

別添資料 2.2-4 排ガス測定結果一覧

[H-R-1] HOB measurement result

Measurement Date		24-Nov-10	25-Nov-10	30-Nov-10	2-Dec-10	14-Dec-10			23-Dec-10		24-Jan-11			
General information	Place	Childcare	Train Repair	NO.39school	Bosa	Train Repair			Childcare		NO.310 Army			
	Type of boiler	MUHT	BZUI-100	DZL-1.4	RJG-18	BZUI-100			MUHT		HP-18-54			
	Capacity	MW	0.7	0.85	1.4	-	0.85			0.7		0.73		
	Cross sectional area of duct	m2	0.20	0.64	0.11	0.16	0.64			0.20		0.65		
	Type of coal		Nalaikh (crushed)	Shiveovoo	Nalaikh (crushed)	Nalaikh (crushed)	Shiveovoo (lump + crushed)			Nalaikh (crushed)		Nalaikh (crushed)		
Operational condition	Velocity of flue gas *1	m/s	-	-	15.6	7.2	13.6	12.7	15.6	10.2	8.9	3.9	4.4	2.5
	Temperature of flue gas *1	°C	-	-	66	198	145	190	234	110	103	134	148	131
	Water vapor concentration *1	%	-	-	30.0	12.1	5.5			2.8		1.7		
	Flow rate of wet flue gas	Nm3/h	-	-	4,200	2,100	17,900	15,100	16,900	2,800	2,600	5,300	5,800	3,500
	Flow rate of dry flue gas	Nm3/h	-	-	2,900	1,700	17,000	14,000	16,000	2,700	2,500	5,200	5,700	3,400
	Ave. flow rate of dry flue gas	Nm3/h	-	-	2,900	1,700	16,000			2,600		4,800		
	Coal feed rate	kg/h	-	-	228	138	672			394	266	223		
	O2 concentration *2	%	-	-	16.1	14.0	18			17.5		18.4		
	CO2 concentration *2	%	-	-	2.8	6.1	2.8			3.0		2.3		
	CO concentration *2	ppm	-	-	370	610	200			130		480		
Measured concentration (Raw data)	Dust concentration	g/Nm3	-	1.0	0.028	2.1	1.8	1.8	4.5	1.2	0.70	0.55	0.16	0.037
	Average dust concentration	g/Nm3	-	1.0	0.028	2.1	2.7			1.0		0.25		
	SO2 (ppm) *2	ppm	-	-	125	412	95			-		94		
	NOX (ppm) *2	ppm	-	-	49	78	32			-		35		

Emission Factor	Dust	kg/t	-	-	0.35	25	64			8.3	6.6	5.3		
	SO2	kg/t	-	-	4.5	14.5	6.5			-		5.8		
	NOX *3	kg/t	-	-	0.8	1.3	1.0			-		1.0		
	CO	kg/t			5.9	9.4	6.0			1.32		12.9		
Dust sampling method			-	Trial	Trial	Trial	Trial			Trial		20min×3		

*1 30min average value
 *2 Average values measured by TESTO
 *3 NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	-	-	0.065	3.4	9.8			3.2		1.1		
	SO2	ppm	-	-	298	687	346			-		421		
	NOX	ppm	-	-	117	130	117			-		156		
	CO				880	1000	730			430		2200		
Emission Standard Value (MNS)	Dust	g/Nm3	0.4	0.3	0.3	0.4	0.3			0.4		0.4		
	SO2	ppm	280	210	210	280	210			280		280		
	NOX	ppm	336	299	299	336	299			336		336		
	CO		2000	1600	1600	2000	1600			2000		2000		

*4 Data in 'Emission Concentration' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values.
 Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[H-R-1] HOB measurement result

Measurement Date			26-Jan-11				28-Jan-11				31-Jan-11		1-Feb-11	
General information	Place		NO.310 Army				NO.310 Army				Bosa		Bosa	
	Type of boiler		HP-18-54				HP-18-54				RJG-18		RJG-18	
	Capacity	MW	0.73				0.73				-		-	
	Cross sectional area of duct	m2	0.65				0.65				0.16		0.16	
	Type of coal		Nalaikh (crushed)				Nalaikh (crushed)				Nalaikh (crushed)		Nalaikh (crushed)	
Operational condition	Velocity of flue gas *1	m/s	4.0	3.3	3.5	4.0	7.6	8.2	8.4	8.5	7.8	7.2	7.6	7.2
	Temperature of flue gas *1	°C	156	151	145	142	152	149	161	179	279	291	261	200
	Water vapor concentration *1	%	1.6				1.2				4.9		6.6	
	Flow rate of wet flue gas	Nm3/h	5,200	4,400	4,700	5,400	10,200	10,900	11,000	10,600	3,400	1,700	1,900	2,100
	Flow rate of dry flue gas	Nm3/h	5,200	4,300	4,700	5,300	10,000	11,000	11,000	11,000	3,300	1,600	1,800	2,000
	Ave. flow rate of dry flue gas	Nm3/h	4,900				11,000				3,300		1,800	
	Coal feed rate	kg/h	222				167				-		86	
	O2 concentration *2	%	18.9				17.9				15.5		14.6	
	CO2 concentration *2	%	1.9				2.8				4.8		5.6	
	CO concentration *2	ppm	530				600				1500		780	
Measured concentration (Raw data)	Dust concentration	g/Nm3	0.32	0.53	0.32	0.25	0.37	0.14	0.16	0.58	-	11	12	19
	Average dust concentration	g/Nm3	0.35				0.31				-		14	
	SO2 (ppm) *2	ppm	-				137				-		-	
	NOX (ppm) *2	ppm	-				51				-		-	

Emission Factor	Dust	kg/t	7.8				20				-		295	
	SO2	kg/t	-				25.8				-		-	
	NOX *3	kg/t	-				4.5				-		-	
	CO	kg/t	14.6				49				-		20.3	
Dust sampling method			20min×4				20min×4				-		3 batches	

*1 30min average value
 *2 Average values measured by TESTO
 *3 NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	2.0				1.2				-		26	
	SO2	ppm	-				509				-		-	
	NOX	ppm	-				190				-		-	
	CO		2900				2200				3200		1400	
Emission Standard Value (MNS)	Dust	g/Nm3	0.4				0.4				0.4		0.4	
	SO2	ppm	280				280				280		280	
	NOX	ppm	336				336				336		336	
	CO		2000				2000				2000		2000	

*4 Data in 'Emission Concentraion' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values.

Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[H-R-1] HOB measurement result

Measurement Date		10-Feb-11				11-Feb-11				16-Feb-11				
General information	Place	NO.113 secondary school				NO.113 secondary school				BOSA				
	Type of boiler	MDZ-0.25				MDZ-0.25				R/JG-18				
	Capacity	MW	0.25				0.25				-			
	Cross sectional area of duct	m2	0.085				0.085				0.16			
	Type of coal	Nalaikh (lump)				Nalaikh (lump)				Nalaikh (crushed)				
Operational condition	Velocity of flue gas *1	m/s	3.5	3.2	5.3	4.9	5.2	5.0	4.2	5.1	7.1	6.9	7.7	7.0
	Temperature of flue gas *1	°C	298	259	262	283	257	230	171	164	221	218	281	245
	Water vapor concentration *1	%	2.7				11.7				5.9			
	Flow rate of wet flue gas	Nm3/h	440	440	730	660	730	730	700	850	2,000	1,900	1,900	1,900
	Flow rate of dry flue gas	Nm3/h	440	440	700	630	630	630	600	760	1,800	1,800	1,800	1,800
	Ave. flow rate of dry flue gas	Nm3/h	550				660				1,800			
	Coal feed rate	kg/h	69				86				144			
	O2 concentration *2	%	15.5				17.9				13.1			
	CO2 concentration *2	%	4.6				2.7				6.0			
Measured concentration (Raw data)	CO concentration *2	ppm	430				150				1,800			
	Dust concentration	g/Nm3	0.79	1.1	0.86	0.26	0.18	0.12	0.10	0.32	12	8	18	14
	Average dust concentration	g/Nm3	0.8				0.18				13			
	SO2 (ppm) *2	ppm	753				408				108			
NOX (ppm) *2	ppm	188				31				70				

Emission Factor	Dust	kg/t	6.0				1.4				162			
	SO2	kg/t	17.1				9.0				3.9			
	NOX *3	kg/t	2.0				0.3				1.2			
	CO	kg/t	4.3				1.44				28.1			
Dust sampling method			20min×4				20min×4				3 batches			

*1 30min average value

*2 Average values measured by TESTO

*3 NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	1.6				0.67				19			
	SO2	ppm	1586				1516				159			
	NOX	ppm	396				115				103			
	CO		910				557				2600			
Emission Standard Value (MNS)	Dust	g/Nm3	0.4				0.4				0.4			
	SO2	ppm	280				280				280			
	NOX	ppm	336				336				336			
	CO		2000				2000				2000			

*4 Data in 'Emission Concentraion' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values.

Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[H-R-1] HOB measurement result

Measurement Date			23-Feb-11			24-Feb-11			1-Mar-11			2-Mar-11		
General information	Place		NO.41secondary school			NO.41 secondary school			No.46 school			No 39 school		
	Type of boiler		MUHT			MUHT			KCR-300			DZL 1,4-0,7/95/70A		
	Capacity	MW	0.7			0.7			-			1.4		
	Cross sectional area of duct	m2	0.064			0.064			0.028			0.13		
	Type of coal		Nalaikh (lump)			Nalaikh (lump)			Nalaikh (lump)			Nalaikh (crushed)		
Operational condition	Velocity of flue gas *1	m/s	17.5	12.4	14.7	14.7	14.9	10.0	12.4	10.6	6.4	5.7	6.4	
	Temperature of flue gas *1	°C	207	373	195	178	199	182	276	196	106	109	114	
	Water vapor concentration *1	%	4.2			3.8			5.7			2.5		
	Flow rate of wet flue gas	Nm3/h	2,000	1,000	1,700	1,800	1,700	540	540	540	1,800	1,600	1,800	
	Flow rate of dry flue gas	Nm3/h	1,900	1,000	1,600	1,700	1,600	510	510	510	1,800	1,600	1,700	
	Ave. flow rate of dry flue gas	Nm3/h	1,500			1,600			510			1,700		
	Coal feed rate	kg/h	281			231			74			104		
	O2 concentration *2	%	17.5			19.3			14.4			16.8		
	CO2 concentration *2	%	3.4			1.9			6			3.8		
	CO concentration *2	ppm	340			330			16,000			178		
Measured concentration	Dust concentration	g/Nm3	0.55	0.67	0.19	0.18	0.27	0.39	0.23	0.019	0.034	0.021	0.032	
	Average dust concentration	g/Nm3	0.6			0.21			0.22			0.029		
(Raw data)	SO2 (ppm) *2	ppm	94			31			93			52		
	NOX (ppm) *2	ppm	36			24			47			30		

Emission Factor	Dust	kg/t	3.2			1.48			1.49			0.48		
	SO2	kg/t	1.43			0.60			1.84			2.41		
	NOX *3	kg/t	0.25			0.225			0.44			0.65		
	CO	kg/t	2.27			2.86			138			3.6		
Dust sampling method			Many Batches			3 batches			1 batch					

*1 30min average value

*2 Average values measured by TESTO

*3 NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	2.0	1.5	0.38			0.082		
	SO2	ppm	312	214	165			144		
	NOX	ppm	119	166	83			83		
	CO		1100	2300	28000			500		
Emission Standard Value (MNS)	Dust	g/Nm3	0.4	0.4	0.4			0.3		
	SO2	ppm	280	280	280			210		
	NOX	ppm	336	336	336			299		
	CO		2000	2000	2000			1600		

*4 Data in 'Emission Concentraion' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values.

Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[H-R-1] HOB measurement result

Measurement Date			3-Mar-11			8-Mar-11			9-Mar-11			11-Mar-11		
General information	Place		No.104 school			Burd center			No.106 school			No 10 secondary school		
	Type of boiler		WWGS 035			LSG-0.2			Thrmocholor-0.3			MWB-1		
	Capacity	MW	0.35			-			-			1.0		
	Cross sectional area of duct	m2	0.068			0.13			0.096			0.50		
	Type of coal		Nalaikh (crushed)			Nalaikh (lump)			Nalaikh (crushed)			Nalaikh (crushed)		
Operational condition	Velocity of flue gas *1	m/s	7.9	2.7	3.9	6.6	6.9	2.1	6.5	5.3	5.2	6.6	6.4	6.5
	Temperature of flue gas *1	°C	128	127	117	467	310	191	86	74	48	161	162	161
	Water vapor concentration *1	%	9.8			5.9			2.32			2.3		
	Flow rate of wet flue gas	Nm3/h	1,100	380	570	1,100	1,500	600	1,500	1,200	1,300	6,500	6,500	6,400
	Flow rate of dry flue gas	Nm3/h	1,000	350	510	1,100	1,400	570	1,500	1,200	1,300	6,300	6,400	6,300
	Ave. flow rate of dry flue gas	Nm3/h	620			1,000			1,300			6,300		
	Coal feed rate	kg/h	85			24			57			750		
	O2 concentration *2	%	12.0			10.3			14.5			16		
	CO2 concentration *2	%	7.8			10			5.7			4.3		
	CO concentration *2	ppm	26,170			1,250			13,670			580		
Measured concentration (Raw data)	Dust concentration	g/Nm3	0.078	0.024	0.14	0.11	0.030	0.41	3.3	1.7	2.0	2.5	3.6	2.2
	Average dust concentration	g/Nm3	0.082			0.18			2.3			2.7		
	SO2 (ppm) *2	ppm	41			240			19			183		
	NOX (ppm) *2	ppm	73			88			58			48		

Emission Factor	Dust	kg/t	0.59			7.6			53			23		
	SO2	kg/t	0.85			28.6			1.3			4.4		
	NOX *3	kg/t	0.71			4.9			1.8			0.54		
	CO	kg/t	239			65			390			6.1		
Dust sampling method			3 batches			3 batches			2 batches			3 batches		

*1 30min average value

*2 Average values measured by TESTO

*3 NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	0.11			0.20			4.2			6.2		
	SO2	ppm	53			261			35			410		
	NOX	ppm	95			96			103			107		
	CO		34000			1400			25000			1300		
Emission Standard Value (MNS)	Dust	g/Nm3	0.4			0.4			0.3			0.3		
	SO2	ppm	280			280			210			210		
	NOX	ppm	336			336			299			299		
	CO		2000			2000			1600			1600		

*4 Data in 'Emission Concentraion' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values.

Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[H-R-1] HOB measurement result

Measurement Date			15-Mar-11			16-Mar-11		
General information	Place		No 71 school			No 92 secondagy school		
	Type of boiler		DLHIRSH 170-80/55-AII*AIH			MDZ-800		
	Capacity	MW	0.17			0.8		
	Cross sectional area of duct	m2	0.085			0.064		
	Type of coal		Baganuur (lump)			Baganuur (lump + crushed)		
Operational condition	Velocity of flue gas *1	m/s	6.8	1.7	5.6	6.2	6.2	6.4
	Temperature of flue gas *1	℃	284	168	209	129	84	57
	Water vapor concentration *1	%	6.3			5.46		
	Flow rate of wet flue gas	Nm3/h	880	280	850	3,400	3,900	4,300
	Flow rate of dry flue gas	Nm3/h	820	250	790	3,300	3,700	4,100
	Ave. flow rate of dry flue gas	Nm3/h	620			3,700		
	Coal feed rate	kg/h	48			138		
	O2 concentration *2	%	11			12.9		
	CO2 concentration *2	%	9.0			7.1		
	CO concentration *2	ppm	400			1,040		
Measured concentration	Dust concentration	g/Nm3	0.28	0.071	0.69	1.1	0.10	0.30
	Average dust concentration	g/Nm3	0.35			0.49		
(Raw data)	SO2 (ppm) *2	ppm	47			89		
	NOX (ppm) *2	ppm	123			118		

Emission Factor	Dust	kg/t	4.5			13.2		
	SO2	kg/t	1.75			6.8		
	NOX *3	kg/t	2.13			4.2		
	CO	kg/t	6.5			35		
Dust sampling method			3 batches			2 batches		

*1 30min average value
 *2 Average values measured by TESTO
 *3 NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	0.40			0.7		
	SO2	ppm	54			128		
	NOX	ppm	141			170		
	CO		460			1500		
Emission Standard Value (MNS)	Dust	g/Nm3	0.4			0.4		
	SO2	ppm	280			280		
	NOX	ppm	336			336		
	CO		1600			2000		

*4 Data in 'Emission Concentraion' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values.
 Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[P-R-1] Measurement results of NO.2 Power Plant

Measurement Date			19-Jan				21-Jan				17-Feb				18-Feb			
No. of boiler			NO.5(75t/h)				NO.3(35t/h)				NO.4(75t/h)				NO.5(75t/h)			
Cross sectional area of duct		m2	1.50		1.61		1.81		1.81		1.40		1.40		1.50		1.61	
Type of coal			Buguuur		Buguuur		Buguuur		Buguuur		Buguuur		Buguuur		Buguuur		Buguuur	
Measurement duct			before scrubber		after scrubber		before scrubber		after scrubber		before scrubber		after scrubber		before scrubber		after scrubber	
			left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	left duct
Operational condition	Velocity of flue gas	m/s	19.4	12.3	14.0	13.8	5.5	9.4	8.2	7.3	-	-	17.7	15.4	17.6	18.6	12.7	15.4
	Temperature of flue gas	°C	145	-	120	-	157	-	146	-	-	-	120	122	150	150	132	132
	Water vapor concentration	%	9.7	-	10.0	-	11.1	-	11.1	-	-	-	10.6	9.8	11.0	11.0	9.8	9.8
	Flow rate of wet flue gas	Nm3/h	59,000	38,000	49,000	48,000	19,900	34,000	29,300	26,900	-	-	53,000	46,000	52,000	55,000	43,000	52,000
	Flow rate of dry flue gas	Nm3/h	53,000	34,000	44,000	43,000	17,700	30,200	26,100	23,900	-	-	47,000	42,000	47,000	49,000	38,000	46,000
	Total flow rate of dry flue gas	Nm3/h	87,000		87,000		47,900		50,000		-		89,000		96,000		84,000	
	Coal feed rate	kg/h	17,110				10,580				17,830				20,630			
	O2 concentration	%	14.2	-	6.8	-	6.4	-	8.5	-	-	-	7.6	-	-	8.4	-	11.4
	CO2 concentration	%	6.0	-	12	-	12	-	11	-	-	-	12	-	-	11	-	8.4
	CO concentration	ppm	58	-	6,200	-	29,000	-	7,000	-	-	-	200	-	-	3,500	-	1,300
Dust (Raw data)	Dust concentration	g/m3N	1.4	9	1.1	1.1	18	11	7.1	2.6	-	-	1.6	1.5	11	11	1.7	1.7
	Average of Dust concentration	g/m3N	5.3		1.1		15		4.8		-		1.5		11		1.7	
	Efficiency of de-dust	%	78.4%				67.1%				-				84.2%			
Gas (Raw data)	NOX concentration	ppm	88	-	-	-	103	-	109	-	-	-	141	148	-	116	-	117
	SO2 concentration	ppm	94	-	-	-	251	-	245	-	-	-	88	88	-	133	-	117
	Measurement time	-	14:55	-	11:50	-	14:50	-	11:49	-	-	-	11:50	12:08	-	11:00	-	10:10

Emission Factor	Dust factor for each duct	kg/t	-	2.9	2.8	-	18	5.8	-	4.2	3.4	25	25	3.2	3.8			
	Dust factor as a boiler	kg/t	-	5.8		-	23		-	7.6		-	7.0					
	SO2	kg/t	-	-		-	3.3		-	1.26		-	1.5					
	NOX	kg/t	-	-		-	0.69		-	0.97		-	0.64					
	CO	kg/t	-	39		-	41		-	1.25		-	6.6					
Emission Concentration after O2 conversion at 6%	Dust	g/Nm3	1.2				5.8				1.7				2.7			
	SO2	ppm	-				294				98				182			
	NOX	ppm	-				131				162				182			
	CO	ppm	6500				8400				220				2000			
Emission Standard Value (MNS)	Dust	g/Nm3	21				10.6				21				21			
	SO2	ppm	676.1				619.5				676.1				676.1			
	NOX	ppm	948.3				530.1				948.3				948.3			
	CO	ppm	2838				70				2838				2838			
Remarks																		

* Data in 'Emission Concentraion' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values. Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[P-R-1] Measurement results of NO.3 Power Plant

Measurement Date			7-Dec				9-Dec				16-Dec				17-Dec			
No. of boiler			NO.10(220t/h)				NO.7(220t/h)				NO.6(75t/h)				NO.4(75t/h)			
Cross sectional area of duct		m2	5.07		3.72		5.07		3.72		2.36		1.88		2.12		1.44	
Type of coal			Buganuur		Buganuur		Buganuur		Buganuur		Buganuur		Buganuur		Buganuur		Buganuur	
Measurement duct			before scrubber		after scrubber		before scrubber		after scrubber		before scrubber		after scrubber		before scrubber		after scrubber	
			left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct
Operational condition	Velocity of flue gas	m/s	12.1	11.2	12.0	10.6	13.8	11.5	7.2	9.6	10.3	8.2	11.3	11.1	10.8	11.6	16.1	23.6
	Temperature of flue gas	℃	172	-	73	-	215	-	98	-	-	116	84	-	127	-	83	-
	Water vapor concentration	%	7.3	-	39.7	-	10.6	-	5.7	5.1	14.4	15.5	14.0	-	11.5	9.4	14.7	12.4
	Flow rate of wet flue gas	Nm3/h	116,000	107,000	108,000	95,000	120,000	100,000	60,000	80,000	53,000	42,000	50,000	49,000	48,000	52,000	54,000	79,000
	Flow rate of dry flue gas	Nm3/h	110,000	100,000	65,000	58,000	107,000	89,000	57,000	76,000	45,000	35,000	43,000	42,000	43,000	47,000	46,000	69,000
	Total flow rate of dry flue gas	Nm3/h	210,000		123,000		196,000		133,000		80,000		85,000		90,000		115,000	
	Coal feed rate	kg/h	26,820				33,021				13,528				12,714			
	O2 concentration	%	9.5	-	-	-	3.7	4.2	-	-	-	2.4	4.3	-	9.7	-	4.2	-
	CO2 concentration	%	10	-	-	-	15	15	-	-	-	16	15	-	10	-	15	-
	CO concentration	ppm	0	-	-	-	0	-	-	-	-	16,000	1,400	-	110	-	11,000	-
Dust (Raw data)	Dust concentration	g/Nm3	5.5	5.1	0.22	0.53	11.2	11.9	0.79	0.73	8.5	11.2	0.65	0.34	19.5	18.1	0.57	1.2
	Average of Dust concentration	g/Nm3	5.3		0.38		11.6		0.76		9.8		0.49		18.8		0.89	
	Efficiency of de-dust	%	92.9				93.4				95.0				95.3			
Gas (Raw data)	NOX concentration	ppm	210	-	-	-	494	-	-	-	-	-	-	189	-	164	-	
	SO2 concentration	ppm	329	-	-	-	465	-	-	-	-	-	-	199	-	236	-	
	Measurement time		11:43	-	14:38	-	11:00	11:20	15:10	-	-	13:37	10:50	-	13:40	-	10:45	-

Emission Factor	Dust factor for each duct	kg/t	-	0.53	1.2	-	1.36	1.68	-	2.07	1.05	-	2.1	6.5				
	Dust factor as a boiler	kg/t	-	1.7		-	3.0		-	3.1		-	8.6					
	SO2	kg/t	-	-	-	-	-	-	-	-	-	-	-	6.1				
	NOX	kg/t	-	-	-	-	-	-	-	-	-	-	-	1.99				
	CO	kg/t	-	-	-	-	-	-	-	11.0		-	-	124				
Emission Concentration after O2 conversion at 6%	Dust	g/Nm3	0.49				0.67				0.42				0.95			
	SO2	ppm	-				-				-				252			
	NOX	ppm	-				-				-				175			
	CO	ppm	-				-				1300				12000			
Emission Standard Value (MNS)	Dust	g/Nm3	10.8				10.8				21				1.2			
	SO2	ppm	519.8				519.8				676.1				215.3			
	NOX	ppm	821.3				821.3				948.3				238.9			
	CO	ppm	240				240				2838				4996			
Remarks			Fluidized bed furnace															

* Molecular weight of NO is used for converting the NOx unit from ppm to mg/m3

* Data in 'Emission Concentraion' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values. Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[P-R-1] Measurement results of NO.4 Power Plant

Measurement Date			1-Sep-10					2-Sep-10					7-Sep-10				
No. of boiler			NO.1					NO.2					NO.4				
Cross sectional area of duct		m2	3.50	3.50	3.50	3.50	11.99	3.50	3.50	3.50	3.50	11.99	3.50	3.50	3.50	3.50	11.99
Type of coal			Baganuur					Baganuur					Baganuur				
Measurement duct			before EP				after EP	before EP				after EP	before EP				after EP
			left1 duct	left2 duct	right2 duct	right1 duct	duct	left1 duct	left2 duct	right2 duct	right1 duct	duct	left1 duct	left2 duct	right2 duct	right1 duct	duct
Operational condition	Velocity of flue gas	m/s	13.8	17.4	18.6	14.2	18.0	19.5	18.8	17.2	16.5	18.8	16.2	19.2	18.2	15.8	19.1
	Temperature of flue gas	°C	151	174	161	135	151	151	165	156	154	149	151	168	165	133	140
	Water vapor concentration	%	11.2	12.4	10.2	5.5	9.8	8.1	9.5	9.1	10.4	9.3	10.6	10.6	10.6	10.6	10.6
	Flow rate of wet flue gas	Nm3/h	100,000	130,000	110,000	100,000	420,000	110,000	120,000	130,000	140,000	440,000	110,000	120,000	130,000	110,000	470,000
	Flow rate of dry flue gas	Nm3/h	96,000	110,000	100,000	85,000	380,000	100,000	110,000	110,000	120,000	400,000	100,000	110,000	120,000	100,000	420,000
	Coal feed rate	kg/h	62,560					74,000					73,500				
	O2 concentration	%	4.6	3.7	5.7	8.6	6.6	3.6	5.2	4.9	5.9	5.7	5.3	4.2	3.6	6.6	5.9
	CO2 concentration	%	14	15	13	11	13	15	14	14	13	13	14	15	15	13	13
	CO concentration	ppm	4	4.8	4	4.8	3	8	3	2	2	4	4	2	2	4	3
Dust (Raw data)	Dust concentration	g/Nm3	10	13	0.57	0.41	0.30	3.8	3.3	3.7	3.1	0.0028	5.8	5.2	3.9	5.9	0.036
	Average of Dust concentration	g/Nm3	6.0				0.30	3.4				0.0028	5.2				0.036
	Efficiency of de-dust	%	95.0					99.9					99.3				
Gas (Raw data)	NOX concentration	ppm	386	359	367	429	383	-	-	-	-	-	390	385	374	350	385
	SO2 concentration	ppm	31	58	7	3	58	-	-	-	-	-	190	182	155	49	134
	Measurement time		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Emission Factor	Dust	kg/t	-				1.8	-				0.02	-				0.2
	SO2	kg/t	-				1.0	-				-	-				2.2
	NOX	kg/t	-				3.1	-				-	-				2.9
	CO	kg/t	-				0.0	-				0.0	-				0.0
Emission Concentration after O2 conversion at 6%	Dust	g/Nm3	0.31				0.0027					0.036					
	SO2	ppm	60				-					133					
	NOX	ppm	398				-					382					
	CO	ppm	3				4					3					
Emission Standard Value (MNS)	Dust	g/Nm3	0.2				0.2					0.2					
	SO2	ppm	420				420					420					
	NOX	ppm	533.9				533.9					533.9					
	CO	ppm	144				144					144					

* Data in 'Emission Concentraion' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values.

Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[P-R-1] Measurement results of NO.4 Power Plant

Measurement Date			8-Sep-10					14-Sep-10				
No. of boiler			NO.5					NO.3				
Cross sectional area of duct		m2	3.50	3.50	3.50	3.50	11.99	3.50	3.50	3.50	3.50	11.99
Type of coal			Shivee ovoo					Baganuur				
Measurement duct			before EP				after EP	before EP				after EP
			left1 duct	left2 duct	right2 duct	right1 duct	duct	left1 duct	left2 duct	right2 duct	right1 duct	duct
Operational condition	Velocity of flue gas	m/s	13.2	20.6	18.8	12.3	19.1	19.5	22.2	21.8	20.2	23.3
	Temperature of flue gas	°C	144	175	164	137	154	142	164	158	147	141
	Water vapor concentration	%	19.7	2.6	0.08	9.3	7.9	5.4	8.4	9.0	4.9	6.9
	Flow rate of wet flue gas	Nm3/h	90,000	120,000	130,000	90,000	440,000	140,000	150,000	150,000	140,000	570,000
	Flow rate of dry flue gas	Nm3/h	80,000	120,000	130,000	70,000	410,000	130,000	140,000	140,000	130,000	530,000
	Coal feed rate	kg/h	84,000					69,100				
	O2 concentration	%	6.1	4.2	4.5	6.4	5.9	6.5	5.2	6.2	7.4	6.7
	CO2 concentration	%	13	15	14	13	13	13	14	13	12	13
	CO concentration	ppm	2	1	1	2	2	4	2	2	5	3
Dust (Raw data)	Dust concentration	g/Nm3	7.7	3.9	9.1	7.0	0.093	11	9.3	10	9.5	0.37
	Average of Dust concentration	g/Nm3	6.9				0.093	9.8				0.37
	Efficiency of de-dust	%	98.7					96.2				
Gas (Raw data)	NOX concentration	ppm	522	475	473	473	457	380	309	380	363	376
	SO2 concentration	ppm	643	704	576	671	90	2	109	67	16	0
	Measurement time		-	-	-	-	-	-	-	-	-	-

Emission Factor	Dust	kg/t	-				0.5	-				2.9
	SO2	kg/t	-				1.3	-				0.0
	NOX	kg/t	-				3.0	-				3.9
	CO	kg/t	-				0.0	-				0.0
Emission Concentration after O2 conversion at 6%	Dust	g/Nm3	0.093					0.39				
	SO2	ppm	90					0.0				
	NOX	ppm	456					393				
	CO	ppm	2					3				
Emission Standard Value (MNS)	Dust	g/Nm3	0.2					0.2				
	SO2	ppm	420					420				
	NOX	ppm	533.9					533.9				
	CO	ppm	144					144				

* Data in 'Emission Concentraion' table above are currently provided for reference purpose only at May 2011, because only a few instantaneous measured values are gained by Testo, exhaust gas analyzer, to calculate the average data for one measurement task, and not averaged from long time measurement values.

Therefore, it is not recommendable to use the data in 'Emission Concentration' table for evaluating the pollution level of each emission source by comparing with 'Emission Standard' value.

[H-R-1] HOB measurement result

Measurement Date		2011-1				2011-2				2011-3				2011-4				2011-5				
Measurement Date		16-Nov-11				25-Nov-11				29-Nov-11				2-Dec-11				9-Dec-11				
General information	Place	NO.41 school				Ikhzasag university-1				NO.114 school				Haan Bank				Tavan gan				
	Type of boiler	MUHT				DZL-0.7				WWGS-0.35				CLHG-0.6/C				CLSG25				
	Capacity	MW	0.7				0.70				0.35				0.60				0.25			
	Cross sectional area of duct	m2	0.062				0.075				0.085				0.062				0.049			
	Type of coal	Nalaikh				Nalaikh				Nalaikh				Nalaikh				Nalaikh				
Operational condition	Velocity of flue gas	m/s	-	-	-	-	6.4	5.8	7.3		7.7	7.4	7.2		3.0	2.9	3.6		11.6	13.8	11.5	
	Temperature of flue gas	°C	-	-	-	-	87	84	83		101	94	80		219	173	234		341	502	360	
	Water vapor concentration	%					4.3				1.1				2.2				7.7			
	Flow rate of wet flue gas	Nm3/h					1124	1015	1286		1528	1497	1507		318	331	362		795	752	760	
	Flow rate of wet flue gas	Nm3/h					1100	1000	1300		1500	1500	1500		320	330	360		800	750	760	
	Flow rate of dry flue gas	Nm3/h					1076	972	1231		1511	1480	1490		311	324	354		734	694	701	
	Flow rate of dry flue gas	Nm3/h					1100	1000	1200		1500	1500	1500		310	320	350		730	690	700	
	Ave. flow rate of dry flue gas	Nm3/h					1100				1500				320				710			
	Coal feed rate	kg/h	92				96				70				7.0				121			
	O2 concentration	%	15.7				16.5				18.3				12.4				15.9			
	CO2 concentration	%	4.3				4.4				2.3				7.2				3.7			
	CO concentration	ppm	2925				310				890				4790				1740			
Measured concentration	Dust concentration	g/Nm3	-	-	-	-	0.18	0.12	0.27		0.16	0.05	0.11		0.042	0.29	0.20		3.4	4.3	8.2	
	Average dust concentration	g/Nm3	#DIV/0!				0.19				0.10				0.18				5.3			
(Raw data)	SO2 (ppm)	ppm	152				146				72				123				184			
	NOx (ppm)	ppm	34				44				34				78				39			

Emission Factor	Dust	kg/t	-				2.2				2.2				8.0				31			
	SO2	kg/t	-				4.8				4.4				16				3.1			
	NOx *	kg/t	-				0.67				1.0				4.8				0.31			
	CO	kg/t	-				4.4				24				275				13			
Dust sampling method																						

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3					<u>0.60</u>				<u>0.46</u>				0.24				<u>12</u>			
	SO2	ppm	227				<u>372</u>				<u>300</u>				158				<u>382</u>			
	NOx	ppm	52				114				134				104				74			
	CO	ppm	<u>8228</u>				793				<u>4764</u>				<u>6027</u>				<u>2924</u>			
Emission Standard Value (MNS)	Dust	g/Nm3	0.4				0.4				0.4				0.4				0.4			
	SO2	ppm	280				280				280				280				280			
	NOx	ppm	336				336				336				336				336			
	CO	ppm	2,000				2,000				2,000				2000				2000			

[H-R-1] HOB measurement result

Measurement Date		2011-6				2011-7				2011-8				2011-9				2011-10				
Measurement Date		14-Dec-11				16-Dec-11				20-Dec-11				22-Dec-11				4-Jan-12				
General information	Place	MCS Tiger beer				Ikhzasag university-3				NO.60 secondary school				kyoyulaakhuu				NO.113 secondary school				
	Type of boiler	DZL4				Unknown				MUHT				HP-18-54				MDZ-0.25				
	Capacity	4.0				Unknown				0.70				0.40				0.25				
	Cross sectional area of duct	0.12				0.20				0.075				0.79				0.091				
	Type of coal	Nalaikh				Nalaikh				Nalaikh				Nalaikh+excrement				Nalaikh				
Operational condition	Velocity of flue gas	m/s	29.4	29.2	31.3		10.6	9.9			26.7	24.1			1.8	1.1	1.4		3.1	5.5	3.3	
	Temperature of flue gas	°C	134	149	131		67	83			145	178			135	130	142		167	163	185	
	Water vapor concentration	%	4.9				3.3				5.3				0.56				4.3			
	Flow rate of wet flue gas	Nm3/h	8354	7999	8972		5337	4790			4019	3366			2996	1870	2229		537	973	561	
	Flow rate of wet flue gas	Nm3/h	8400	8000	9000		5300	4800			4000	3400			3000	1900	2200		540	970	560	
	Flow rate of dry flue gas	Nm3/h	7946	7609	8534		5161	4632			3804	3186			2979	1860	2217		501	937	547	
	Flow rate of dry flue gas	Nm3/h	7900	7600	8500		5200	4600			3800	3200			3000	1900	2200		500	940	550	
	Ave. flow rate of dry flue gas	Nm3/h	8000				4800				3500				2300				580			
	Coal feed rate	kg/h	2026				155				131				298				50			
	O2 concentration	%	16.4				17.6				16.7				17.2				13.4			
	CO2 concentration	%	3.9				3.1				3.7				3.4				6.5			
	CO concentration	ppm	630				890				920				812				1487			
Measured concentration	Dust concentration	g/Nm3	0.16	0.23	0.11		0.12	0.044			0.62	1.1			0.76	0.38	0.57		0.12	0.14	0.060	
	Average dust concentration	g/Nm3	0.16				0.075				0.82				0.60				0.11			
(Raw data)	SO2 (ppm)	ppm	112				134				116				97				245			
	NOx (ppm)	ppm	45				40				52				46				56			

21.90839695

Emission Factor	Dust	kg/t	0.65				2.3				22				4.6				1.3			
	SO2	kg/t	1.3				12				8.9				2.1				8.1			
	NOx *	kg/t	0.24				1.6				1.9				0.48				0.86			
	CO	kg/t	3.1				35				31				7.8				22			
Dust sampling method																						

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	0.53				0.26				2.2				1.8				0.18			
	SO2	ppm	345				466				318				281				382			
	NOx	ppm	138				131				129				141				88			
	CO	ppm	2145				3640				3683				3682				3718			
Emission Standard Value (MNS)	Dust	g/Nm3	12.0				0.3				0.4				0.4				0.4			
	SO2	ppm	567				210				280				280				280			
	NOx	ppm	859				299				336				336				336			
	CO	ppm	824				1600				2000				2000				2000			

[H-R-1] HOB measurement result

Measurement Date		2011-11				2011-12				2011-13				2011-14				2011-15				
5-Jan-12		6-Jan-12				10-Jan-12				11-Jan-12				12-Jan-12								
General information	Place	NO.92 school				Train Repair				NO.106 School				No.88 school				No.46school				
	Type of boiler	MDZ-063				BZUI 100				Thermochlor-0.3				KBPO7KB				CLSG				
	Capacity	MW	0.63				0.85				0.35				0.70				0.60			
	Cross sectional area of duct	m2	0.23				0.636				0.085				0.49				0.028			
	Type of coal	Nalaikh				Siveoovo				Nalaikh				Nalaikh				Nalaikh				
Operational condition	Velocity of flue gas	m/s	8.9	8.7	7.3		13.7	14.5	14.7		8.3	6.2	6.2		3.8	3.4	2.7		12.5	10.2		
	Temperature of flue gas	°C	101	97	107		225	243	217		77	117	96		90	93	92		244	167		
	Water vapor concentration	%	5.7				3.5				2.4				2.8				4.3			
	Flow rate of wet flue gas	Nm3/h	4750	4677	3850		17037	17391	18574		1737	1044	1216		4261	3786	3023		585	560		
	Flow rate of wet flue gas	Nm3/h	4800	4700	3900		17000	17000	19000		1700	1000	1200		4300	3800	3000		590	560		
	Flow rate of dry flue gas	Nm3/h	4477	4409	3629		16441	16782	17924		1696	1019	1187		4143	3682	2940		560	536		
	Flow rate of dry flue gas	Nm3/h	4500	4400	3600		16000	17000	18000		1700	1000	1200		4100	3700	2900		560	540		
	Ave. flow rate of dry flue gas	Nm3/h	4200				17200				1200				3600				570			
	Coal feed rate	kg/h	150				1334				126				125				46			
	O2 concentration	%	17.3				16.3				17.9				18.5				15.3			
	CO2 concentration	%	3.1				4.1				2.6				2.0				4.6			
	CO concentration	ppm	490				1990				650				729				3760			
Measured concentration (Raw data)	Dust concentration	g/Nm3	0.52	0.72	0.64		0.75	0.92	0.81		0.17	0.79	0.82		0.89	1.4	1.1		0.13	0.27		
	Average dust concentration	g/Nm3	0.63				0.83				0.62				1.1				0.20			
	SO2 (ppm)	ppm	58				102				87				76				182			
	NOx (ppm)	ppm	26				62				33				17				36			

Emission Factor	Dust	kg/t	18				11				5.9				32				2.5			
	SO2	kg/t	4.6				3.8				2.4				6.3				6.4			
	NOx *	kg/t	1.0				1.1				0.43				0.68				0.59			
	CO	kg/t	17				32				7.7				26				58			
Dust sampling method																						

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	2.0				2.0				2.3				6.2				0.41			
	SO2	ppm	182				266				392				369				361			
	NOx	ppm	82				151				128				80				72			
	CO	ppm	1896				2178				4848				3066				6549			
Emission Standard Value (MNS)	Dust	g/Nm3	0.4				0.3				0.4				0.4				0.4			
	SO2	ppm	280				210				280				280				280			
	NOx	ppm	336				299				336				336				336			
	CO	ppm	2000				1600				2000				2000				2000			

[H-R-1] HOB measurement result

Measurement Date		2011-16				2011-17				2011-18				2011-19				2011-19					
Measurement Date		15-Jan-12				17-Jan-12				19-Jan-12				20-Jan-12				22-Jan-12					
General information	Place	No.10 school				BELON LLC				No.17 Secondary School				No.58 Secondary School				No.59 School					
	Type of boiler	MWB-1				HP18-27				Viaduras VSB IV				MUHT 1.2				Mon dulaan					
	Capacity	MW		1.0				0.2				0.385				0.70				0.063			
	Cross sectional area of duct	m2		0.50				0.042				0.13				0.196				0.013			
	Type of coal	Nalaikh (crushed)				Nalaikh				Baganuur				Nalaikh				Nalaikh (lump)					
Operational condition	Velocity of flue gas	m/s	6.0	6.1	6.4		10.9	11.5	11.2		3.8	3.4	4.0		6.4	4.8	4.7		5.4	6.5			
	Temperature of flue gas	°C	168	168	171		298	316	299		127	80	122		135	101	108		235	232			
	Water vapor concentration	%	7.2				9.0				2.9				0.49				4.7				
	Flow rate of wet flue gas	Nm3/h	5826	5956	6175		673	684	689		1026	1069	1128		2527	2152	2084		143	143			
	Flow rate of wet flue gas	Nm3/h	5800	6000	6200		670	680	690		1000	1100	1100		2500	2200	2100		140	140			
	Flow rate of dry flue gas	Nm3/h	5421	5518	5733		612	622	627		997	1038	1096		2515	2141	2074		136	136			
	Flow rate of dry flue gas	Nm3/h	5400	5500	5700		610	620	630		1000	1000	1100		2500	2100	2100		140	140			
	Ave. flow rate of dry flue gas	Nm3/h	5600				620				1000				2300				140				
	Coal feed rate	kg/h	714				109				41				266				4.1				
	O2 concentration	%	16.0				12.9				17.6				14.5				15.3				
	CO2 concentration	%	3.9				6.4				3.1				5.9				5.0				
CO concentration	ppm	10900				4190				6993				6413				1990					
Measured concentration	Dust concentration	g/Nm3	2.0	3.1	1.9		1.0	1.3	0.80		0.027	0.86	0.82		3.9				0.0094	0.15			
	Average dust concentration	g/Nm3	2.3				1.0				0.17				3.9				0.10				
(Raw data)	SO2 (ppm)	ppm	254				65				100				197				150				
	NOx (ppm)	ppm	38				47				30				45				65				

Emission Factor	Dust	kg/t	18				5.8				4.1				34				3.5			
	SO2	kg/t	5.7				1.1				6.9				4.9				15			
	NOx *	kg/t	0.40				0.36				1.0				0.52				3.0			
	CO	kg/t	107				30				212				69				86			
Dust sampling method																						

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	5.4				1.6				0.68				7.0				0.16			
	SO2	ppm	588				280				360				322				302			
	NOx	ppm	89				183				96				70				132			
	CO	ppm	2397				606				2326				11870				4121			
Emission Standard Value (MNS)	Dust	g/Nm3	0.3				0.4				0.4				0.4				0.4			
	SO2	ppm	210				280				280				280				280			
	NOx	ppm	299				336				336				336				336			
	CO	ppm	1600				2000				2000				2000				2000			

[H-R-1] HOB measurement result

Measurement Date		2011-20				2011-21				2011-22				2011-23				2011-24				
31-Jan-12		31-Jan-12				1-Feb-12				3-Feb-12				9-Feb-12				10-Feb-12				
General information	Place	Police Academy				No. 71 School				No. 104 School				Ecology Institute				No. 118 School				
	Type of boiler	DZL 2.8				Dliirsh 170-88/55				WWGS 0.35				unknown				Carborobot 300				
	Capacity	MW	2.8				0.17				0.35				unknown				0.30			
	Cross sectional area of duct	m2	0.181				0.152				0.068				0.138				0.025			
	Type of coal	Nalaikh				Buganuur				Nalaikh				Nalaikh				Nalaikh				
Operational condition	Velocity of flue gas	m/s	12.9	12.5	13.5		6.8	7.2			6.6	7.0	6.13		6.8	6.6	6.7		11.7	12.2	11.4	
	Temperature of flue gas	°C	164	171	175		220	221			188	197	182		225	195	214		98	98	105	
	Water vapor concentration	%	10.4				5.6				5.6				2.6				7.3			
	Flow rate of wet flue gas	Nm3/h	4529	4312	4620		1758	1874			820	853	771		1595	1658	1619		680	711	651	
	Flow rate of wet flue gas	Nm3/h	4500	4300	4600		1800	1900			820	850	770		1600	1700	1600		680	710	650	
	Flow rate of dry flue gas	Nm3/h	4059	3864	4140		1659	1768			774	806	729		1554	1616	1578		630	659	603	
	Flow rate of dry flue gas	Nm3/h	4100	3900	4100		1700	1800			770	810	730		1600	1600	1600		630	660	600	
	Ave. flow rate of dry flue gas	Nm3/h	4,000				1,700				770				1,600				630			
	Coal feed rate	kg/h	628				81				63				74				92			
	O2 concentration	%	10.9				14.0				12.3				17.9				15.0			
	CO2 concentration	%	8.7				6.0				7.2				2.5				5.0			
CO concentration	ppm	84				1185				5921				2922				2776				
Measured concentration	Dust concentration	g/Nm3	0.18	0.32	0.27		0.36	0.59			0.17	0.19	0.028		0.67	0.073	0.066		0.58	0.64	0.35	
	Average dust concentration	g/Nm3	0.26				0.48				0.13				0.27				0.53			
(Raw data)	SO2 (ppm)	ppm	442				124				221				110				237			
	NOx (ppm)	ppm	126				84				40				23				68			

Emission Factor	Dust	kg/t	1.6				10				1.6				5.8				3.6			
	SO2	kg/t	8.0				7.4				7.8				6.8				4.7			
	NOx *	kg/t	1.1				2.4				0.66				0.66				0.63			
	CO	kg/t	0.67				31				91				79				24			
Dust sampling method																						

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	0.30				0.79				0.18				0.99				1.0			
	SO2	ppm	510				206				289				399				462			
	NOx	ppm	144				139				54				82				132			
	CO	ppm	97				2118				6111				7416				6920			
Emission Standard Value (MNS)	Dust	g/Nm3	0.3				0.4				0.4				0.3				0.4			
	SO2	ppm	210				280				280				210				280			
	NOx	ppm	299				336				336				299				336			
	CO	ppm	1600				2000				2000				1600				2000			

[H-R-1] HOB measurement result

Measurement Date		2011-25				2011-26				2011-27				
13-Feb-12		13-Feb-12				14-Feb-12				15-Feb-12				
General information	Place	No. 102 School				No. 63 School				No. 105 School				
	Type of boiler	HP18-27				BNEB				Viadurus				
	Capacity	MW	unknown				0.23				0.39			
	Cross sectional area of duct	m2	0.053				0.031				0.042			
	Type of coal	Nalaikh				Nalaikh				Baganuur				
Operational condition	Velocity of flue gas	m/s	11.6	11.7	10.3		3.7	3.7	4.0		13.7	12.8	11.7	
	Temperature of flue gas	°C	212	288	193		78	85	95		273	269	268	
	Water vapor concentration	%	7.0				3.5				7.8			
	Flow rate of wet flue gas	Nm3/h	1066	934	986		278	274	286		868	818	751	
	Flow rate of wet flue gas	Nm3/h	1100	930	990		280	270	290		870	820	750	
	Flow rate of dry flue gas	Nm3/h	991	869	917		268	265	276		801	754	693	
	Flow rate of dry flue gas	Nm3/h	990	870	920		270	260	280		800	750	690	
	Ave. flow rate of dry flue gas	Nm3/h	918				271				749			
	Coal feed rate	kg/h	60				17				112			
	O2 concentration	%	13.7				13.8				15.2			
	CO2 concentration	%	6.2				6.3				4.8			
	CO concentration	ppm	2183				743				973			
Measured concentration	Dust concentration	g/Nm3	1.35	1.23	0.30		0.37	0.072	0.076		0.23	0.15	0.14	
	Average dust concentration	g/Nm3	1.0				0.15				0.18			
(Raw data)	SO2 (ppm)	ppm	371				314				132			
	NOx (ppm)	ppm	38				80				47			

Emission Factor	Dust	kg/t	15				2.3				1.2			
	SO2	kg/t	16				14				2.5			
	NOx *	kg/t	0.78				1.7				0.4			
	CO	kg/t	42				15				8.1			
Dust sampling method														

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	1.6				0.24				0.35			
	SO2	ppm	606				491				269			
	NOx	ppm	62				125				93			
	CO	ppm	3789				1798				1893			
Emission Standard Value (MNS)	Dust	g/Nm3	0.3				0.4				0.4			
	SO2	ppm	210				280				280			
	NOx	ppm	299				336				336			
	CO	ppm	1600				2000				2000			

[P-R-1] Measurement results of NO.3 Power Plant

Measurement Date			6-Dec-11				7-Dec-11				24-Jan-12				24-Jan-12			
No. of boiler			NO.4(75t/h)				NO.6(75t/h)				NO.7(220t/h)				NO.10(220t/h)			
Cross sectional area of duct		m2	2.12		1.44		2.36		1.88		-		3.72		-		3.72	
Type of coal			Baganuur		Baganuur		Baganuur		Baganuur		Baganuur		Baganuur		Baganuur		Baganuur	
Measurement duct			before scrubber		after scrubber		before scrubber		after scrubber		before scrubber		after scrubber		before scrubber		after scrubber	
			left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct	left duct	right duct
Operational condition	Velocity of flue gas	m/s	10.1	10.9	10.9	11.3	28.2	28.3	24.8	25.0	-	-	8.1	8.7	-	-	10.1	11.8
	Temperature of flue gas	℃	131	116	68	53	168	163	68	74	-	-	82	80	-	-	64	64
	Water vapor concentration	%	8.5	8.7	12.3	10.7	5.5	11.2	3.9	3.9	-	-	5.5	16.5	-	-	3.9	9.0
	Flow rate of wet flue gas	Nm3/h	44,500	50,200	38,300	41,500	128,400	130,500	115,100	114,200	-	-	70,800	75,500	-	-	90,400	106,500
	Flow rate of dry flue gas	Nm3/h	40,800	45,900	33,600	37,100	121,400	116,000	110,600	109,800	-	-	67,000	63,000	-	-	86,900	96,900
	Total flow rate of dry flue gas	Nm3/h	86,700		70,700		237,400		220,400		-		130,000		-		183,800	
	Coal feed rate	kg/h	11,000				14,000				37,340				26,820			
	O2 concentration	%	8.6	8.9	8.8	9.0	5.7	4.8	4.4	5.2	-	-	14.0	14.6	-	-	16.3	16.3
	CO2 concentration	%	11.1	10.8	10.9	10.7	13.4	14.3	14.8	13.9	-	-	6.4	5.8	-	-	4.4	4.4
	CO concentration	ppm	177	130	152	129	21	31	33	26	-	-	77	27	-	-	2.4	2.4
Dust (Raw data)	Dust concentration	g/Nm3	8.75	9.19	0.28	0.09	5.99	6.23	0.75	0.58	-	-	1.55	1.39	-	-	0.40	0.47
	Average of Dust concentration	g/Nm3	9.0		0.19		6.11		0.67		-		1.47		-		0.43	
	Efficiency of de-dust	%	97.9				89.1				-				-			
Gas (Raw data)	NOx concentration	ppm	209	216	213	215	311	307	350	306	-	-	146	142	-	-	95	95
	SO2 concentration	ppm	316	275	208	225	237	272	145	182	-	-	173	156	-	-	54	54
	Measurement time		14:53-15:19	15:24-15:46	13:02-13:39	13:46-14:32	13:38-13:54	13:02-13:23	11:32-12:07	12:12-12:48	-	-	12:10-13:51	15:02-16:10	-	-	16:50-17:50	18:24-19:47

Emission Factor	Dust factor for each duct	kg/t	-	0.86	0.30	-	5.9	4.5	-	2.8	2.3	-	1.3	1.7				
	Dust factor as a boiler	kg/t	1.2		-		10		-		5.1		3.0					
	SO2	kg/t	4.0		-		7.4		-		1.6		1.1					
	NOx	kg/t	1.8		-		6.9		-		0.67		0.88					
	CO	kg/t	1.1		-		0.6		-		0.2		0.021					
Emission Concentration after O2 conversion at 6%	Dust	g/Nm3	0.23				0.61				3.3				1.4			
	SO2	ppm	268				152				371				173			
	NOx	ppm	265				303				324				307			
	CO	ppm	174				27				115				7.8			
Emission Standard Value (MNS)	Dust	g/Nm3	1.2				21				10.8				10.8			
	SO2	ppm	215.3				676.1				519.8				519.8			
	NOx	ppm	238.9				948.3				821.3				821.3			
	CO	ppm	4996				2838				240				240			
Remarks			Fluidized bed furnace															

* Molecular weight of NO is used for converting the NOx unit from ppm to mg/m3

[H-R-1] GER measurement result

Measurement Date			28-Dec-11				29-Dec-11						30-Dec-11			
General information	Place		Obi's ger				Obi's ger						Obi's ger			
	Type of boiler		traditional ger stove				traditional ger stove						turky ger stove			
	Capacity	MW	-				-						-			
	Cross sectional area of duct	m2	0.0095				0.0095						0.0133			
	Type of coal		wood only				wood+Nalaikh coal						wood only			
Operational condition	Velocity of flue gas	m/s	2.9	4.4	3.0		2.7	2.8	3.6	2.5	3.0	2.3	2.1	4.4	3.0	
	Temperature of flue gas	℃	191	271	85		176	195	299	221	207	120	168	350	116	
	Water vapor concentration	%	4.7				5.3						5.9			
	Flow rate of wet flue gas	Nm3/h	50	64	65		39	46	49	40	50	47	53	79	86	
	Flow rate of dry flue gas	Nm3/h	47	58	64		37	42	44	38	50	47	51	71	85	
	Ave. flow rate of dry flue gas	Nm3/h	58				45						75			
	Fuel feed rate	kg/h	2.5 (Wood)				1.7 (Coal)						1.2 (Wood)			
	O2 concentration	%	20.1				17.2						19.0			
	CO2 concentration	%	1.0				3.1						1.7			
	CO concentration	ppm	740				1782						1340			
Measured concentration (Raw data)	Dust concentration	g/Nm3	0.23	0.18	0.037		0.00055	0.81	0.035	0.043	0.14	0.000	0.000	0.323	0.000	
	Average dust concentration	g/Nm3	0.11				0.17						0.17			
	SO2 (ppm)	ppm	0.2				17						6.1			
	NOx (ppm)	ppm	1.2				30						6.4			

Emission Factor	Dust	kg/t	2.6				4.4						11			
	SO2	kg/t	0.012				1.2						1.1			
	NOx *	kg/t	0.039				1.1						0.55			
	CO	kg/t	21.5				58						107			
Dust sampling method																

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	1.3				0.53						0.98			
	SO2	ppm	1.8				55						22			
	NOx	ppm	10				87						24			
	CO	ppm	6732				6688						4997			
Emission Standard Value (MNS)	Dust	g/Nm3	2.5				2.5						2.5			
	SO2	ppm	-				-						-			
	NOx	ppm	-				-						-			
	CO	ppm	3200				3200						3200			

[H-R-1] GER measurement result

Measurement Date		31-Dec-11					5-Feb-12					6-Feb-12				
General information	Place	Obi's ger					Mr. Davaajargal Home					Mr. Davaajargal Ger				
	Type of boiler	turky ger stove					Wall stove					Ger stove (Coal)				
	Capacity	-					-					-				
	Cross sectional area of duct	0.0133					0.0532					0.0079				
	Type of coal	wood+Nalaikh coal					Nalaikh					Nalaikh				
Operational condition	Velocity of flue gas	2.4	2.6	2.6	0.5		0.21	0.6	0.3		4.5	5.7	3.1			
	Temperature of flue gas	213	145	130	76		94	101	106		276	469	252			
	Water vapor concentration	5.0					1.4					7.8				
	Flow rate of wet flue gas	54	68	70	16		26	70	35		55	51	39			
	Flow rate of dry flue gas	54	68	70	16		25	69	35		51	47	36			
	Ave. flow rate of dry flue gas	56					38					45				
	Fuel feed rate	2.2 (Coal)					2.0 (Coal)					2.3 (Coal)				
	O2 concentration	17.1					18.9					14.0				
	CO2 concentration	3.1					1.8					5.9				
CO concentration	1427					2490					3014					
Measured concentration (Raw data)	Dust concentration	0.29	0.13	0.11	0.00		0.42	0.57	0.49		0.54	0.064	0.0028			
	Average dust concentration	0.13					0.50					0.23				
	SO2 (ppm)	45					109					131				
	NOx (ppm)	27					23					29				

Emission Factor	Dust	3.3					9.8					4.4				
	SO2	3.3					6.1					7.3				
	NOx *	0.94					0.61					0.76				
	CO	46					60.4					73.4				
Dust sampling method		Constant flow rate sampling					Constant flow rate sampling									

* NO molecular weight is used for convert the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	0.38					2.8					0.38				
	SO2	154					630					204				
	NOx	64					131					40				
	CO	5606					14048					7193				
Emission Standard Value (MNS)	Dust	2.5					2.5					2.5				
	SO2	-					-					-				
	NOx	-					-					-				
	CO	3200					3200					3200				

[H-R-1] GER measurement result

Measurement Date		6-Feb-12			
General information	Place	Mr. Davaajargal Ger			
	Type of boiler	Ger stove (Semi-Coke)			
	Capacity	-			
	Cross sectional area of duct	0.0079			
	Type of coal	Nalaikh			
Operational condition	Velocity of flue gas	4.0	2.8	3.3	
	Temperature of flue gas	246	237	158	
	Water vapor concentration	1.9			
	Flow rate of wet flue gas	51	36	51	
	Flow rate of dry flue gas	50	35	50	
	Ave. flow rate of dry flue gas	45			
	Fuel feed rate	1.0 (Semi-Coke)			
	O2 concentration	18.6			
	CO2 concentration	2.1			
	CO concentration	4430			
Measured concentration (Raw data)	Dust concentration	0.035	0.013	0.0044	
	Average dust concentration	0.018			
	SO2 (ppm)	22			
	NOx (ppm)	5.3			

Emission Factor	Dust	0.79			
	SO2	2.7			
	NOx *	0.31			
	CO	244			
Dust sampling method		Constant flow rate sampling			

* NO molecular weight is used for convert the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	0.088			
	SO2	110			
	NOx	25			
	CO	18932			
Emission Standard Value (MNS)	Dust	2.5			
	SO2	-			
	NOx	-			
	CO	3200			

IH-R-1) HOB measurement result

Measurement Date		15-Jan-13				16-Jan-13				31-Jan-13					
General information	Place	#76 School				#20 Kindergarten				#104 school					
	Type of boiler	DZL-1.4				DZL-0.7				SHG 0.7					
	Capacity	MW	1.4				0.70				0.35				
	Cross sectional area of duct	m2	0.11				0.16				0.032				
	Type of coal	Nalaikh				Nalaikh				Nalaikh					
Operational condition	Velocity of flue gas	m/s	13.8	11.6	13.0		0.9	0.8	2.0		22.2	21.6	20.3	9.0	
	Temperature of flue gas	°C	119	117	118		58	53	56		129	132	146	100	
	Water vapor concentration	%	13.9				7.8				8.4				
	Flow rate of wet flue gas	Nm3/h	3062	2588	2898		393	392	836		1561	1508	1369	681	
	Flow rate of wet flue gas	Nm3/h	3060	2590	2900		390	390	840		1560	1510	1370	680	
	Flow rate of dry flue gas	Nm3/h	2637	2229	2496		362	361	770		1457	1407	1278	636	
	Flow rate of dry flue gas	Nm3/h	2640	2230	2500		360	360	770		1460	1410	1280	640	
	Ave. flow rate of dry flue gas	Nm3/h	2,454				498				1,194				
	Coal feed rate	kg/h	275				186				64				
	O2 concentration	%	10.6				12.6				16.3				
	CO2 concentration	%	9.5				7.9				4.5				
	CO concentration	ppm	50				711				196				
Measured concentration	Dust concentration	g/Nm3	0.55	0.52	0.62		0.030	0.014	0.0028		0.031	0.045	0.044	0.12	
	Average dust concentration	g/Nm3	0.56				0.012				0.050				
(Raw data)	SO2 (ppm)	ppm	625				81				274				
	NOx (ppm)	ppm	155				87				47				

ファンのダンパーを使って、抑制して運転していた

Emission Factor	Dust	kg/t	5.0				0.032				0.93			
	SO2	kg/t	16				0.62				14.6			
	NOx *	kg/t	1.9				0.31				1.2			
	CO	kg/t	0.56				2.4				4.6			
Dust sampling method			Isokinetic sampling				Isokinetic sampling				Isokinetic sampling			

高いが、本当に出ている

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	0.63				0.016				0.12			
	SO2	ppm	700				107				684			
	NOx	ppm	172				115				111			
	CO	ppm	60				1237				669			
Emission Standard Value (MNS)	Dust	g/Nm3	0.3				0.4				0.4			
	SO2	ppm	210				280				280			
	NOx	ppm	299				336				336			
	CO	ppm	1600				2000				2000			

IH-R-1) GER measurement result

Measurement Date		9-Oct-12				9-Oct-12				25-Oct-12				25-Oct-12				
General information	Place	Daba's ger				Daba's ger				Daba's ger				Daba's ger				
	Type of boiler	traditional ger stove				traditional ger stove				traditional ger stove				traditional ger stove				
	Capacity	MW	-				-				-				-			
	Cross sectional area of duct	m2	0.0079				0.0079				0.0079				0.0079			
	Type of coal	wood briquet				semicoke				wood briquet B				semicoke briquet				
Operational condition	Velocity of flue gas	m/s	5.0	5.1	4.0		4.5	4.8			3.6	2.0			2.8	2.0		
	Temperature of flue gas	°C	431	477	313		402	435			389	207			257	146		
	Water vapor concentration	%	13.9				17.6				10.4				3.5			
	Flow rate of wet flue gas	Nm3/h	47	44	44		44	44			47	61			77	68		
	Flow rate of dry flue gas	Nm3/h	40	38	38		36	36			42	55			74	66		
	Ave. flow rate of dry flue gas	Nm3/h	39				36				48				70			
	Fuel feed rate	kg/h	3.1 (Wood B.)				2.1 (Semi-Coke)				2.8 (Wood B.)				2.4 (Semi-Coke)			
	O2 concentration	%	13.9				14.8				16.5				18.5			
	CO2 concentration	%	6.5				5.8				4.2				2.5			
	CO concentration	ppm	12533				2877				4319				1508			
Measured concentration (Raw data)	Dust concentration	g/Nm3	0.96	0.04	0.02		0.61	0.02			0.38	0.01			0.15	0.03		
	Average dust concentration	g/Nm3	0.35				0.32				0.17				0.09			
	SO2 (ppm)	ppm	226				67				66				46			
	NOx (ppm)	ppm	24				46				23				14			

Emission Factor	Dust	kg/t	4.4				5.4				3.0				2.7			
	SO2	kg/t	8.1				3.3				3.3				3.9			
	NOx *	kg/t	0.40				1.05				0.55				0.56			
	CO	kg/t	195				62				94				56			
Dust sampling method																		

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	0.58				0.59				0.45				0.43			
	SO2	ppm	252				125				115				280			
	NOx	ppm	42				78				70				57			
	CO	ppm	14938				10516				7646				8757			
Emission Standard Value (MNS)	Dust	g/Nm3	2.5				2.5				2.5				2.5			
	SO2	ppm	-				-				-				-			
	NOx	ppm	-				-				-				-			
	CO	ppm	3200				3200				3200				3200			

IH-R-1] GER measurement result

Measurement Date		23-Jan-13				24-Jan-13				25-Jan-13				24-Jan-13				28-Jan-13			
General information	Place	Otgonbayal's ger				Otgonbayal's ger				Otgonbayal's ger				Otgonbayal's ger				Otgonbayal's ger			
	Type of boiler	traditional ger stove				t rditional ger stove				tradtional				traditional ger stove				traditional ger stove			
	Capacity	-				-				-				-				-			
	Cross sectional area of duct	0.0079				0.0079				0.0079				0.0079				0.0079			
	Type of coal	Wood briquet (Tunkhel)				Wood briquet (Hyalgant)				wood briquet (2-step loan)				semicoke (PP2)				semi coke briquet(MAK)			
Operational condition	Velocity of flue gas	3.0	3.0	3.0		2.5	2.5	3.0		4.0	3.5			3.5	3.0	2.8		2.2	2.3	2.1	2.5
	Temperature of flue gas	200	200	200		207	230	387		443	340			239	266	235		128	140	134	149
	Water vapor concentration	6.1				9.6				5.4				2.4				4.2			
	Flow rate of wet flue gas	42	42	42		34	33	28		37	36			45	36	36		36	35	33	38
	Flow rate of dry flue gas	36	40	41		32	31	26		35	34			44	35	35		34	34	32	36
	Ave. flow rate of dry flue gas	39				30				34				38				35			
	Fuel feed rate	2.0 (Wood B.)				2.8 (Wood B.)				2.0 (Wood B.)				1.0 (Semi-Coke)				1.0 (Semi-Coke)			
	O2 concentration	17.9				15.7				17.5				18.1				18.7			
	CO2 concentration	2.9				4.4				2.8				2.2				2.1			
CO concentration	2435				2425				1513				3244				2350				
Measured concentration (Raw data)	Dust concentration	0.35	0.11	0.29		0.10	0.082	0.10		0.072	0.051			0.0053	0.0013	0.0017		0.071	0.072	0.070	0.0093
	Average dust concentration	0.21				0.095				0.056				0.0029				0.029			
	SO2 (ppm)	21				14				7.2				1.5				16			
	NOx (ppm)	16				25				13				9.4				12			

Emission Factor	Dust	4.1				1.0				0.97				0.11				1.0			
	SO2	1.2				0.42				0.36				0.16				1.6			
	NOx *	0.43				0.35				0.31				0.47				0.59			
	CO	60				32				33				152				104			
Dust sampling method		Constant flow rate sampling				Isokinetic sampling				Isokinetic sampling				Isokinetic sampling				Isokinetic sampling			

* NO molecular weight is used for conve

Emission Concentration after O2 conversion at 9.33%	Dust	0.78				0.21				0.19				0.011				0.15			
	SO2	71				22				29				5.1				83			
	NOx	63				54				46				35				64			
	CO	9191				5930				5966				15203				12161			
Emission Standard Value (MNS)	Dust	2.5				2.5				2.5				2.5				2.5			
	SO2	-				-				-				-				-			
	NOx	-				-				-				-				-			
	CO	3200				3200				3200				3200				3200			

IH-R-1) GER measurement result

ゆっくり燃えた場合

勢い良く燃えた場合

Measurement Date		21-Jan-13				22-Jan-13					28-Jan-13				29-Jan-13			
General information	Place	Otgonbayal's ger				Otgonbayal's ger					Otgonbayal's ger				Otgonbayal's ger			
	Type of boiler	turky ger stove coal1				turky ger stove coal2					traditional ger stove				traditional ger stove			
	Capacity	MW	-				-					-				-		
	Cross sectional area of duct	m2	0.013				0.013					0.0079				0.0079		
	Type of coal	Nalaikh				Nalaikh					Nalaikh				Nalaikh			
Operational condition	Velocity of flue gas	m/s	0.7~1.4	0.7~1.4	0.7~1.4	1~2	1~2	1~2	1~2	1~2	3.3	3.7	2.5		2.5	2.6	1.9	
	Temperature of flue gas	℃	255	348	255	513	525	469	373	312	205	227	197		161	213	134	
	Water vapor concentration	%	13.3				10.9					3.0				2.9		
	Flow rate of wet flue gas	Nm3/h	15	13	15	14	14	15	17	19	44	48	34		37	35	30	
	Flow rate of dry flue gas	Nm3/h	13	11	13	13	13	13	15	17	43	47	33		36	34	29	
	Ave. flow rate of dry flue gas	Nm3/h	13				14					36				30		
	Fuel feed rate	kg/h	1.8				1.8					1.6				1.6		
	O2 concentration	%	15.0				14.7					17.3				16.3		
	CO2 concentration	%	4.8				5.4					3.2				3.9		
	CO concentration	ppm	1060				285					2230				4292		
Measured concentration (Raw data)	Dust concentration	g/Nm3	0.018	0.021	0.0042	0.034	0.016	0.022	0.032	0.040	0.14	0.024	0.042		0.099	0.21	0.022	
	Average dust concentration	g/Nm3	0.0062				0.029					0.055				0.061		
	SO2 (ppm)	ppm	131				117					36				71		
	NOx (ppm)	ppm	69				57					41				45		

Emission Factor	Dust	kg/t	0.043 ~ 0.085				0.23 ~ 0.45					1.2				1.2		
	SO2	kg/t	2.6 ~ 5.2				2.6 ~ 5.2					2.3				3.9		
	NOx *	kg/t	0.63 ~ 1.3				0.59 ~ 1.2					1.2				1.2		
	CO	kg/t	9.1 ~ 18				2.8 ~ 5.6					63				103		
Dust sampling method			Constant flow rate sampling				Constant flow rate sampling					Isokinetic sampling				Isokinetic sampling		

* NO molecular weight is used for converting the NOx unit from ppm to mg/m3

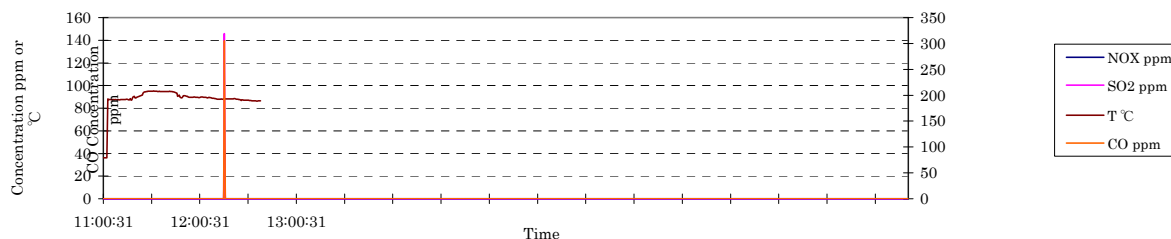
Emission Concentration after O2 conversion at 9.33%	Dust	g/Nm3	0.012				0.054					0.17				0.15		
	SO2	ppm	254				207					104				186		
	NOx	ppm	137				98					125				110		
	CO	ppm	1962				565					7298				11491		
Emission Standard Value (MNS)	Dust	g/Nm3	2.5				2.5					2.5				2.5		
	SO2	ppm	-				-					-				-		
	NOx	ppm	-				-					-				-		
	CO	ppm	3200				3200					3200				3200		

Graph of Measurement Result

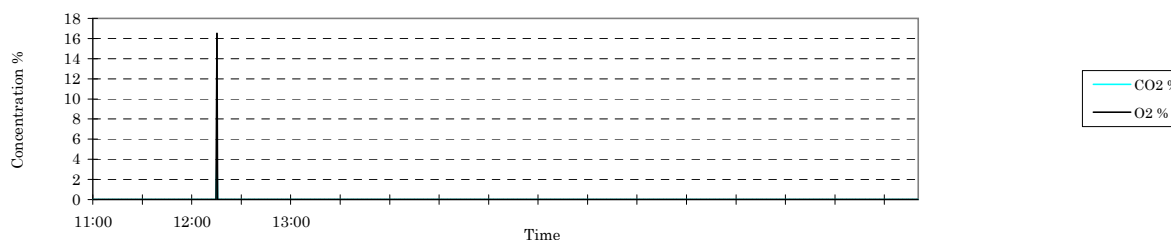
Date:	2011/11/25
Place:	Ikhzasag university-1
HOB type:	DZL-0.7
Boiler Capacity (kW):	0.70
Cross sectional area of duct (m ²):	0.075
Type of Coal:	Nalaikh

Comment:
 HODAKA didn't work in the first half of the measurement.

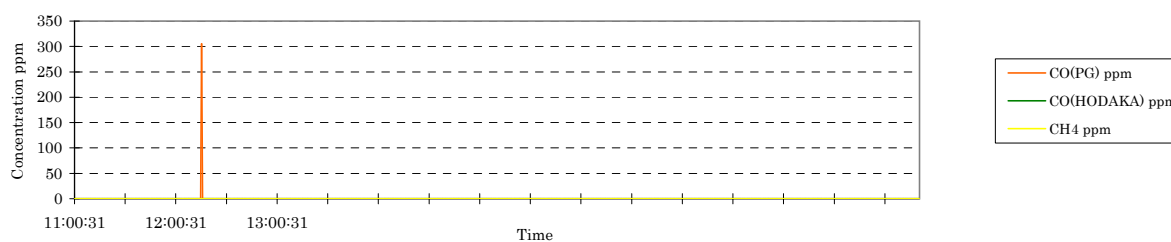
NOX,SO2,CO(Horiba),T



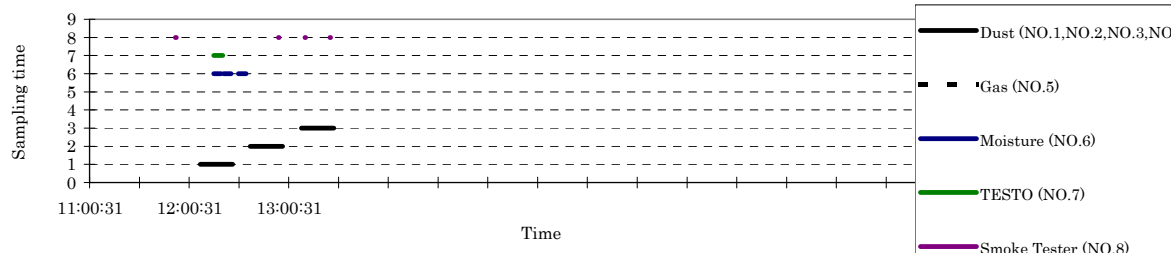
CO2,O2



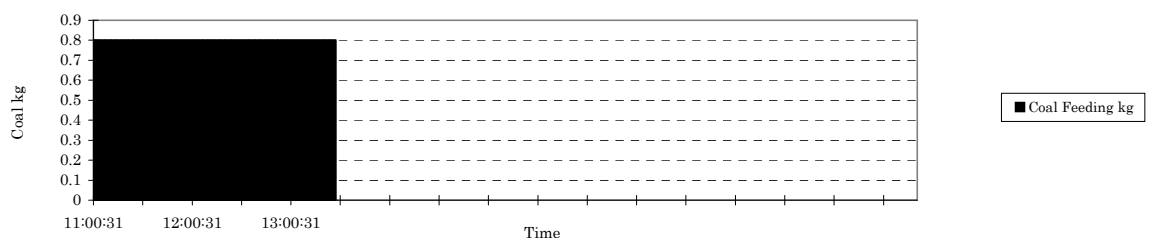
CO(PG-250),CO(HODAKA)



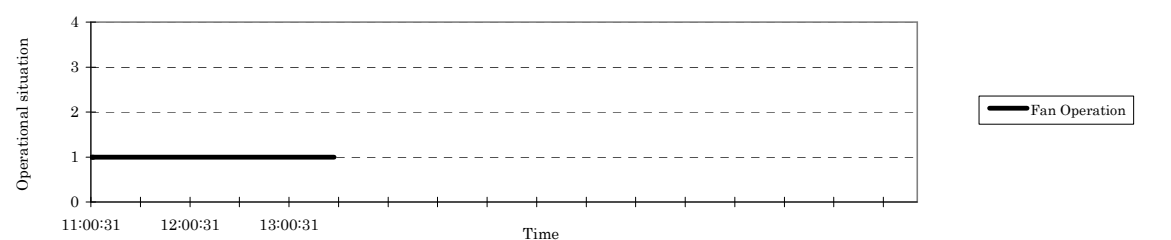
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



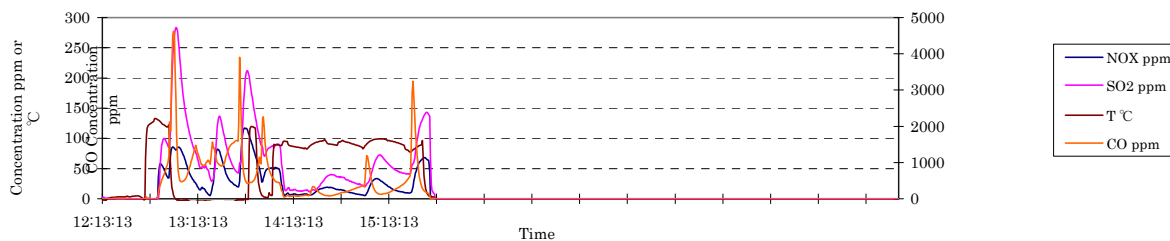
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

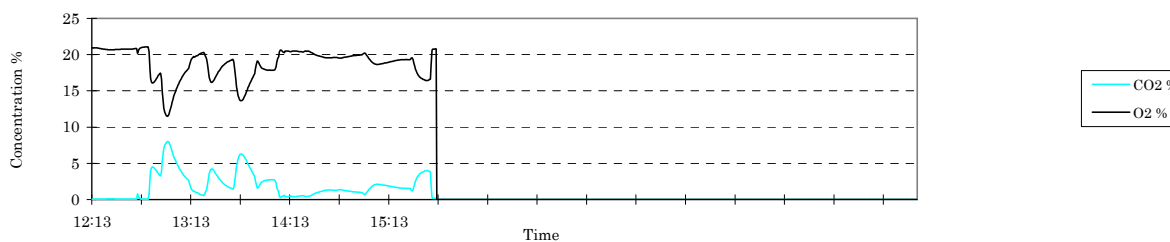
Date:	2011/11/29
Place:	NO.114 school
HOB type:	WWGS-0.35
Boiler Capacity (kW):	0.35
Cross sectional area of duct (m ²):	0.085
Type of Coal:	Nalaikh

Comment:
HODAKA didn't work in the first half of the measurement.

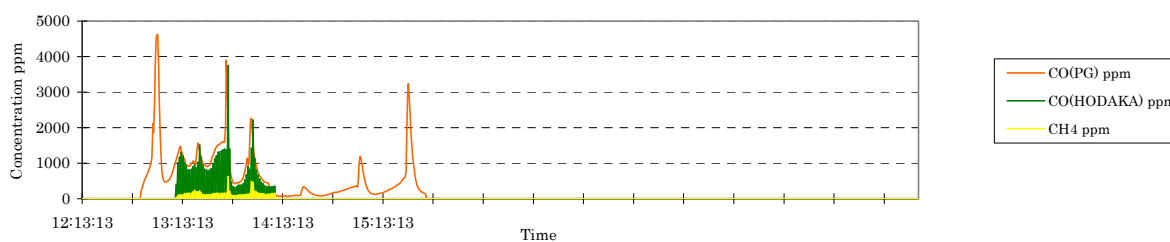
NOX,SO2,CO(Horiba),T



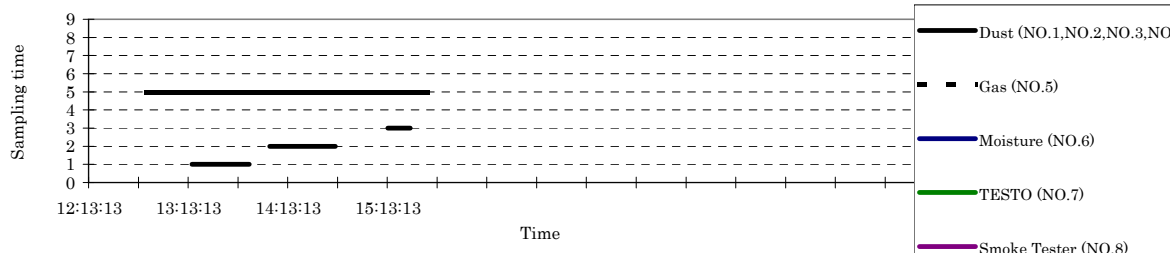
CO2,O2



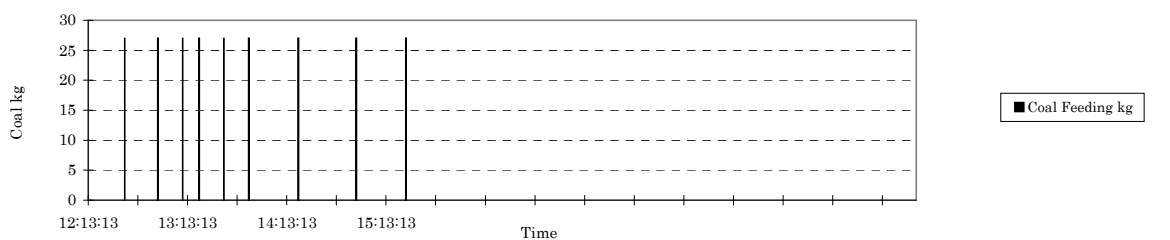
CO(PG-250),CO(HODAKA)



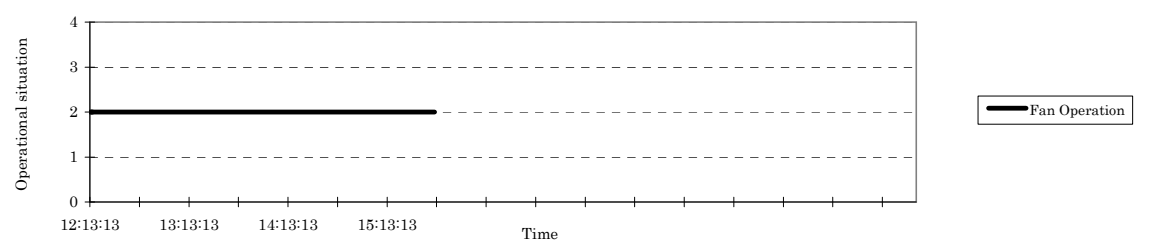
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



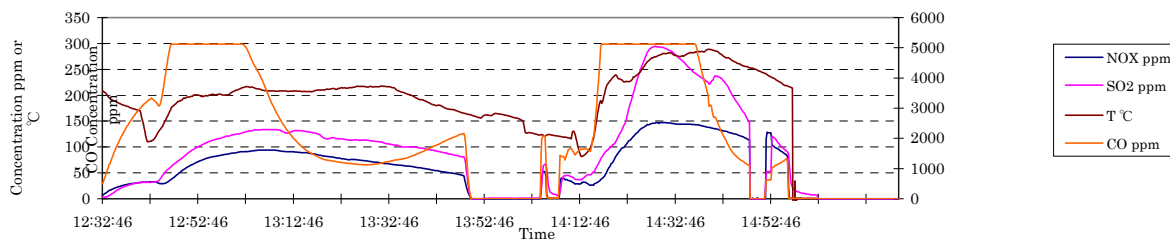
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

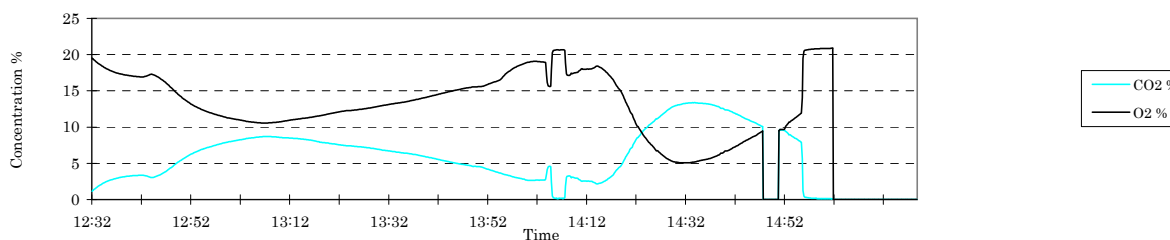
Date:	2011/12/2
Place:	Haan Bank
HOB type:	CLHG-0.6/C
Boiler Capacity (kW):	0.60
Cross sectional area of duct (m ²):	0.062
Type of Coal:	Nalaikh

Comment:

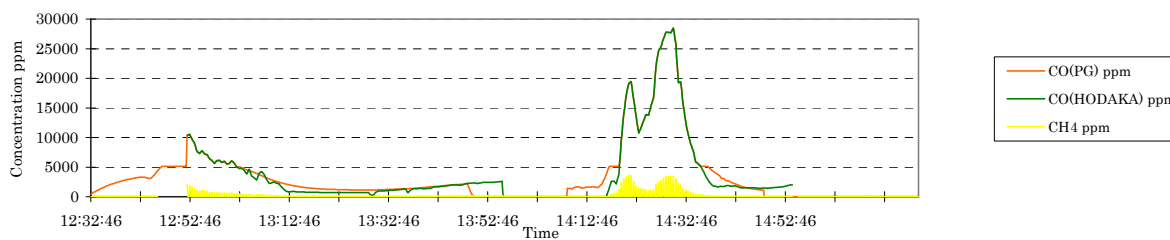
NOX,SO2,CO(Horiba),T



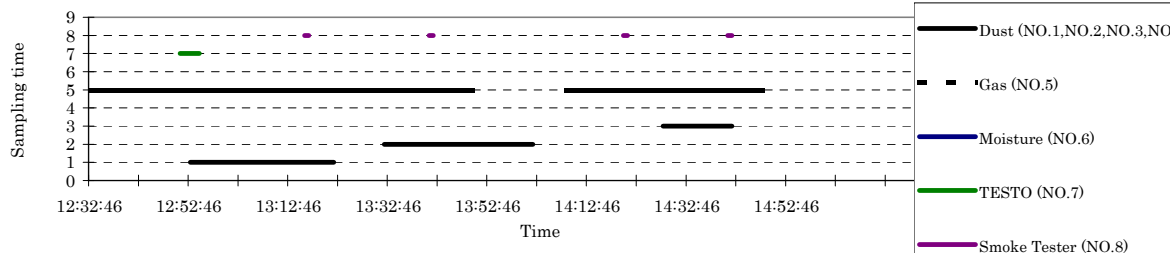
CO2,O2



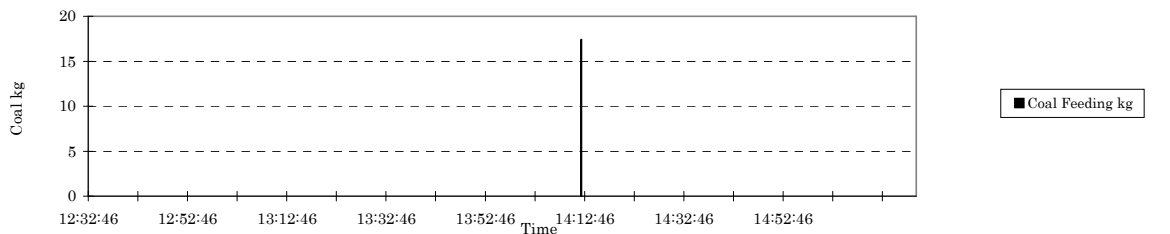
CO(PG-250),CO(HODAKA)



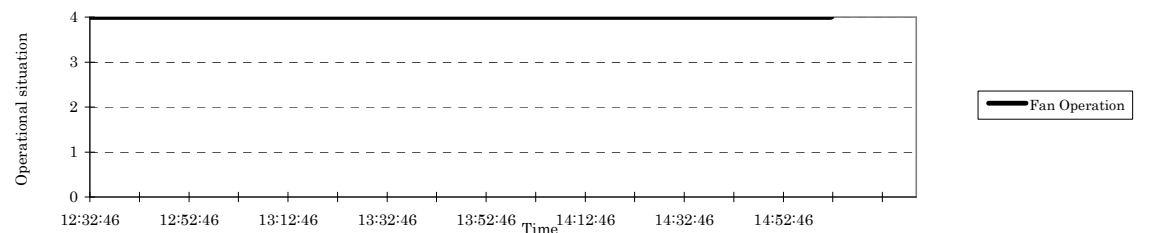
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



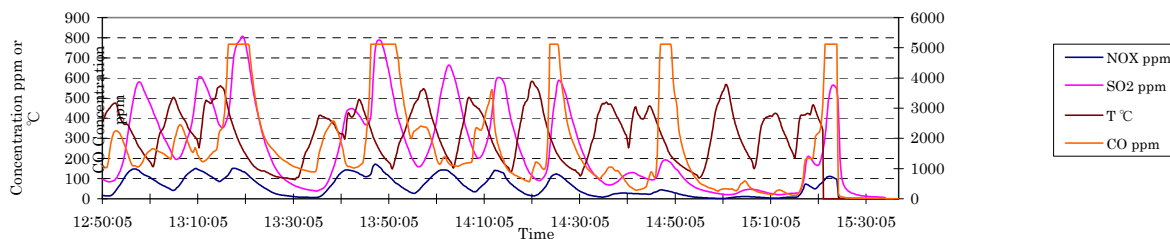
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

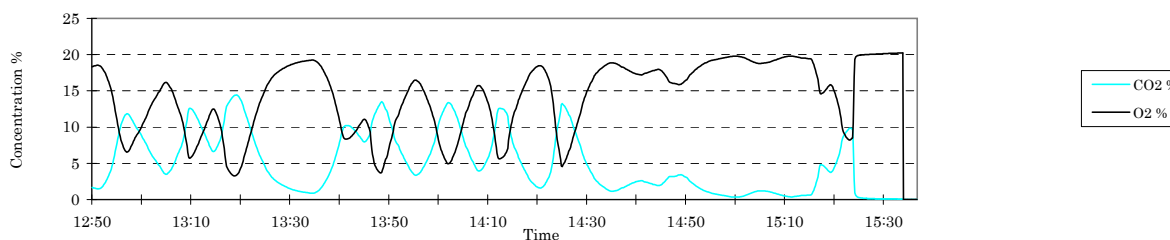
Date:	2011/12/9
Place:	Tavan gan
HOB type:	CLSG25
Boiler Capacity (kW):	0.25
Cross sectional area of duct (m ²):	0.049
Type of Coal:	Nalaikh

Comment:
HODAKA didn't work in the first half of the measurement.

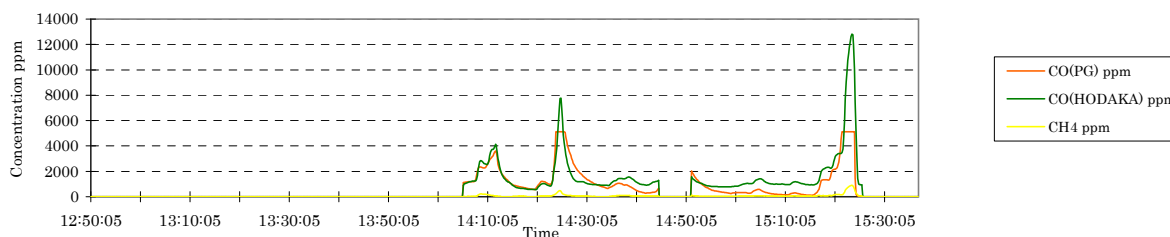
NOX,SO2,CO(Horiba),T



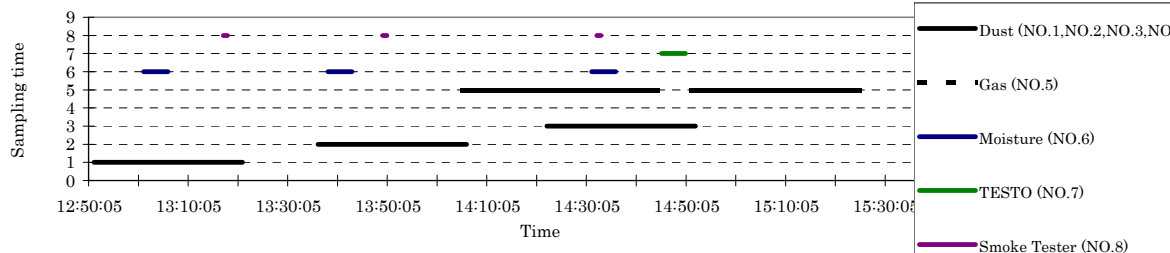
CO2,O2



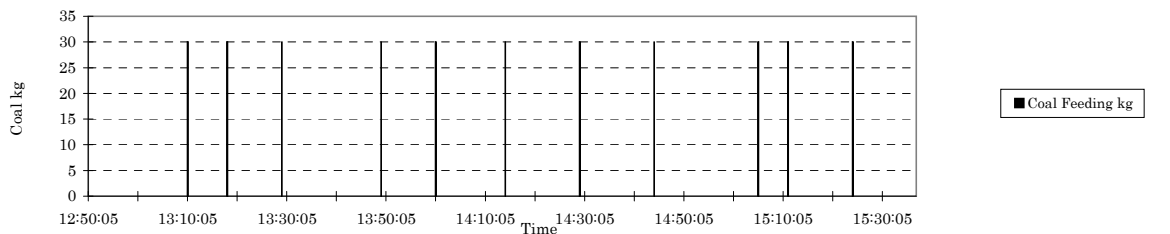
CO(PG-250),CO(HODAKA)



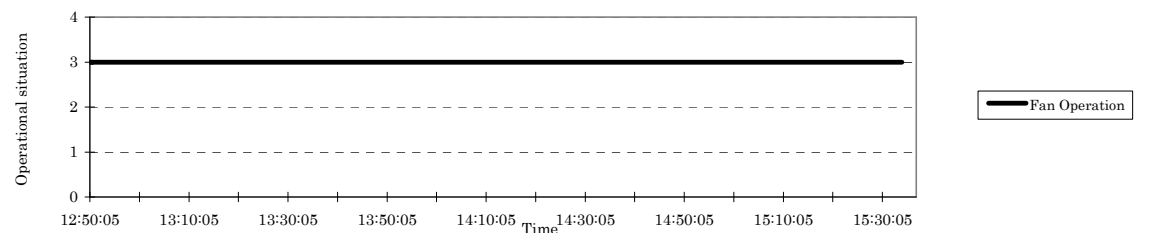
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



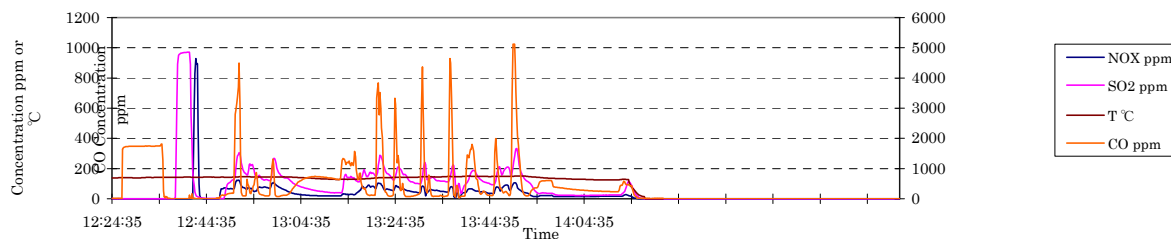
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

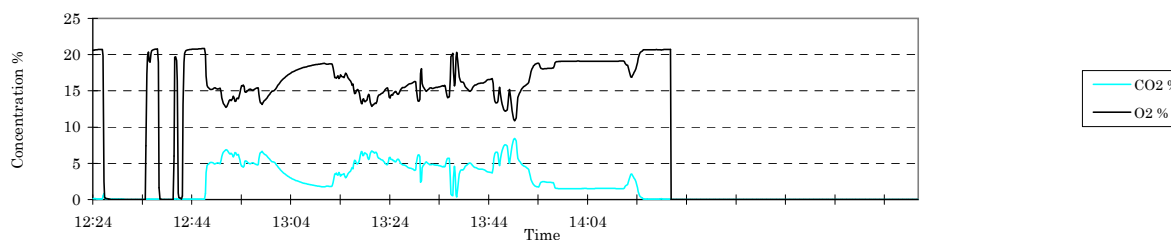
Date:	2011/12/14
Place:	MCS Tiger beer
HOB type:	DZL4
Boiler Capacity (kW):	4.00
Cross sectional area of duct (m ²):	0.119
Type of Coal:	Nalaikh

Comment:

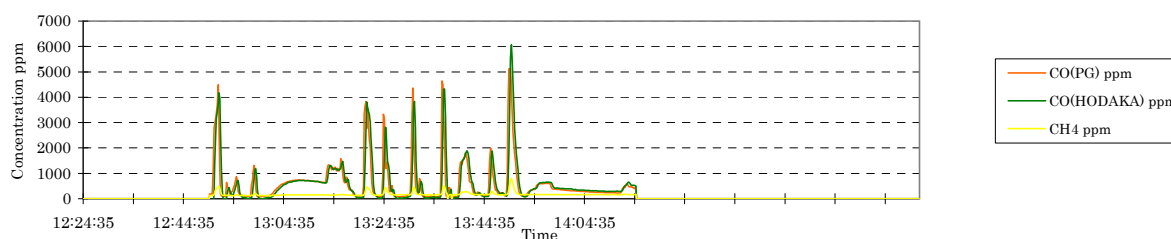
NOX,SO2,CO(Horiba),T



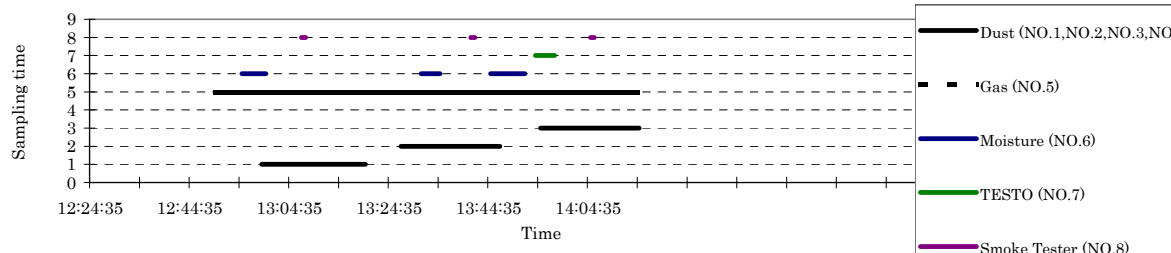
CO2,O2



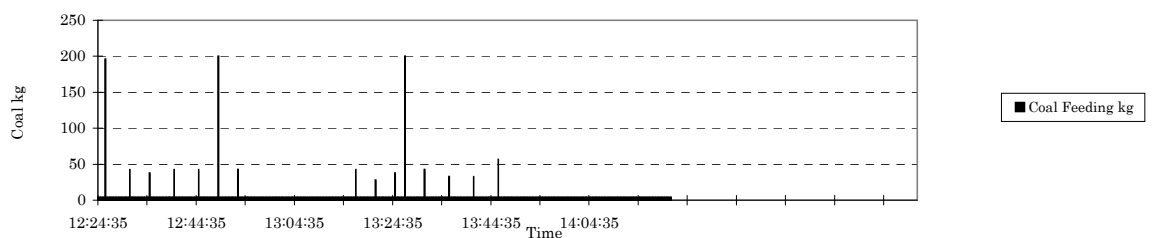
CO(PG-250),CO(HODAKA),CH4



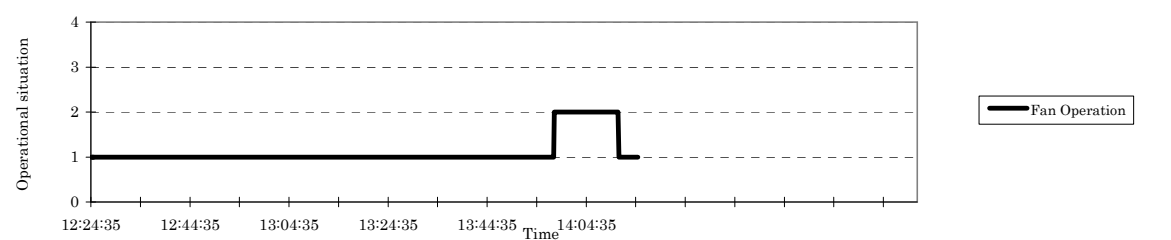
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



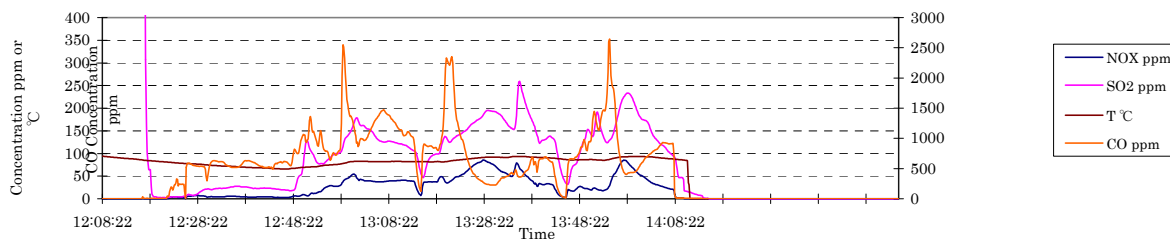
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

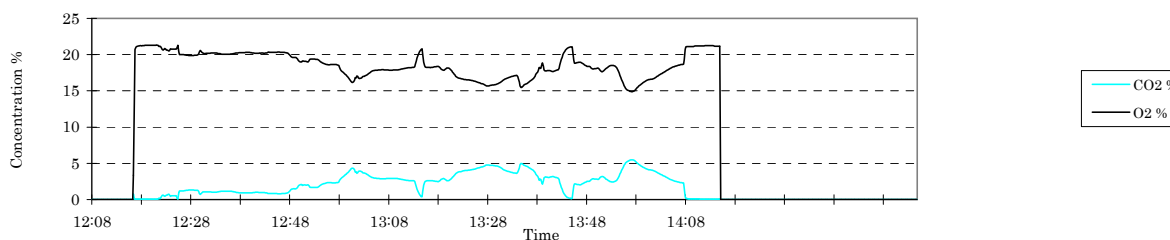
Date:	2011/12/16
Place:	Ikhzasag university-3
HOB type:	1900/1/0
Boiler Capacity (kW):	0.00
Cross sectional area of duct (m ²):	0.201
Type of Coal:	Nalaikh

Comment:

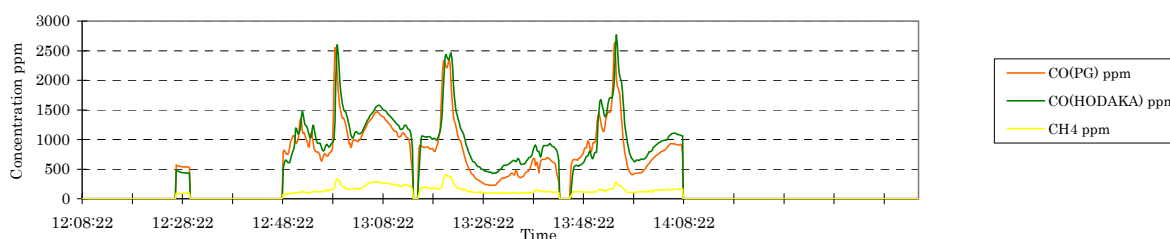
NOX,SO2,CO(Horiba),T



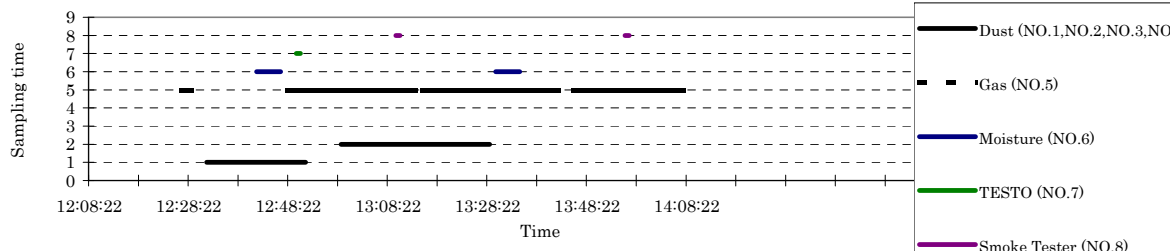
CO2,O2



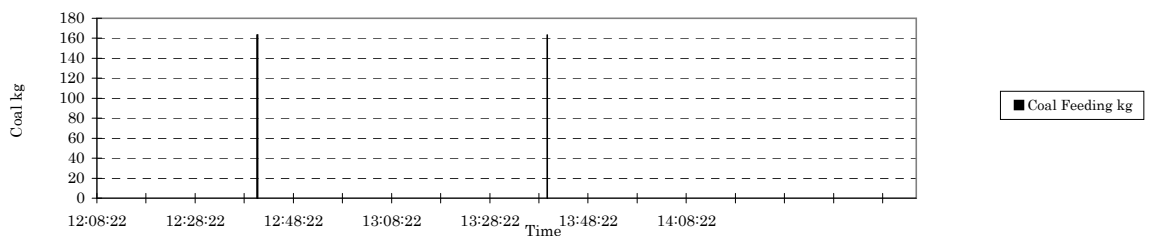
CO(PG-250),CO(HODAKA)



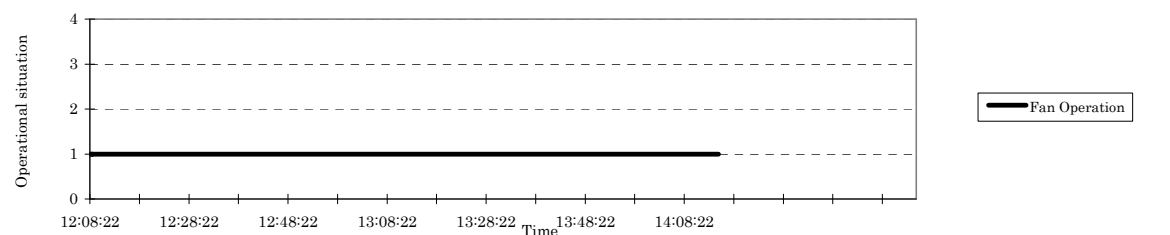
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



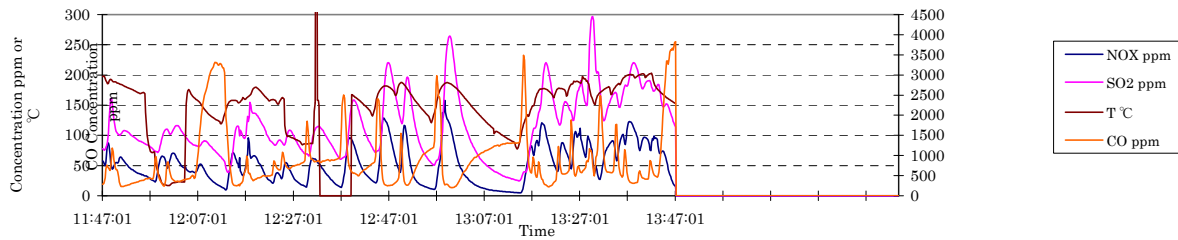
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

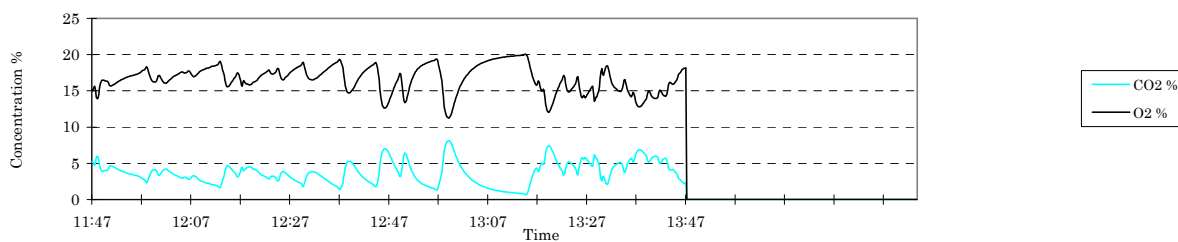
Date:	2011/12/20
Place:	NO.60 secondary school
HOB type:	MUHT
Boiler Capacity (kW):	0.70
Cross sectional area of duct (m ²):	0.075
Type of Coal:	Nalaikh

Comment:

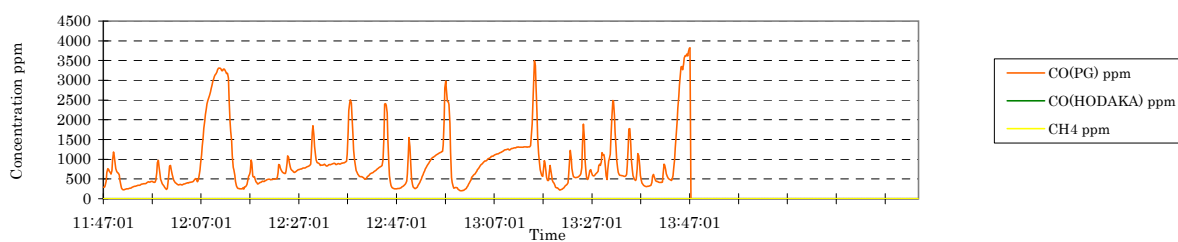
NOX,SO2,CO(Horiba),T



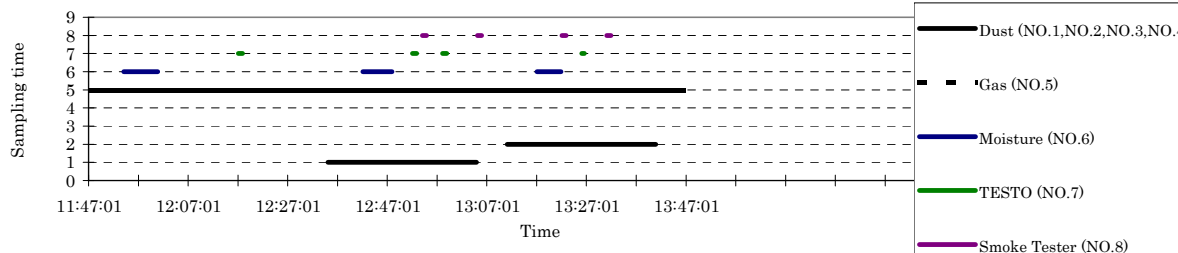
CO2,O2



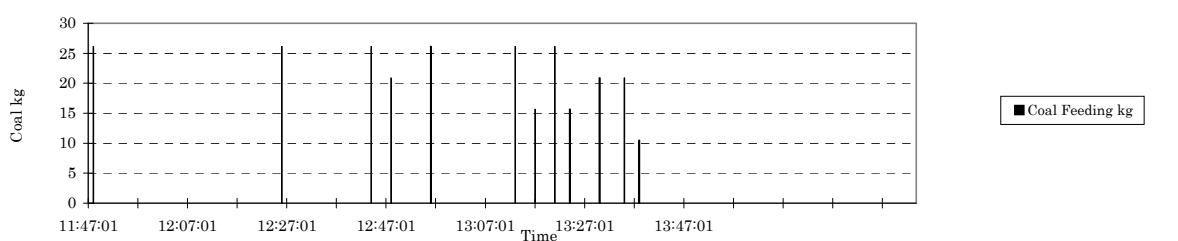
CO(PG-250),CO(HODAKA)



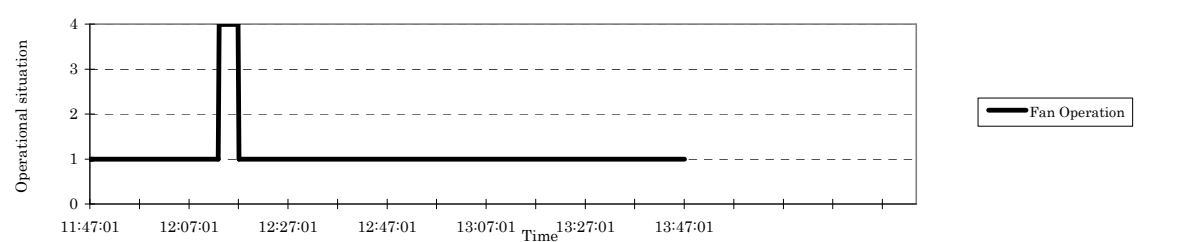
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



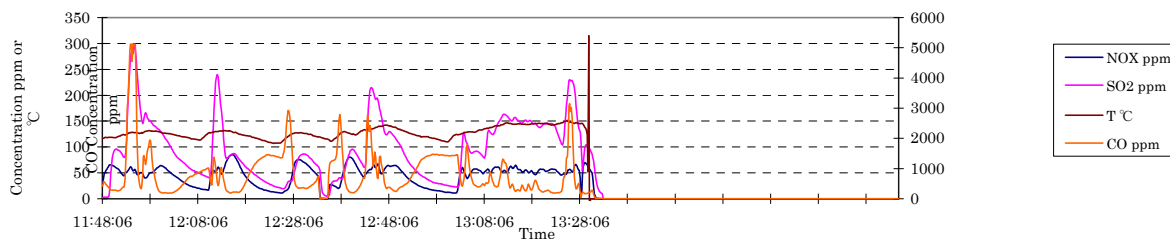
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

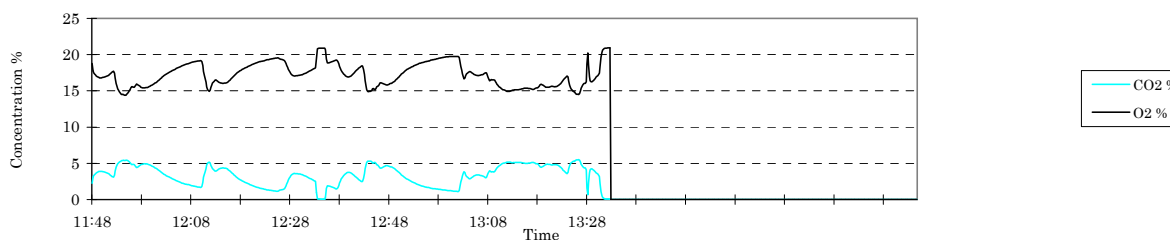
Date:	2011/12/22
Place:	kyoyulaakhuu
HOB type:	HP-18-54
Boiler Capacity (kW):	0.40
Cross sectional area of duct (m ²):	0.785
Type of Coal:	Nalaikh+excrement

Comment:

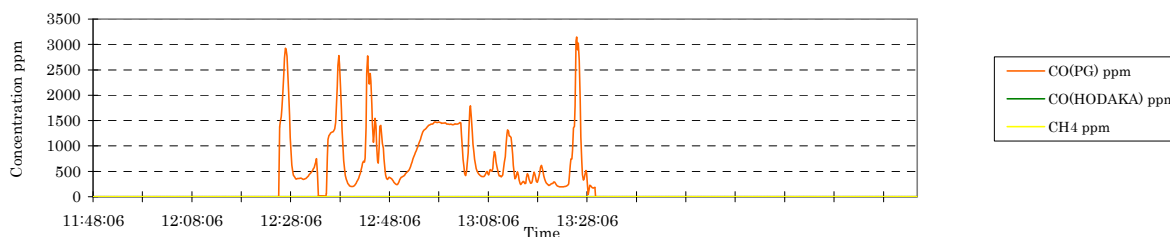
NOX,SO2,CO(Horiba),T



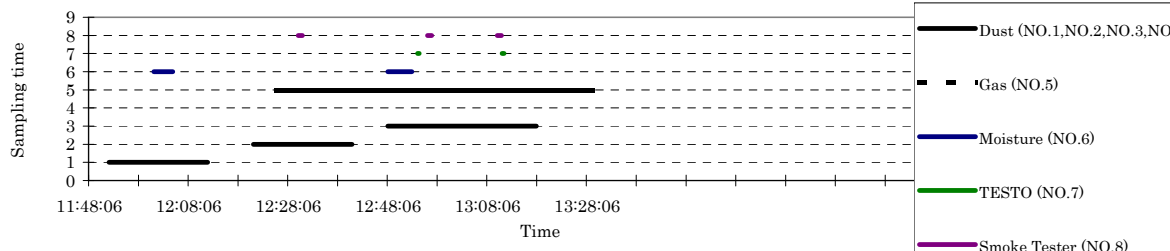
CO2,O2



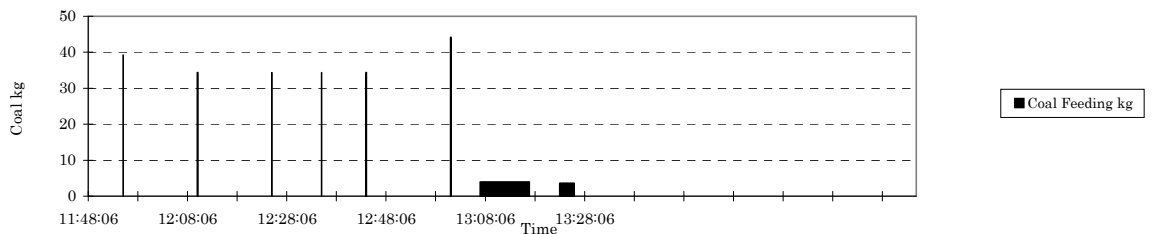
CO(PG-250),CO(HODAKA)



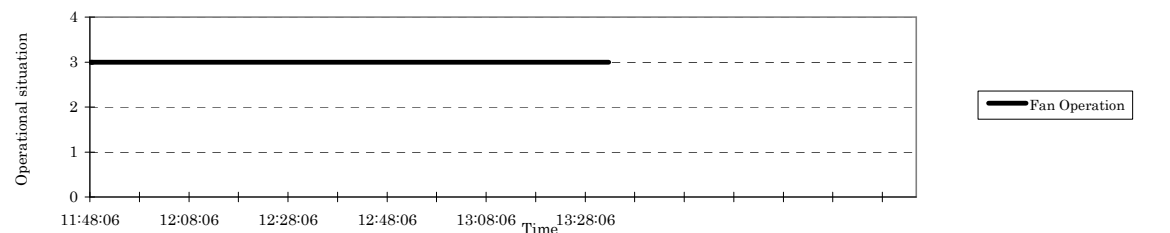
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



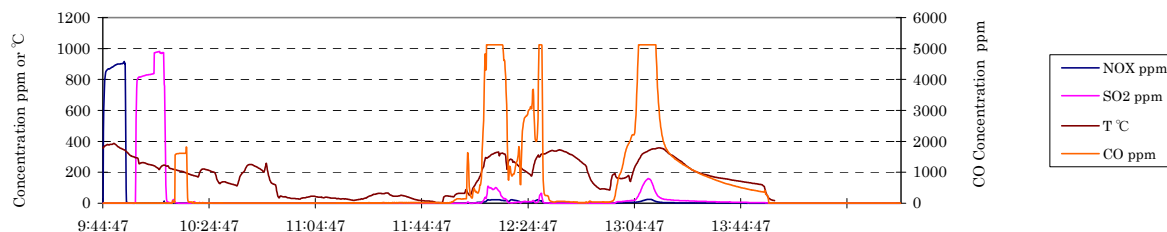
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

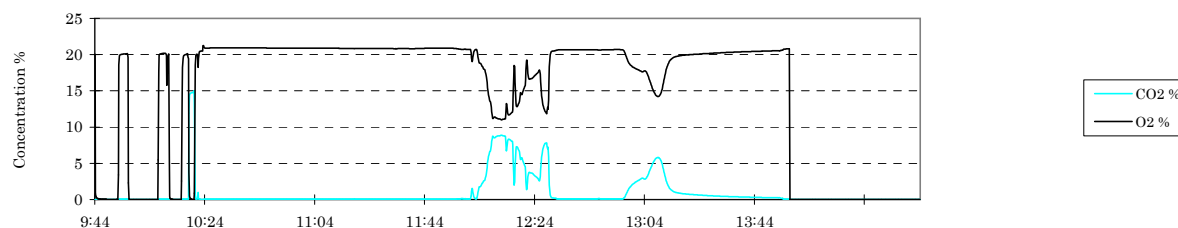
Date:	2011/12/27
Place:	Obi's ger
HOB type:	traditional ger stove
Boiler Capacity (kW):	-
Cross sectional area of duct (m ²):	0.009
Type of Coal:	wood + Nalaikh coal

Comment:

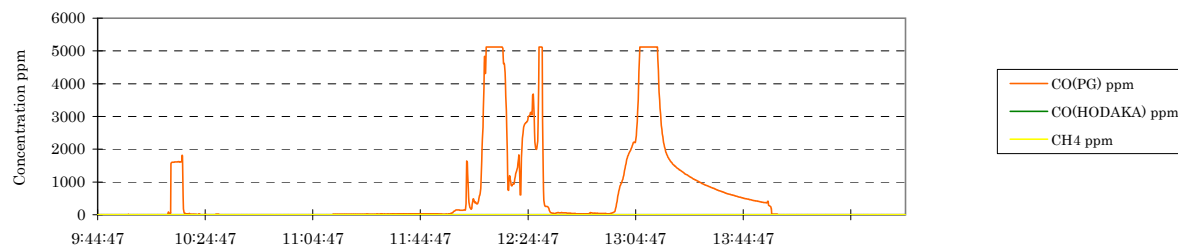
NOX,SO2,CO(Horiba),T



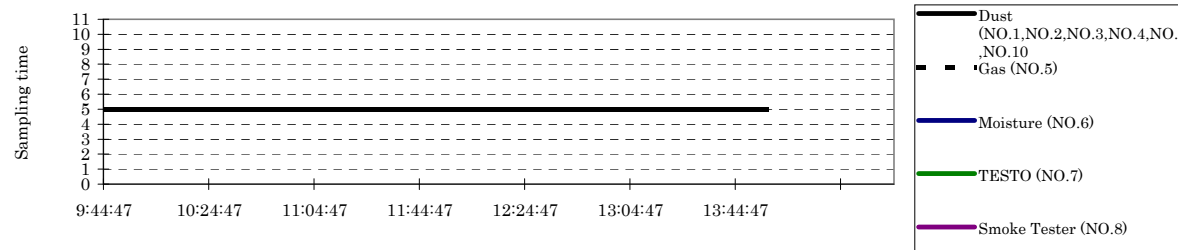
CO2,O2



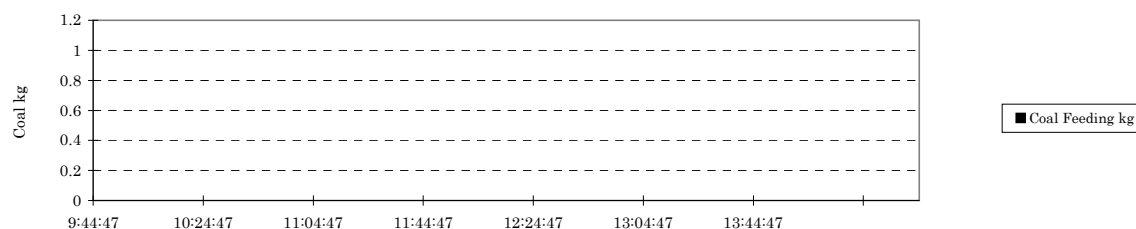
CO(PG-250),CO(HODAKA)



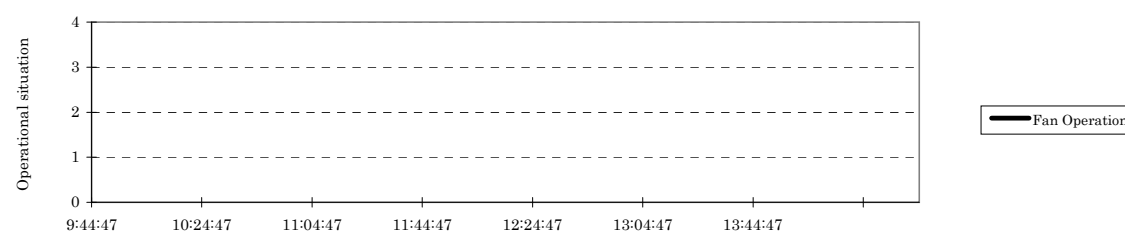
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



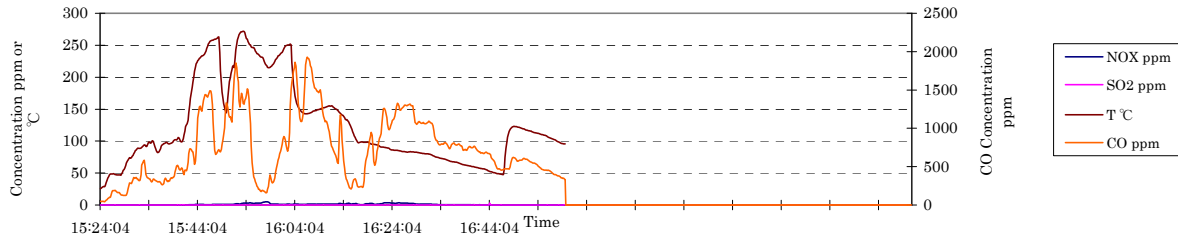
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

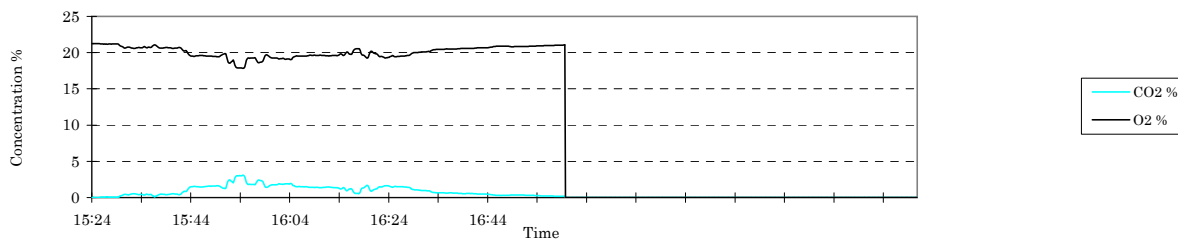
Date:	2011/12/28
Place:	Obi's ger
HOB type:	traditional ger stove
Boiler Capacity (kW):	-
Cross sectional area of duct (m2):	0.009
Type of Coal:	wood only

Comment:
Fuel is only woods.

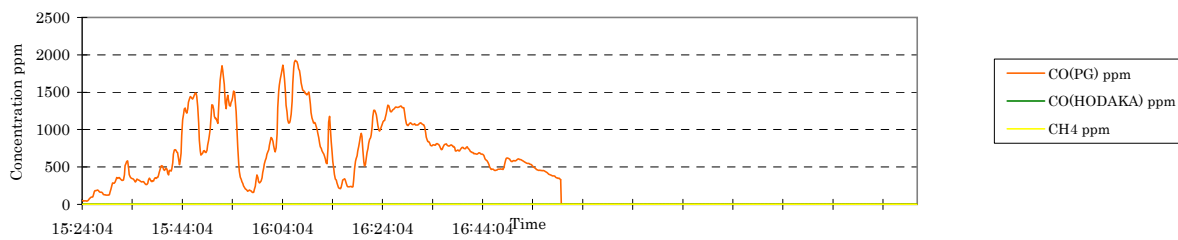
NOX,SO2,CO(Horiba),T



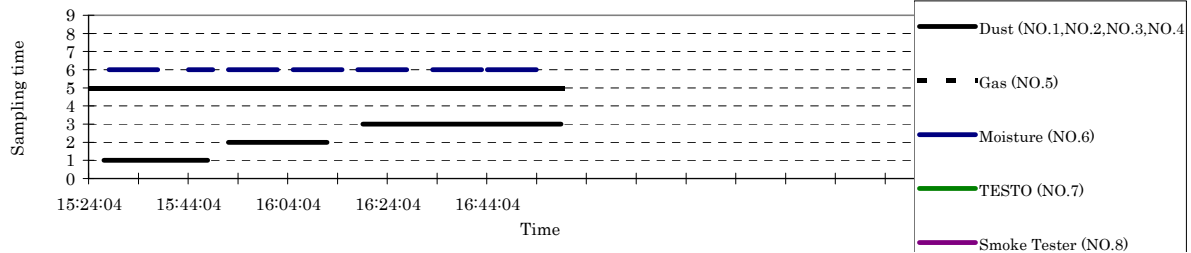
CO2,O2



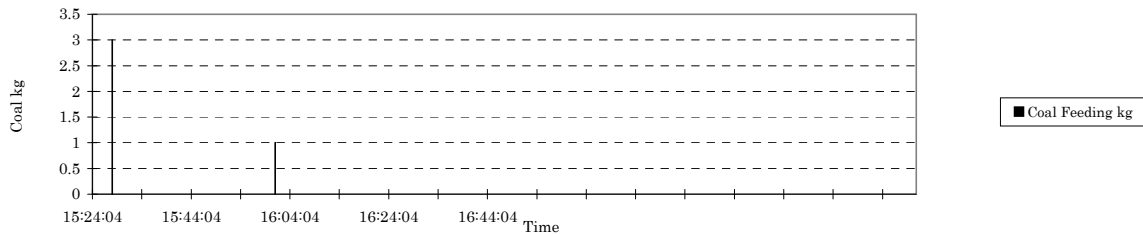
CO(PG-250),CO(HODAKA)



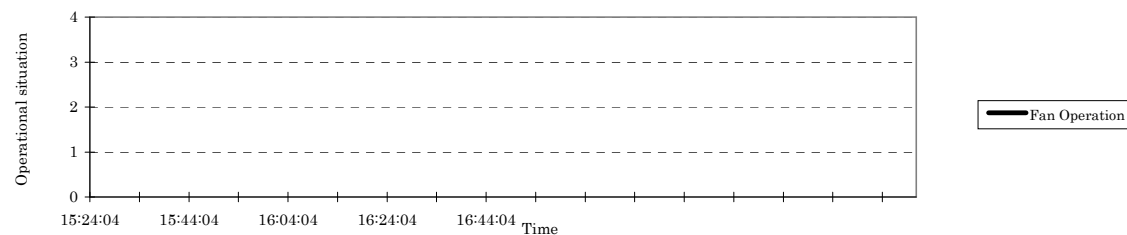
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



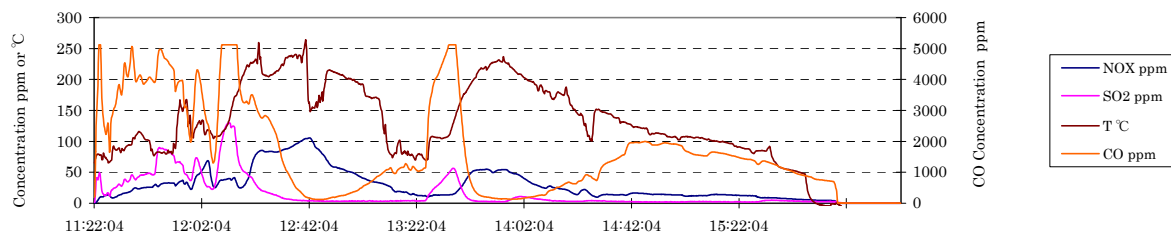
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

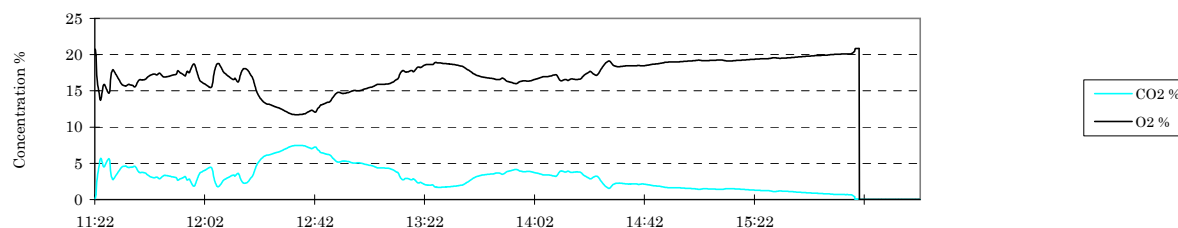
Date:	2011/12/29
Place:	Obi's ger
HOB type:	traditional ger stove
Boiler Capacity (kW):	-
Cross sectional area of duct (m ²):	0.009
Type of Coal:	wood + Nalaikh coal

Comment:

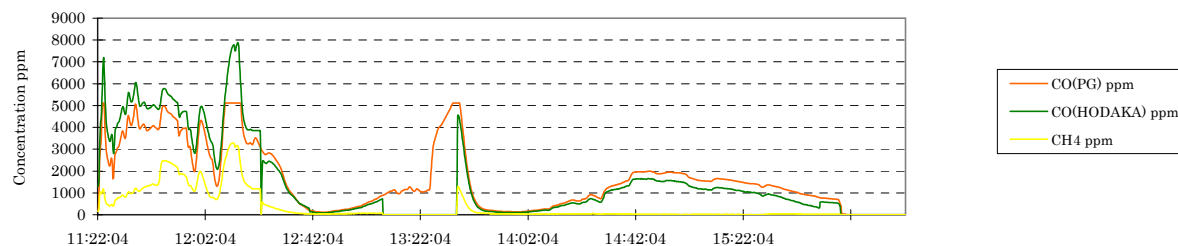
NOX,SO2,CO(Horiba),T



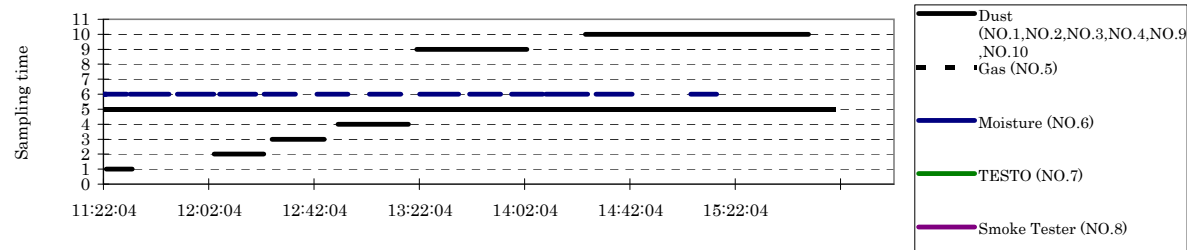
CO2,O2



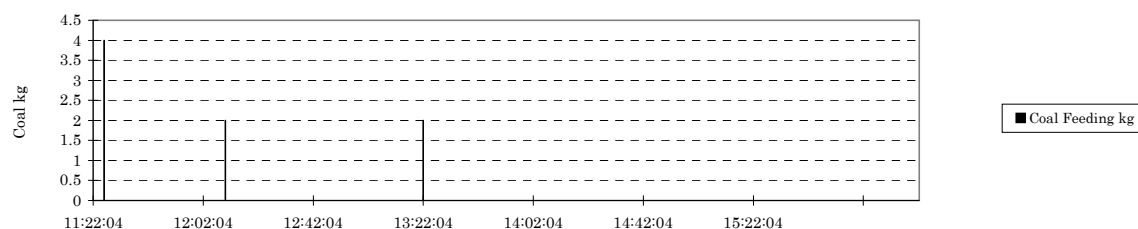
CO(PG-250),CO(HODAKA),CH4



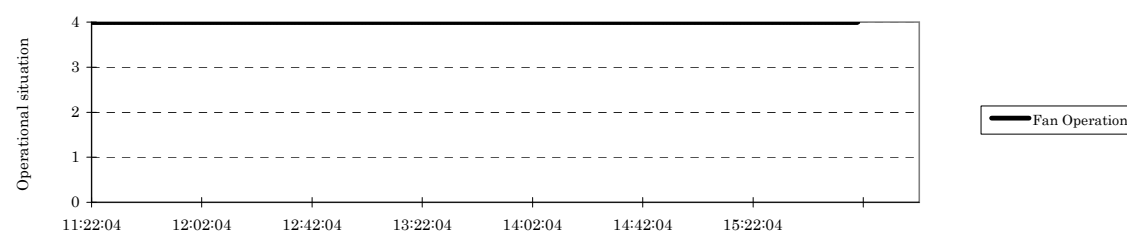
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



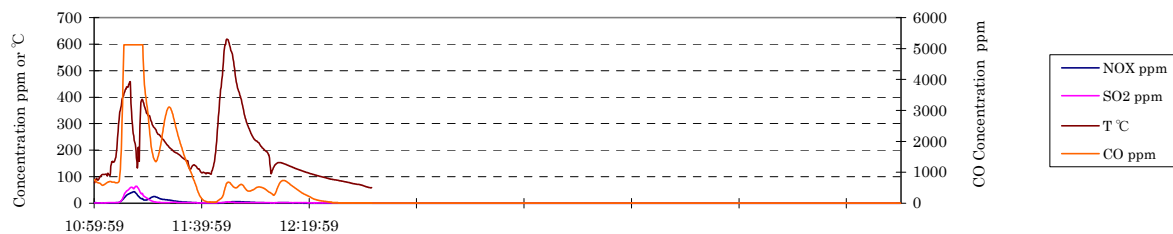
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

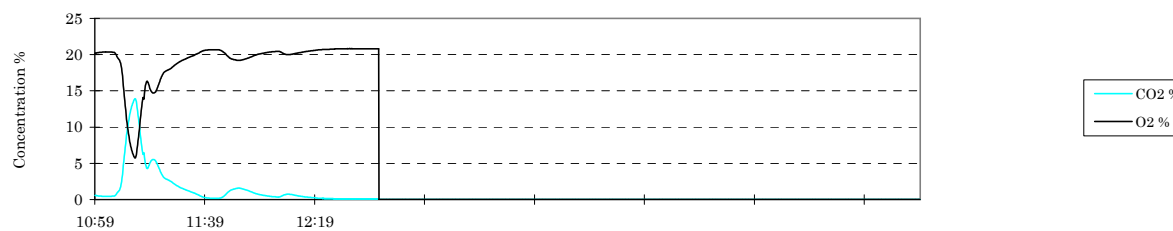
Date:	2011/12/30
Place:	Obi's ger
HOB type:	turky ger stove
Boiler Capacity (kW):	-
Cross sectional area of duct (m ²):	0.013
Type of Coal:	wood only

Comment:

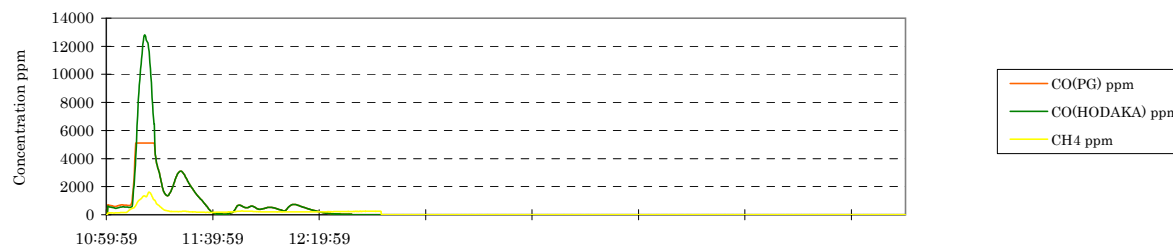
NOX,SO2,CO(Horiba),T



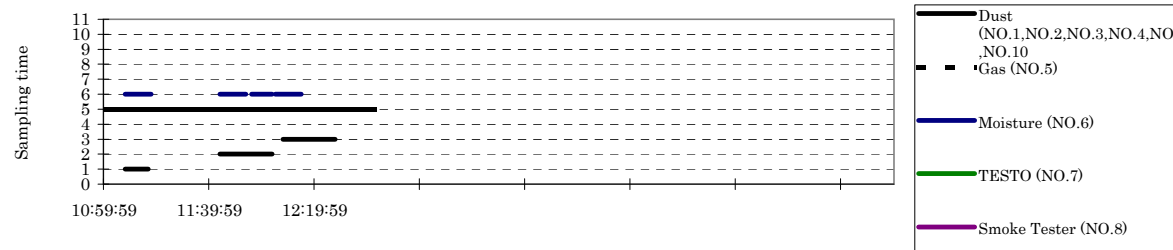
CO2,O2



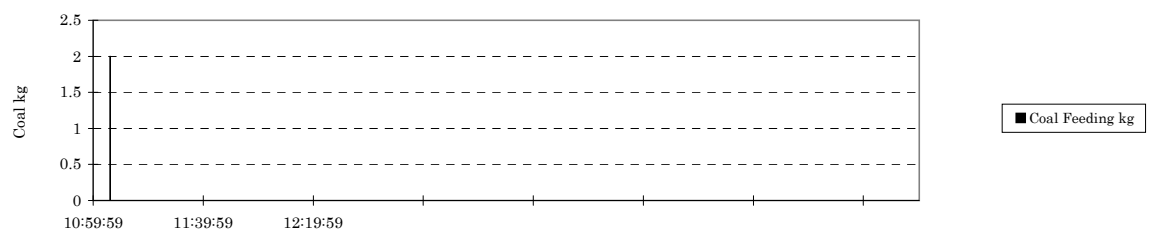
CO(PG-250),CO(HODAKA)



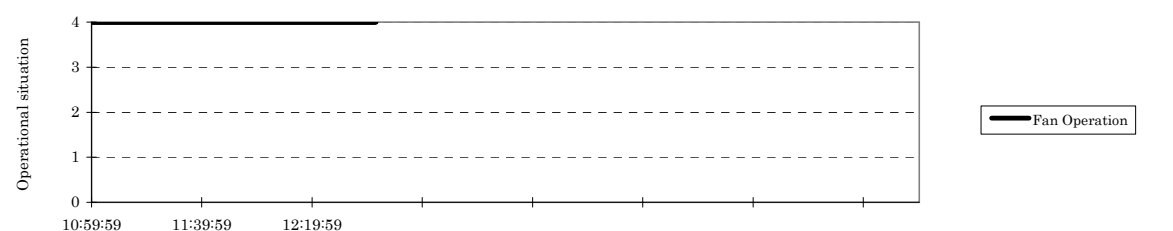
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



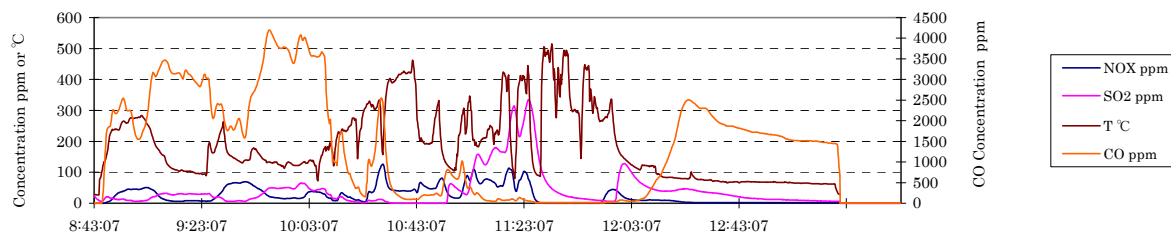
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

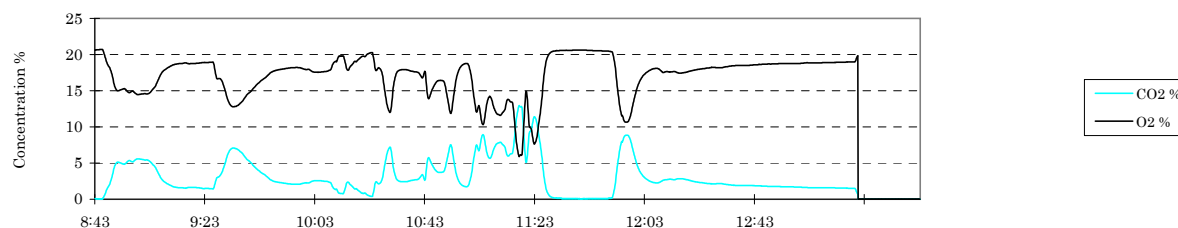
Date:	2011/12/31
Place:	Obi's ger
HOB type:	turky ger stove
Boiler Capacity (kW):	-
Cross sectional area of duct (m2):	0.013
Type of Coal:	wood + Nalaikh coal

Comment:

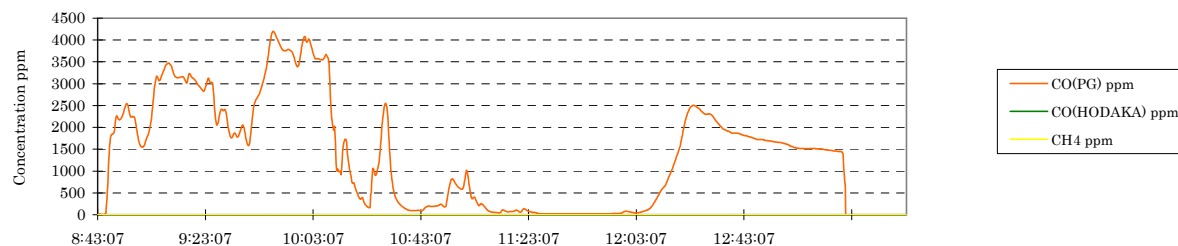
NOX,SO2,CO(Horiba),T



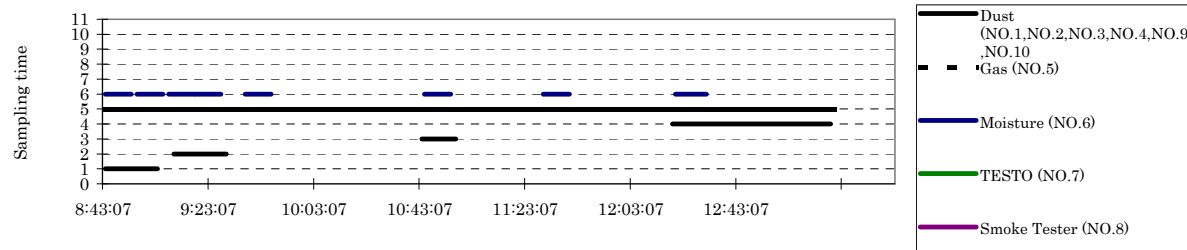
CO2,O2



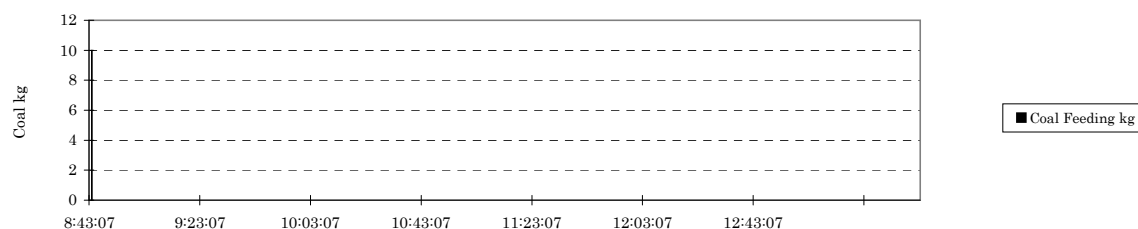
CO(PG-250),CO(HODAKA)



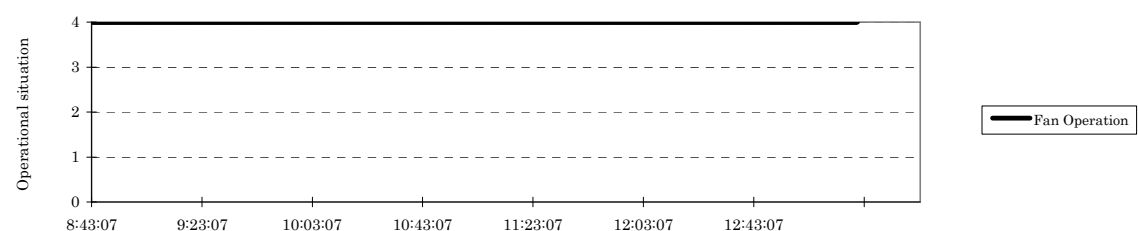
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



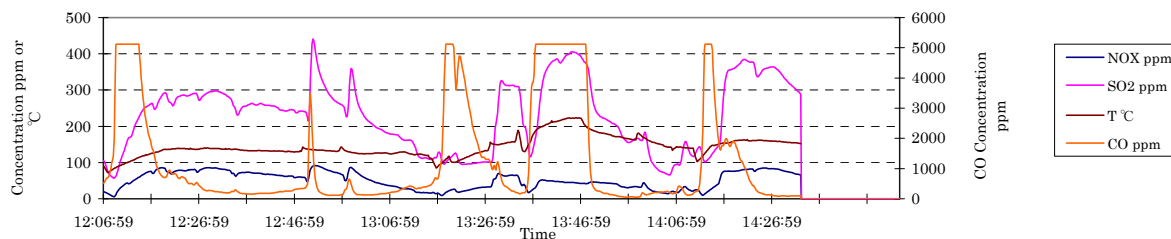
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

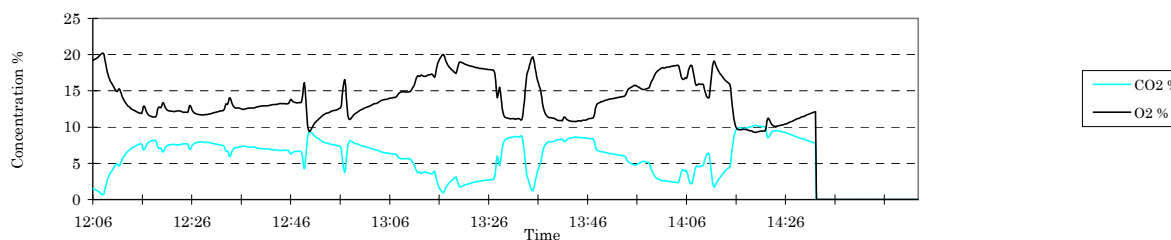
Date:	2012/1/4
Place:	O.113 secondary scho
HOB type:	MDZ-0.25
Boiler Capacity (kW):	0.25
Cross sectional area of duct (m ²):	0.091
Type of Coal:	Nalaikh

Comment:

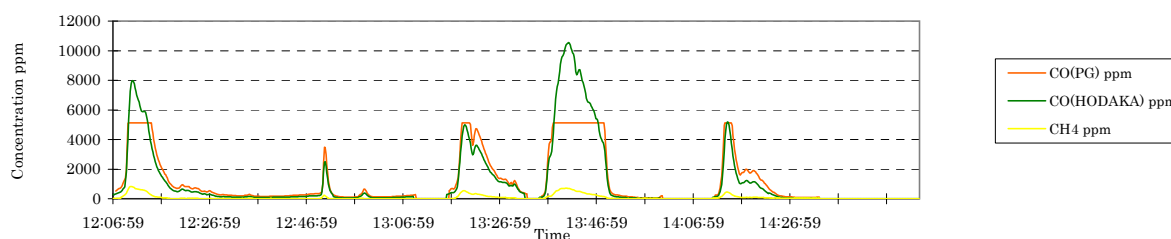
NOX,SO2,CO(Horiba),T



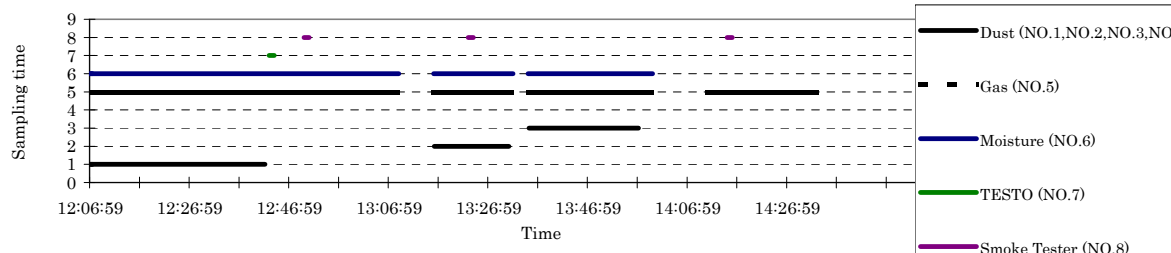
CO2,O2



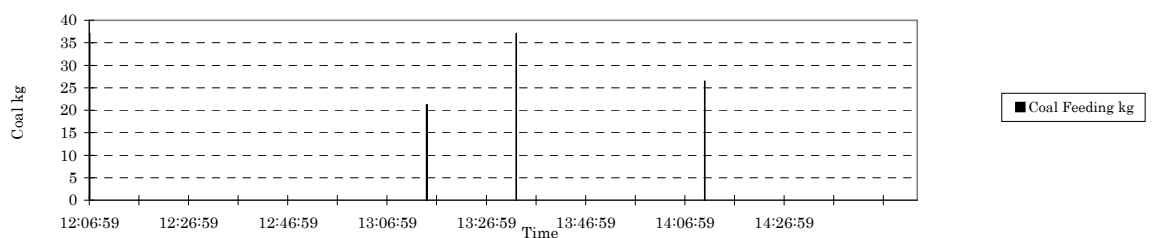
CO(PG-250),CO(HODAKA)



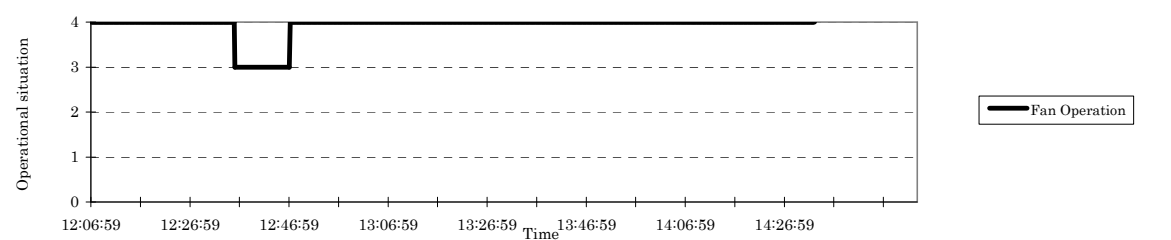
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



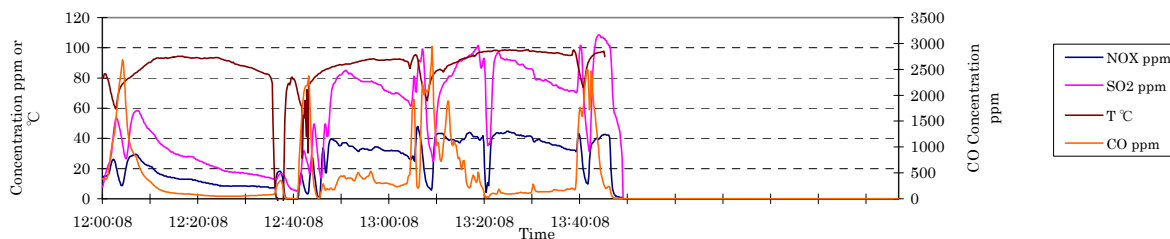
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

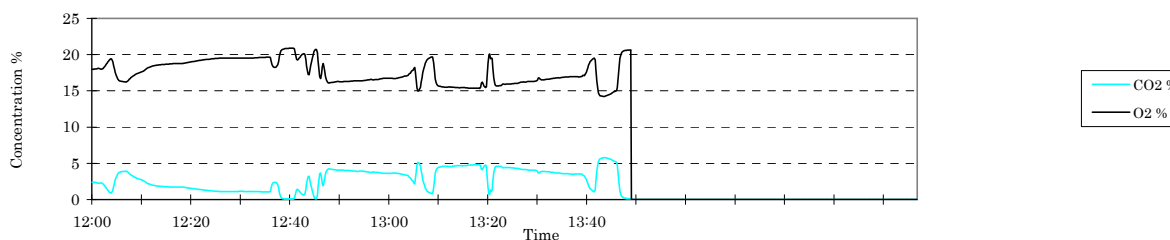
Date:	2012/1/5
Place:	NO.92 school
HOB type:	MDZ-063
Boiler Capacity (kW):	0.63
Cross sectional area of duct (m ²):	0.233
Type of Coal:	Nalaikh

Comment:

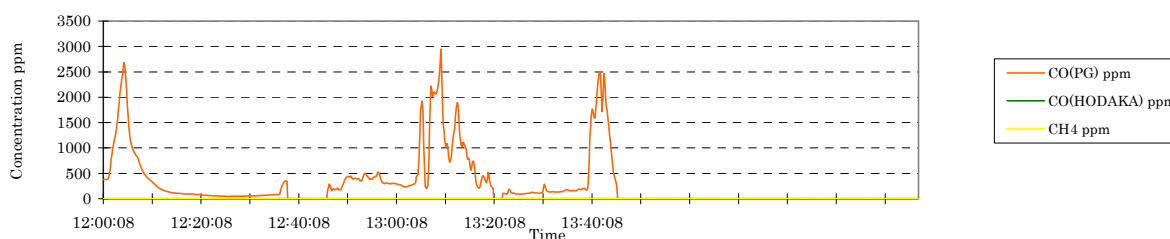
NOX,SO2,CO(Horiba),T



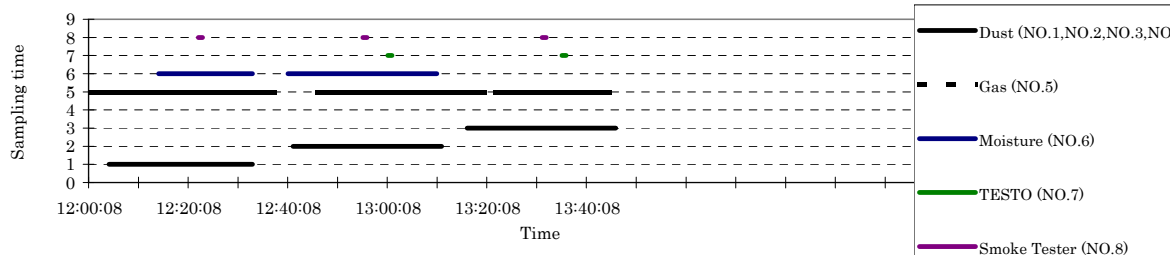
CO2,O2



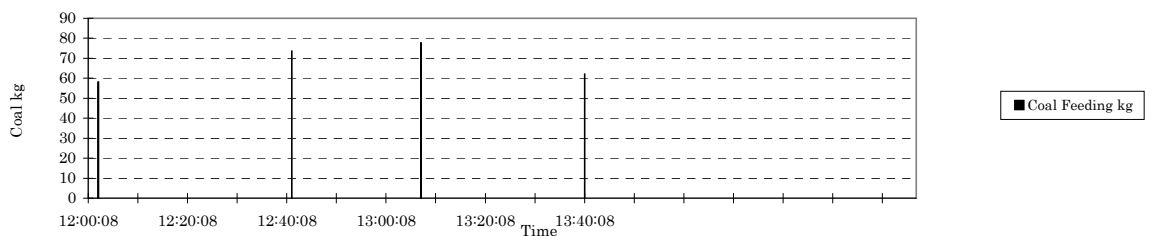
CO(PG-250),CO(HODAKA)



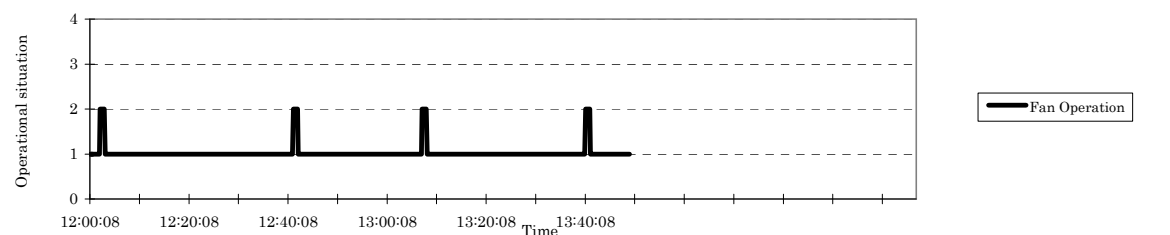
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



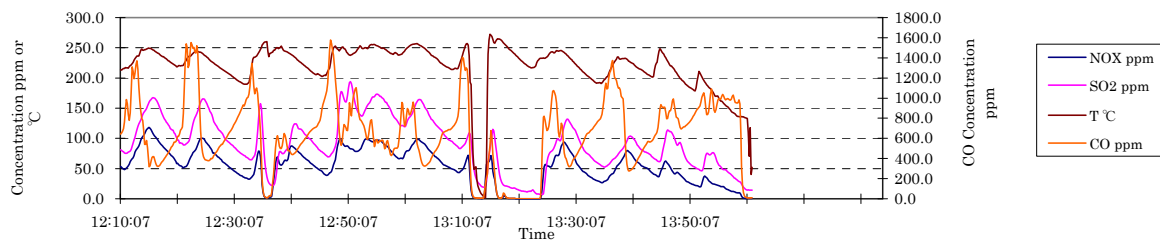
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

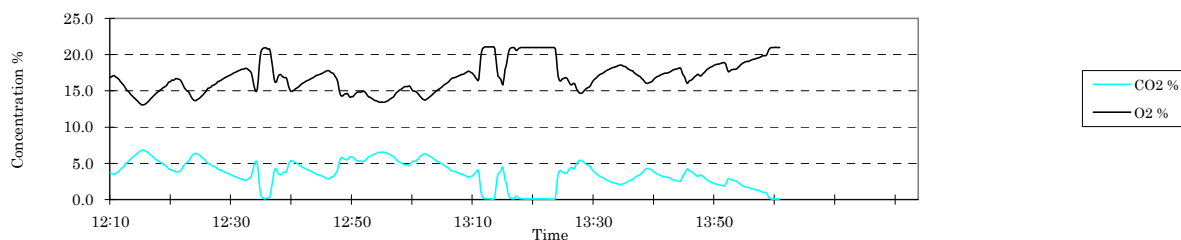
Date:	2012/1/6
Place:	Train Repair
HOB type:	BZUI 100
Boiler Capacity (kW):	0.85
Cross sectional area of duct (m ²):	0.636
Type of Coal:	Siveovoo

Comment:

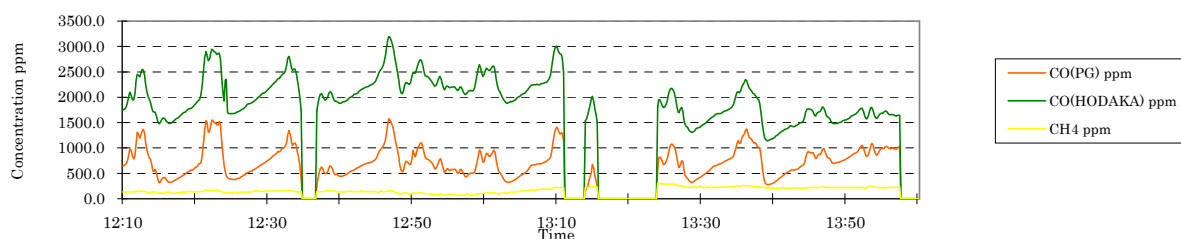
NOX,SO2,CO(Horiba),T



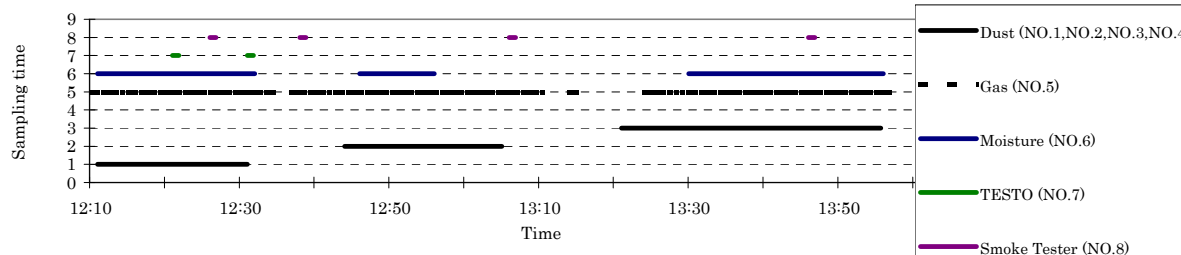
CO2,O2



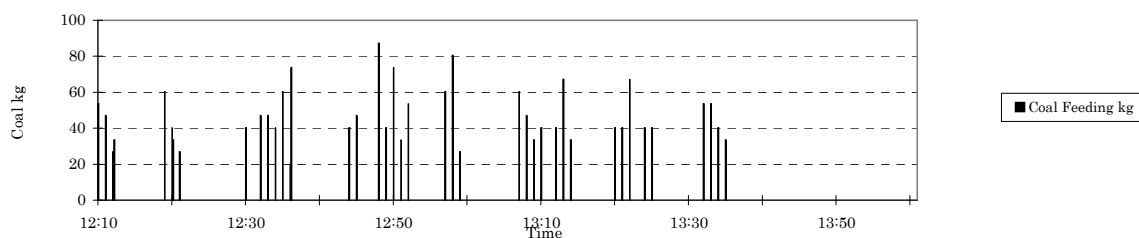
CO(PG-250),CO(HODAKA)



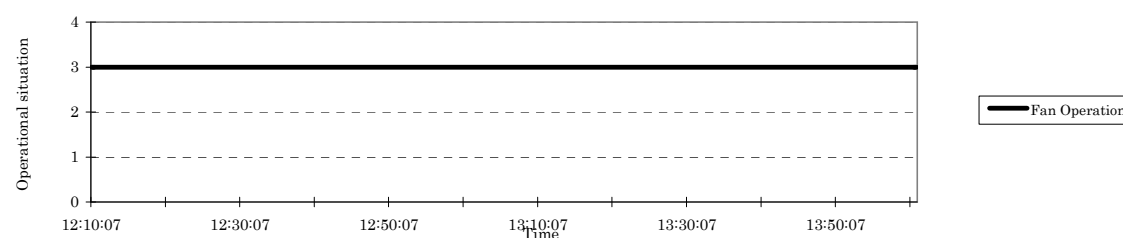
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



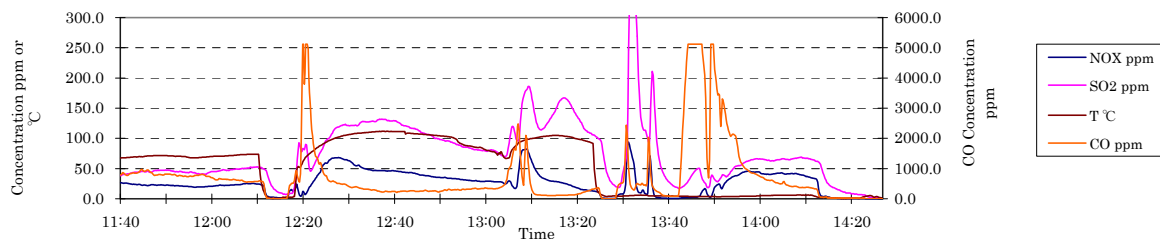
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

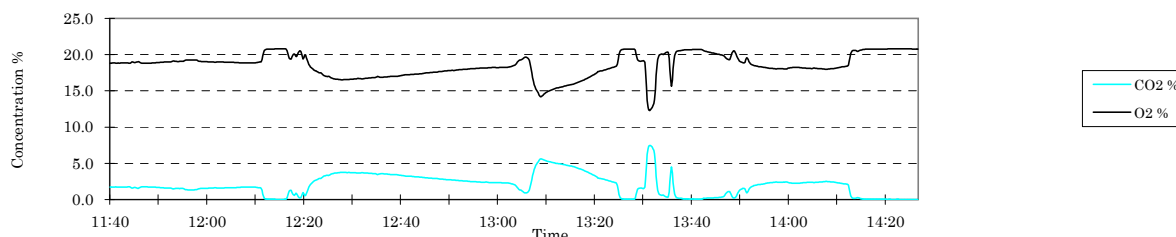
Date:	2012/1/10
Place:	#106 School
HOB type:	Thermochlor-0.3
Boiler Capacity (kW):	0.35
Cross sectional area of duct (m ²):	0.085
Type of Coal:	Nalaikh

Comment:

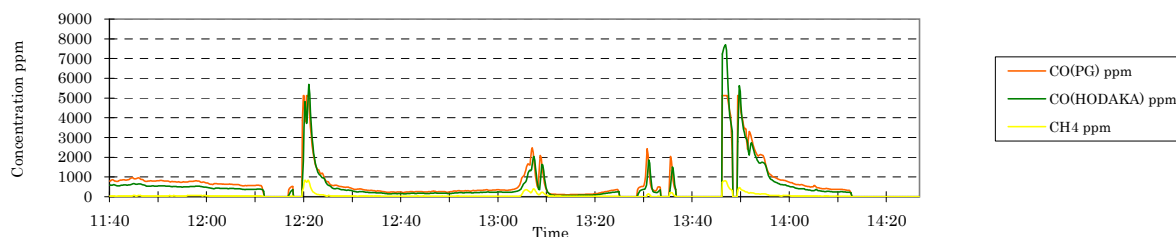
NOX,SO2,CO(Horiba),T



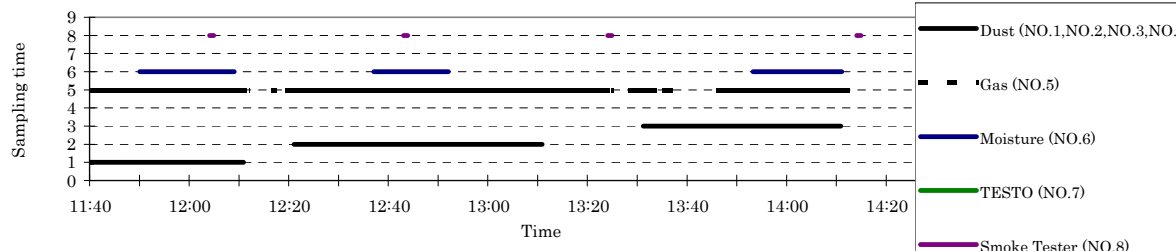
CO2,O2



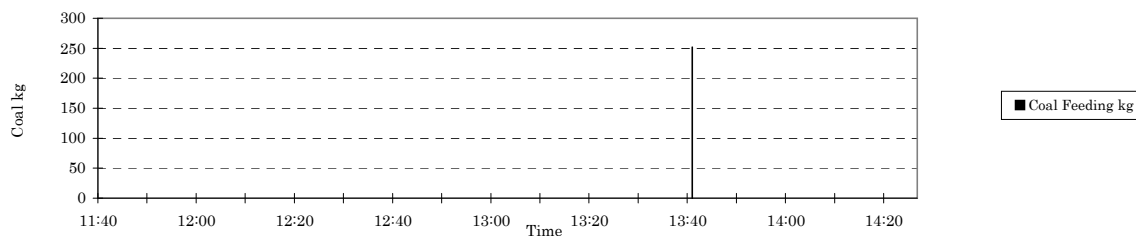
CO(PG-250),CO(HODAKA)



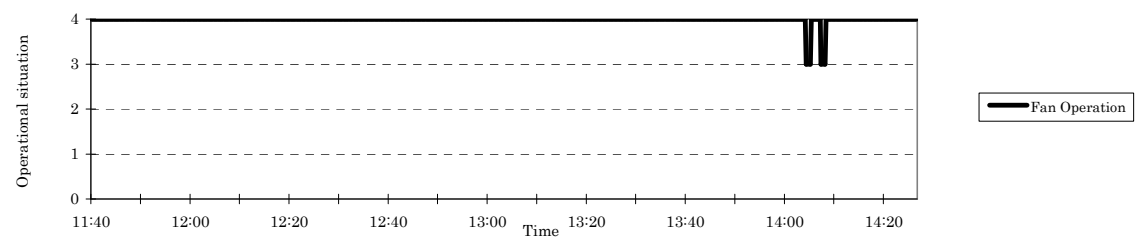
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



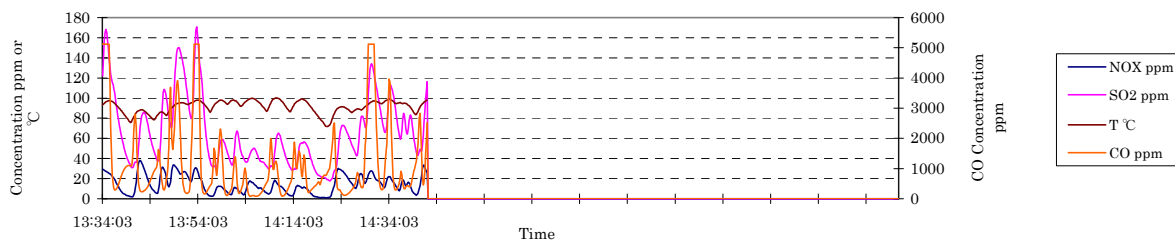
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

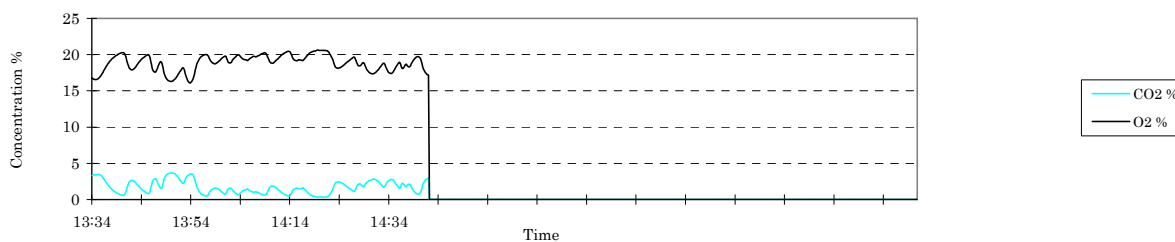
Date:	2012/1/11
Place:	No.88 school
HOB type:	KBPO7KB
Boiler Capacity (kW):	0.70
Cross sectional area of duct (m ²):	0.490
Type of Coal:	Nalaikh

Comment:

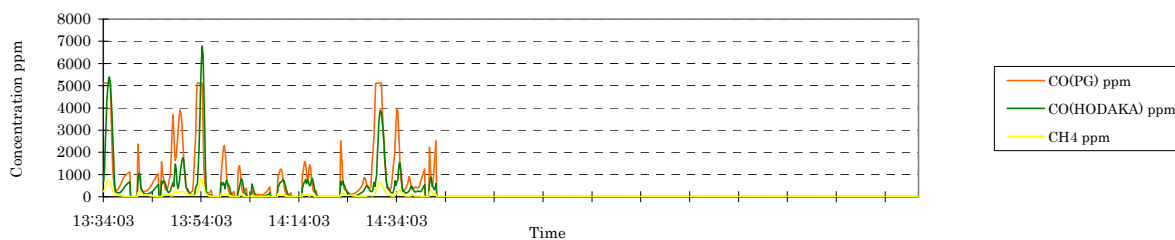
NOX,SO2,CO(Horiba),T



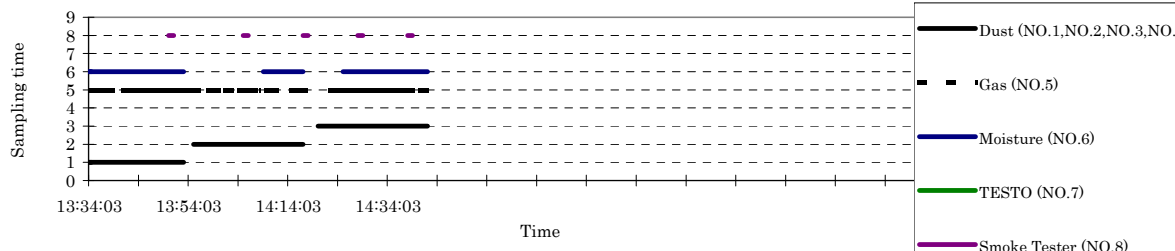
CO2,O2



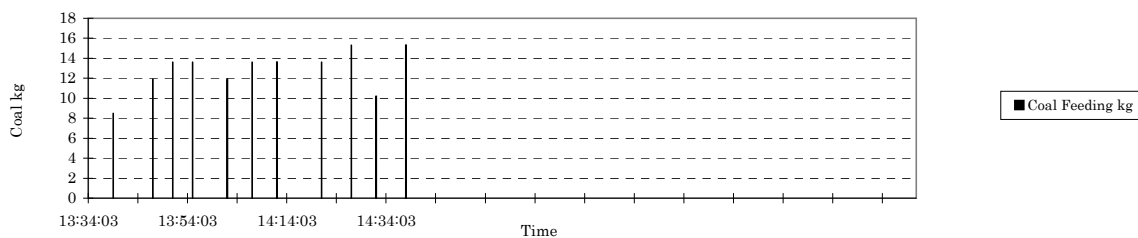
CO(PG-250),CO(HODAKA)



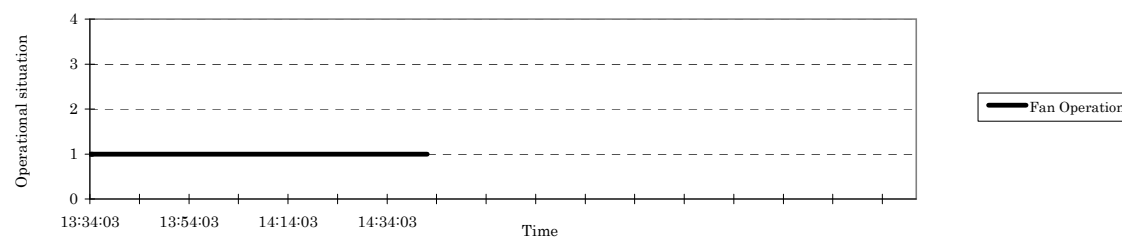
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



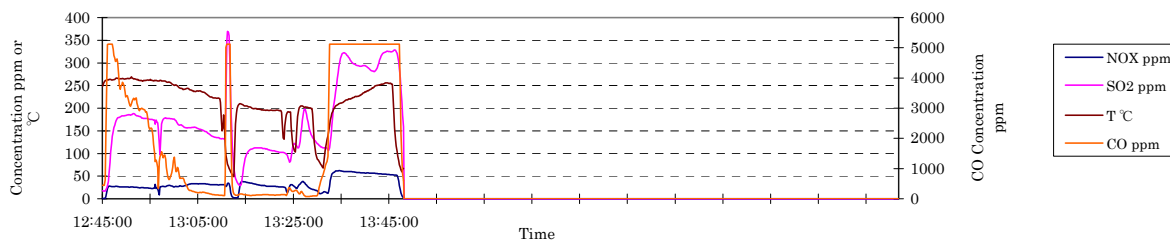
1:Forced and Induced 2:Induced 3:Forced 4:Natural

Graph of Measurement Result

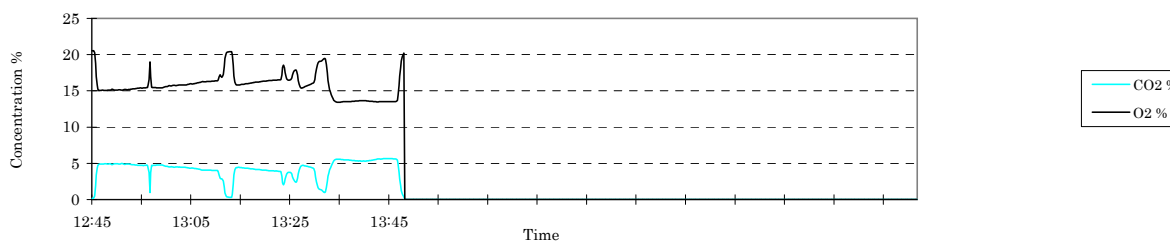
Date:	2012/1/12
Place:	No.46school
HOB type:	CLSG
Boiler Capacity (kW):	0.60
Cross sectional area of duct (m ²):	0.028
Type of Coal:	Nalaikh

Comment:

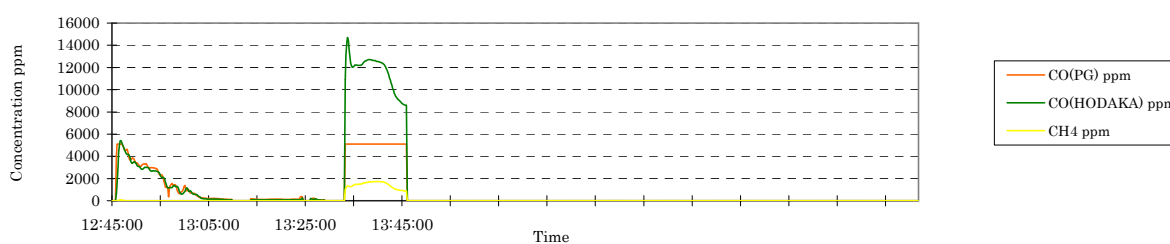
NOX,SO2,CO(Horiba),T



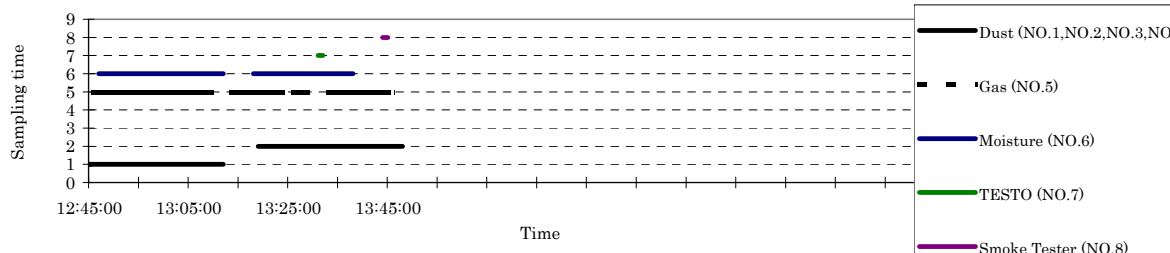
CO2,O2



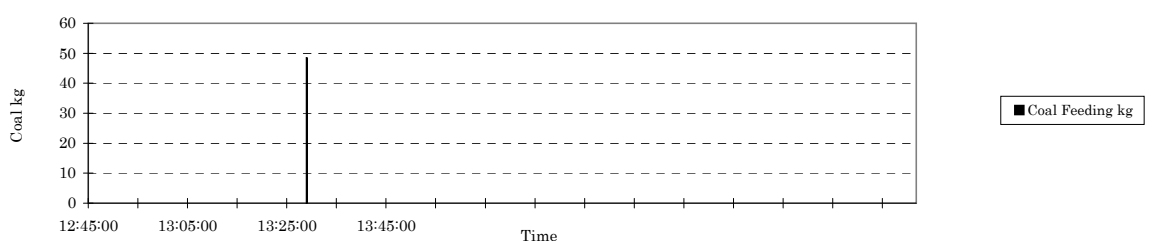
CO(PG-250),CO(HODAKA)



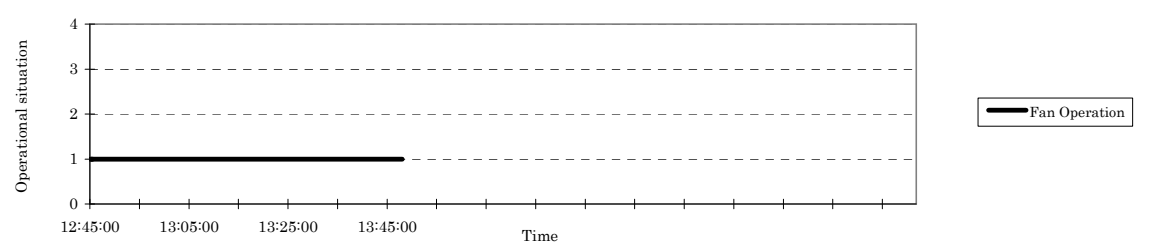
Sampling time (Target time)



Coal Feeding



HOB Fan Operational Situation



1:Forced and Induced 2:Induced 3:Forced 4:Natural