Middletown Cogeneration Project

AK Steel Past Baseline Emission Basis Assumptions

For the Past Baseline emissions basis, the twenty four month period ending with March 07 was used by AK Steel

Blast Furnace operating hours	8,411	hours/yr	
#2 BH operating hours	8,760	hours/yr	
Flare Fuel Usage - BFG	7,496,814	MMBtu/yr LHV dry	
	69.8%	% of Total BFG	
#2 Boiler House Fuel Usage			
Natural Gas	653,078	MMBtu/yr LHV dry	
Blast Furnace Gas	3,248,038	MMBtu/yr LHV dry	
	30.2%	% of Total BFG	
Total BFG Flare & Boilers	10,744,852	MMBtu/yr LHV dry	
BFG to Stoves and Coke Ovens	23.9%	3,374,533	
BFG to Flare and Boilers	76.1%	10,744,852	
Total	100%	14,119,385	MMBtu/yr LHV dry
BFG Avg Heat Content	**123**	Btu/dSCF LHV (adjusted per Oct 21, 2010 P. Gallo email)	
Nat Gas Avg Heat Content	1018	Btu/dSCF LHV	
BFG SO2 Emission Factor	**0.117**	# SO2/MMBtu LHV dry	Calculated based on 123 Btu/scf
PPM	85.5		

Blast Furnace Flare

	MMBtu/yr LHV dry	Btu/dSCF LHV	Lbs/MMdSCF	Lbs/MMBtu LHV dry	Lbs/ton	Tons/yr
PM Filterable	7,496,814	123	2.9		2000	**88.4**
SO2	7,496,814			0.117	2000	**438.6**
NOx	7,496,814	123	23		2000	**700.9**
CO	7,496,814	123	13.7		2000	**417.5**
VOC's	7,496,814	123	0		2000	**0.0**

Blast Furnace Stoves and BFG to Coke Ovens

	MMBtu/yr LHV dry	Btu/dSCF LHV	Lbs/MMdSCF	Lbs/MMBtu LHV dry	Lbs/ton	Tons/yr
PM Filterable	3,374,533	123	2.9		2000	**39.8**
SO2	3,374,533			0.117	2000	**197.4**
NOx	3,374,533	123	23		2000	**315.5**
CO	3,374,533	123	13.7		2000	**187.9**
VOC's	3,374,533	123	0		2000	**0.0**

No.2 Boiler House

	MMBtu/yr LHV dry	Btu/dSCF LHV	Lbs/MMdSCF	Lbs/MMBtu LHV dry	Lbs/ton	Tons/yr	
PM Filterable							
BFG	3,248,038	123	2.9		2000	**38.3**	
Nat.Gas	653,078	1018	1.9	0.00187	2000	**0.6**	
						38.9	Total
S02							
BFG	3,248,038			0.117	2000	**190.0**	
Nat.Gas	653,078	1018	0.6	0.00059	2000	**0.2**	
						190.2	Total
NOx							
BFG	3,248,038	123	~~23~~	0.02	2000	**32.5**	
Nat.Gas	653,078	1018	280		2000	**89.8**	
						122.3	Total
CO							
BFG	3,248,038	123	13.7		2000	**180.9**	
Nat.Gas	653,078	1018	84		2000	**26.9**	
						207.8	Total
VOC's							
BFG	3,248,038	123	0		2000	**0.0**	
Nat.Gas	653,078	1018	5.5	0.0054	2000	**1.8**	
						1.76	Total
Lead							
Nat.Gas	653,078	1018	0.0005	4.9E-07	2000	**0.00016**	Total

Summary of Emissions

	BFG Only				Nat Gas
	Flare	Stoves	Boilers	Total BFG	Boiler
PM Filterable	88	40	38	166	0.6
SO2	439	197	190	826	0.2
NOx	701	316	32	1,049	90
CO	418	188	181	786	27
VOC's	0	0	0	0	1.8