i>~28'</i>														
DISTANCE FROM OBSERVER START <i>~60'</i> STOP <i>~60'</i>			DIRECTION FROM OBSERVER START <i>NE</i> STOP <i>NE</i>														
DESCRIBE EMISSIONS START <i>Sporadic</i> STOP <i>Sporadic</i>																	
EMISSION COLOR START <i>tan</i> STOP <i>tan</i>			PLUME TYPE CONTINUOUS <input type="checkbox"/>														
WATER DROPLETS PRESENT <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			FUGITIVE <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/>														
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START <i>4" dia</i> STOP <i>4" dia</i>			ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>														
DESCRIBE BACKGROUND START <i>Concrete Silo</i> STOP <i>Concrete Silo</i>																	
BACKGROUND COLOR START <i>gray</i> STOP <i>gray</i>			SKY CONDITIONS START <i>Clear</i> STOP <i>Clear</i>														
WIND SPEED START <i>20</i> STOP			WIND DIRECTION START <i>W</i> STOP														
AMBIENT TEMP START <i>78</i> STOP <i>68</i>			WET BULB TEMP <i>26</i>				AM. HUMIDITY										
<p align="center">Source Location Sketch</p> <p align="center">Draw North Arrow</p>																	
			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE										
			0 % was 5				0 % was 0										
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE										
			0 % was 0				0 % was 5 to 5										
			COMMENTS			OBSERVER'S NAME <i>Chady Stevenson</i>											
						OBSERVER'S SIGNATURE <i>Chady Stevenson</i>				DATE <i>10-2-91</i>							
			I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			CERTIFIED BY				DATE							
			SIGNATURE														

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Visible Emission Observation Form

SOURCE NAME <i>Busch</i>		OBSERVATION DATE <i>10-3-91</i>				START TIME <i>11:35 A</i>		STOP TIME <i>11:45 A</i>			
ADDRESS		SEC				SEC					
		MIN	0	15	30	45	MIN	0	15	30	45
		1	0	0	0	0	31				
CITY <i>Idaho Falls</i>		2	0	0	0	0	32				
STATE <i>Id</i>		3	0	0	0	0	33				
ZIP		4	0	0	0	0	34				
PHONE		5	0	0	0	0	35				
SOURCE ID NUMBER		6	0	0	0	0	36				
PROCESS EQUIPMENT <i>#2 Keln</i>		7	0	0	0	0	37				
OPERATING MODE <i>1 fan</i>		8	0	0	0	0	38				
CONTROL EQUIPMENT		9	0	0	0	0	39				
OPERATING MODE <i>loading</i>		10	0	0	0	0	40				
DESCRIBE EMISSION POINT START <i>100'x9'</i> STOP <i>100'x9'</i>		11					41				
HEIGHT ABOVE GROUND LEVEL START <i>175'</i> STOP <i>175'</i>		12					42				
HEIGHT RELATIVE TO OBSERVER START <i>6'</i> STOP <i>6'</i>		13					43				
DISTANCE FROM OBSERVER START <i>18'</i> STOP <i>18'</i>		14					44				
DIRECTION FROM OBSERVER START <i>S</i> STOP <i>S</i>		15					45				
DESCRIBE EMISSIONS START <i>fractional</i> STOP <i>same</i>		16					46				
EMISSION COLOR START <i>tan</i> STOP <i>tan</i>		17					47				
PLUME TYPE CONTINUOUS <input type="checkbox"/>		18					48				
FUGITIVE <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/>		19					49				
WATER DROPLETS PRESENT NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>		20					50				
IF WATER DROPLET PLUME ATTACHED <input type="checkbox"/> DETACHED <input checked="" type="checkbox"/>		21					51				
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START <i>4" diam size</i> STOP <i>size</i>		22					52				
DESCRIBE BACKGROUND START <i>tan</i> STOP <i>tan</i>		23					53				
BACKGROUND COLOR START <i>blue</i> STOP <i>blue</i>		24					54				
SKY CONDITIONS START <i>blue</i> STOP <i>blue</i>		25					55				
WIND SPEED START <i>10</i> STOP <i>10</i>		26					56				
WIND DIRECTION START <i>N</i> STOP <i>N</i>		27					57				
AMBIENT TEMP START <i>70</i> STOP		28					58				
WET BULB TEMP <i>62</i>		29					59				
REL. HUMIDITY		30					60				
<p style="text-align: center;">Source Level Sketch Draw North Arrow</p> <p style="text-align: center;">Sun \diamond Wind \rightarrow Photo and/or Sketch</p> <p style="text-align: center;">140° Sun Location Line</p>		NUMBER OF READINGS ABOVE		NUMBER OF MINUTES ABOVE							
		0 % was 0		0 % was 0							
		AVERAGE OF READINGS ABOVE		RANGE OF READINGS ABOVE							
		0 % was 0		0 % was 0 to 0							
COMMENTS		OBSERVER'S NAME <i>Judy Stevenson</i>		OBSERVER'S SIGNATURE <i>Judy Stevenson</i>							
		DATE <i>10-3-91</i>		DATE							
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS		CERTIFIED BY		DATE							
SIGNATURE											

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Visible Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME							
Anheuser-Busch B&B Plant			10-3-91 27				1:20 pm				1:30 pm							
ADDRESS			SEC				SEC											
			MIN	0	15	30	45	MIN	0	15	30	45						
			1	0	0	0	0	31										
CITY <i>Id Falls</i>			STATE <i>Id</i>		ZIP		2	0	0	0	0	32						
PHONE			SOURCE ID NUMBER				3	0	0	0	0	33						
PROCESS EQUIPMENT			OPERATING MODE				4	0	0	0	0	34						
Kiln #2			FANS				5	0	0	0	0	35						
CONTROL EQUIPMENT			OPERATING MODE				6	0	0	0	0	36						
			Loading				7	0	0	0	0	37						
DESCRIBE EMISSION POINT							8	0	0	0	0	38						
START Rec Stack #19 STOP 100' x 9'							9	0	0	0	0	39						
HEIGHT ABOVE GROUND LEVEL			HEIGHT RELATIVE TO OBSERVER				10	0	0	0	0	40						
START 175' STOP			START 10' STOP 10'				11	0	0	0	0	41						
DISTANCE FROM OBSERVER			DIRECTION FROM OBSERVER				12						42					
START 18' STOP 18'			START SW STOP SW				13						43					
DESCRIBE EMISSIONS							14						44					
START fractional STOP 5							15						45					
EMISSION COLOR			PLUME TYPE CONTINUOUS <input type="checkbox"/>				16						46					
START Tan STOP Tan			FUGITIVE <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/>				17						47					
WATER DROPLETS PRESENT			IF WATER DROPLET PLUME				18						48					
NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>			ATTACHED <input type="checkbox"/> DETACHED <input checked="" type="checkbox"/>				19						49					
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED							20						50					
START 4" AS STOP 4" AS							21						51					
DESCRIBE BACKGROUND							22						52					
START Sky STOP Sky							23						53					
BACKGROUND COLOR			SKY CONDITIONS				24						54					
START blue STOP blue			START Clear STOP Clear				25						55					
WIND SPEED			WIND DIRECTION				26						56					
START 10 gusty STOP 15			START NE STOP NW				27						57					
AMBIENT TEMP			WET BULB TEMP		AM. HUMIDITY		28						58					
START 66 STOP 66			54				29						59					
<p>Source Layout Sketch</p> <p>Draw North Arrow</p> <p>Sun \odot Wind \rightarrow Plume and \rightarrow Stack</p> <p>Observer Position</p> <p>100'</p> <p>Sun Location Line</p>			30						60									
			NUMBER OF READINGS ABOVE			NUMBER OF MINUTES ABOVE			31						61			
			AVERAGE OF READINGS ABOVE			RANGE OF READINGS ABOVE			32						62			
									33						63			
COMMENTS			OBSERVER'S NAME				OBSERVER'S SIGNATURE				DATE							
			Judy Stevenson				<i>Judy Stevenson</i>				10-3-91							
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			CERTIFIED BY				DATE											
SIGNATURE																		
DATE																		

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Visible Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME				
A/B Bari Plant			10-3-91 RT				3:20pm				3:30pm				
ADDRESS			SEC				SEC								
			MIN	0	15	30	45	MIN	0	15	30	45			
			1	0	0	0	0	31							
CITY <i>Id Falls</i> STATE <i>Id</i> ZIP			2	0	0	0	0	32							
PHONE			SOURCE ID NUMBER				3	0	0	0	0	33			
PROCESS/EQUIPMENT			OPERATING MODE				4	0	0	0	0	34			
CONTROL EQUIPMENT			OPERATING MODE				5	0	0	0	0	35			
DESCRIBE EMISSION POINT							6	0	0	0	0	36			
START <i>100x9</i> STOP <i>100x9</i>							7	0	0	0	0	37			
HEIGHT ABOVE GROUND LEVEL			HEIGHT RELATIVE TO OBSERVER				8	0	0	0	0	38			
START <i>175'</i> STOP <i>175'</i>			START <i>6'</i> STOP <i>6'</i>				9	0	0	0	0	39			
DISTANCE FROM OBSERVER			DIRECTION FROM OBSERVER				10	0	0	0	0	40			
START <i>18'</i> STOP <i>18'</i>			START <i>SW</i> STOP <i>SW</i>				11					41			
DESCRIBE EMISSIONS							12					42			
START <i>fractional</i> STOP <i>fractional</i>							13					43			
EMISSION COLOR			PLUME TYPE CONTINUOUS <input type="checkbox"/>				14					44			
START <i>br</i> STOP <i>br</i>			FUGITIVE <input type="checkbox"/> INTERMITTENT <input type="checkbox"/>				15					45			
WATER DROPLETS PRESENT			IF WATER DROPLET PLUME				16					46			
NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>			ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>				17					47			
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED							18					48			
START <i>4' above stack</i> STOP -							19					49			
DESCRIBE BACKGROUND							20					50			
START <i>sky</i> STOP -			SKY CONDITIONS				21					51			
BACKGROUND COLOR			START <i>Clear</i> STOP <i>Clear</i>				22					52			
WIND SPEED			WIND DIRECTION				23					53			
START <i>5</i> STOP <i>5</i>			START STOP				24					54			
AMBIENT TEMP			WET BULB TEMP		AM. HUMIDITY		25					55			
START <i>72</i> STOP <i>72</i>			<i>60</i>				26					56			
<p>Source Layout Sketch</p> <p>Draw North Arrow</p>							27					57			
							28					58			
							29					59			
							30					60			
			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE								
			0 % 0 0				0 % 0 0								
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE								
			0 % 0 0				0 % 0 10								
COMMENTS			OBSERVER'S NAME												
			<i>Judy Stevenson</i>												
			OBSERVER'S SIGNATURE								DATE				
			<i>Judy Stevenson</i>								<i>10-3-91</i>				
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			CERTIFIED BY								DATE				
SIGNATURE															

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Visible Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME					
A1/B BARI PLANT			10-3-91 R7				5:20 P				5:30 P					
ADDRESS			SEC				SEC									
			MIN	0	15	30	45	MIN	0	15	30	45				
			1	0	0	0	0	31								
CITY			2				3									
Idaho Falls			0 0 0 0 0				32									
STATE			3				4									
ID			0 0 0 0 0				33									
ZIP			4				5									
			0 0 0 0 0				34									
PHONE			6				7									
			0 0 0 0 0				35									
SOURCE ID NUMBER			6				8									
			0 0 0 0 0				36									
PROCESS EQUIPMENT			6				9									
KILN # 2			0 0 0 0 0				36									
OPERATING MODE			7				10									
drying			0 0 0 0 0				37									
CONTROL EQUIPMENT			8				11									
90% damp			0 0 0 0 0				38									
OPERATING MODE			9				12									
4 fans on			0 0 0 0 0				39									
DESCRIBE EMISSION POINT			10				13									
START 100' x 9' STOP 100' x 9'			0 0 0 0 0				40									
HEIGHT ABOVE GROUND LEVEL			11				14									
START 175' STOP 175'			0 0 0 0 0				41									
HEIGHT RELATIVE TO OBSERVER			12				15									
START 10' STOP 6'			0 0 0 0 0				42									
DISTANCE FROM OBSERVER			13				16									
START 18' STOP 18'			0 0 0 0 0				43									
DIRECTION FROM OBSERVER			14				17									
START SW STOP SW			0 0 0 0 0				44									
DESCRIBE EMISSIONS			15				18									
START fractured STOP Sw			0 0 0 0 0				45									
EMISSION COLOR			16				19									
START Tan STOP Tan			0 0 0 0 0				46									
PLUME TYPE CONTINUOUS <input type="checkbox"/>			17				20									
FUGITIVE <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/>			0 0 0 0 0				47									
WATER DROPLETS PRESENT			18				21									
NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>			0 0 0 0 0				48									
# WATER DROPLET PLUME			19				22									
ATTACHED <input type="checkbox"/> DETACHED <input checked="" type="checkbox"/>			0 0 0 0 0				49									
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED			20				23									
START 4' above stl STOP			0 0 0 0 0				50									
DESCRIBE BACKGROUND			21				24									
START Sky STOP Sky			0 0 0 0 0				51									
BACKGROUND COLOR			22				25									
START Blue STOP Blue			0 0 0 0 0				52									
SKY CONDITIONS			23				26									
START Clear STOP Clear			0 0 0 0 0				53									
WIND SPEED			24				27									
START 10 STOP 10			0 0 0 0 0				54									
WIND DIRECTION			25				28									
START NE STOP NE			0 0 0 0 0				55									
AMBIENT TEMP			26				29									
START 66 STOP 66			0 0 0 0 0				56									
WET BULB TEMP			27				30									
START 54			0 0 0 0 0				57									
AM. WINDSPEED			28				31									
			0 0 0 0 0				58									
SOURCE LAYOUT SKETCH			29				32									
Draw North Arrow			0 0 0 0 0				59									
			30				60									
			31				61									
			32				62									
			33				63									
			34				64									
			35				65									
			36				66									
			37				67									
			38				68									
			39				69									
			40				70									
			41				71									
			42				72									
			43				73									
			44				74									
			45				75									
			46				76									
			47				77									
			48				78									
			49				79									
			50				80									
			51				81									
			52				82									
			53				83									
			54				84									
			55				85									
			56				86									
			57				87									
			58				88									
			59				89									
			60				90									
			61				91									
			62				92									
			63				93									
			64				94									
			65				95									
			66				96									
			67				97									
			68				98									
			69				99									
			70				100									
COMMENTS			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE									
			0 % 0 0				0 % 0 0									
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE									
			0 % 0 0				0 % 0 10 0									
OBSERVER'S NAME			OBSERVER'S SIGNATURE				DATE									
Judy Stevenson			Judy Stevenson				10-3-91									
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			CERTIFIED BY				DATE									
SIGNATURE																

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Visible Emission Observation Form

SOURCE NAME <i>A/A</i>			OBSERVATION DATE <i>10-3-91 Rn</i>				START TIME <i>8:20</i>				STOP TIME <i>8:30</i>			
ADDRESS			SEC				SEC							
			MIN	0	15	30	45	MIN	0	15	30	45		
			1	0	0	0	0	11	-					
CITY <i>Edgell</i> STATE <i>Id</i> ZIP			2	0	0	0	0	12						
PHONE			3	0	0	0	0	13						
SOURCE ID NUMBER			4	0	0	0	0	14						
PROCESS EQUIPMENT <i>#2 Keln</i>			5	0	0	0	0	15						
OPERATING MODE <i>during</i>			6	0	0	0	0	16						
CONTROL EQUIPMENT <i>90% damp 4 fans</i>			7	0	0	0	0	17						
OPERATING MODE			8	0	0	0	0	18						
OPERATING MODE			9	0	0	0	0	19						
DESCRIBE EMISSION POINT START <i>100'x9'</i> STOP <i>100'x9'</i>			10	0	0	0	0	20						
HEIGHT ABOVE GROUND LEVEL START <i>175'</i> STOP <i>175'</i>			11					21						
HEIGHT RELATIVE TO OBSERVER START <i>10'</i> STOP <i>10'</i>			12					22						
DISTANCE FROM OBSERVER START <i>18'</i> STOP <i>18'</i>			13					23						
DIRECTION FROM OBSERVER START <i>SW</i> STOP <i>SW</i>			14					24						
DESCRIBE EMISSIONS START <i>fractional</i> STOP <i>fractional</i>			15					25						
EMISSION COLOR START <i>tan</i> STOP <i>tan</i>			16					26						
PLUME TYPE CONTINUOUS <input type="checkbox"/>			17					27						
FUGITIVE <input type="checkbox"/> INTERMITTENT <input type="checkbox"/>			18					28						
WATER DROPLETS PRESENT NO <input type="checkbox"/> YES <input type="checkbox"/>			19					29						
IF WATER DROPLET PLUME ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>			20					30						
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START <i>1/2 way</i> STOP <i>1/2 way</i>			21					31						
DESCRIBE BACKGROUND START <i>tan</i> STOP <i>tan</i>			22					32						
BACKGROUND COLOR			23					33						
SKY CONDITIONS START <i>tan</i> STOP <i>tan</i>			24					34						
WIND SPEED START <i>10</i> STOP <i>10</i>			25					35						
WIND DIRECTION START <i>N</i> STOP <i>N</i>			26					36						
AMBIENT TEMP START <i>100</i> STOP <i>100</i>			27					37						
WET BULB TEMP <i>52</i>			28					38						
RH. <i>50%</i>			29					39						
<p style="text-align: center;">Source Layout Sketch Draw North Arrow</p>			30					40						
			31					41						
			32					42						
			33					43						
			34					44						
			35					45						
			36					46						
			37					47						
			38					48						
			39					49						
			40					50						
			41					51						
			42					52						
			43					53						
			44					54						
			45					55						
			46					56						
			47					57						
			48					58						
			49					59						
			50					60						
			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE							
			0 % was 0				0 % was 0							
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE							
			.) % was 0				0 % was 0 100							
COMMENTS			OBSERVER'S NAME <i>Judy Peters Stevenson</i>											
			OBSERVER'S SIGNATURE <i>Judy Peters Stevenson</i>								DATE <i>10-3-91</i>			
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			CERTIFIED BY				DATE							
SIGNATURE														

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Visible Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME					
Busch			10-3-91 27				11:30 P				11:30 A					
ADDRESS			SEC				SEC				SEC					
			MIN	0	15	30	45	MIN	0	15	30	45				
			1	5	5	5	5	31								
CITY			2	5	5	5	5	32								
Ed Falls			3	10	5	5	5	33								
STATE			4	5	5	5	5	34								
Ed			5	5	5	10	5	35								
ZIP			6	5	5	5	5	36								
PHONE			7	10	5	5	5	37								
SOURCE ID NUMBER			8	5	5	5	5	38								
PROCESS EQUIPMENT			OPERATING MODE													
#2 Keln			drying													
CONTROL EQUIPMENT			OPERATING MODE													
90% damper			4 fans													
DESCRIBE EMISSION POINT																
START 100' x 9'			STOP 100' x 9'													
HEIGHT ABOVE GROUND LEVEL			HEIGHT RELATIVE TO OBSERVER													
START 175' STOP 175'			START 6' STOP 6'													
DISTANCE FROM OBSERVER			DIRECTION FROM OBSERVER													
START 18' STOP 18'			START SW STOP SW													
DESCRIBE EMISSIONS																
START Sporadic			STOP Sporadic													
EMISSION COLOR			PLUME TYPE CONTINUOUS <input type="checkbox"/>													
START tan			STOP tan													
WATER DROPLETS PRESENT			IF WATER DROPLET PLUME													
NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>			ATTACHED <input type="checkbox"/> DETACHED <input checked="" type="checkbox"/>													
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED																
START 4" above stack			STOP 4" above stack													
DESCRIBE BACKGROUND																
START Sun			STOP sky													
BACKGROUND COLOR			SKY CONDITIONS'													
START dark			STOP dark													
WIND SPEED			WIND DIRECTION													
START 10			STOP 10													
AMBIENT TEMP			WET BULB TEMP													
START 42			STOP 42													
			37													
<div style="text-align: center;"> <p>Source Level Station Draw North Arrow</p> <p>Sun Wind → Plume and → Stack</p> <p>Observer's Position</p> <p>100°</p> <p>Sun Location Line</p> </div>																
			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE									
			0 % <u>40</u>				0 % <u>10</u>									
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE									
			0 % <u>100%</u>				0 % <u>5 to 10</u>									
COMMENTS (area about 8" dia) em. was coming out when #8			OBSERVER'S NAME													
portal was not all way across			Judy Peters Stevenson													
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			OBSERVER'S SIGNATURE													
SIGNATURE			Judy Peters Stevenson													
DATE			DATE													
			10-3-91													
SIGNATURE			DATE													
DATE			DATE													

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Visible Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME			
A/B			10-4-91 R7				2:20A				2:30A			
ADDRESS			SEC				SEC							
			MIN	0	15	30	45	MIN	0	15	30	45		
			1	0	0	0	0	31						
			2	0	0	0	0	32						
			3	0	0	0	0	33						
			4	0	0	0	5	34						
			5	0	0	0	0	35						
			6	0	0	0	0	36						
			7	0	0	0	0	37						
			8	0	0	0	0	38						
			9	0	0	0	0	39						
			10	0	0	0	0	40						
			11					41						
			12					42						
			13					43						
			14					44						
			15					45						
			16					46						
			17					47						
			18					48						
			19					49						
			20					50						
			21					51						
			22					52						
			23					53						
			24					54						
			25					55						
			26					56						
			27					57						
			28					58						
			29					59						
			30					60						
			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE							
			0 % 0 0 0				0 % 0 0							
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE							
			0 % 0 0				0 % 0 10 0							
COMMENTS			OBSERVER'S NAME											
			Judy Peters Stevenson											
			OBSERVER'S SIGNATURE							DATE				
			Judy Peters Stevenson							10-4-91				
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SIGNATURE														

Source Laying Station

Draw North Arrow

Sun → West
Plume and Sun Laying Line

Observer Position

Emission Point

100°

Sun Laying Line

24

25

26

27

28

29

30

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Visible Emission Observation Form

SOURCE NAME			OBSERVATION DATE				START TIME		STOP TIME				
- Reuser Block			10-4-91 R-7				5:20 A		5:30 A				
ADDRESS			SEC				SEC						
			MIN	0	15	30	45	MIN	0	15	30	45	
			1	0	0	0	0	31					
CITY													
Idaho Falls			STATE ID				ZIP						
PHONE			SOURCE ID NUMBER										
PROCESS EQUIPMENT			OPERATING MODE										
Kiln #2			Transfer										
CONTROL EQUIPMENT			OPERATING MODE										
			Fans off										
DESCRIBE EMISSION POINT													
START			STOP										
HEIGHT ABOVE GROUND LEVEL			HEIGHT RELATIVE TO OBSERVER										
START 175' STOP 175'			START Level STOP level										
DISTANCE FROM OBSERVER			DIRECTION FROM OBSERVER										
START 15' STOP 15'			START SW STOP SW										
DESCRIBE EMISSIONS													
START None			STOP none										
EMISSION COLOR			PLUME TYPE CONTINUOUS <input type="checkbox"/>										
START Tan STOP Tan			FUGITIVE <input type="checkbox"/> INTERMITTENT <input type="checkbox"/>										
WATER DROPLETS PRESENT			IF WATER DROPLET PLUME										
NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>			ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>										
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED													
START 1" from exit STOP 1" from exit													
DESCRIBE BACKGROUND													
START Sky			STOP Sky										
BACKGROUND COLOR			SKY CONDITIONS										
START dark STOP dark			START clear STOP clear										
WIND SPEED			WIND DIRECTION										
START 20 STOP 30			START N STOP N										
AMBIENT TEMP			WET BULB TEMP		AM. HUMIDITY								
START 32 STOP 32			30										
<div style="text-align: center;"> </div>													
			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE						
			0 % was 0				0 % was 0						
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE						
			0 % was 0				0 % was 0 to 0						
			COMMENTS			OBSERVER'S NAME							
						Judy Peters Stevenson							
						OBSERVER'S SIGNATURE				DATE			
						Judy Peters Stevenson				10-4-91			
			I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			CERTIFIED BY				DATE			
SIGNATURE													

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Visible Emission Observation Form

SOURCE NAME <i>H/B</i>			OBSERVATION DATE <i>10-4-91</i>				START TIME <i>7:20H</i>				STOP TIME <i>7:30H</i>						
ADDRESS			SEC				SEC				MIN						
			MIN	0	15	30	45	MIN	0	15	30	45	MIN	0	15	30	45
			1	0	0	0	0	31									
CITY <i>Idaho Falls</i>			STATE <i>Id</i>				ZIP										
PHONE			SOURCE ID NUMBER														
PROCESS EQUIPMENT <i>Kiln #2</i>			OPERATING MODE <i>Attending</i>														
CONTROL EQUIPMENT <i>Transfer</i>			OPERATING MODE <i>fans off</i>														
DESCRIBE EMISSION POINT START <i>100'x9' sth</i> STOP <i>100'x9' sth</i>																	
HEIGHT ABOVE GROUND LEVEL START <i>175'</i> STOP <i>175'</i>			HEIGHT RELATIVE TO OBSERVER START STOP														
DISTANCE FROM OBSERVER START STOP			DIRECTION FROM OBSERVER START STOP														
DESCRIBE EMISSIONS START <i>light</i> STOP																	
EMISSION COLOR START <i>tan</i> STOP <i>tan</i>			PLUME TYPE CONTINUOUS <input type="checkbox"/>														
WATER DROPLETS PRESENT NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>			FUGITIVE <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/>														
			IF WATER DROPLET PLUME ATTACHED <input type="checkbox"/> DETACHED <input checked="" type="checkbox"/>														
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START <i>4' from sth</i> STOP <i>5m</i>																	
DESCRIBE BACKGROUND START <i>sky</i> STOP <i>sky</i>																	
BACKGROUND COLOR START <i>gray</i> STOP <i>gray</i>			SKY CONDITIONS START <i>hazy</i> STOP <i>hazy</i>														
WIND SPEED START <i>10</i> STOP <i>10</i>			WIND DIRECTION START <i>N</i> STOP <i>N</i>														
AMBIENT TEMP START <i>32</i> STOP <i>32</i>			WET BULB TEMP <i>32</i>				RH. percent										
SOURCE LAYOUT SKETCH Draw North Arrow																	
			NUMBER OF READINGS ABOVE				NUMBER OF MINUTES ABOVE										
			AVERAGE OF READINGS ABOVE				RANGE OF READINGS ABOVE										
COMMENTS			OBSERVER'S NAME <i>Judy Stevenson</i>				OBSERVER'S SIGNATURE <i>Judy Stevenson</i>				DATE <i>10-4-91</i>						
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EMISSION TEST REPORT REVIEW SUMMARY

Source Category: Grain Elevators and Processes

Filename: TRBARI-1.xls

Ref. No.:

Date: 13-Jun-97

Reviewer: Brian L. Watson

Facility: Busch Agricultural Resources, Inc.

Location: Idaho Falls Malt Plant

Source: Dust Collector 100(Barley Unloading)

Test date: 01-Oct-91

Emission Data/Mass Flux Rates/Emission Factors

Test ID	Parameter	Units	Values reported			
			Run 1	Run 2	Run 3	AVERAGE
	Stack temperature	Deg F				
	Pressure	in. Hg				
	Moisture	%	0.0102	0.0054	0.0058	0.0071
	Oxygen	%				
	Gas volume sampled	dscf	87.01	86.48	86.01	86.50
	Vol. flow, actual	acfm				
	Vol. flow, standard*	dscfm	39,177	38,911	38,009	38,699
	Isokinetic variation	%	93.4	93.5	96.7	94.5
	Process rate (average)	1,000 bu/hr	7.085	7.085	7.085	7.085
Indicate basis for process rate (production):						
Pollutant mass:						
	Filterable PM	grams	0.0266	0.0236	0.1014	5.05E-02
Pollutant concentrations:						
	Filterable PM	gr/dscf	0.0047	0.0042	0.0182	0.0090
Pollutant mass flux rates:						
	Filterable PM	lb/hr	1.58E+00	1.40E+00	5.93E+00	2.97E+00
Emission factors (lb/1000bu):						
	Filterable PM	lb/1000 bu	2.24E-01	1.98E-01	8.36E-01	4.19E-01

*DSCFM BASED ON A STANDARD TEMPERATURE OF 68 DEGREES FAHRENHEIT

EMISSION TEST REPORT REVIEW SUMMARY

Source Category: Grain Elevators and Processes

Filename: TBARI200.xls

Facility: Busch Agricultural Resources, Inc.

Ref. No.:

Location: Idaho Falls Malt Plant

Date: 13-Jun-97

Source: Dust Collector 200 (Barley Unloading)

Reviewer: Brian L. Watson

Test date: 02-Oct-91

Emission Data/Mass Flux Rates/Emission Factors

Test ID	Parameter	Units	Values reported			
			Run 1	Run 2	Run 3	AVERAGE
	Stack temperature	Deg F				
	Pressure	in. Hg				
	Moisture	%	0.0048	0.0051	0.0038	0.0046
	Oxygen	%				
	Gas volume sampled	dscf	65.66	71.89	73.03	70.19
	Vol. flow, actual	acfm				
	Vol. flow, standard*	dscfm	27,135	29,419	29,401	28,652
	Isokinetic variation	%	96.2	95.5	98.6	96.8
	Process rate (avg)	1,000 bu/hr	5.777	5.777	5.777	5.777
Indicate basis for process rate (production):						
	Pollutant mass:					
	Filterable PM	grams	0.0376	0.0132	0.0167	2.25E-02
	Pollutant concentrations:					
	Filterable PM	gr/dscf	0.0088	0.0028	0.0035	AVERAGE 0.0051
	Pollutant mass flux rates:					
	Filterable PM	lb/hr	2.06E+00	7.14E-01	8.89E-01	AVERAGE 1.22E+00
	Emission factors (lb/1000bu):					
	Filterable PM	lb/1000 bu	3.56E-01	1.24E-01	1.54E-01	AVERAGE 2.11E-01

*DSCFM BASED ON A STANDARD TEMPERATURE OF 68 DEGREES FAHRENHEIT

EMISSION TEST REPORT REVIEW SUMMARY

Source Category:

Filename: TRBARI#2.xls
 Ref. No.:
 Date: 13-Jun-97
 Reviewer: Brian L. Watson

Facility: Busch Agricultural Resources, Inc.
 Location: Idaho Falls Malt Plant
 Source: Kiln #2 Exhaust
 Test date: October 3-6, 1991

Emission Data/Mass Flux Rates/Emission Factors

Test ID	Parameter	Units	Values reported			
			Run 1	Run 2	Run 3	AVERAGE
	Stack temperature	Deg F				
	Pressure	in. Hg				
	Moisture	%	0.2200	0.0198	0.0152	0.0850
	Oxygen	%				
	Gas volume sampled	dscf	647.92	383.24	335.46	455.54
	Vol. flow, actual	acfm				
	Vol. flow, standard*	dscfm	600,413	377,626	303,716	427,252
	Isokinetic variation	%	94.7	88.4	105.8	96.3
	Process rate (avg)	1,000 bu/hr	0.39	0.39	0.39	0.39
Indicate basis for process rate (production):						
Pollutant mass:						
	Filterable PM	grams	0.0158	0.0066	0.0828	0.0351
Pollutant concentrations:						
	Filterable PM	gr/dscf	0.0004	0.0003	0.0038	0.0015
Pollutant mass flux rates:						
	Filterable PM	lb/hr	1.94E+00	8.60E-01	9.91E+00	4.24E+00
Emission factors (lb/1000bu):						
	Filterable PM	lb/1000 bu	4.94E+00	2.20E+00	2.53E+01	1.08E+01

*DSCFM BASED ON A STANDARD TEMPERATURE OF 68 DEGREES FAHRENHEIT