Section 3B

Production Data

SECTION 3B. PRODUCTION DATA - BOILER HOUSE

NO.	Source	MATERIAL	UNITS	Max Hr	Avg Hr	Annual
S-B1	Foster Wheeler BOILER	Steam - Beet	1000 lbs	200.0	200.0	960000
		Coal - Beet	Tons	11.6	11.6	55776
		Steam - Juice	1000 lbs	200.0	200.0	792000
		Coal - Juice	Tons	11.6	11.6	46015
S-B2	B & W BOILER	Steam (Coal)-Beet	1000 lbs	200.0	200.0	940800
		Coal (1)-Beet	Tons	13.4	13.4	62916
		Natural Gas (1)-Beet	MMcf	0.27	0.27	26
		Steam (Coal)-Juice	1000 lbs	200.0	200.0	777600
		Coal (1)-Juice	Tons	13.4	13.4	52002
		Natural Gas (1)-Juice	MMcf	0.27	0.27	19
S-B3	Keeler BOILER	Steam (Natural Gas)-Beet	1000 lbs	80	80	384000
		Natural Gas (1)-Beet	MMcf	0.10	0.10	480
		Steam (Natural Gas)-Juice	1000 lbs	80	80	316800
		Natural Gas (1)-Juice	MMcf	0.10	0.10	396

(1) Production data provided is for individual fuels only.

(2) Amalgamated reserves the right to operate these boilers in any combination.

(3) For the juice run, emissions have been assumed to be generated by both FW and B&W Boilers.

(4) Production based on 200 day Beet Run and 165 day Juice/Separator Run.

Production Summary - Pulp Dryers
2005 Tier I Permit Renewal (revised 4/20/07)

SECTION 3B. PRODUCTION DATA - PULP DRYING AND PELLETIZING

NO.	SOURCE	MATERIAL	UNITS	Max Hrly	Avg Hrly	ANNUAL
S-D1	PULP DRYER	Total Input (1)	Tons	70.0	70.0	613200
		Coal (2)	Tons	4.8	4.8	41515
		Natural Gas (2)	MMcf	0.020	0.020	2
S-D2	PELLET COOLER NO. 1	Pellets	Tons	8.3	8.3	41832
S-D3	PELLET COOLER NO. 2	Pellets	Tons	8.3	8.3	41832
S-D4	PULP DRYER MATERIAL HANDLING	Shreds/Pellets	Tons	(5)	(5)	83664

(1) Total input includes press pulp, coal, and additives.
(2) Production data assumes that coal and natural gas are used to dry pulp.
(3) S-D4 Hourly production data estimated using annual production divided by hours of operation.
(4) S-D2 and S-D3 Average Hourly production is estimated using the Maximum due to significant hourly variabilit
(5) Hourly value cannot be determined because of significant hourly variability.

SECTION 3B. PRODUCTION DATA - LIME KILN AND CO2 PRODUCTION

NO.	SOURCE	MATERIAL	UNITS	MAX HR.	MAX DAILY	ANNUAL (1)
S-K1	SOUTH KILN	Lime Rock	Tons	(2)	102.0	37,230
		Coke	Tons	(2)	9.2	3,358
S-K2	NORTH KILN	Lime Rock	Tons	(2)	238.0	86,870
		Coke	Tons	(2)	21.0	7,665
S-K4	PROCESS SLAKER	CaO	Tons	(2)	190.0	69,350
S-K5	MATERIAL HANDLING/CRUSHING	Lime Rock & Coke	Tons	(2)	370.0	135,050

(1) Annual production rates are based on 365 days of operation.
(2) Hourly production data cannot be determined because this is a batch process with significant hourly variability.

PRODUCTION SUMMARY - SUGAR WAREHOUSE AND HANDLING
2005 TIER I PERMIT RENEWAL (REVISED 4/20/07)

SECTION 3B. PRODUCTION DATA - SUGAR WAREHOUSE AND HANDLING

NO.	SOURCE	MATERIAL	UNITS	Max hrly	Hourly	ANNUAL
S-W1	DRYING GRANULATOR	Sugar	Tons	45.8	45.8	401,208
S-W2	COOLING GRANULATOR	Sugar	Tons	45.8	45.8	401,208

NOTE: PRODUCTIO VALUES BASED ON 365 DAYS OF OPERATION

SECTION 3B. PRODUCTION DATA - OTHER SOURCES

NO.	SOURCE	MATERIAL	UNITS	Max Hrly	Avg Hrly	ANNUAL
S-O5	MAIN MILL	Thin Juice	1000 gal	105	105	919,800
S-O6	SULFUR STOVE (2)	Sulfur	Tons	0.028	0.028	245

Note: ANNUAL PRODUCTION BASED ON 365 DAYS OF OPERATION.

SECTION 3C

Emission Factors

SECTION 3C. EMISSION FACTORS - OTHER SOURCES

NO.		POLLUTANT	EFF	UNIT	EMISSION FACTOR (1) LB/UNIT	REFERENCE
S-O5	MAIN MILL	VOC		1000 gal	0.277	Non validated test method - 2005 Beet Campaign
S-O6	SULFUR STOVE	SO2		Ton	91.60	Uncertified Stack Test

SECTION 3D

Emissions

SECTION 3D. EMISSIONS - OTHER SOURCES

NO.		POLLUTANT	lbs/h	tons/y
S-O5	MAIN MILL	VOC	29.1	127.4
S-O6	SULFUR STOVE	SO2	2.6	11.2

SECTION 3E

Hazardous Air Pollutants

Section 3E
Hazardous Air Pollutants
(40 CFR Part 63)

Hazardous Air Pollutants (HAP's) emissions were estimated in order to document whether or not the facility was a major source of HAP's as defined in 40 CFR Part 63.2. The definition lists major source as a facility that emits or has the potential to emit in aggregate, 10 tons of any single HAP, or 25 tons or more of any combination of HAP's. As required, HAP's emissions were estimated based on "Worst Case Conditions[1]".

The following spreadsheets provide documentation for the estimated HAP's emissions. Limited information exists that allow accurate HAP emission estimates from industrial or non-industrial emissions sources. There has been no source specific verification of EPA approved stack-testing methods for measuring HAP's from sugar beet manufacturing processes. EPA AP-42 emissions factors for HAP's from boilers and sugar beet processes are lacking and, where available, are generally considered poor quality by EPA. HAP removal efficiencies for emission control equipment, such as baghouses and scrubbers are also lacking. Engineering source tests and analytical data used for estimating TASCO's emissions are sparse and represent data from limited operating time. All of these limitations need to be considered.

HAP's emissions are provided based on the potential to emit (PTE) and actual emissions estimates for the 2005 beet campaign. Based on the potential to emit, the highest single HAP is 82.5 tons/y and the sum total of all HAP's is 127.5 tons. For the 2005 beet campaign, the estimated HAP's were 27.1 tons per year for a single constituent and 49.2 tons per year in aggregate.

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1 Worst Case Condition is defined as: if a source had the potential to utilize more than one fuel, the fuel with the highest potential for emissions was utilized for the evaluation, i.e., if the source was able to utilize both coal and natural gas, the assumption was made that the source was being fired with coal only.

Based upon the HAP evaluation, the Amalgamated Sugar Company LLC, Twin Falls Facility is a major source of Hazardous Air Pollutants as defined in 40 CFR Part 63 (see May 2, 2007 Correspondence from Gary Pool to Martin Bauer and Jeff KenKnight in Appendix K) and is subject to the National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters in 40 CFR Subpart DDDD.

HAP PTE Emissions Estimates
Twin Falls Facility

Individual Emissions

Hazardous Air Pollutant (HAP)	Foster Wheeler Boiler Coal (tons / year)	B & W Boiler Coal (tons / year)	B & W Boiler Nat. Gas (tons / year)	Keeler Nat. Gas (tons / year)	Dryer Coal (tons / year)	Dryer Nat Gas (tons / year)	Kilns (tons / year)	Main Mill (tons / year)	Constituent Totals (tons / year)
Acetaldehyde	0.030	0.04	-	-	5.89	-	0.0E+00	4.17	10.13
Acrolein	0.015	0.02	-	-	2.85	-	0.0E+00	0.10	2.98
Formaldehyde	0.013	0.01	0.00	0.0343	2.89	0.00	0.0E+00	0.04	2.99
Methanol					3.95			78.55	82.51
Arsenic	0.022	0.03	0.00	0.0001	0.01	2.19E-06	2.3E-03		0.06
Benzene	0.069	0.08	0.00	0.0010	0.03	2.30E-05	0.0E+00		0.18
Beryllium	0.001	0.00	0.00	0.0000	0.00	1.31E-07	1.2E-04		0.00
Cadmium	0.003	0.00	0.00	0.0005	0.00	1.20E-05	7.5E-02		0.08
Chromium	0.014	0.02	0.00	0.0006	0.01	1.53E-05	1.4E-03		0.04
Cyanide	0.132	0.16	-	-	0.05	-	1.4E-02		0.35
Hydrochloric Acid	16.65	2.75	-	-	0.11	-	0.0E+00		19.51
Hydrogen Fluoride	2.44	4.37	-	-	0.13	-	0.0E+00		6.94
Lead	0.022	0.03	0.00	0.0002	0.01	5.48E-06	2.3E-03		0.06
Manganese	0.026	0.03	0.00	0.0002	0.01	4.16E-06	2.7E-03		0.07
Mercury	0.0004	0.002	0.00	0.0001	0.000	2.85E-06	2.2E-03		0.0053
Nickel	0.015	0.02	0.00	0.0010	0.006	2.30E-05	1.5E-03		0.04
Selenium	0.069	0.08	0.00	0.0000	0.027	2.63E-07	7.2E-03		0.18
Toluene	0.013	0.01	0.00	0.0016	0.005	3.72E-05	0.0E+00		0.03
Xylenes	0.002	0.00	-	-	0.001	-			0.01
PAH and other HAPs	0.199	0.23	0.00	0.8246	0.08	1.97E-02	0.0E+00		1.35
								Grand Total	**127.51**

1. PAH and Other HAP emission factors are listed in the Fuel E_Factors sheet and include the following

2,4-Dinitrotoluene, 2-Chloroacetophenone, Acetophenone, Antimony Compounds, Benzyl chloride, Bis(2-ethylhexyl)phthalate (DEHP), Bromoform, Carbon disulfide, Chlorobenzene, Chloroform, Cobalt Compounds, Cumene, Dimethyl sulfate, Ethyl benzene, Ethyl chloride (Chloroethane), Ethylene dibromide (Dibromoethane), Ethylene dichloride (1,2-Dichloroethane), Hexane, Isophorone, Methyl bromide (Bromomethane), Methyl chloride (Chloromethane), Methyl chloroform (1,1,1-Trichloroethane), Methyl hydrazine, Methyl Methacylate, Methyl tert butyl ether, Methylene chloride (Dichloromethane), Phenol, Propionaldehyde, Styrene, Tetrachloroethylene (Perchloroethylene), Vinyl Acetate and PAH Compounds

HAP's Emissions Inventory
PTE Production Rate Assumptions
Twin Falls Facility

Twin Falls facility, Production Input Table

Beet Campaign is =	200	days
Juice & Extract run is =	165	days
Total	365	days

The Foster Wheeler Boiler uses Southern Utah Coal

The B & W Boiler uses P & M Coal

The Dryers use P & M Coal

	Beet Campaign	Juice Campagn	Units
OPERATING CAMPAIGN	200	165	Days
BEETS SLICED (Daily)	7,000		Tons per day
BEETS SLICED (Annually)	1,400,000		Tons per year
FOSTER WHEELER BOILERS (COAL FIRED)	57,919	47,783	Tons per year
B & W BOILERS (COAL FIRED)	68,091	56,175	Tons per year
B & W BOILERS (NATURAL GAS FIRED)	0.00	0.00	MMCF / year
KEELER BOILER (NATURAL GAS FIRED)	501.5	414	MMCF / year
PULP DRYER (COAL INPUT)	41,172		Tons per year
PULP DRYER (NATURAL GAS INPUT)	22		MMCF / year
PULP DRYER (TOTAL INPUT)	613,200		Tons per year
SOUTH KILN (COKE)	3,329		Tons per year
(LIME ROCK)	37,230		Tons per year
NORTH KILN (COKE)	7,709		Tons per year
(LIME ROCK)	86,870		Tons per year
MAIN MILL [1]	919,800		1000 gal / year

Hap emissions with the exception of Main Mill operations, are calculated Using the annual production values based on PTE

[1] Main mill throughput is based on the average hourly slice rate times 24 hours/day times 365 days/year.

HAP Emissions
From the
Twin Falls Facility

Individual Emissions - 2005 Beet Campaign Estimates

Hazardous Air Pollutant (HAP)	Foster Wheeler Boiler Coal (tons / year)	B & W Boiler Coal (tons / year)	B & W Boiler Nat. Gas (tons / year)	Keeler Nat. Gas (tons / year)	Dryer Coal (tons / year)	Dryer Nat Gas (tons / year)	Kilns (tons / year)	Main Mill (tons / year)	Constituent Totals (tons / year)
Acetaldehyde	0.018	0.02	-	-	1.89	-	0.0E+00	1.37	3.30
Acrolein	0.009	0.01	-	-	0.91	-	0.0E+00	0.03	0.96
Formaldehyde	0.008	0.01	0.00	0.0328	0.93	0.00	0.0E+00	0.01	0.99
Methanol					1.27			25.80	27.07
Arsenic	0.013	0.01	0.00	0.0001	0.00	1.03E-06	7.0E-04		0.03
Benzene	0.041	0.04	0.00	0.0009	0.01	1.08E-05	0.0E+00		0.09
Beryllium	0.001	0.00	0.00	0.0000	0.00	6.18E-08	3.6E-05		0.00
Cadmium	0.002	0.00	0.00	0.0005	0.00	5.67E-06	2.9E-02		0.03
Chromium	0.008	0.01	0.00	0.0006	0.00	7.22E-06	4.4E-04		0.02
Cyanide	0.079	0.08	-	-	0.02	-	4.3E-03		0.18
Hydrochloric Acid	9.95	1.44	-	-	0.03	-	0.0E+00		11.42
Hydrogen Fluoride	1.46	2.29	-	-	0.04	-	0.0E+00		3.79
Lead	0.013	0.01	0.00	0.0002	0.00	2.58E-06	7.2E-04		0.03
Manganese	0.015	0.02	0.00	0.0002	0.00	1.96E-06	8.3E-04		0.04
Mercury	0.0002	0.001	0.00	0.0001	0.000	1.34E-06	8.6E-04		0.0025
Nickel	0.009	0.01	0.00	0.0009	0.002	1.08E-05	4.8E-04		0.02
Selenium	0.041	0.04	0.00	0.0000	0.009	1.24E-07	2.2E-03		0.09
Toluene	0.008	0.01	0.00	0.0015	0.002	1.75E-05	0.0E+00		0.02
Xylenes	0.001	0.00	-	-	0.000	-			0.00
PAH and other HAPs	0.119	0.12	0.00	0.7880	0.02	9.29E-03	0.0E+00		1.06
								Grand Total	**49.15**

1. PAH and Other HAP emission factors are listed in the Fuel E_Factors sheet and include the following

2,4-Dinitrotoluene, 2-Chloroacetophenone, Acetophenone, Antimony Compounds, Benzyl chloride, Bis(2-ethylhexyl)phthalate (DEHP), Bromoform, Carbon disulfide, Chlorobenzene, Chloroform, Cobalt Compounds, Cumene, Dimethyl sulfate, Ethyl benzene, Ethyl chloride (Chloroethane), Ethylene dibromide (Dibromoethane), Ethylene dichloride (1,2-Dichloroethane), Hexane, Isophorone, Methyl bromide (Bromomethane), Methyl chloride (Chloromethane), Methyl chloroform (1,1,1-Trichloroethane), Methyl hydrazine, Methyl Methacylate, Methyl tert butyl ether, Methylene chloride (Dichloromethane), Phenol, Propionaldehyde, Styrene, Tetrachloroethylene (Perchloroethylene), Vinyl Acetate and PAH Compounds

HAP's Emissions Inventory
2005 Production Rate Assumptions
Twin Falls Facility

Beet Campaign is =	171.8	days
Juice & Extract run is =	177	days
Total	348.8	days

The Foster Wheeler Boiler uses Southern Utah Coal
The B & W Boiler uses P & M Coal
The Dryers use P & M Coal

	Beet Campaign	Juice Campagn	Units
OPERATING CAMPAIGN	172	177	Days
BEETS SLICED (Daily)	6,442		Tons per day
BEETS SLICED (Annually)	1,106,660		Tons per year
FOSTER WHEELER BOILERS (COAL FIRED)	40,424	22,727	Tons per year
B & W BOILERS (COAL FIRED)	39,583	25,488	Tons per year
B & W BOILERS (NATURAL GAS FIRED)	0.00	0.00	MMCF / year
KEELER BOILER (NATURAL GAS FIRED)	430.8	444	MMCF / year
PULP DRYER (COAL INPUT)	13,194		Tons per year
PULP DRYER (NATURAL GAS INPUT)	10		MMCF / year
PULP DRYER (TOTAL INPUT)	196,677		Tons per year
SOUTH KILN (COKE)	1,003		Tons per year
(LIME ROCK)	13,349		Tons per year
NORTH KILN (COKE)	2,404		Tons per year
(LIME ROCK)	34,360		Tons per year
MAIN MILL [1]	302,118		1000 gal / year

Hap emissions with the exception of Main Mill operations, are calculated Using the annual production values based on PTE

[1] Main mill throughput is based on the annual slice total times 273 gallons/ton beets divided by 1000.

Emission factors
Categorized According to Fuel

Emission Factors for Selected Fuels Used by Amalgamated

Pollutants from Coal Combustion		EMISSION FACTOR		
		UNIT	LB/UNIT	REFERENCE
	Acetaldehyde	ton coal	5.70E-04	See Note (a.)
	Acrolein	ton coal	2.90E-04	See Note (a.)
	Arsenic	ton coal	4.10E-04	See Note (b.)
	Benzene	ton coal	1.30E-03	See Note (a.)
	Beryllium	ton coal	2.10E-05	See Note (b.)
	Cadmium	ton coal	5.10E-05	See Note (b.)
	Chromium	ton coal	2.60E-04	See Note (b.)
	Cyanide	ton coal	2.50E-03	See Note (a.)
	Formaldehyde	ton coal	2.40E-04	See Note (a.)
BW	Hydrochloric Acid from P & M coal through Fabric Filter	ton coal	4.43E-02	See Note (f.)
BW	Hydrogen Fluoride from P & M coal through Fabric Filter	ton coal	7.04E-02	See Note (c.)
FW	Hydrochloric Acid from Genwal coal through Fabric Filter	ton coal	3.15E-01	See Note (f.)
FW	Hydrogen Fluoride from Genwal coal through Fabric Filter	ton coal	4.61E-02	See Note (c.)
	Lead	ton coal	4.20E-04	See Note (b.)
	Manganese	ton coal	4.90E-04	See Note (b.)
	Mercury B&W	ton coal	3.75E-05	See Note (f.)
	Mercury FW	ton coal	6.73E-06	See Note (f.)
	Nickel	ton coal	2.80E-04	See Note (b.)
	PAH (see below)			
	Selenium	ton coal	1.30E-03	See Note (b.)
	Toluene	ton coal	2.40E-04	See Note (a.)
	Xylenes	ton coal	3.70E-05	See Note (a.)

Notes

a. AP-42, 9/98, Table 1.1-14, Emission Factors for Various Organic Compounds from Controlled Coal Combustion

b. AP-42, 9/98, Table 1.1-18, Emission Factors from Trace Metals From Controlled Coal Combustion

c. EF derived from material balance calculations based on USGS Data and/or TASCO's mine specific data and EPA Emissions Modification Factors in EPA's 1998 Report to Congress

d. AP-42, 9/98, Table 1.1-13, Emission Factors from Trace Metals From Controlled Coal Combustion.

e. Mercury in Coke is presumed to volatize off in the process of forming coke from coal. Coke is formed at a temperature range of 1273-1423 K and mercury boils at 624 K.

f. Based on 9/2006 engineering stack test.

Emission factors
Categorized According to Fuel

Other HAPs from Coal Combustion	UNIT	LB/UNIT	REFERENCE
2,4-Dinitrotoluene	ton coal	2.80E-07	See Note (a.)
2-Chloroacetophenone	ton coal	7.00E-06	See Note (a.)
Acetophenone	ton coal	1.50E-05	See Note (a.)
Antimony Compounds	ton coal	1.80E-05	See Note (b.)
Benzyl chloride	ton coal	7.00E-04	See Note (a.)
Bis(2-ethylhexyl)phthalate (DEHP)	ton coal	7.30E-05	See Note (a.)
Bromoform	ton coal	3.90E-05	See Note (a.)
Carbon disulfide	ton coal	1.30E-04	See Note (a.)
Chlorobenzene	ton coal	2.20E-05	See Note (a.)
Chloroform	ton coal	5.90E-05	See Note (a.)
Cobalt Compounds	ton coal	1.00E-04	See Note (b.)
Cumene	ton coal	5.30E-06	See Note (a.)
Dimethyl sulfate	ton coal	4.80E-05	See Note (a.)
Ethyl benzene	ton coal	9.40E-05	See Note (a.)
Ethyl chloride (Chloroethane)	ton coal	4.20E-05	See Note (a.)
Ethylene dibromide (Dibromoethane)	ton coal	1.20E-06	See Note (a.)
Ethylene dichloride (1,2-Dichloroethane)	ton coal	4.00E-05	See Note (a.)
Hexane	ton coal	6.70E-05	See Note (a.)
Isophorone	ton coal	5.80E-04	See Note (a.)
Methyl bromide (Bromomethane)	ton coal	1.60E-04	See Note (a.)
Methyl chloride (Chloromethane)	ton coal	5.30E-04	See Note (a.)
Methyl chloroform (1,1,1-Trichloroethane)	ton coal	2.00E-05	See Note (a.)
Methyl hydrazine	ton coal	1.70E-04	See Note (a.)
Methyl Methacylate	ton coal	2.00E-05	See Note (a.)
Methyl tert butyl ether	ton coal	3.50E-05	See Note (a.)
Methylene chloride (Dichloromethane)	ton coal	2.90E-04	See Note (a.)
Phenol	ton coal	1.60E-05	See Note (a.)
Propionaldehyde	ton coal	3.80E-04	See Note (a.)
Styrene	ton coal	2.50E-05	See Note (a.)
Tetrachloroethylene (Perchloroethylene)	ton coal	4.30E-05	See Note (a.)
Vinyl Acetate	ton coal	7.60E-06	See Note (a.)
	Total	3.74E-03	

Emission factors
Categorized According to Fuel

Polynuclear Aromatic Hydrocarbons From Coal Combustion	UNIT	LB/UNIT	REFERENCE
Biphenyl	ton coal	1.70E-06	See Note (d.)
Acenaphthene	ton coal	5.10E-07	See Note (d.)
Acenaphthylene	ton coal	2.50E-07	See Note (d.)
Anthracene	ton coal	2.10E-07	See Note (d.)
Benzo(a)anthracene	ton coal	8.00E-08	See Note (d.)
Beno(a)pyrene	ton coal	3.80E-08	See Note (d.)
Benzo(b,j,k)fluoranthene	ton coal	1.10E-07	See Note (d.)
Benzo(g,h,I)perylene	ton coal	2.70E-08	See Note (d.)
Chrysene	ton coal	1.00E-07	See Note (d.)
Fluoranthene	ton coal	7.10E-07	See Note (d.)
Fluorene	ton coal	9.10E-07	See Note (d.)
Indeno(1,2,3-cd)pyrene	ton coal	6.10E-08	See Note (d.)
Naphthalene	ton coal	1.30E-05	See Note (d.)
Phenanthrene	ton coal	2.70E-06	See Note (d.)
Pyrene	ton coal	3.30E-07	See Note (d.)
5-Methyl chrysene	ton coal	2.20E-08	See Note (d.)
	PAH total	2.08E-05	
Total of all HAPs from Coal Combustion (not including HCl & HF)	lbs / ton	4.88E-01	
To convert Emission Factor from lb/ton coal to lb / 1000 lbs steam,			
For the Foster Wheeler boiler, multiply the above EF by		1.657E+01	ton coal / 1000 lb steam
For the B&W boiler, multiply the above EF by		1.410E+01	ton coal / 1000 lb steam

Emission factors

Categorized According to Fuel

Pollutants from Natural Gas Combustion	UNIT	LB/UNIT	REFERENCE
Arsenic	MMCF	2.00E-04	See Note (g.)
Benzene	MMCF	2.10E-03	See Note (h.)
Beryllium	MMCF	1.20E-05	See Note (g.)
Cadmium	MMCF	1.10E-03	See Note (g.)
Chromium	MMCF	1.40E-03	See Note (g.)
Cobalt	MMCF	8.40E-05	See Note (g.)
Dichlorobenzene	MMCF	1.20E-03	See Note (h.)
Formaldehyde	MMCF	7.50E-02	See Note (h.)
Hexane	MMCF	1.80E+00	See Note (h.)
Lead	MMCF	5.00E-04	See Note (i.)
Manganese	MMCF	3.80E-04	See Note (g.)
Mercury	MMCF	2.60E-04	See Note (g.)
Naphthalene	MMCF	6.10E-04	See Note (h.)
Nickel	MMCF	2.10E-03	See Note (g.)
PAH		See Below	
Selenium	MMCF	2.40E-05	See Note (g.)
Toluene	MMCF	3.40E-03	See Note (h.)

Emission factors
Categorized According to Fuel

Polynuclear Aromatic Hydorcarbons From Natural Gas Combustion	UNIT	LB/UNIT	REFERENCE
2-Methylnaphthalene	MMCF	2.40E-05	See Note (h.)
3-Methylchloranthrene	MMCF	1.80E-06	See Note (h.)
7, 12-Dimethylbenz(a)anthracene	MMCF	1.60E-05	See Note (h.)
Acenaphthene	MMCF	1.80E-06	See Note (h.)
Acenaphthylene	MMCF	1.80E-06	See Note (h.)
Anthracene	MMCF	2.40E-06	See Note (h.)
Benz(a)_anthracene	MMCF	1.80E-06	See Note (h.)
Benzo(a)pyrene	MMCF	1.20E-06	See Note (h.)
Benzo(b)fluoranthene	MMCF	1.80E-06	See Note (h.)
Benzo(g,h,I)perylene	MMCF	1.20E-06	See Note (h.)
Benzo(k)fluoranthene	MMCF	1.80E-06	See Note (h.)
Chrysene	MMCF	1.80E-06	See Note (h.)
Dibenzo(a,h)anthracene	MMCF	1.20E-06	See Note (h.)
Fluoranthene	MMCF	3.00E-06	See Note (h.)
Fluorene	MMCF	2.80E-06	See Note (h.)
Indeno(1,2,3-cd)pyrene	MMCF	1.80E-06	See Note (h.)
Phenanathrene	MMCF	1.70E-05	See Note (h.)
Pyrene	MMCF	5.00E-06	See Note (h.)
	PAH total	8.82E-05	
Total of all HAPs from Natural Gas Combustion	MMCF	1.89E+00	

Notes

g. AP-42, 7/98, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion

h. AP-42, 7/98, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion

i. AP-42, 7/98, Table 1.4-2, Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion

Emission factors
Categorized According to Fuel

Pollutants from Coke Combustion	EMISSION FACTOR		
	UNIT	LB/UNIT	REFERENCE
Acetaldehyde	ton coal	0.00E+00	See Note (m.)
Acrolein	ton coal	0.00E+00	See Note (m.)
Arsenic	ton coal	4.10E-04	See Note (n.)
Benzene	ton coal	0.00E+00	See Note (m.)
Beryllium	ton coal	2.10E-05	See Note (n.)
Cadmium	ton coal	5.10E-05	See Note (n.)
Chromium	ton coal	2.60E-04	See Note (n.)
Cyanide	ton coal	2.50E-03	See Note (n.)
Formaldehyde	ton coal	0.00E+00	See Note (m.)
Hydrochloric Acid	ton coal	0.00E+00	See Note (m.)
Hydrogen Fluoride	ton coal	0.00E+00	See Note (m.)
Lead	ton coal	4.20E-04	See Note (n.)
Manganese	ton coal	4.90E-04	See Note (n.)
Mercury	ton coal	0.00E+00	See Note (e.)
Nickel	ton coal	2.80E-04	See Note (n.)
PAH	ton coal	0.00E+00	See Note (m.)
Selenium	ton coal	1.30E-03	See Note (n.)
Toluene	ton coal	0.00E+00	See Note (m.)
Xylenes	ton coal	0.00E+00	See Note (m.)
Other HAPS	ton coal	0.00E+00	See Note (m.)
All Haps from Coke Fired Kiln Operations	ton coal	5.73E-03	

Notes

m. No VOC Emissions are identified in AP-42.

n. Metal HAPs are estimated based on AP 42 for bituminous coal.

Emission factors
Categorized According to Fuel

Pollutants from Lime Rock	EMISSION FACTOR		
	UNIT	LB/UNIT	REFERENCE
Cadmium	ton lime rock	1.20E-03	See Note (o.)
Mercury	ton lime rock	3.62E-05	See Note (p.)

Notes

o. EF based on material balance calculations using analytical results of Ash Grove Cement Company Sweet Rock samples collected on 10/18/06

p. EF based on material balance calculations using analytical results of Ash Grove Cement Company Sweet Rock samples collected on 10/18/07 and Precipitated Calcium Carbonate analysis performed by Stukenholtz Laboratory, Inc

Total Dryer Input

POLLUTANT	UNIT	LB/UNIT	REFERENCE
Acetaldehyde	Tons Input	1.92E-02	See Note (j.)
Acrolein	Tons Input	9.30E-03	See Note (j.)
Formaldehyde	Tons Input	9.42E-03	See Note (j.)
Hydrogen Chloride from P & M coal through Scrubber System	Tons Coal	5.29E-03	See Note (c.)
Hydrogen Fluoride from P & M coal through Scrubber System	Tons Coal	6.34E-03	See Note (c.)
Mercury	Tons Coal	1.40E-05	See Notes (c., l.)
Methanol From Dryer	Tons Input	1.29E-02	Engineering Estimate
Total of all HAPs from Total Dryer Input	MMCF	6.25E-02	

Emission factors
Categorized According to Fuel

Main Mill Emissions

POLLUTANT	UNIT	LB/UNIT	REFERENCE
Acetaldehyde	1000 gallons	9.06E-03	See Note (k.)
Acrolein	1000 gallons	2.10E-04	See Note (j.)
Formaldehyde	1000 gallons	8.28E-05	See Note (k.)
Methanol 1st Carbonation Tank Stack	1000 gallons	6.89E-02	Engineering Estimate
Methanol 2nd Carbonation Tank Stack	1000 gallons	2.87E-02	Engineering Estimate
Methanol Evaporators	1000 gallons	7.33E-02	Engineering Estimate
Main Mill Methanol	1000 gallons	1.71E-01	Engineering Estimate
Total of all HAPs from Main Mill Thin Juice Flow	MMCF	3.51E-01	

Notes

j. Nampa Source Test "Particulate, Aldehyde, and Semi-Volatile Organic Compound (SVOC) Testing Report for the Pulp

k. Twin Falls and Nampa Source Tests (2003)

l. Assumes 80% removal efficiency of particulate and that mercury is particulate bound.

SECTION 3E
Emission Factor Development

Estimated Methanol Emissions Factor
Main Mill Vents

There are no EPA approved and field validated methanol stack testing procedures for main mill vents at sugar beet processing facilities. During the 2005 beet processing campaign, TASCO hired a third party consultant to conduct speciated VOC screening engineering stack tests on selected vents at the Mini-Cassia facility and Twin Falls facility. The 1st and 2nd carbonation tank vents were sampled at the Twin Falls facility in October 2005. The evaporator heater vent was tested in October 2005 and March 2006.

Although emissions data was collected, several noted interferences and inaccuracies with the testing methods were encountered. Testing interferences, which affect the accuracy of the results, include stack gas exhaust gases with high CO_2 concentrations, high moisture, entrained droplets and possible sugar carryover. High moisture levels greatly reduced the sample times and volumes, which limited the ability to collect accurate and representative emissions data. In order to more accurately measure these sources, the interferences would need to be eliminated or alternative-testing procedures would need to be developed.

However, based on analysis of this data and other information TASCO will utilize the preliminary engineering stack testing data at this time to estimate methanol emissions from the main mill vents. A summary of the emissions factors is as follows:

1.71 E-01 lbs/1,000 gals.

or

4.66 E-02 lbs/ton beets

ALDEHYDE
EMISSION FACTORS

The Amalgamated Sugar Company LLC, (TASCO) initially developed Aldehyde Emission factors at the company's Nampa facility. These tests performed in 1992, subsequently became part of the EPA's AP-42 emission factor database. With the introduction of a more efficient gas distribution system and the removal of additional equipment, the initial 1992 aldehyde tests are not representative of the current mode of operations at the TASCO factories.

Several factors combine to suggest that the 1992 testing are not representative for current main mill vents at TASCO's facilities. In 1992, Nampa's B-side Presaturator, B Side 1st Carbonation, B Side 2nd Carbonation and the A Side 2nd Carbonation systems as well as the North and Center Pulp Dryers were evaluated. Subsequent to the 1992 tests, all of TASCO's facilities have improved the air diffusion in the Carbonation systems, eliminated the Presaturator and no longer uses formaldehyde as a biocide.

In order to more accurately identify the aldehydes emitted from TASCO facilities, a series of stack tests were performed at the Twin Falls and Nampa factories. These facilities were identified as prime candidates for the development of a company wide emission factor due to their comparable operational parameters and because they represented the production spectrum (large and small production).

Acetaldehyde and formaldehyde tests were performed on the first and second carbonation systems stacks at the Twin Falls facility in February of 2003 and December of 2003 and at the Nampa facility in December of 2003. These tests consisted of Method 1 thru 4 to determine stack flows and Method 0011 for aldehyde and ketone emissions.

Some of the equipment tested in 1992 is still in place and the emissions were not reevaluated for these units. Instead, the 1992-3 values for the 1st evaporator vent was added to the emissions from the 1st and 2nd carbonation stack emissions to develop a factor for the entire Main Mill processing system. Because there are some differences between factories, the total formaldehyde and acetaldehyde emissions for the factories were evaluated on a facility wide basis and converted to lbs / total thin juice produced. This was then averaged over the three tests to arrive at a company wide emissions factor.

Tables 1 thru 4 below summarize the 2003 main mill testing results.

Twin Falls February 2003.

Table 1. Emissions From Main Mill Vents

Source	Acetaldehyde lb / hr	Formaldehyde lb / hr	Process Flow rate	Emissions rates lbs / k-gal	
			Thin juice flow k-gal / hr	Acet.	Form.
1st Carbonation Rx Tank	0.086	0.0028	90.04	9.51E-04	3.15E-05
2nd Carbonation Rx Tank	0.187	0.0065	64.99	2.87E-03	1.01E-04
1st Evaporator Vent	7.93E-03	9.59E-05	74.0	1.07E-04	1.30E-06
Total emissions				3.93E-03	1.33E-04

Twin Falls December 2003.

Table 2 Emissions From Main Mill Vents

Source	Acetaldehyde lb / hr	Formaldehyde lb / hr	Process Flow rate	Emissions rates lbs / k-gal	
			Thin juice flow k-gal / hr	Acet.	Form.
1st Carbonation Rx Tank	0.506	0.0053	88.44	5.72E-03	5.94E-05
2nd Carbonation Rx Tank	1.003	0.0020	89.84	1.12E-02	2.27E-05
1st Evaporator Vent	7.93E-03	9.59E-05	74.0	1.07E-04	1.30E-06
Total emissions				1.70E-02	8.34E-05

Nampa December 2003.

Table 3 Emissions From Main Mill Vents

Source	Acetaldehyde lb / hr	Formaldehyde lb / hr	Process Flow rate	Emissions rates lbs / k-gal	
			Thin juice flow k-gal / hr	Acet.	Form.
1st Carbonation Rx Tank	0.535	0.0034	140	3.82E-3	2.43E-5
A-Side 2nd Carbonation Rx Tank	0.127	0.0006	141	9.01E-4	4.26E-6
B-Side 2nd Carbonation Rx Tank	0.197	0.0003	142	1.39E-3	2.11E-6
A-Side 1st Evaporator Vent	7.93E-03	9.59E-05	74.0	1.07E-4	1.30E-6
B-side 1st Evaporator Vent	1.73E-03	7.63E-06	73.4	2.36E-5	1.04E-7
Total emissions				6.24E-3	3.21E-5

Table 4 Summary of Aldehyde Emission Factors

Tests	Acetaldehyde	Formaldehyde	Units
Twin Falls - Feb 2003	3.93E-03	1.33E-04	lbs / k-gal
Twin Falls - Dec 2003	1.70E-02	8.34E-05	lbs / k-gal
Nampa - Dec 2003	6.24E-03	3.21E-05	lbs / k-gal
Average	9.06E-3	8.28 E-5	lbs / k-gal

Stack tests were not performed on the dryers because there were no significant changes in the operational methods or equipment. In this case, the HAP evaluations utilize the results of the 1992 tests to estimate the emissions from the Pulp Dryers.

Table 5 Emission Factors for Pulp Dryers

1992 study	Acetaldehyde lb / hr	Formaldehyde lb / hr	Process Flow rate Pulp through-put Tons / hr	Emissions rates Acet. lbs / ton	Form. lbs / ton
North Pulp Dryer	7.560 E-02	2.443 E-01	23.90	3.163 E-03	1.022 E-03
North Pulp Dryer	3.543 E-01	2.488 E-01	16.17	2.110 E-02	1.553 E-02
Center Pulp (2 Stacks)	1.374	4.991 E-01	42.03	3.241 E-02	1.171 E-02
				1.922 E-02	**9.423 E-03**

a. Acetaldehyde and Formaldehyde emissions and pulp throughput values are taken from the study "Particulate, Aldehyde, and Semi-Volatile Organic Compound (SVOC) Testing Report for the Pulp Dryer Stacks, 1st and 2nd Carbonation Tank Vents, and the Evaporator Heater Vents. Appendix A" submitted to IDEQ on May 14, 1993.

Summary

Main Mill Acetaldehyde Emission Factors

The average emission through the Main Mill Vents resulted in an acetaldehyde emission factor of: **9.06E-3 lbs / 1000 gallons Thin Juice**

Main Mill Formaldehyde Emission Factors

The average emission through the Main Mill Vents resulted in an formaldehyde emission factor of: **8.28 E-5 lbs / 1000 gallons Thin Juice**

Pulp Dryer Acetaldehyde Emission Factors

The average emissions through the pulp dryers resulted in an acetaldehyde emissions factor of: **1.922 E-02 lbs per ton total throughput.**

Pulp Dryer Formaldehyde Emission Factors

The average emissions through the pulp dryers resulted in a formaldehyde emissions factor of; **9.423 E-03 lbs per ton total throughput.**

Hydrogen Chloride and Hydrogen Fluoride
Mass Balance Emission Factors

Engineering source tests were not available for the estimation of HF emissions from the boilers. Additionally, stack tests for HCl or HF have not been performed on the pulp dryers. As a result, a material balance approach for these units is the most reasonable approach.

Emissions factors for HCl and HF were calculated based on emission modification factors (EMF) taken from the EPA's "*Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generation Units – Final Report to Congress Volume 1 and Volume 2*" dated February 1998. The comparison of the Amalgamated Sugar Companies steam generating boilers with those of the Electric Utility is appropriate because the industrial boilers at the Amalgamated Sugar Company facilities have very similar firing systems as the electric utility boilers.

The Congressional Report analyzes the emissions from 52 utility units (boilers) that utilize different fuels from coal to natural gas to oil. Of the units tested that use coal, about 1% were of the Stoker Fired type with the vast majority being pulverized coal units (wall fired (48.8%), tangential fired (41.2%) or cyclone fired (8.5%)). Pulverized coal systems provide a more complete conversion of chloride to HCl and fluoride to HF than spreader-stoker systems. As a result, these factors likely overestimate emissions from stoker systems.

The EPA utilized the United States Geological Survey (USGS) COALQUAL database to estimate the concentration of chloride and fluoride in the coal used in the boiler and stack gas emission modification factor (EMF) development. The boilers tested that discharged to fabric filters, utilized a combination of bituminous and subbituminous coal and the furnace configuration was a dry bottom boiler. Units that utilized Flue Gas Desulfurization (FGD) also were dry bottom units but the coal type included Lignite coals as well as bituminous and subbituminous coals

The report documents that a portion of the chlorine found in coal is released to the environment as HCl in its gaseous state. On page D-12 of Appendix D of Volume 2 of the Congressional Report, the EPA documents that "for each lb/hr of chloride in the feed coal at one of the test sites, 0.63 lbs of HCl was found in the gas stream leaving the boiler. Similarly for HF, the boiler emissions were 0.64 lb/hr for each lb/hr of fluoride in the coal." The report also states in section 3.4.7 of Volume I "the method used with HCl and HF emissions allowed direct conversion from coal chlorine or fluorine content into boiler emissions, (as described on page D-12) that could be further modified for systems with PM control or SO_2 control." Although the mechanism for acid gas reduction is not discussed, the report documents on page C-9 of Volume II that fabric filters alone reduce 44% of the chlorine as HCl. This translates to an EMF of 0.56 to be used in the calculation of total HCl released through the fabric filter. According to the test report, there was no identifiable difference in fluorine across a fabric filter thus the EMF for fluorine is 1.00. Emission control units that utilize scrubber controls were identified on page C-10 as being effective at controlling 94% of the HCl and 91% of the HF emitted. Subsequently the EMFs for these units are 0.06 for HCl and 0.09 for HF. The following equations calculate the emissions factor for the TASCO facilities based on their combustion and emissions control modification factors (EMFs) for boilers and emission control systems.

HCl Emission Factors

Pulp Dryers with Scrubber Emissions Controls

Pulp dryer HCl emissions through a pulp dryer-scrubber combination are estimated using the previously mentioned EMFs for a boiler and scrubber unit. As previously discussed, the HCL-EMF for a boiler is 0.63 while the HCL-EMF for water scrubber control is 0.06. The Calculations are as follows;

$$\frac{Cl\cdot(mg)}{kg}*\frac{kg}{10^6 mg}*\frac{2000\cdot lbs}{ton\cdot coal}*0.63_{Boiler\cdot EMF}*0.06_{Control\cdot Unit\cdot EMF}=Cl*\frac{7.56E-5\cdot lbs}{ton\cdot coal}$$

where the chloride value Cl in the last term is the numerical ppm concentration in the coal..

HF Emission Factors

Boilers with Baghouse Emissions Controls

The HF emissions through a boiler-baghouse combination are estimated using the previously mentioned EMFs for a boiler and fabric filter. As previously discussed, the HF-EMF for a boiler is 0.64 while the HF-EMF for a fabric filter is 1.0. The Calculations are as follows;

$$\frac{F\cdot(mg)}{kg}*\frac{kg}{10^6 mg}*\frac{2000\cdot lbs}{ton\cdot coal}*0.64_{Boiler\cdot EMF}*1.0_{Control\cdot Unit\cdot EMF}=F*\frac{1.28E-3\cdot lbs}{ton\cdot coal}$$

where the fluorine value F in the last term is the numerical ppm concentration in the coal

Pulp Dryers with Scrubber Emissions Controls

The HF emissions through a pulp dryer-scrubber combination are estimated using the previously mentioned EMFs for a boiler and scrubber unit. As previously discussed, the HF-EMF for a boiler is 0.64 while the HF-EMF for water scrubber is 0.09. The Calculations are as follows;

$$\frac{F\cdot(mg)}{kg}*\frac{kg}{10^6 mg}*\frac{2000\cdot lbs}{ton\cdot coal}*0.64_{Boiler\cdot EMF}*0.09_{Control\cdot Unit\cdot EMF}=F*\frac{1.152E-4\cdot lbs}{ton\cdot coal}$$

where the fluorine value F in the last term is the numerical ppm concentration in the coal.

TASCO has followed the example of the EPA in the Congressional Report and utilized coal concentrations as documented in the United States Geological Survey (USGS) as reported in the USGS COALQUAL Database. The database offers an analysis of multiple coal samples taken in specific counties through out the United States. Because the data reported by the USGS does not follow a Bell Curve, the mean does not adequately reflect the actual average and TASCO uses median values as the average. The values for Lincoln County, Wyoming are as follows:

	Chlorine	Fluorine
Lincoln County, Wyoming	70 mg/kg	55 mg/kg
Emery County, Utah	100 mg/kg	36 mg/kg

These values are on an "as received" or wet basis. The COALQUAL database for chloride samples in Lincoln County, Wyoming is limited to 6 samples and the fluoride was based on 18 samples. Each chloride sample was below the detection limit of 100 ppm. TASCO believes these values are conservative and in support of that conclusion, in December of 2003, TASCO collected three discrete composite samples of the P&M coal and requested a chloride analysis with a detection limit of 50 ppm. The resultant chlorine concentrations were below the detection limit of 50 ppm. To be conservative, TASCO will utilize the median value of the USGS COALQUAL database for their chloride and fluoride concentrations to represent concentrations from the P&M mine in this analysis. The COALQUAL Database for Emery County, Utah is more extensive with chlorides reported from 58 samples and fluorides from 77 samples. However, over 55% of the chloride samples are at or below the detection limit. The use of the median values are to be considered conservative and will be used in this analysis.

Hydrogen Chloride Emission Factors
From Engineering Stack Tests

The Amalgamated Sugar Company LLC performed a series of site-specific source tests to determine hydrogen chloride (HCl) emissions for the Foster Wheeler boiler and the B&W boiler at Twin Falls. Three tests were performed on each boiler and to be conservative, the highest concentration was used to calculate the emission factor. A summary of the maximum HCl emission rates from the 2006 stack tests is documented in Table 6. When more than one stack test was performed on a specific source, the highest concentration was used.

Table 6: HCl Source Test Results

Emission unit	Coal Source	Estimated HCl emission factor
Foster Wheeler Boiler	Genwal coal source w/fabric filter	**0.316 lbs/ton**
B&W Boiler	P&M coal source w/fabric filter	**0.0443 lbs/ton**

Foster Wheeler Boiler, Twin Falls (Sept. 26, 2006): $1.29*10^{-2}$ Lbs HCl / MMBtu input
The Foster Wheeler uses southern Utah coal with a heat content of 12250 Btu / lb, thus:

$$\frac{1.29*10^{-2}\,HCl}{MMBtu}*\frac{12250\,Btu}{lb\,coal}*\frac{1MMBtu}{10^{6}\,Btu}*\frac{2000\;\;lbs}{ton\,coal}=\frac{0.316\,lbs\,HCl}{ton\,coal}$$

B & W Boiler, Twin Falls (Sept. 28, 2006): $2.24*10^{-3}$ Lbs HCl / MMBtu input
The B&W uses Wyoming coal with a Heat content of 9900 Btu / lb, thus:

$$\frac{2.24*10^{-3}\,HCl}{MMBtu}*\frac{9900\,Btu}{lb\,coal}*\frac{1MMBtu}{10^{6}\,Btu}*\frac{2000\,lbs}{ton\,coal}=\frac{0.0443\,lbs\,HCl}{ton\,coal}$$

Mercury
Emission Factors

Trace quantities of mercury have been detected in coal and limerock. Though measured in extremely low concentrations, there is a potential for trace emissions from the coal fired boilers and limekilns (<13.5 lb/year).

Boilers

Stack tests for mercury (Hg) were performed at the Twin Falls facility to determine emission rates relative to energy input. A summary of the emission factors is provided in the following table.

Estimated Mercury Emissions factor for the Twin Falls Boilers

Date	Unit	Emission Factor	
		Lbs Hg / MM-Btu	Lbs / ton coal
September 26-28, 2006	Foster Wheeler	2.76E-7	6.73E-6
September 26-28, 2006	B&W	1.90E-6	3.75E-5

Pulp Dryers

The Pulp Dryer mercury emissions were estimated using a mass balance approach. The wet scrubbers of the Pulp Dryer are assumed to remove 80% of the particulate from the exhaust gases. Assuming that mercury is attached to the particulate, only 20% of the mercury from coal is released to atmosphere.

The Pulp Dryers use P&M coal. Using the COALQUAL database developed by the United States Geological Service, the mercury content of coal from Lincoln County, Wyoming (median) is 0.035 ppm. This is on an "as received" (wet) basis. Using this median value results in a concentration in pounds per ton as follows;

$$EF = (0.035\text{ppm Hg})(1/10^6)(2000 \text{ lbs/ton})(0.2) = 1.4*10^{-5} \text{ lbs Hg/ton Coal}$$

Coke

Coke is produced at extreme high temperatures (1273-1423 K). Because mercury boils at 351°C (624 K), it is assumed that all trace mercury is volatized in coke production prior to use in the limekilns.

Lime Rock

Lime rock is calcined or thermally decomposed to calcium oxide and carbon dioxide. These two compounds are recombined in a later process to filter impurities from the thin juice. It is assumed that the mercury of the unburned limerock has the same Hg concentration as the original limerock. Using a mass balance approach, mercury introduced to the system in the form of lime rock minus mercury in the PCC removed and mercury in the spalls conservatively calculates the amount of mercury released to the atmosphere.

Lime Rock Analysis from Ash Grove collected from "Sweet Rock" on 10-18-06 and analyzed to meet FCC requirements for food grade material is presented along with an analysis of the Precipitated Calcium Carbonate (PCC) analysis performed by the Stukenholtz laboratory, Inc

Lime Rock Analysis	Precipitated Calcium Carbonate Analysis
Ash Grove Cement	Stukenholtz laboratory, Inc
Sampled 10/18/06	Sampled 12/13/2000
Mercury Content	Mercury content,
dry weight … 0.101 ppm	dry weight … 0.060 ppm.

Assuming that 1.246 tons of PCC is produced for every ton of limerock used and 0.08 tons of limerock spalls are produced for every ton of limerock used, then;

$$\frac{0.101}{10^6}\frac{Lbs\ Hg}{lbs\ Limerock}*\frac{2000\ \ lbs}{ton}=2.02*10^{-4}\frac{lbs\ Hg}{ton\ Limerock}$$

$$\frac{0.06}{10^6}\frac{lbs\ Hg}{lbs\ PCC}*\frac{2000\ \ lbs}{ton}*1.246\frac{tons\ PCC}{ton\ Limerock}=1.4948*10^{-4}\frac{lbs\ Hg}{ton\ Limerock}$$

$$\frac{0.101}{10^6}\frac{lbs\ Hg}{lbs\ Limerock}*\frac{2000\ \ lbs}{ton}*\frac{0.081\,tons\ Spalls}{ton\ Limerock}=1.636*10^{-5}\frac{lbs\ Hg}{ton\ Limerock}$$

Mercury (Hg) lost to atmosphere is

2.02E-4 – 1.4948E-4 – 1.636E-5 = <u>3.62E-5 lbs per ton limerock input.</u>

Section 5A
Compliance Demonstration at Time of Application

At the time of this permit renewal, The Amalgamated Sugar Company LLC, Twin Falls facility, is in compliance with all current permit conditions. For demonstration of compliance, please find attached the January 13, 2005 IDEQ Full Compliance Evaluation Report.

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

601 Pole Line Road, Suite 2 • Twin Falls, Idaho 83301-3035 • (208) 736-2190

Dirk Kempthorne, Governor
Toni Hardesty, Director

February 14, 2005

Mr. Gary Pool, Plant Manager
The Amalgamated Sugar Company, LLC – Twin Falls Factory
P.O. Box 127
Twin Falls, ID. 83303-0127

Subject: January 13, 2005 Air Quality Inspection

Dear Mr. Pool:

On January 13, 2005, the Idaho Department of Environmental Quality (Department) conducted an air quality site inspection of the Amalgamated Sugar Company's, LLC Sugar-Beet processing facility (TASCO) located at 2320 Orchard Drive, Twin Falls, Idaho.

Based on the on site inspection, TASCO was observed by Department personnel to be in compliance with IDAPA 58.01.01.625. VISIBLE EMISSIONS, and IDAPA 58.01.01.650. RULES FOR CONTROL OF FUGITIVE DUST, of the Rules for the Control of Air Pollution in Idaho, IDAPA 58.01.01.000, *et seq.*

TASCO's compliance status was also evaluated in regards to Tier I Operating Permit # 083-00001, issued on May 21, 2004.

A copy of the inspection report is attached. Thank you for your cooperation and assistance during this inspection. If you have any questions concerning the inspection or the inspection report, please call me at (208) 736-2190.

Sincerely,

Steve VanZandt

Stephen VanZandt
Air Quality Science Officer

SVZ:gl

Attachment

cc: Marilyn Seymore, Air Quality Division, IDEQ-SO
JR. Fuentes, Technical Services, IDEQ-SO
Steve VanZandt, Air Quality Science Officer, DEQ-TFRO
COF
AFS/Source File #083-00001