Appendix C
Project Design Memorandum
(Design Basis)

EON
EW Brown, Ghent, Cane Run, Mill Creek, Trimble County, Green River
Design Basis
6/1/2010

Unit Designation	EW Brown			Ghent				Cane Run			Mill Creek				Trimble County		Green River		Reference
	1	2	3	1	2	3	4	4	5	6	1	2	3	4	1	2	3	4	
Ultimate Coal analysis, wet basis																			
Carbon, %	61.20	61.20	61.20	61.20	61.20	61.20	61.20	61.20	61.20	61.20	61.20	61.20	61.20	61.20	61.20	61.20	65.41	65.41	Data from E-ON
Hydrogen, %	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.46	4.46	Data from E-ON
Sulfur, %	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	2.60	2.60	Data from E-ON
Nitrogen, %	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.34	1.34	Data from E-ON
Chlorine, %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Data from E-ON
Oxygen, %	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.89	6.69	6.69	Data from E-ON
Ash, %	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	9.00	9.00	Data from E-ON
Moisture, %	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	10.50	10.50	Data from E-ON
Higher Heating Value, Btu/lb	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	11,600	11,600	Data from E-ON
Trace Metal Analysis, ppm																			
Antimony (Sb)	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.07	1.07	Data from E-ON
Arsenic (As)	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	10.00	10.00	Data from E-ON
Barium (Ba)	74.00	74.00	74.00	74.00	74.00	74.00	74.00	74.00	74.00	74.00	74.00	74.00	74.00	74.00	74.00	74.00	49.00	49.00	Data from E-ON
Cadmium (Cd)	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.30	0.30	Data from E-ON
Chlorine (Cl)	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00	1845.00	1845.00	Data from E-ON
Chromium (Cr)	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	17.00	17.00	Data from E-ON
Fluorine (F)	98.00	98.00	98.00	98.00	98.00	98.00	98.00	98.00	98.00	98.00	98.00	98.00	98.00	98.00	98.00	98.00	71.00	71.00	Data from E-ON
Lead (Pb)	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	Data from E-ON
Magnesium (Mg)	684.00	684.00	684.00	684.00	684.00	684.00	684.00	684.00	684.00	684.00	684.00	684.00	684.00	684.00	684.00	684.00	509.00	509.00	Data from E-ON
Mercury (Hg)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.10	0.10	Data from E-ON
Nickel (Ni)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	14.00	14.00	Data from E-ON
Selenium (Se)	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	1.93	1.93	Data from E-ON
Strontium (Sr)	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	30.00	30.00	Data from E-ON
Vanadium (V)	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	Data from E-ON
Zinc (Zn)	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	50.00	50.00	Data from E-ON
Ash Analysis, % by mass																			
Alumina (Al2O3)	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	21.69	19.45	19.45	Data from E-ON
Barium Oxide (BaO)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	Data from E-ON
Lime (CaO)	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.89	2.89	Data from E-ON
Iron Oxide (Fe2O3)	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	21.80	19.90	19.90	Data from E-ON
Magnesia (MgO)	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	Data from E-ON
Manganese Oxide (MnO)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	Data from E-ON
Phosphorous Pentoxide (P2O5)	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.21	0.21	Data from E-ON
Potassium Oxide (K2O)	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.41	2.41	Data from E-ON
Silica (SiO2)	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	45.88	49.65	49.65	Data from E-ON
Sodium Oxide (Na2O)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.77	0.77	Data from E-ON
Strontium Oxide (SrO)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	Data from E-ON
Sulfur Trioxide (SO3)	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.47	2.47	Data from E-ON
Titania (TiO2)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.08	1.08	Data from E-ON
Undetermined	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	Data from E-ON
Unit Characteristics																			
Gross Turbine Generator Load, MW	110	180	457	541	517	523	526	168	181	261	330	330	423	525	547	760	75	109	Data from E-ON
Boiler Efficiency, % (HHV)	85.32	86.73	86.53	85.74	86.83	86.31	86.77	85.12	87.14	87.09	85.40	85.40	86.51	86.51	86.88	86.92	89.02	85.25	Data from E-ON
Boiler Heat Input, MBtu/hr (HHV)	999.80	1,665.50	4,120.43	5,369	4,327	5,496	5,473	1,603	1,757	2,589	3,224	3,311	4,209	5,122	5,310	6,583	848	1,150	Data from E-ON
Coal Flow Rate, lb/hr	89,268	148,705	367,895	479,375	386,339	490,714	488,661	143,125	156,875	231,161	287,857	295,625	375,804	457,321	474,107	587,768	73,103	99,138	Data from E-ON
Capacity Factor, %	44.00	62.00	57.00	81.00	71.00	78.00	77.00	60.00	62.00	54.00	68.00	70.00	75.00	75.00	85.00	87.00	26.00	32.00	Data from E-ON
Fly Ash Portion of Total Ash, %	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	Data from E-ON
Air Heater Leakage, %	10.0	10.0	10.0	10.0	10.0	10.0	10.0	16.7	17.0	7.8	10.0	10.0	10.0	10.0	10.0	6.0	6.8	6.8	Data from E-ON
Excess Air, %	34.352	18.258	16.848	18.258	21.926	21.926	20.433	20.00	20.00	20.00	20.00	20.00	20.00	20.00	18.258	19.700	25.000	25.000	Data from E-ON
Economizer Outlet Conditions																			
Flue Gas Temperature, F	650	730	730	729	610	731	791	580	630	617	760	760	690	640	700	586	475	610	B&V Combustion Calculations
Flue Gas Pressure, in. w.g.	-8.0	-3.7	-5.0	-3.2	-5.1	-5.1	-4.5	-4.0	-3.0	-4.0	-5.0	-5.0	-5.0	-5.0	-6.0	-6.0	-5.0	-6.0	B&V Combustion Calculations
Flue Gas Mass Flow Rate, lb/hr	1,090,927	1,615,221	3,952,267	5,206,933	4,316,060	5,482,104	5,397,559	1,575,668	1,727,042	2,544,856	3,169,029	3,254,545	4,137,234	5,034,667	5,149,714	6,455,853	886,785	1,202,598	B&V Combustion Calculations
Volumetric Flue Gas Flow Rate, acfm	509,072	796,739	1,955,176	2,563,081	1,922,533	2,718,161	2,805,958	680,015	779,254	1,137,376	1,608,445	1,651,849	1,979,343	2,303,938	2,490,348	2,816,034	345,095	536,927	B&V Combustion Calculations
Uncontrolled Sulfur Dioxide Concentration, lb/MBtu	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	4.48	4.48	= % Sulfur in Coal x 20,000 / HHV
Uncontrolled Sulfur Dioxide Mass Flow Rate, lb/hr	5,993	9,983	24,697	32,181	25,936	32,942	32,805	9,608	10,531	15,518	19,324	19,846	25,228	30,701	31,828	39,458	3,798	5,150	B&V Combustion Calculations
Uncontrolled PM Concentration, lb/MBtu	8.746	8.746	8.746	8.746	8.746	8.746	8.746	8.746	8.746	8.746	8.746	8.746	8.746	8.746	8.746	8.746	6.334	6.334	B&V Combustion Calculations
Uncontrolled PM Mass Flow Rate, lb/hr	8,744	14,566	36,037	46,957	37,844	48,068	47,867	14,020	15,367	22,643	28,197	28,958	36,812	44,797	46,441	57,575	5,371	7,284	= Uncontrolled PM (lb/MBtu) x Heat Input (MBtu/hr)
Uncontrolled Mercury Concentration, lb/TBtu	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	8.62	8.62	= Hg in Coal (ppm) x Coal Flow Rate (lb/hr) / Heat Input (MBtu/hr)
Uncontrolled HCl Mass Flow Rate, lb/hr	147	244.63	605.21	789	636	807	804	235	258	380	474	486	618	752	780	967	139	188	= HCl in Coal (ppm) / 1,000,000 x Coal Flow Rate (lb/hr) x MW of HCl / MW of Cl
Uncontrolled HCl Concentration, lb/MBtu	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16	= HCl Flowrate (lb/hr) / Heat Input (MBtu/hr)
Hot-Side ESP Outlet Conditions																			
Flue Gas Temperature, F					605	708	770											600	B&V Combustion Calculations
Flue Gas Pressure, in. w.g.					-10.80	-10.90	-10.8											-8.1	B&V Combustion Calculations
Flue Gas Mass Flow Rate, lb/hr	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	4,531,863	5,756,209	5,667,437	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	No Hot-side ESP. Unit has a Cold-side ESP	1,262,728	B&V Combustion Calculations
Volumetric Flue Gas Flow Rate, acfm					2,041,027	2,843,960	2,947,083											562,236	B&V Combustion Calculations
Controlled PM Concentration, lb/MBtu					0.0565	0.0451	0.0248											0.08	B&V Combustion Calculations
Controlled PM Mass Flow Rate, lb/hr					244	248	135.73											92	= Controlled PM (lb/MBtu) x Heat Input (MBtu/hr)
Particulate Removal Efficiency, %					99.35	99.48	99.72											98.74	= (1- Controlled PM (lb/MBtu) / Uncontrolled PM (lb/MBtu)) x 100
SCR Outlet Conditions																			
Flue Gas Temperature, F				729		708	770						690	640	700	586			B&V Combustion Calculations
Flue Gas Pressure, in. w.g.				-13.2		-20.90	-20.8						-13.0	-13.0	-16.0	-11.0			B&V Combustion Calculations
Flue Gas Mass Flow Rate, lb/hr	No SCR	No SCR	New SCR Planned for 2012	5,311,071	No SCR	5,871,333	5,780,786	No SCR	No SCR	No SCR	No SCR	No SCR	4,219,979	5,135,360	5,252,708	6,584,970	No SCR	No SCR	B&V Combustion Calculations
Volumetric Flue Gas Flow Rate, acfm				2,682,371		2,977,658	3,085,629						2,061,162	2,399,175	2,606,716	2,910,365			B&V Combustion Calculations
Controlled NOx Concentration, lb/MBtu				0.0639		0.0479	0.0627						0.0584	0.0589	0.076	0.076			Data from E-ON
Controlled NOx Mass Flow Rate, lb/hr				343		263	343						246	302	404	500			= Controlled NOx (lb/MBtu) x Heat Input (MBtu/hr)
Air Heater Outlet Conditions																			
Flue Gas Temperature, F	350	330	340	361	309	322	309	369	299	318	375	375	330	330	320	324	243	363	B&V Combustion Calculations
Flue Gas Pressure, in. w.g.	-14.00	-8.00	-18.00	-22.4	-18.60	-36.10	-29.4	-8.0	-6.0	-8.0	-10.0	-10.0	-18.0	-18.0	-22.5	-16.0	-9.0	-13.5	B&V Combustion Calculations
Flue Gas Mass Flow Rate, lb/hr	1,200,020	1,776,743	4,347,494	5,842,179	4,985,049	6,458,467	6,358,865	1,839,262	2,021,310	2,744,081	3,485,932	3,580,000	4,641,976	5,648,896	5,777,979	6,980,068	947,426	1,349,077	B&V Combustion Calculations
Volumetric Flue Gas Flow Rate, acfm	415,851	589,646	1,498,187	2,091,568	1,657,754	2,288,309	2,175,592	641,787	642,552	896,674	1,229,416	1,262,592	1,581,582	1,924,653	1,965,750	2,345,528	280,496	473,593	B&V Combustion Calculations
Cold-Side ESP Outlet Conditions																			
Flue Gas Temperature, F	340	320	330	358				369	299	318	340	340	330	330	320	324	230		B&V Combustion Calculations
Flue Gas Pressure, in. w.g.	-18.00	-12.00	-19.00	-25.7				-9.1	-6.8	-9.8	-14.0	-14.0	-23.0	-21.0	-25.5	-18.0	-11.0		B&V Combustion Calculations
Flue Gas Mass Flow Rate, lb/hr	1,260,021	1,865,580	4,564,869	6,134,288	No Cold-side ESP. Unit has a Hot-side ESP	No Cold-side ESP. Unit has a Hot-side ESP	No Cold-side ESP. Unit has a Hot-side ESP	1,931,225	2,122,376	2,881,285	3,660,228	3,759,000	4,874,075	5,931,341	6,066,878	7,398,872	994,797	No Cold-side ESP. Unit has a Hot-side ESP	B&V Combustion Calculations
Volumetric Flue Gas Flow Rate, acfm	436,197	618,296	1,559,510	2,209,920				676,568	676,855	947,034	1,250,977	1,284,735	1,684,442	2,039,199	2,082,968	2,502,995	290,916		B&V Combustion Calculations
Controlled PM Concentration, lb/MBtu	0.241	0.1	0.1	0.023				0.041	0.034	0.024	0.0385	0.0443	0.0517	0.0354	0.017	0.31	0.063		Data from E-ON
Controlled PM Mass Flow Rate, lb/hr	241	166.55	412.04	123				66	60	62	124	147	218	181	90	2041	53		= Controlled PM (lb/MBtu) x Heat Input (MBtu/hr)
Particulate Removal Efficiency, %	97.24	98.86	98.86	99.74				99.53	99.61	99.73	99.56	99.49	99.41	99.60	99.81	96.46	99.01		= (1- Controlled PM (lb/MBtu) / Uncontrolled PM (lb/MBtu)) x 100
Fabric Filter Outlet Conditions																			
Flue Gas Temperature, F																313			B&V Combustion Calculations
Flue Gas Pressure, in. w.g.																-23.1			B&V Combustion Calculations
Flue Gas Mass Flow Rate, lb/hr	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	No Fabric Filter	7,398,872	No Fabric Filter	No Fabric Filter	B&V Combustion Calculations
Volumetric Flue Gas Flow Rate, acfm																2,500,664			B&V Combustion Calculations
Controlled PM Concentration, lb/MBtu																0.015			Data from E-ON
Controlled PM Mass Flow Rate, lb/hr																99			= Controlled PM from fabric Filter (lb/MBtu) x Heat Input (MBtu/hr)
Particulate Removal Efficiency, %																95.16			= (1- FF Controlled PM (lb/MBtu) / ESP Controlled PM (lb/MBtu)) x 100
ID Fan Outlet Conditions																			
Flue Gas Temperature, F	356.05	332.17	346.44	376.94	325.52	346.34	333.60	379.03	306.39	327.81	354.85	355.15	348.83	348.83	340.08	334.60	235.91	371.55	B&V Combustion Calculations
Flue Gas Pressure, in. w.g.	10.00	10.00	10.00	6.10	11.40	5.90	14.60	8.00	7.00	8.00	10.00	10.00	10.00	10.00	10.00	15.77	1.00	1.00	B&V Combustion Calculations
Flue Gas Mass Flow Rate, lb/hr	1,260,021	1,865,580	4,564,869	6,134,288	4,985,049	6,458,467	6,358,865	1,931,225	2,122,376	2,881,285	3,660,228	3,759,000	4,874,075	5,931,341	6,066,878	7,398,872	994,797	1,349,077	B&V Combustion Calculations
Volumetric Flue Gas Flow Rate, acfm	415,059	594,805	1,481,211	2,086,965	1,571,913	2,119,437	2,010,799	656,526	660,654	917,824	1,200,841	1,233,697	1,588,066	1,932,543	1,954,644	2,334,113	284,775	461,503	B&V Combustion Calculations

EON
EW Brown, Ghent, Cane Run, Mill Creek, Trimble County, Green River
Design Basis
6/1/2010

Unit Designation	EW Brown			Ghent				Cane Run			Mill Creek				Trimble County		Green River		Reference
	1	2	3	1	2	3	4	4	5	6	1	2	3	4	1	2	3	4	
Scrubber Outlet Conditions	(For 3 units combined to a common/shared scrubber)																		
Flue Gas Temperature, F	129.64			131.74	128.04	129.28	128.50	131.19	125.96	128.80	130.30	130.32	129.60	129.60	129.24	129.43			B&V Combustion Calculations
Flue Gas Pressure, in. w.g.	2.00			1.70	1.50	2.00	1.60	2.00	2.00	2.00	1.00	1.00	1.00	1.00	2.00	6.00			B&V Combustion Calculations
Flue Gas Mass Flow Rate, lb/hr	8,136,097			6,534,149	5,252,980	6,834,132	6,711,801	2,056,206	2,226,116	3,036,144	3,879,298	3,984,228	5,157,618	6,277,442	6,413,722	7,813,543	No Scrubber	No Scrubber	B&V Combustion Calculations
Volumetric Flue Gas Flow Rate, acfm	2,029,766			1,643,977	1,306,064	1,705,743	1,671,656	517,157	550,120	754,452	972,502	998,878	1,291,025	1,571,359	1,598,535	1,927,087			B&V Combustion Calculations
Controlled Sulfur Dioxide Mass Flow Rate, lb/hr	679			805	865	824	821	659	736	1,750	1,515	1,556	2,441	2,407	441	546			B&V Combustion Calculations
Controlled Sulfur Dioxide Concentration, lb/MBtu	0.10			0.150	0.200	0.150	0.150	0.411	0.419	0.676	0.47	0.47	0.58	0.47	0.083	0.083			= Controlled SO_2 (lb/hr) / Heat Input (MBtu/hr)
Sulfur Dioxide Removal Efficiency, %	98.33			97.50	96.67	97.50	97.50	93.15	93.02	88.73	92.17	92.17	90.33	92.17	98.62	98.62			= { 1- Controlled SO_2 (lb/MBtu) / Uncontrolled SO_2 (lb/MBtu) } x 100
Wet ESP Outlet Conditions																			
Flue Gas Temperature, F																129.43			B&V Combustion Calculations
Flue Gas Pressure, in. w.g.	No WESP			No WESP	No WESP	No WESP	No WESP	No WESP	No WESP	No WESP	No WESP	No WESP	No WESP	No WESP	No WESP	2.00	No WESP	No WESP	B&V Combustion Calculations
Flue Gas Mass Flow Rate, lb/hr																7,813,543			B&V Combustion Calculations
Volumetric Flue Gas Flow Rate, acfm																1,945,943			B&V Combustion Calculations
Stack Outlet Emissions[1]																			
Sulfur Dioxide Emission Concentration, lb/MBtu	0.10	0.10	0.10	0.15	0.20	0.15	0.15	0.411	0.419	0.676	0.47	0.47	0.58	0.47	0.083	0.083	4.48	4.48	Data from E-ON
Sulfur Dioxide Emission Rate, lb/hr	100	167	412	805	865	824	821	659	736	1,750	1,515	1,556	2,441	2,407	441	546	3,798	5,150	= SO_2 Emission (lb/MBtu) x Heat Input (MBtu/hr)
PM Emission Concentration, lb/MBtu	0.241	0.1	0.1	0.023	0.0565	0.0451	0.0248	0.041	0.034	0.024	0.0385	0.0443	0.0517	0.0354	0.017	0.015	0.063	0.08	Data from E-ON
PM Emission Rate, lb/hr	241	167	412	123	244	248	136	66	60	62	124	147	218	181	90	99	53	92	= PM Emission (lb/MBtu) x Heat Input (MBtu/hr)
NOx Emission Concentration, lb/MBtu	0.4463	0.4374	0.3319	0.0639	0.276	0.0479	0.0627	0.3394	0.3843	0.272	0.3169	0.3139	0.0584	0.0589	0.076	0.076	0.4011	0.3864	Data from E-ON
NOx Emission Rate, lb/hr	446	728	1,368	343	1,194	263	343	544	675	704	1,022	1,039	246	302	404	500	340	444	= NOx Emission (lb/MBtu) x Heat Input (MBtu/hr)
Hg Emission Concentration, lb/TBtu	5.0	5.0	5.0	2.0	3.5	2.0	2.0	3.5	3.5	3.5	3.0	3.0	2.5	2.5	1.2	1.0	5.5	5.5	Data from E-ON
Hg Emission Rate, lb/hr	5.00E-03	8.33E-03	2.06E-02	1.07E-02	1.51E-02	1.10E-02	1.09E-02	5.61E-03	6.15E-03	9.06E-03	9.67E-03	9.93E-03	1.05E-02	1.28E-02	6.37E-03	6.58E-03	4.66E-03	6.33E-03	= Hg Emission (lb/TBtu) x Heat Input (MBtu/hr) / 1,000,000
HCl Emission Concentration, lb/MBtu	0.002	0.002	0.002	0.0015	0.0017	0.0015	0.0015	0.00095	0.00095	0.00095	0.0015	0.0015	0.0015	0.0015	0.00085	0.00085	0.017	0.017	Data from E-ON
HCl Emission Rate, lb/hr	2	3	8	8	7	8	8	2	2	2	5	5	6	8	5	6	14	20	= HCl Emission (lb/MBtu) x Heat Input (MBtu/hr)
CO Emission Concentration, lb/MBtu	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	CO Emissions are not known
CO Emission Rate, lb/hr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	CO Emissions are not known
Dioxin/Furan Emission Concentration, lb/MBtu	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Dioxin/Furan Emissions are not known
Dioxin/Furan Emission Rate, lb/hr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Dioxin/Furan Emissions are not known

Notes:

1. Current Outlet Emissions as noted in E-ON Matrix

Revision History:

Rev	Date	Description
0	5/21/2010	Initial Issue
1	6/1/2010	Final Issue