

CSU DRAKE BART SO2 COST ANALYSIS

Alternative	Control Efficiency (%)	Resultant Emissions								
		Unit 5			Unit 6			Unit 7		
		(tons/year)	Annual Average (lb/MMBtu)	30-day Rolling Average (lb/MMBtu)	(tons/year)	Annual Average (lb/MMBtu)	30-day Rolling Average (lb/MMBtu)	(tons/year)	Annual Average (lb/MMBtu)	30-day Rolling Average (lb/MMBtu)
Baseline	---	1,269	0.63		2,785	0.82		4,429	0.83	
DSI	60	508	0.25	0.26	1,114	0.33	0.34	1,771	0.33	0.35
Dry FGD (LSD) @ 82% control	82				501	0.15	0.15	797	0.15	0.16
Dry FGD (LSD) @ 85% control	85				418	0.12	0.13	664	0.12	0.13
Dry FGD (LSD) @ 90% control	90				279	0.08	0.09	443	0.08	0.09

UNIT 5				
Alternative	Emissions Reduction (tpy)	Annualized Cost (\$)	Cost Effectiveness (\$/ton)	Incremental Cost (\$/ton)
Baseline	0	\$0	\$0	---
DSI	761.5	\$1,340,663	\$1,760	\$1,760

FOR SCALING:

Unit 5 51 MW
 Unit 6 85 MW
 Unit 7 142 MW

UNIT 6				
Alternative	Emissions Reduction (tpy)	Annualized Cost (\$)	Cost Effectiveness (\$/ton)	Incremental Cost (\$/ton)
Baseline	0	\$0	\$0	---
DSI	1,671	\$2,234,438	\$1,337	\$1,337
Dry FGD (LSD) @ 82% control (0.15 lb/MMBtu)	2,284	\$6,186,854	\$2,709	\$6,450
Dry FGD (LSD) @ 85% control (0.12 lb/MMBtu)	2,367.5	\$6,647,835	\$2,808	\$5,517
Dry FGD (LSD) @ 90% control (0.08 lb/MMBtu)	2,507	\$7,452,788	\$2,973	\$5,780

UNIT 7				
Alternative	Emissions Reduction (tpy)	Annualized Cost (\$)	Cost Effectiveness (\$/ton)	Incremental Cost (\$/ton)
Baseline	0	\$0	\$0	---
DSI	2,657	\$3,732,826	\$1,405	\$1,405
Dry FGD (LSD) @ 82% control (0.15 lb/MMBtu)	3,632	\$8,216,863	\$2,263	\$4,602
Dry FGD (LSD) @ 85% control (0.12 lb/MMBtu)	3,764.4	\$8,829,321	\$2,345	\$4,610
Dry FGD (LSD) @ 90% control (0.08 lb/MMBtu)	3,986	\$9,898,382	\$2,483	\$4,828

Baseline Emissions

Pre-Control

	Average 2006 - 2008		Uncontrolled		1995	1996	1997		
	(tons/year)	(lb/MMBtu)	(tons/year)	(lb/MMBtu)		tons/yr		lb/MMBtu	
Unit 5									
NOx	768	0.378	864.4	0.835	1133	742	718.141	0.8346	from CAMD
SO2	1269	0.629	567.3		713	474.3	514.717		from CAMD
PM	27	0.013	26906.7	13.499 from APENs					
PM10	26.9	0.013	26906.7	13.499 from APENs					
Unit 6									
NOx	1413	0.415	2578.4	0.881	2738	2255	2742.156	0.8809	from CAMD
SO2	2785	0.820	2091.4		2059	1837.3	2091.376		from CAMD
PM	58	0.020	57606.7	20.256 from APENs					
PM10	57.6	0.020	57606.7	20.256 from APENs					
Unit 7									
NOx	2081.0	0.393	4422.1	0.928	4237	4294	4735.183	0.9281	from CAMD
SO2	4428.7	0.833	3147.5		2930	3079.2	3433.429		from CAMD
PM	54.6	0.011	54573.3	10.505 from APENs					
PM10	54.6	0.011	54573.3	10.505 from APENs					

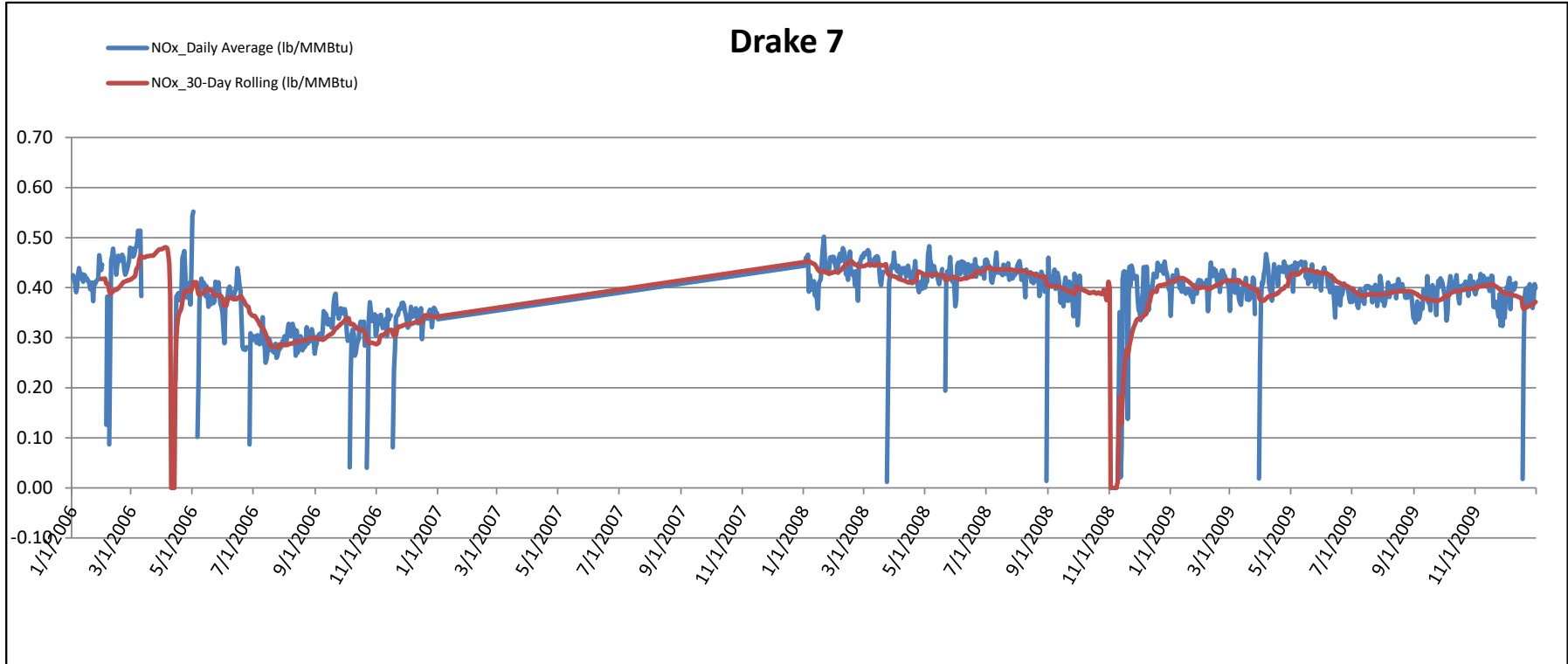
Used data from CAMD query

Heat Input (MMBtu/year)	2006	2007	2008 Average	(lb/year)	(lb/hr)
Unit 5	4123787	3464652	4371282	3986573.667	406,890,110
Unit 6	3446957	7105510	6510699	5687722	
Unit 7	10155928	11454052	9559725	10389901.67	

Unit 5				
Uncontrolled AP-42 Emission Factors	NOx	SO2	PM	PM10
	(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)
	22	13.62	81.45	18.73
convert to lb/MMBtu	1.123	0.695	4.156	0.956
Controlled (%)	54.7%	n/a	99.7%	98.6%

Unit 6				
Uncontrolled AP-42 Emission Factors	NOx	SO2	PM	PM10
	(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)
	22	17.898	103.82	23.88
convert to lb/MMBtu	1.023	0.833	4.829	1.111
Controlled (%)	52.8%	n/a	99.6%	98.2%

Unit 7				
Uncontrolled AP-42 Emission Factors	NOx	SO2	PM	PM10
	(lb/ton)	(lb/ton)	(lb/ton)	(lb/ton)
	22	18.81	111.43	25.63
convert to lb/MMBtu	0.990	0.846	5.012	1.153
Controlled (%)	57.7%	n/a	99.8%	99.1%



Maximum 30-day rolling Emission Rate
'NOx [lb/MMBtu] = 0.5357

CSU DSI COSTS (partially based on CENC cost estimates)

PROVIDED ON MAY 10, 2010 AT DIVISION'S REQUEST

Capital Costs			
Trona - DSI (Unit 5)		SIZE	CAPITAL COSTS
SCALING			
CEN Boiler 4	35	\$	6,111,180
CEN Boiler 5	65	\$	6,111,180
Drake Unit 5	51	\$	6,000,000
			rough estimate based on comparison to similarly sized DSI systems; informal estimate by DSI vendor, order of magnitude estimate for BOP
Addition of activated carbon for Hg (mercury) removal		\$	850,000
			previously provided to APCD in BART analysis for Drake power plant - not included in Division cost analysis
TOTAL CAPITAL COSTS		\$	6,000,000

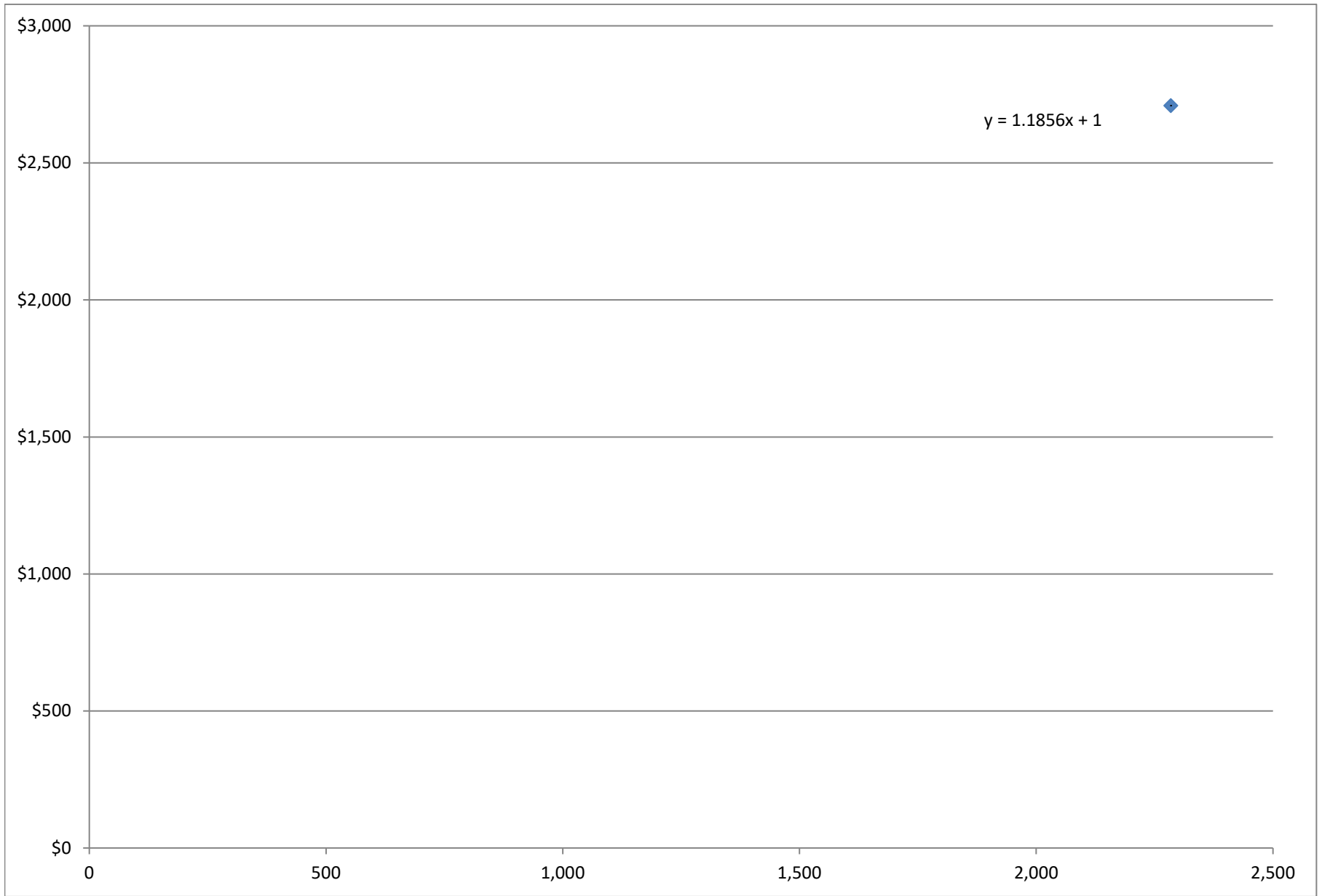
O&M Costs

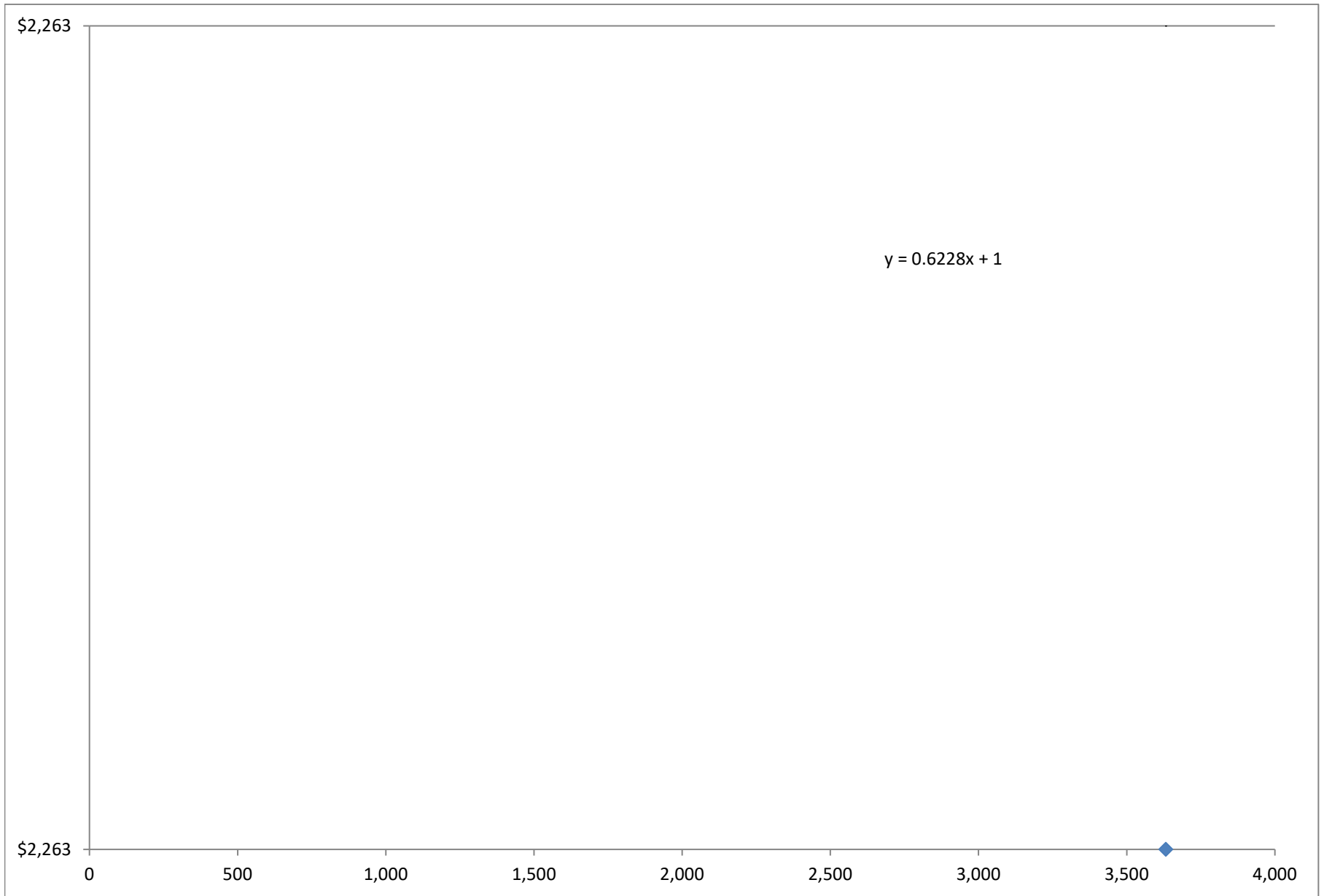
Annual Trona Costs	Trona - DSI (Unit 5)			
Annual Disposal Costs	\$	238,587	(Assumes Trona is \$130/ton)	
Annual Electrical Costs				1269 baseline SO2 emissions for Unit 5
Operating Labor				60% removal
Supervisor				762 SO2 removed
Maintenance Labor	\$	600,000	estimated as 10% of cap	1835 Trona consumption - 2.41 * SO2 removed (weight ratio of Trona to SO2, assumes NSR of 1.0)
Maintenance Materials				
Overhead				
Property Tax				
Insurance				
Administration				
Mercury removal cost	\$	225,000	previously provided to APCD in BART analysis for Drake power plant - not included in Division cost analysis	
Capital Recovery	\$	502,076	5.5%, 20 years	
Original Annualized Costs	\$	1,340,663		
COMPARISON (Annualized to total)		22%		

CSU semi-dry FGD COSTS

PROVIDED IN BART UPDATE SUBMITTAL (March 29, 2007)

	CAPITAL COSTS	Unit 6	Unit 7
TOTAL PLANT COST	\$	38,000,000	\$ 44,166,000
Annual Capital Recovery Cost (5.5% interest, 20 years)	\$	3,179,815	\$ 3,695,781
O&M COSTS			
Maintenance Labor & Materials	\$	492,685	\$ 638,597
Operating Labor			
Admin & Support			
Prorated Common Maint Labor & Mat'l, Operating Labor, Admin & Support	\$	859,047	\$ 1,332,970
TOTAL FIXED O&M COSTS	\$	1,351,732	\$ 1,971,567
Reagent Costs (1.2 stoic. Ratio)	\$	393,750	\$ 612,500
All other variable operating costs	\$	525,297	\$ 815,095
TOTAL VARIABLE O&M COSTS	\$	919,047	\$ 1,427,595
Replacement Energy Cost	\$	643,860	\$ 981,120
Replacement Capacity Cost	\$	92,400	\$ 140,800
TOTAL SCRUBBING COST	\$	6,186,894	\$ 8,216,863
Mercury Removal Capital Cost	\$	857,500	\$ 1,750,000
Annual Mercury Capital Recovery Cost	\$	71,755	\$ 146,439
Mercury Removal O&M Cost	\$	325,000	\$ 450,000
Total Mercury Removal Cost	\$	396,755	\$ 596,439
			NOT INCLUDED IN APCD'S COST ANALYSIS
SO2 Allowance Savings per Ton (estimate of 2013 allowance value)	\$	(200)	(200)





CSU DRAKE BART NOx COST ANALYSIS

Alternative	Control Efficiency (%)	Resultant Emissions		
		Unit 5		
		Annual Emissions (tons/year)	Annual Average (lb/MMBtu)	30-day rolling (lb/MMBtu)
Baseline	---	768	0.38	0.44
Overfire air (OFA)	20	615	0.30	0.35
Ultra-low NOx burners (ULNBs)	26	569	0.280	0.32
Ultra-low NOx burners (ULNBs) + OFA	28	553	0.272	0.31
Selective Non-Catalytic Reduction (SNCR)	30	538	0.26	0.30
ULNB+SCR	81.5	142	0.070	0.080
Selective Catalytic Reduction (SCR)	81.5	142	0.070	0.080

UNIT 5				
Alternative	Emissions Reduction (tpy)	Annualized Cost (\$)	Cost Effectiveness (\$/ton)	Incremental Cost (\$/ton)
Baseline	0	\$0	\$0	---
Overfire air (OFA)	154	\$141,844	\$923	\$923
Ultra-low NOx burners (ULNBs)	200	\$147,000	\$736	\$112
Ultra-low NOx burners (ULNBs) + OFA	215.2	\$288,844	\$1,342	\$9,230
Selective Non-Catalytic Reduction (SNCR)	230.5	\$1,011,324	\$4,387	\$47,011
ULNB+SCR	626.3	\$4,467,000	\$7,133	\$8,732
Selective Catalytic Reduction (SCR)	626	\$4,580,349	\$7,314	---

Alternative	Control Efficiency (%)	Resultant Emissions		
		Unit 6		
		(tons/year)	Annual Average (lb/MMBtu)	30-day rolling (lb/MMBtu)
Baseline	---	1,413	0.42	0.48
Overfire air (OFA)	20	1,130	0.33	0.38
Selective Non-Catalytic Reduction (SNCR)	30	989	0.291	0.33
Ultra-low NOx burners (ULNBs)	32	961	0.282	0.32
Ultra-low NOx burners (ULNBs) + OFA	36	904	0.266	0.31
ULNB+SCR	83.2	237	0.070	0.080
Selective Catalytic Reduction (SCR)	83.2	237	0.070	0.080

UNIT 6				
Alternative	Emissions Reduction (tpy)	Annualized Cost (\$)	Cost Effectiveness (\$/ton)	Incremental Cost (\$/ton)
Baseline	0	\$0	\$0	---
Overfire air (OFA)	283	\$104,951	\$371	\$371
Selective Non-Catalytic Reduction (SNCR)	423.8	\$1,208,302	\$2,851	\$7,810
Ultra-low NOx burners (ULNBs)	452	\$232,800	\$515	(\$34,525)
Ultra-low NOx burners (ULNBs) + OFA	509	\$337,751	\$664	\$1,857
ULNB/SCR layered approach	1,175.4	\$6,182,800	\$5,260	\$8,226
Selective Catalytic Reduction (SCR)	1,175	\$6,340,797	\$5,395	---

Alternative	Control Efficiency (%)	Resultant Emissions		
		Unit 7		
		(tons/year)	Annual Average (lb/MMBtu)	30-day rolling (lb/MMBtu)
Baseline	---	2,081	0.39	0.45
Overfire air (OFA)	20	1,665	0.31	0.36
Ultra-low NOx burners (ULNBs)	28	1,498	0.283	0.33
Selective Non-Catalytic Reduction (SNCR)	30	1,457	0.275	0.32
Ultra-low NOx burners (ULNBs) + OFA	36	1,332	0.251	0.29
ULNB+SCR	82.1	372	0.070	0.081
Selective Catalytic Reduction (SCR)	82.1	372	0.070	0.081

UNIT 7				
Alternative	Emissions Reduction (tpy)	Annualized Cost (\$)	Cost Effectiveness (\$/ton)	Incremental Cost (\$/ton)
Baseline	0	\$0	\$0	---
Overfire air (OFA)	416	\$75,217	\$181	\$181
Ultra-low NOx burners (ULNBs)	583	\$386,000	\$662	\$1,867
Selective Non-Catalytic Reduction (SNCR)	624.3	\$2,018,575	\$3,233	\$39,226
Ultra-low NOx burners (ULNBs) + OFA	749.1	\$461,217	\$616	(\$12,473)
ULNB/SCR layered approach	1,708.5	\$8,196,000	\$4,797	\$5,698
Selective Catalytic Reduction (SCR)	1,708	\$8,510,067	\$4,981	---

CSU COSTS - Overfire Air PROVIDED IN ORIGINAL BART SUBMITTAL (2006)

Capital Costs				
	OFA - Unit 5	OFA - Unit 6	OFA - Unit 7	Notes
Basic Equipment - NOx Equipment				
NOx Equipment Installation				
NOx Control Modification				
Control Installation & Integration				
Lost Revenue - NOx Equip+Control Install				
TOTAL CAPITAL COST	\$1,106,842	\$770,531	\$553,384	
Retrofit Factor	1.30	1.40	1.40	
Adjusted Retrofit Capital Cost	\$1,438,895	\$1,078,743	\$774,738	
Capital Cost w/ Inflation Factor (2%)	\$1,467,672	\$1,100,318	\$790,232	
\$/kW	\$ 29	\$ 13	\$ 6	
O&M Costs				
Increased Carbon Loss (Loss on Ignition)				
Annual Electrical Costs (NOx equipment)	\$3,396	\$1,938	\$1,156	Variable O&M Costs
Operating Labor				
Supervisor				
Maintenance Labor				
Maintenance Materials				
Overhead				
Property Tax				
Insurance				
Administration	\$15,634	\$10,939	\$7,935	Fixed O&M Costs
Capital Recovery	\$122,814	\$92,074	\$66,126	5.5%, 20 years
TOTAL ANNUALIZED COST	\$141,844	\$104,951	\$75,217	
Annual/Total Capital Cost	9.9%	9.7%	9.7%	

CSU Costs - Ultra low NOx burners PROVIDED ON 2/2/2009 - SO2 and NOx Emissions Control Cost & Feasibility Information for Drake and Nixon Plants

Capital Costs				
	ULNBs - Unit 5	ULNBs - Unit 6	ULNBs - Unit 7	Notes
Basic Equipment - NOx Equipment	\$ 340,000	\$ 550,000	\$ 930,000	
NOx Equipment Installation	\$ 390,000	\$ 630,000	\$ 1,070,000	
Construction Management	\$ 50,000	\$ 80,000	\$ 140,000	
Craft Supervision	\$ 40,000	\$ 40,000	\$ 40,000	
Startup	\$ 30,000	\$ 30,000	\$ 30,000	
Contingency (@ 20%)	\$ 170,000	\$ 270,000	\$ 440,000	
Boiler modeling and pulverizer modifications	\$ 408,000	\$ 640,000	\$ 1,060,000	
TOTAL CAPITAL COST	\$ 1,428,000	\$ 2,240,000	\$ 3,710,000	
\$/kW	\$ 28	\$ 26	\$ 26	
O&M Costs				
Increased Carbon Loss (Loss on Ignition)	\$ 7,000	\$ 13,000	\$ 22,000	
Operating Labor				
Supervisor				
Maintenance Labor				
Maintenance Materials				
Overhead				
Property Tax				
Insurance				
Administration	\$ 12,207	\$ 8,360	\$ 13,802	
Capital Recovery	\$ 134,793	\$ 211,440	\$ 350,198	7%, 20 years
TOTAL ANNUALIZED COST	\$ 147,000	\$ 232,800	\$ 386,000	
Annual/Total Capital Cost	10.3%	10.4%	10.4%	

CSU Costs - SCR/ULNB+SCR PROVIDED ON 2/2/2009 - SO2 and NOx Emissions Control Cost & Feasibility Information for Drake and Nixon Plants

Capital Costs				
	SCR - Unit 5	SCR - Unit 6	SCR - Unit 7	Notes
SCR system including reactor & injection	\$ 2,230,000	\$ 2,950,000	\$ 4,680,000	
Ammonia Handling and Injection	\$ 1,318,800	\$ 1,160,000	\$ 1,760,000	x1.57 for retrofit difficulty (Unit 5 only)
Air Preheater Modifications	\$ 769,300	\$ 1,131,500	\$ 1,805,400	x1.57,1.55,1.53 for retrofit difficulty (Unit 5,6,7 respectively)
Miscellaneous equipment capital costs	\$ 361,100	\$ 480,500	\$ 780,300	x1.57,1.55,1.53 for retrofit difficulty (Unit 5,6,7 respectively)
ID fan modifications/replacement	\$ 1,148,100	\$ 1,478,400	\$ 1,976,000	x2.64,2.63,2.6 for retrofit difficulty (Unit 5,6,7 respectively)
Inlet Duct	\$ 1,540,000	\$ 2,000,200	\$ 3,070,200	x1.4,1.37,1.29 for retrofit difficulty (Unit 5,6,7 respectively)
Outlet Duct	\$ 1,554,000	\$ 2,027,600	\$ 3,096,000	x1.4,1.37,1.29 for retrofit difficulty (Unit 5,6,7 respectively)
Contractor Fees	\$ 890,000	\$ 1,190,000	\$ 1,810,000	approximately 10% of direct costs
TOTAL INSTALLED COST W/ RETROFIT	\$ 17,660,340	\$ 22,352,760	\$ 26,569,060	x1.8,1.8,1.4 for retrofit difficulty (Unit 5,6,7 respectively)
General Facilities	\$ 880,000	\$ 1,170,000	\$ 1,400,000	approximately 5% of total installed cost w/retrofit
Engineering & Project Management	\$ 1,770,000	\$ 2,350,000	\$ 2,790,000	approximately 10% of total installed cost w/retrofit
Contingencies	\$ 3,530,000	\$ 4,690,000	\$ 5,590,000	approximately 20% of total installed cost w/retrofit
Preproduction Costs	\$ 640,000	\$ 870,000	\$ 1,100,000	
Inventory Capital	\$ 70,000	\$ 110,000	\$ 170,000	
Initial Catalyst and Chemicals	\$ 970,000	\$ 1,480,000	\$ 2,430,000	
Prepaid Royalties (Owner's Cost)	\$ 349,660	\$ 1,567,240	\$ 1,870,940	
Market Demand Escalation	\$ 2,590,000	\$ 3,460,000	\$ 4,190,000	
TOTAL CAPITAL COST (SCR)	\$ 28,460,000	\$ 38,050,000	\$ 46,110,000	
TOTAL CAPITAL COST (ULNB+SCR)	\$ 29,368,000	\$ 39,540,000	\$ 48,110,000	
\$/KW	\$ 558	\$ 448	\$ 325	
O&M Costs				
	SCR - Unit 5	SCR - Unit 6	SCR - Unit 7	Notes
Catalyst replacement	\$ 320,000	\$ 490,000	\$810,000	
Reagent (Aqueous Ammonia)	\$ 770,000	\$ 1,180,000	\$1,940,000	
Operating Labor	\$ 90,000	\$ 100,000	\$110,000	
Maintenance Labor	\$ 360,000	\$ 480,000	\$570,000	
Maintenance Materials	\$ 40,000	\$ 60,000	\$100,000	
Electricity	\$ 150,000	\$ 230,000	\$370,000	
Capital Recovery	\$ 2,850,349	\$ 3,800,797	\$ 4,610,067	approx 7.7%, 20 years
TOTAL ANNUALIZED COST	\$ 4,580,349	\$ 6,340,797	\$ 8,510,067	
ULNB+SCR ANNUALIZED COST	\$ 4,467,000	\$ 6,182,800	\$ 8,196,000	
SCR only adjusted to 15%	\$ 4,269,000	\$ 5,707,500	\$ 6,916,500	
Annual/Total Capital Cost (SCR)	16.1%	16.7%	18.5%	
Annual/Total Capital Cost (ULNB+SCR)	15.2%	15.6%	17.0%	
COST DIFFERENCE to adjust to 15%	\$ 311,349	\$ 633,297	\$ 1,593,567	

THE DIVISION DID NOT CONDUCT ADDITIONAL ULNB+SCR COST ANALYSIS SINCE THE SCR COSTS WERE DEEMED REASONABLE AND ULNB+SCR WERE CHEAPER THAN SCR

Adjust to \$300/kw	\$ 15,300,000	\$ 25,500,000	\$ 42,600,000
\$/kW	\$ 300	\$ 300	\$ 300
Adjusted Capital Recovery	\$ 1,532,338	\$ 2,553,897	\$ 4,266,510
Adjust Annualized Cost (\$300/kw)	\$ 3,262,338	\$ 5,093,897	\$ 8,166,510
SCR \$/ton	\$ 5,209	\$ 4,334	\$ 4,780

NOTES: CSU DID NOT INCLUDE OVERHEAD (typically 60% of O&M, labor, and maint. Mtl costs OR taxes, insurance, and administration)

Predicted Overhead	\$ 294,000	\$ 384,000	\$ 468,000
Predicted Taxes, Insurance, and Administration	\$ 706,414	\$ 894,110	\$ 1,062,762
total	\$ 1,000,414	\$ 1,278,110	\$ 1,530,762

	2006			2007			2008			Average			
	Fuel Heating Value	% Sulfur	% Ash	Fuel Heating Value	% Sulfur	% Ash	Fuel Heating Value	% Sulfur	% Ash	Fuel Heating Value	% Sulfur	% Ash	
Unit 5	9935		0.368	8.685	9822	0.383	8.708	9636	0.324	7.041	9798	0.36	8.14
Unit 6	10804		0.462	10.628	10515	0.47	10.525	10927	0.481	9.993	10749	0.47	10.38
Unit 7	10858		0.479	11.179	11474	0.526	11.9	11018	0.48	10.351	11117	0.50	11.14

Coal Mine/Region		Southern PRB Sub-bituminous				
Year	Moisture %	Ash %	Sulfur %	Btu/Lb	Nitrogen %	
2006	27.02	4.65	0.21	8,816.34	0.73	
2007	27.06	4.66	0.22	8,808.64	0.66	
2008	27.23	4.61	0.20	8,788.98	0.67	
2009	27.38	4.63	0.22	8,753.77	0.69	
Avg. 06 - 08	27.11	4.64	0.21	8,804.65	0.69	

Coal Mine/Region		20-Mile Foidel Creek Bituminous				
Year	% Moisture	% Ash	% Sulfur	Btu/Lb	% Nitrogen	
2006	9.49	12.53	0.54	11,005.58	1.54	
2007	9.56	12.52	0.53	10,999.92	1.60	
2008	9.81	10.73	0.50	11,246.92	1.58	
2009	10.12	10.48	0.49	11,217.42	1.62	
Avg. 06 - 08	9.62	11.93	0.52	11,084.14	1.57	

Coal Mine/Region		Colowyo Sub-bituminous, Class A				
Year	% Moisture	% Ash	% Sulfur	Btu/Lb	% Nitrogen	
2006	Non-Received					
2007	17.16	5.50	0.35	10,477.00	1.34	
2008	17.68	5.92	0.39	10,307.00	1.35	
2009	Non-Received					
Avg. 06 - 08	17.42	5.71	0.37	10,392.00	1.35	

Coal Mine/Region		West Elk Bituminous				
Year	% Moisture	% Ash	% Sulfur	Btu/Lb	% Nitrogen	
2006	Non-Received					
2007	7.55	8.71	0.45	12,266.00	1.30	
2008	Non-Received					
2009	11.13	5.15	0.43	11,849.00	1.65	
Avg. 06 - 08	7.55	8.71	0.45	12,266.00	1.30	

SO2 Control Scenario	Boiler(s)	SO2 Emission Rate (lb/MMBtu)	Output (@ 98 th Percentile Impact)	98 th Percentile Impact Improvement	98 th Percentile Improvement from Maximum	Cost Effectiveness
			(dv)	(Δ dv)	(%)	(\$/dv)
Max 24-hr SO ₂ rates	5	0.943	1.84	---	---	---
	6	0.997				
	7	0.994				
DSI	5	0.251	1.72	0.12	6%	\$11,266,076
	6	0.328	1.65	0.18	10%	\$12,210,046
	7	0.333	1.55	0.29	16%	\$12,871,815
dry FGD (LSD)	5	0.120	n/a			
	6	0.120	1.59	0.24	13%	\$27,470,391
	7	0.120	1.45	0.39	21%	\$22,697,484
dry FGD (LSD)	6	0.100	1.59	0.25	14%	n/a
	7	0.100	1.44	0.40	22%	n/a
dry FGD (LSD)	6	0.070	1.58	0.26	14%	\$28,999,176
	7	0.070	1.42	0.41	22%	\$23,967,026
Combo	5	0.321	0.25	1.59	86%	n/a
	6	0.120				
	7	0.120				

SO ₂ BART Control Limit	Unit(s)	SO2 Emission Rate (lb/MMBtu)	Class I Area Affected	3-year totals			3-year totals		
				Pre-Control Days >0.5 dv	Post-Control Days >0.5 dv	Δdays	Pre-Control Days >1.0 dv	Post-Control Days >1.0 dv	Δdays
Max 24-hr SO ₂ rates	5	0.943	Rocky Mountain National Park	34	---	---	17	---	---
	6	0.997							
	7	0.994							
DSI	5	0.251		34	32	2	17	14	3
	6	0.328		34	32	2	17	14	3
	7	0.333		34	31	3	17	13	4
dry FGD (LSD)	5	0.120		34		34	17		17
	6	0.120		34	31	3	17	14	3
	7	0.120		34	28	6	17	12	5
dry FGD (LSD)	6	0.100		34	31	3	17	14	3
	7	0.100		34	28	6	17	12	5
dry FGD (LSD)	6	0.070		34	31	3	17	14	3
	7	0.070		34	28	6	17	12	5
Combo	5	0.321		34	1	33	17	0	17
	6	0.120							
	7	0.120							

NOx Control Scenario	Boiler(s)	NOx Emission Rate (lb/MMBtu)*	Output (@	98 th Percentile	98 th Percentile	Cost
			98 th Percentile	Impact	Improvement	
			(dv)	(Δ dv)	(%)	(\$/dv)
Max 24-hour NOx rates	5	0.619	1.84	---	---	---
	6	0.827				
	7	0.710				
NOx Control Scenario	5	0.390	1.79	0.05	3%	n/a
	6	0.390	1.68	0.16	9%	n/a
	7	0.390	1.66	0.18	10%	n/a
OFA	5	0.300*	1.76	0.07	4%	\$1,970,053
	6	0.330*	1.66	0.180	10%	\$583,061
	7	0.310*	1.61	0.22	12%	\$335,791
ULNB	5	0.280*	1.76	0.08	4%	\$1,934,212
	6	0.282*	1.64	0.197	11%	\$1,181,727
	7	0.283*	1.60	0.24	13%	\$1,615,062
SNCR	5	0.265*	1.76	0.08	4%	\$12,641,549
	6	0.291*	1.64	0.19	11%	\$6,260,633
	7	0.275*	1.59	0.24	13%	\$8,272,850
ULNBs+OFA	5	0.272*	1.76	0.08	4%	\$3,703,128
	6	0.266*	1.63	0.20	11%	\$1,663,798
	7	0.251*	1.58	0.26	14%	\$1,794,618
NOx Control Scenario	5	0.234	1.75	0.24	5%	n/a
	6	0.234	1.62	0.24	12%	n/a
	7	0.234	1.57	0.24	15%	n/a
SCR	5	0.070	1.71	0.12	7%	\$36,024,194
	6	0.070	1.56	0.27	15%	\$22,647,619
	7	0.070	1.47	0.37	20%	\$22,091,644
Combo	5	0.321	0.25	1.59	86%	n/a
	6	0.070				
	7	0.070				

NOx Control Scenario	Boiler(s)	NOx Emission Rate (lb/MMBtu)*	Class I Area Affected	3-year totals			3-year totals		
				Pre-Control Days >0.5 dv	Post-Control Days >0.5 dv	Δdays	Pre-Control Days >1.0 dv	Post-Control Days >1.0 dv	Δdays
Max 24-hour NOx rates	5	0.619	Rocky Mountain National Park		---	---	17	---	---
	6	0.827		34					
	7	0.710							
NOx Control Scenario	5	0.390		34	34	0	17	15	2
	6	0.390		34	31	3	17	14	3
	7	0.390		34	31	3	17	14	3
OFA	5	0.300*				n/a			
	6	0.330*				n/a			
	7	0.310*				n/a			
ULNB	5	0.280*				n/a			
	6	0.282*				n/a			
	7	0.283*				n/a			
SNCR	5	0.265*				n/a			
	6	0.291*				n/a			
	7	0.275*				n/a			
ULNBs+OFA	5	0.272*				n/a			
	6	0.266*				n/a			
	7	0.251*				n/a			
NOx Control Scenario	5	0.234		34	34	0	17	14	3
	6	0.234		34	31	3	17	14	3
	7	0.234		34	28	6	17	14	3
SCR	5	0.070		34	32	2	17	14	3
	6	0.070		34	27	7	17	14	3
	7	0.070		34	26	8	17	13	4
Combo	5	0.321		34	1	33	17	0	17
	6	0.070							
	7	0.070							