



WOOD BUFFALO
ENVIRONMENTAL
ASSOCIATION



2010
ANNUAL REPORT

CONTINUOUS MONITORING
February 9, 2011

Operations and Data Collection by:
Measair Corporation
Fort McMurray, Alberta

QA/QC, Data Validation and Reporting by:
Aurora Atmospherics Inc. & Rawin Consulting Inc.
Calgary, Alberta

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
MONTHLY AIR MONITORING SUMMARY
for AMD SECTION III.B.1(c)

JANUARY to DECEMBER 2010

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APPROVAL NUMBERS	REPORT DATE						
	MONTH	YEAR					
94-01-00	1 - 12	2010	CONTINUOUS AMBIENT MONITORING				
26-01-00							
20809-01-00							
149968-00-01							
137467-00-00							
46586-00-01							
206355-00-00							
			ONE-HOUR AVERAGE		24-HOUR AVERAGE		
PARAMETER	STN. NO.	% TIME OPERATIONAL	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION	
SO2 (ppm)	1	99.1	0.105	0	0.016	0	
SO2 (ppm)	2	99.6	0.094	0	0.018	0	
SO2 (ppm)	4	99.2	0.110	0	0.018	0	
SO2 (ppm)	5	98.9	0.197	2	0.071	1	
SO2 (ppm)	6	99.5	0.062	0	0.011	0	
SO2 (ppm)	7	99.6	0.045	0	0.006	0	
SO2 (ppm)	8	99.4	0.020	0	0.009	0	
SO2 (ppm)	11	99.7	0.116	0	0.015	0	
SO2 (ppm)	12	99.5	0.096	0	0.019	0	
SO2 (ppm)	13	99.7	0.145	0	0.012	0	
SO2 (ppm)	14	98.8	0.067	0	0.006	0	
SO2 (ppm)	15	99.8	0.083	0	0.022	0	
SO2 (ppm)	16	99.1	0.161	0	0.030	0	
H2S (ppm)	2	99.6	0.099	192	0.016	35	
H2S (ppm)	4	99.2	0.055	12	0.004	1	
H2S (ppm)	5	99.8	0.073	176	0.021	28	
H2S (ppm)	11	99.8	0.093	74	0.009	19	
TRS (ppm)	1	99.7	0.019	5	0.004	3	
TRS (ppm)	6	99.1	0.008	0	0.002	0	
TRS (ppm)	7	98.9	0.011	1	0.002	0	
TRS (ppm)	9	99.6	0.028	5	0.005	2	
TRS (ppm)	12	99.7	0.046	148	0.013	30	
TRS (ppm)	13	99.8	0.009	0	0.002	0	
TRS (ppm)	14	98.6	0.017	1	0.001	0	
TRS (ppm)	15	99.7	0.004	0	0.001	0	
THC (ppm)	1	97.0	5.9	-	3.2	-	
THC (ppm)	2	99.3	10.5	-	3.1	-	
THC (ppm)	4	99.3	10.4	-	3.5	-	
THC (ppm)	5	99.6	7.1	-	3.2	-	
THC (ppm)	6	95.0	4.4	-	2.8	-	
THC (ppm)	7	99.3	5.6	-	3.1	-	
THC (ppm)	9	98.3	5.1	-	3.3	-	
THC (ppm)	11	99.1	4.6	-	3.0	-	
THC (ppm)	12	98.5	11.5	-	5.1	-	
THC (ppm)	13	99.7	9.6	-	4.0	-	
THC (ppm)	14	98.7	3.8	-	2.5	-	
THC (ppm)	15	99.6	8.4	-	3.7	-	
THC (ppm)	16	99.1	7.3	-	3.5	-	
O3 (ppm)	1	99.8	0.066	0	0.048	-	
O3 (ppm)	6	99.2	0.073	0	0.049	-	
O3 (ppm)	7	81.6	0.066	0	0.047	-	
O3 (ppm)	8	99.5	0.062	0	0.046	-	

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
MONTHLY AIR MONITORING SUMMARY
for AMD SECTION III.B.1(c)

JANUARY to DECEMBER 2010

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APPROVAL NUMBERS	REPORT DATE								
	MONTH	YEAR							
94-01-00	1 - 12	2010	CONTINUOUS AMBIENT MONITORING						
26-01-00									
20809-01-00									
149968-00-01									
137467-00-00									
46586-00-01			ONE-HOUR AVERAGE		24-HOUR AVERAGE				
206355-00-00			PARAMETER	STN. NO.	% TIME OPERATIONAL	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION
			O3 (ppm)	13	98.7	0.062	0	0.042	-
			O3 (ppm)	14	98.6	0.068	0	0.057	-
			NO2 (ppm)	1	99.6	0.046	0	0.029	0
			NO2 (ppm)	6	99.4	0.039	0	0.026	0
			NO2 (ppm)	7	99.4	0.071	0	0.033	0
			NO2 (ppm)	8	99.4	0.024	0	0.011	0
			NO2 (ppm)	12	99.3	0.123	0	0.056	0
			NO2 (ppm)	13	99.4	0.049	0	0.030	0
			NO2 (ppm)	14	98.8	0.054	0	0.019	0
			NO2 (ppm)	15	99.9	0.049	0	0.034	0
			NO2 (ppm)	16	99.7	0.106	0	0.038	0
			CO (ppm)	7	98.5	1.9	0	0.5	0
			NH3 (ppm)	1	99.4	0.0	0	0.0	0
			NH3 (ppm)	6	99.1	0.0	0	0.0	0
			PM2.5 (ug/m3)	1	93.8	97.6	0	51.9	1 *
			PM2.5 (ug/m3)	6	91.6	74.4	0	45.6	1
			PM2.5 (ug/m3)	7	89.8	86.6	0	44.4	1
			PM2.5 (ug/m3)	8	92.3	268.8	0	68.2	8 *
			PM2.5 (ug/m3)	12	95.6	197.3	0	60.2	3
			PM2.5 (ug/m3)	13	93.6	85.5	0	47.7	2
			PM2.5 (ug/m3)	14	87.1	82.4	0	38.1	1 *
			PM2.5 (ug/m3)	15	90.5	289.1	0	72.9	3 *
			PM2.5 (ug/m3)	16	96.2	133.2	0	44.6	2
			WIND	1	99.1	-	-	-	-
			WIND	2	99.8	-	-	-	-
			WIND	4	98.2	-	-	-	-
			WIND	5	99.1	-	-	-	-
			WIND	6	98.2	-	-	-	-
			WIND	7	99.7	-	-	-	-
			WIND	8	98.6	-	-	-	-
			WIND	9	97.8	-	-	-	-
			WIND	11	99.5	-	-	-	-
			WIND	12	99.7	-	-	-	-
			WIND	13	96.5	-	-	-	-
			WIND	14	98.0	-	-	-	-
			WIND	15	99.6	-	-	-	-
			WIND	16	98.7	-	-	-	-
SIGNATURE OF ASSOCIATION REPRESENTATIVE			FOR ALBERTA ENVIRONMENT USE ONLY						

* count excludes one 24-hour PM_{2.5} value calculated on days with less than 75% of readings available

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY (AMS 1)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.46	707	0.0010	0.009	0	0.002
FEB	99.40	631	0.0035	0.052	0	0.016
MAR	99.33	703	0.0029	0.105	0	0.011
APR	99.72	683	0.0009	0.029	0	0.005
MAY	100.00	709	0.0009	0.032	0	0.005
JUN	100.00	685	0.0011	0.023	0	0.005
JUL	99.46	699	0.0012	0.039	0	0.006
AUG	99.33	700	0.0011	0.018	0	0.004
SEP	99.31	680	0.0014	0.050	0	0.010
OCT	98.79	699	0.0007	0.014	0	0.003
NOV	96.25	658	0.0007	0.031	0	0.007
DEC	98.52	698	0.0007	0.010	0	0.002
PERI OD	99.13	8252	0.0013	0.105	0	0.016

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)						MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34	
JAN	707	100.00	.	.	.	.	0.0010
FEB	631	96.51	3.49	.	.	.	0.0035	
MAR	703	97.58	2.13	0.28	.	.	0.0029	
APR	683	99.27	0.73	.	.	.	0.0009	
MAY	709	99.44	0.56	.	.	.	0.0009	
JUN	685	99.71	0.29	.	.	.	0.0011	
JUL	699	99.00	1.00	.	.	.	0.0012	
AUG	700	100.00	.	.	.	.	0.0011
SEP	680	98.68	1.32	.	.	.	0.0014	
OCT	699	100.00	.	.	.	.	0.0007
NOV	658	99.70	0.30	.	.	.	0.0007	
DEC	698	100.00	.	.	.	.	0.0007
TOTAL	8252						ANNUAL MEAN (ppm) 0.0013	

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILDRED LAKE (AMS 2)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					VALUES EXCEEDING 1-HOUR GUIDELINE	VALUES EXCEEDING 24-HOUR GUIDELINE
JAN	99.60	706	0.0013	0.031	0	0.006
FEB	100.00	640	0.0032	0.091	0	0.018
MAR	99.60	706	0.0019	0.091	0	0.011
APR	99.72	683	0.0022	0.067	0	0.010
MAY	100.00	706	0.0015	0.032	0	0.007
JUN	99.86	685	0.0021	0.084	0	0.013
JUL	98.92	695	0.0022	0.048	0	0.014
AUG	99.33	700	0.0012	0.033	0	0.008
SEP	99.86	683	0.0014	0.093	0	0.015
OCT	98.52	698	0.0024	0.094	0	0.014
NOV	99.86	686	0.0018	0.059	0	0.012
DEC	99.87	706	0.0009	0.025	0	0.006
PERIOD	99.59	8294	0.0018	0.094	0	0.018

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)					MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	
JAN	706	99.72	0.28	.	.	.	0.0013
FEB	640	96.88	2.81	0.31	.	.	0.0032
MAR	706	98.58	1.13	0.28	.	.	0.0019
APR	683	97.95	1.90	0.15	.	.	0.0022
MAY	706	98.44	1.56	.	.	.	0.0015
JUN	685	97.66	2.04	0.29	.	.	0.0021
JUL	695	97.12	2.88	.	.	.	0.0022
AUG	700	99.00	1.00	.	.	.	0.0012
SEP	683	98.83	0.88	0.29	.	.	0.0014
OCT	698	97.13	2.44	0.43	.	.	0.0024
NOV	686	98.25	1.75	.	.	.	0.0018
DEC	706	99.86	0.14	.	.	.	0.0009
TOTAL	8294						ANNUAL MEAN (ppm) 0.0018

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BUFFALO VIEWPOINT (AMS 4)

ANNUAL SUMMARY FOR THE YEAR 2010

SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES	
					EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	100.00	709	0.0011	0.029	0	0.005	0
FEB	100.00	638	0.0022	0.110	0	0.018	0
MAR	99.87	708	0.0009	0.046	0	0.012	0
APR	100.00	686	0.0009	0.059	0	0.010	0
MAY	100.00	707	0.0015	0.063	0	0.009	0
JUN	99.86	685	0.0010	0.047	0	0.007	0
JUL	100.00	703	0.0016	0.085	0	0.015	0
AUG	92.34	651	0.0008	0.034	0	0.006	0
SEP	100.00	685	0.0009	0.070	0	0.011	0
OCT	100.00	709	0.0003	0.023	0	0.002	0
NOV	99.03	679	0.0002	0.015	0	0.001	0
DEC	99.06	702	0.0003	0.008	0	0.002	0
PERI OD	99.17	8262	0.0010	0.11	0	0.018	0

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)					MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	
JAN	709	99.86	0.14	.	.	.	0.0011
FEB	638	98.28	0.94	0.78	.	.	0.0022
MAR	708	99.01	0.99	.	.	.	0.0009
APR	686	99.42	0.58	.	.	.	0.0009
MAY	707	99.01	0.71	0.28	.	.	0.0015
JUN	685	99.12	0.88	.	.	.	0.0010
JUL	703	97.58	1.99	0.43	.	.	0.0016
AUG	651	99.54	0.46	.	.	.	0.0008
SEP	685	98.83	1.02	0.15	.	.	0.0009
OCT	709	99.72	0.28	.	.	.	0.0003
NOV	679	100.00	.	.	.	.	0.0002
DEC	702	100.00	.	.	.	.	0.0003
TOTAL	8262						ANNUAL MEAN (ppm) 0.0010

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MANNIX (AMS 5)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF	NUMBER OF	
					VALUES EXCEEDING 1-HOUR GUIDELINE	VALUES EXCEEDING 24-HOUR GUIDELINE	
JAN	100.00	709	0.0018	0.026	0	0.009	0
FEB	99.85	638	0.0033	0.197	1	0.025	0
MAR	99.87	708	0.0058	0.176	1	0.071	1
APR	100.00	684	0.0026	0.093	0	0.022	0
MAY	99.46	703	0.0034	0.065	0	0.016	0
JUN	99.03	678	0.0010	0.034	0	0.006	0
JUL	100.00	706	0.0028	0.107	0	0.019	0
AUG	98.52	692	0.0010	0.031	0	0.006	0
SEP	98.75	677	0.0019	0.092	0	0.013	0
OCT	100.00	709	0.0011	0.024	0	0.008	0
NOV	93.47	636	0.0013	0.062	0	0.005	0
DEC	98.25	696	0.0016	0.055	0	0.014	0
PERIOD	98.94	8236	0.0023	0.197	2	0.071	1

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)						MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34	
JAN	709	99.44	0.56	.	.	.	.	0.0018
FEB	638	97.65	1.57	0.47	0.16	0.16	.	0.0033
MAR	708	92.37	4.38	2.40	0.71	0.14	.	0.0058
APR	684	96.20	3.65	0.15	.	.	.	0.0026
MAY	703	94.88	4.98	0.14	.	.	.	0.0034
JUN	678	98.97	1.03	.	.	.	.	0.0010
JUL	706	96.88	2.69	0.42	.	.	.	0.0028
AUG	692	99.57	0.43	.	.	.	.	0.0010
SEP	677	97.78	1.62	0.59	.	.	.	0.0019
OCT	709	99.86	0.14	.	.	.	.	0.0011
NOV	636	99.21	0.63	0.16	.	.	.	0.0013
DEC	696	98.85	1.15	.	.	.	.	0.0016
TOTAL	8236							ANNUAL MEAN (ppm) 0.0023

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNES (AMS 6)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	99.46	704	0.0013	0.014	0	0.005
FEB	99.85	638	0.0013	0.036	0	0.005
MAR	100.00	708	0.0013	0.043	0	0.007
APR	99.58	680	0.0014	0.062	0	0.011
MAY	99.73	700	0.0012	0.036	0	0.005
JUN	99.72	680	0.0007	0.035	0	0.005
JUL	100.00	702	0.0010	0.048	0	0.007
AUG	97.98	691	0.0007	0.029	0	0.006
SEP	99.86	682	0.0004	0.011	0	0.002
OCT	98.92	695	0.0005	0.031	0	0.008
NOV	99.17	674	0.0004	0.027	0	0.003
DEC	100.00	707	0.0009	0.042	0	0.010
PERIOD	99.52	8261	0.0009	0.062	0	0.011

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)						MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34	
JAN	704	100.00	.	.	.	.	0.0013
FEB	638	99.53	0.47	.	.	.	0.0013	
MAR	708	99.44	0.56	.	.	.	0.0013	
APR	680	98.68	1.18	0.15	.	.	0.0014	
MAY	700	99.86	0.14	.	.	.	0.0012	
JUN	680	99.71	0.29	.	.	.	0.0007	
JUL	702	99.29	0.71	.	.	.	0.0010	
AUG	691	99.57	0.43	.	.	.	0.0007	
SEP	682	100.00	.	.	.	.	0.0004
OCT	695	99.57	0.43	.	.	.	0.0005	
NOV	674	99.85	0.15	.	.	.	0.0004	
DEC	707	99.43	0.57	.	.	.	0.0009	
TOTAL	8261						ANNUAL MEAN (ppm) 0.0009	

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS 7)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES	
					EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	100.00	707	0.0006	0.010	0	0.002	0
FEB	99.70	637	0.0010	0.034	0	0.005	0
MAR	99.60	705	0.0010	0.024	0	0.006	0
APR	99.58	681	0.0006	0.015	0	0.004	0
MAY	98.12	693	0.0009	0.045	0	0.004	0
JUN	99.58	682	0.0006	0.032	0	0.004	0
JUL	100.00	702	0.0011	0.038	0	0.006	0
AUG	98.92	696	0.0005	0.019	0	0.004	0
SEP	99.58	679	0.0003	0.008	0	0.001	0
OCT	100.00	706	0.0004	0.015	0	0.005	0
NOV	100.00	683	0.0003	0.008	0	0.003	0
DEC	100.00	707	0.0006	0.036	0	0.006	0
PERI OD	99.59	8278	0.0007	0.045	0	0.006	0

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)					MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	
JAN	707	100.00	.	.	.	.	0.0006
FEB	637	99.69	0.31	.	.	.	0.0010
MAR	705	99.72	0.28	.	.	.	0.0010
APR	681	100.00	.	.	.	.	0.0006
MAY	693	99.71	0.29	.	.	.	0.0009
JUN	682	99.56	0.44	.	.	.	0.0006
JUL	702	99.29	0.71	.	.	.	0.0011
AUG	696	100.00	.	.	.	.	0.0005
SEP	679	100.00	.	.	.	.	0.0003
OCT	706	100.00	.	.	.	.	0.0004
NOV	683	100.00	.	.	.	.	0.0003
DEC	707	99.72	0.28	.	.	.	0.0006
TOTAL	8278						ANNUAL MEAN (ppm) 0.0006

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT CHIPEWYAN (AMS 8)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					VALUES EXCEEDING 1-HOUR GUIDELINE	VALUES EXCEEDING 24-HOUR GUIDELINE
JAN	99.87	705	0.0010	0.020	0	0.009
FEB	99.26	632	0.0006	0.010	0	0.003
MAR	100.00	707	0.0007	0.020	0	0.007
APR	99.58	681	0.0001	0.005	0	0.001
MAY	99.33	702	0.0000	0.005	0	0.001
JUN	99.72	681	0.0001	0.002	0	0.000
JUL	100.00	708	0.0001	0.007	0	0.002
AUG	97.85	689	0.0001	0.003	0	0.001
SEP	98.06	669	0.0002	0.005	0	0.001
OCT	99.87	705	0.0003	0.008	0	0.002
NOV	100.00	684	0.0004	0.014	0	0.005
DEC	99.73	702	0.0005	0.013	0	0.003
PERIOD	99.44	8265	0.0003	0.02	0	0.009

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)						MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34	
JAN	705	100.00	.	.	.	.	0.0010
FEB	632	100.00	.	.	.	.	0.0006
MAR	707	100.00	.	.	.	.	0.0007
APR	681	100.00	.	.	.	.	0.0001
MAY	702	100.00	.	.	.	.	0.0000
JUN	681	100.00	.	.	.	.	0.0001
JUL	708	100.00	.	.	.	.	0.0001
AUG	689	100.00	.	.	.	.	0.0001
SEP	669	100.00	.	.	.	.	0.0002
OCT	705	100.00	.	.	.	.	0.0003
NOV	684	100.00	.	.	.	.	0.0004
DEC	702	100.00	.	.	.	.	0.0005
TOTAL	8265						ANNUAL MEAN (ppm) 0.0003	

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP - AIR QUALITY - (AMS 11)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDI NG 1-HOUR GUI DELI NE	NUMBER OF VALUES EXCEEDING 24-HOUR GUI DELI NE
JAN	100.00	708	0.0022	0.116	0	0.015
FEB	97.77	625	0.0028	0.079	0	0.015
MAR	99.87	707	0.0020	0.063	0	0.006
APR	100.00	682	0.0013	0.029	0	0.005
MAY	99.60	699	0.0019	0.077	0	0.009
JUN	99.72	684	0.0013	0.043	0	0.006
JUL	100.00	706	0.0018	0.074	0	0.011
AUG	99.60	704	0.0011	0.024	0	0.005
SEP	100.00	686	0.0010	0.041	0	0.008
OCT	99.60	706	0.0011	0.049	0	0.004
NOV	99.86	679	0.0009	0.025	0	0.005
DEC	99.87	707	0.0006	0.024	0	0.004
PERI OD	99.67	8293	0.0015	0.116	0	0.015

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)						MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34	
JAN	708	98.02	1.84	.	0.14	.	.	0.0022
FEB	625	97.92	1.76	0.32	.	.	.	0.0028
MAR	707	99.01	0.85	0.14	.	.	.	0.0020
APR	682	99.71	0.29	.	.	.	.	0.0013
MAY	699	98.00	1.72	0.29	.	.	.	0.0019
JUN	684	99.12	0.88	.	.	.	.	0.0013
JUL	706	99.15	0.71	0.14	.	.	.	0.0018
AUG	704	99.57	0.43	.	.	.	.	0.0011
SEP	686	99.27	0.73	.	.	.	.	0.0010
OCT	706	99.01	0.99	.	.	.	.	0.0011
NOV	679	99.85	0.15	.	.	.	.	0.0009
DEC	707	99.86	0.14	.	.	.	.	0.0006
TOTAL	8293							ANNUAL MEAN (ppm) 0.0015

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILLENNIUM MINE (AMS 12)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.60	705	0.0008	0.010	0	0.002
FEB	99.55	636	0.0024	0.096	0	0.019
MAR	99.87	706	0.0009	0.044	0	0.004
APR	97.92	667	0.0009	0.039	0	0.011
MAY	100.00	706	0.0008	0.069	0	0.009
JUN	99.86	679	0.0005	0.030	0	0.002
JUL	100.00	702	0.0016	0.072	0	0.010
AUG	99.60	703	0.0006	0.029	0	0.007
SEP	100.00	684	0.0008	0.052	0	0.007
OCT	97.98	692	0.0006	0.016	0	0.004
NOV	99.86	682	0.0004	0.021	0	0.003
DEC	100.00	707	0.0009	0.030	0	0.010
PERI OD	99.52	8269	0.0009	0.096	0	0.019

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)					MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	
JAN	705	100.00	.	.	.	.	0.0008
FEB	636	98.27	0.94	0.79	.	.	0.0024
MAR	706	99.58	0.42	.	.	.	0.0009
APR	667	98.50	1.50	.	.	.	0.0009
MAY	706	99.29	0.57	0.14	.	.	0.0008
JUN	679	99.71	0.29	.	.	.	0.0005
JUL	702	98.29	1.57	0.14	.	.	0.0016
AUG	703	99.72	0.28	.	.	.	0.0006
SEP	684	99.42	0.58	.	.	.	0.0008
OCT	692	100.00	.	.	.	.	0.0006
NOV	682	99.85	0.15	.	.	.	0.0004
DEC	707	99.43	0.57	.	.	.	0.0009
TOTAL	8269						ANNUAL MEAN (ppm) 0.0009

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SYNCRUDE UPGRADE EXPANSION 1 (AMS 13)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	99.19	703	0.0005	0.004	0	0.002
FEB	99.70	636	0.0026	0.094	0	0.010
MAR	99.73	703	0.0014	0.145	0	0.012
APR	99.58	682	0.0012	0.036	0	0.004
MAY	99.73	707	0.0011	0.029	0	0.005
JUN	100.00	686	0.0015	0.033	0	0.006
JUL	99.87	702	0.0013	0.046	0	0.007
AUG	98.66	698	0.0013	0.025	0	0.004
SEP	99.72	682	0.0010	0.069	0	0.010
OCT	100.00	709	0.0006	0.020	0	0.002
NOV	99.86	685	0.0008	0.028	0	0.005
DEC	99.87	708	0.0011	0.022	0	0.004
PERIOD	99.66	8301	0.0012	0.145	0	0.012

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)					MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	
JAN	703	100.00	.	.	.	.	0.0005
FEB	636	97.17	2.52	0.31	.	.	0.0026
MAR	703	98.58	1.28	.	0.14	.	0.0014
APR	682	99.12	0.88	.	.	.	0.0012
MAY	707	99.15	0.85	.	.	.	0.0011
JUN	686	98.98	1.02	.	.	.	0.0015
JUL	702	99.00	1.00	.	.	.	0.0013
AUG	698	99.71	0.29	.	.	.	0.0013
SEP	682	98.68	1.17	0.15	.	.	0.0010
OCT	709	100.00	.	.	.	.	0.0006
NOV	685	99.85	0.15	.	.	.	0.0008
DEC	708	99.86	0.14	.	.	.	0.0011
TOTAL	8301						ANNUAL MEAN (ppm) 0.0012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS 14)

ANNUAL SUMMARY FOR THE YEAR 2010

SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					VALUES EXCEEDING 1-HOUR GUIDELINE	VALUES EXCEEDING 24-HOUR GUIDELINE
JAN	99.87	708	0.0007	0.012	0	0.003
FEB	100.00	639	0.0010	0.030	0	0.004
MAR	99.73	706	0.0007	0.011	0	0.003
APR	99.03	674	0.0005	0.009	0	0.002
MAY	99.73	704	0.0004	0.014	0	0.003
JUN	90.28	615	0.0003	0.007	0	0.001
JUL	98.92	694	0.0004	0.009	0	0.002
AUG	98.66	697	0.0004	0.012	0	0.002
SEP	99.86	682	0.0002	0.008	0	0.001
OCT	99.46	702	0.0003	0.010	0	0.002
NOV	99.86	684	0.0003	0.067	0	0.006
DEC	100.00	701	0.0007	0.017	0	0.004
PERIOD	98.79	8206	0.0005	0.067	0	0.006

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)					MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	
JAN	708	100.00	.	.	.	.	0.0007
FEB	639	99.69	0.31	.	.	.	0.0010
MAR	706	100.00	.	.	.	.	0.0007
APR	674	100.00	.	.	.	.	0.0005
MAY	704	100.00	.	.	.	.	0.0004
JUN	615	100.00	.	.	.	.	0.0003
JUL	694	100.00	.	.	.	.	0.0004
AUG	697	100.00	.	.	.	.	0.0004
SEP	682	100.00	.	.	.	.	0.0002
OCT	702	100.00	.	.	.	.	0.0003
NOV	684	99.56	0.29	0.15	.	.	0.0003
DEC	701	100.00	.	.	.	.	0.0007
TOTAL	8206						ANNUAL MEAN (ppm) 0.0005

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CNRL HORIZON (AMS 15)

ANNUAL SUMMARY FOR THE YEAR 2010

SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.46	704	0.0007	0.013	0	0.004
FEB	99.85	639	0.0026	0.064	0	0.022
MAR	99.87	701	0.0012	0.083	0	0.015
APR	100.00	684	0.0011	0.053	0	0.007
MAY	100.00	708	0.0006	0.025	0	0.004
JUN	100.00	685	0.0013	0.030	0	0.005
JUL	99.60	703	0.0009	0.032	0	0.006
AUG	99.73	707	0.0008	0.042	0	0.003
SEP	99.86	685	0.0007	0.026	0	0.004
OCT	99.73	706	0.0003	0.017	0	0.003
NOV	100.00	683	0.0005	0.057	0	0.007
DEC	99.87	706	0.0008	0.033	0	0.008
PERI OD	99.83	8311	0.0009	0.083	0	0.022

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)						MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34	
JAN	704	100.00	.	.	.	.	0.0007
FEB	639	96.87	2.97	0.16	.	.	0.0026	
MAR	701	99.00	0.71	0.29	.	.	0.0012	
APR	684	98.98	1.02	.	.	.	0.0011	
MAY	708	99.58	0.42	.	.	.	0.0006	
JUN	685	99.85	0.15	.	.	.	0.0013	
JUL	703	99.43	0.57	.	.	.	0.0009	
AUG	707	99.86	0.14	.	.	.	0.0008	
SEP	685	99.56	0.44	.	.	.	0.0007	
OCT	706	100.00	.	.	.	.	0.0003
NOV	683	99.56	0.44	.	.	.	0.0005	
DEC	706	99.58	0.42	.	.	.	0.0008	
TOTAL	8311						ANNUAL MEAN (ppm) 0.0009	

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ALBIAN MUSKEG RIVER (AMS 16)
ANNUAL SUMMARY FOR THE YEAR 2010
SO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDI NG 1-HOUR GUI DELI NE	NUMBER OF VALUES EXCEEDING 24-HOUR GUI DELI NE
JAN	99.73	707	0.0026	0.161	0	0.030
FEB	99.70	638	0.0029	0.071	0	0.011
MAR	99.06	699	0.0027	0.068	0	0.015
APR	99.44	680	0.0013	0.044	0	0.010
MAY	98.25	695	0.0013	0.036	0	0.004
JUN	100.00	686	0.0009	0.015	0	0.004
JUL	100.00	705	0.0015	0.084	0	0.007
AUG	99.33	703	0.0017	0.058	0	0.011
SEP	100.00	684	0.0013	0.036	0	0.006
OCT	99.73	707	0.0013	0.024	0	0.004
NOV	94.03	639	0.0018	0.066	0	0.017
DEC	99.87	707	0.0015	0.015	0	0.004
PERI OD	99.1	8250	0.0017	0.161	0	0.03

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	% OF DATA IN EACH CONCENTRATION RANGE (ppm)					MONTHLY MEAN (ppm)
		<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	
JAN	707	98.30	1.13	0.28	0.28	.	0.0026
FEB	638	98.28	1.41	0.31	.	.	0.0029
MAR	699	97.14	2.43	0.43	.	.	0.0027
APR	680	99.41	0.59	.	.	.	0.0013
MAY	695	99.42	0.58	.	.	.	0.0013
JUN	686	100.00	.	.	.	.	0.0009
JUL	705	99.57	0.28	0.14	.	.	0.0015
AUG	703	98.72	1.28	.	.	.	0.0017
SEP	684	98.83	1.17	.	.	.	0.0013
OCT	707	99.72	0.28	.	.	.	0.0013
NOV	639	98.75	1.10	0.16	.	.	0.0018
DEC	707	100.00	.	.	.	.	0.0015
TOTAL	8250						ANNUAL MEAN (ppm) 0.0017

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILDRED LAKE (AMS 2)

ANNUAL SUMMARY FOR THE YEAR 2010

H2S (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					VALUES EXCEEDING 1-HOUR GUIDELINE	VALUES EXCEEDING 24-HOUR GUIDELINE
JAN	99.60	706	0.0015	0.031	11	4
FEB	100.00	640	0.0021	0.059	30	6
MAR	99.60	706	0.0028	0.088	52	8
APR	99.72	684	0.0021	0.099	35	5
MAY	99.73	705	0.0003	0.008	0	0
JUN	99.86	685	0.0007	0.014	4	0
JUL	99.60	704	0.0010	0.027	18	3
AUG	99.46	704	0.0014	0.033	22	5
SEP	99.58	684	0.0011	0.017	13	3
OCT	97.85	691	0.0013	0.022	7	1
NOV	99.86	683	0.0008	0.007	0	0
DEC	100.00	709	0.0004	0.007	0	0
PERIOD	99.57	8301	0.0013	0.099	192	35

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	706	88.95	9.49	1.56	.	1.5
FEB	640	82.19	13.13	4.53	0.16	2.1
MAR	706	81.73	10.91	6.80	0.57	2.8
APR	684	89.33	5.56	4.53	0.58	2.1
MAY	705	98.58	1.42	.	.	0.3
JUN	685	94.60	4.82	0.58	.	0.7
JUL	704	91.76	5.68	2.56	.	1.0
AUG	704	88.07	8.81	3.13	.	1.4
SEP	684	90.20	7.89	1.90	.	1.1
OCT	691	88.28	10.71	1.01	.	1.3
NOV	683	96.63	3.37	.	.	0.8
DEC	709	99.58	0.42	.	.	0.4
TOTAL	8301				ANNUAL MEAN (ppb)	1.3

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BUFFALO VIEWPOINT (AMS 4)

ANNUAL SUMMARY FOR THE YEAR 2010

H2S (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES		
					EXCEEDI NG 1-HOUR GUI DELI NE	NUMBER OF VALUES EXCEEDING 24-HOUR GUI DELI NE	
JAN	100.00	709	0.0004	0.009	0	0.003	0
FEB	100.00	640	0.0004	0.006	0	0.001	0
MAR	99.87	709	0.0002	0.010	0	0.001	0
APR	100.00	687	0.0004	0.055	6	0.004	1
MAY	100.00	709	0.0002	0.010	0	0.001	0
JUN	99.86	686	0.0003	0.014	2	0.002	0
JUL	100.00	704	0.0002	0.004	0	0.001	0
AUG	92.07	651	0.0004	0.014	3	0.003	0
SEP	100.00	685	0.0003	0.012	1	0.001	0
OCT	98.92	702	0.0002	0.008	0	0.001	0
NOV	100.00	686	0.0002	0.004	0	0.001	0
DEC	100.00	709	0.0001	0.003	0	0.001	0
PERI OD	99.21	8277	0.0003	0.055	12	0.004	1

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	709	97.74	2.26	.	.	0.4
FEB	640	98.75	1.25	.	.	0.4
MAR	709	99.15	0.85	.	.	0.2
APR	687	97.82	1.31	0.73	0.15	0.4
MAY	709	99.15	0.85	.	.	0.2
JUN	686	97.67	2.04	0.29	.	0.3
JUL	704	99.72	0.28	.	.	0.2
AUG	651	97.39	2.15	0.46	.	0.4
SEP	685	98.83	1.02	0.15	.	0.3
OCT	702	99.43	0.57	.	.	0.2
NOV	686	99.71	0.29	.	.	0.2
DEC	709	100.00	.	.	.	0.1
TOTAL	8277				ANNUAL MEAN (ppb)	0.3

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MANNIX (AMS 5)

ANNUAL SUMMARY FOR THE YEAR 2010

H2S (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	100.00	709	0.0015	0.016	10	1
FEB	100.00	639	0.0015	0.021	9	3
MAR	99.87	708	0.0009	0.022	5	1
APR	99.31	681	0.0017	0.073	23	2
MAY	99.46	698	0.0005	0.006	0	0
JUN	99.44	681	0.0005	0.010	0	0
JUL	100.00	706	0.0017	0.036	27	5
AUG	100.00	705	0.0026	0.029	57	8
SEP	99.31	681	0.0020	0.029	41	8
OCT	100.00	709	0.0008	0.019	4	0
NOV	100.00	686	0.0003	0.005	0	0
DEC	100.00	709	0.0005	0.006	0	0
PERIOD	99.78	8312	0.0012	0.073	176	28

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	709	90.55	8.04	1.41	.	1.5
FEB	639	90.30	8.29	1.41	.	1.5
MAR	708	95.06	4.24	0.71	.	0.9
APR	681	92.80	3.82	2.94	0.44	1.7
MAY	698	99.57	0.43	.	.	0.5
JUN	681	96.04	3.96	.	.	0.5
JUL	706	85.13	11.05	3.82	.	1.7
AUG	705	77.87	14.04	8.09	.	2.6
SEP	681	80.76	13.22	6.02	.	2.0
OCT	709	93.37	6.06	0.56	.	0.8
NOV	686	99.42	0.58	.	.	0.3
DEC	709	99.15	0.85	.	.	0.5
TOTAL	8312				ANNUAL MEAN (ppb)	1.2

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP - AIR QUALITY - (AMS 11)

ANNUAL SUMMARY FOR THE YEAR 2010

H2S (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	100.00	709	0.0020	0.016	7	7
FEB	97.92	626	0.0016	0.014	5	3
MAR	99.87	708	0.0017	0.025	17	4
APR	100.00	685	0.0013	0.093	14	3
MAY	100.00	710	0.0003	0.008	0	0
JUN	100.00	686	0.0007	0.018	3	0
JUL	100.00	705	0.0013	0.023	11	1
AUG	99.60	705	0.0010	0.020	7	1
SEP	100.00	686	0.0008	0.013	2	0
OCT	100.00	710	0.0009	0.017	8	0
NOV	99.86	678	0.0007	0.006	0	0
DEC	99.87	708	0.0005	0.003	0	0
PERI OD	99.77	8316	0.0011	0.093	74	19

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	709	78.42	20.59	0.99	.	2.0
FEB	626	87.70	11.50	0.80	.	1.6
MAR	708	87.57	10.03	2.40	.	1.7
APR	685	94.45	3.50	1.75	0.29	1.3
MAY	710	99.30	0.70	.	.	0.3
JUN	686	96.21	3.35	0.44	.	0.7
JUL	705	90.35	8.09	1.56	.	1.3
AUG	705	94.47	4.54	0.99	.	1.0
SEP	686	96.21	3.50	0.29	.	0.8
OCT	710	95.21	3.66	1.13	.	0.9
NOV	678	98.53	1.47	.	.	0.7
DEC	708	100.00	.	.	.	0.5
TOTAL	8316				ANNUAL MEAN (ppb)	1.1

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY (AMS 1)

ANNUAL SUMMARY FOR THE YEAR 2010

TRS (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					VALUES EXCEEDING 1-HOUR GUIDELINE	VALUES EXCEEDING 24-HOUR GUIDELINE
JAN	98.39	698	0.0012	0.008	0	1
FEB	99.70	638	0.0013	0.007	0	1
MAR	99.60	705	0.0011	0.012	2	0
APR	99.86	685	0.0007	0.019	3	1
MAY	100.00	708	0.0005	0.005	0	0
JUN	100.00	685	0.0006	0.004	0	0
JUL	99.19	702	0.0007	0.006	0	0
AUG	99.73	707	0.0007	0.006	0	0
SEP	99.31	682	0.0005	0.006	0	0
OCT	100.00	709	0.0005	0.008	0	0
NOV	100.00	687	0.0007	0.004	0	0
DEC	100.00	709	0.0007	0.004	0	0
PERIOD	99.65	8315	0.0008	0.019	5	3

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	698	93.41	6.59	.	.	1.2
FEB	638	92.63	7.37	.	.	1.3
MAR	705	94.89	4.82	0.28	.	1.1
APR	685	98.10	1.46	0.44	.	0.7
MAY	708	99.72	0.28	.	.	0.5
JUN	685	99.85	0.15	.	.	0.6
JUL	702	98.86	1.14	.	.	0.7
AUG	707	97.31	2.69	.	.	0.7
SEP	682	98.97	1.03	.	.	0.5
OCT	709	98.87	1.13	.	.	0.5
NOV	687	99.42	0.58	.	.	0.7
DEC	709	99.86	0.14	.	.	0.7
TOTAL	8315			ANNUAL MEAN (ppb)		0.8

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNIS (AMS 6)

ANNUAL SUMMARY FOR THE YEAR 2010

TRS (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	98.52	697	0.0003	0.005	0	0.001
FEB	99.85	639	0.0003	0.004	0	0.001
MAR	100.00	709	0.0001	0.003	0	0.001
APR	99.44	682	0.0002	0.008	0	0.002
MAY	99.33	702	0.0001	0.002	0	0.000
JUN	99.72	684	0.0001	0.002	0	0.001
JUL	95.16	668	0.0001	0.004	0	0.001
AUG	97.85	692	0.0001	0.005	0	0.001
SEP	100.00	685	0.0001	0.002	0	0.001
OCT	99.73	705	0.0000	0.001	0	0.000
NOV	99.17	680	0.0001	0.002	0	0.001
DEC	100.00	709	0.0001	0.002	0	0.000
PERIOD	99.05	8252	0.0001	0.008	0	0.002

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	697	99.57	0.43	.	.	0.3
FEB	639	99.69	0.31	.	.	0.3
MAR	709	100.00	.	.	.	0.1
APR	682	99.56	0.44	.	.	0.2
MAY	702	100.00	.	.	.	0.1
JUN	684	100.00	.	.	.	0.1
JUL	668	99.85	0.15	.	.	0.1
AUG	692	99.57	0.43	.	.	0.1
SEP	685	100.00	.	.	.	0.1
OCT	705	100.00	.	.	.	0.0
NOV	680	100.00	.	.	.	0.1
DEC	709	100.00	.	.	.	0.1
TOTAL	8252					ANNUAL MEAN (ppb) 0.1

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS 7)

ANNUAL SUMMARY FOR THE YEAR 2010

TRS (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	100.00	707	0.0009	0.004	0	0.002
FEB	99.70	637	0.0011	0.006	0	0.002
MAR	99.60	705	0.0008	0.002	0	0.002
APR	99.86	685	0.0008	0.011	1	0.002
MAY	95.03	673	0.0004	0.002	0	0.001
JUN	99.58	683	0.0000	0.001	0	0.000
JUL	99.19	698	0.0001	0.003	0	0.001
AUG	94.09	667	0.0004	0.002	0	0.001
SEP	99.72	675	0.0005	0.004	0	0.001
OCT	100.00	703	0.0006	0.002	0	0.001
NOV	100.00	685	0.0007	0.003	0	0.001
DEC	99.87	708	0.0009	0.002	0	0.001
PERI OD	98.87	8226	0.0006	0.011	1	0.002

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	707	99.72	0.28	.	.	0.9
FEB	637	99.22	0.78	.	.	1.1
MAR	705	100.00	.	.	.	0.8
APR	685	98.98	0.88	0.15	.	0.8
MAY	673	100.00	.	.	.	0.4
JUN	683	100.00	.	.	.	0.0
JUL	698	100.00	.	.	.	0.1
AUG	667	100.00	.	.	.	0.4
SEP	675	99.85	0.15	.	.	0.5
OCT	703	100.00	.	.	.	0.6
NOV	685	100.00	.	.	.	0.7
DEC	708	100.00	.	.	.	0.9
TOTAL	8226				ANNUAL MEAN (ppb)	0.6

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BARGE LANDING (AMS 9)
ANNUAL SUMMARY FOR THE YEAR 2010
TRS (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	100.00	708	0.0010	0.007	0	0
FEB	100.00	636	0.0011	0.008	0	1
MAR	99.87	708	0.0007	0.006	0	0
APR	99.31	681	0.0004	0.028	4	1
MAY	96.51	684	0.0001	0.004	0	0
JUN	100.00	686	0.0002	0.005	0	0
JUL	100.00	705	0.0003	0.005	0	0
AUG	99.73	707	0.0004	0.006	0	0
SEP	99.86	685	0.0003	0.006	0	0
OCT	99.87	704	0.0005	0.007	0	0
NOV	99.86	685	0.0005	0.011	1	0
DEC	100.00	709	0.0005	0.002	0	0
PERIOD	99.58	8298	0.0005	0.028	5	2

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	708	97.46	2.54	.	.	1.0
FEB	636	94.65	5.35	.	.	1.1
MAR	708	97.46	2.54	.	.	0.7
APR	681	98.09	1.32	0.59	.	0.4
MAY	684	99.85	0.15	.	.	0.1
JUN	686	99.71	0.29	.	.	0.2
JUL	705	99.57	0.43	.	.	0.3
AUG	707	98.44	1.56	.	.	0.4
SEP	685	99.42	0.58	.	.	0.3
OCT	704	99.15	0.85	.	.	0.5
NOV	685	98.83	1.02	0.15	.	0.5
DEC	709	100.00	.	.	.	0.5
TOTAL	8298				ANNUAL MEAN (ppb)	0.5

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILLENNIUM MINE (AMS 12)

ANNUAL SUMMARY FOR THE YEAR 2010

TRS (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.73	706	0.0022	0.038	26	5
FEB	99.70	637	0.0021	0.028	19	7
MAR	99.87	708	0.0030	0.046	58	9
APR	97.78	670	0.0006	0.012	1	0
MAY	100.00	705	0.0004	0.005	0	0
JUN	99.86	684	0.0004	0.006	0	0
JUL	100.00	705	0.0015	0.017	10	1
AUG	99.60	700	0.0021	0.019	29	6
SEP	100.00	684	0.0012	0.017	5	2
OCT	99.60	705	0.0003	0.007	0	0
NOV	99.86	683	0.0003	0.003	0	0
DEC	100.00	708	0.0004	0.003	0	0
PERI OD	99.67	8295	0.0012	0.046	148	30

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	706	84.70	11.61	3.68	.	2.2
FEB	637	79.59	17.43	2.98	.	2.1
MAR	708	73.73	18.08	8.19	.	3.0
APR	670	97.31	2.54	0.15	.	0.6
MAY	705	99.43	0.57	.	.	0.4
JUN	684	97.95	2.05	.	.	0.4
JUL	705	86.52	12.06	1.42	.	1.5
AUG	700	79.86	16.00	4.14	.	2.1
SEP	684	90.79	8.48	0.73	.	1.2
OCT	705	99.01	0.99	.	.	0.3
NOV	683	100.00	.	.	.	0.3
DEC	708	100.00	.	.	.	0.4
TOTAL	8295				ANNUAL MEAN (ppb)	1.2

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SYNCRUDE UPGRADER EXPANSION 1 (AMS 13)

ANNUAL SUMMARY FOR THE YEAR 2010

TRS (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.87	707	0.0003	0.007	0	0.002
FEB	100.00	639	0.0003	0.003	0	0.001
MAR	99.73	706	0.0002	0.009	0	0.002
APR	99.31	681	0.0001	0.003	0	0.001
MAY	99.87	708	0.0000	0.003	0	0.000
JUN	100.00	687	0.0001	0.003	0	0.001
JUL	99.73	703	0.0001	0.004	0	0.001
AUG	99.87	709	0.0002	0.006	0	0.001
SEP	99.86	684	0.0002	0.005	0	0.001
OCT	100.00	709	0.0002	0.003	0	0.001
NOV	99.86	684	0.0001	0.002	0	0.001
DEC	99.87	708	0.0001	0.001	0	0.001
PERI OD	99.83	8325	0.0002	0.009	0	0.002

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	707	99.29	0.71	.	.	0.3
FEB	639	100.00	.	.	.	0.3
MAR	706	99.43	0.57	.	.	0.2
APR	681	100.00	.	.	.	0.1
MAY	708	100.00	.	.	.	0.0
JUN	687	100.00	.	.	.	0.1
JUL	703	99.86	0.14	.	.	0.1
AUG	709	99.44	0.56	.	.	0.2
SEP	684	99.71	0.29	.	.	0.2
OCT	709	100.00	.	.	.	0.2
NOV	684	100.00	.	.	.	0.1
DEC	708	100.00	.	.	.	0.1
TOTAL	8325					ANNUAL MEAN (ppb) 0.1

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS 14)

ANNUAL SUMMARY FOR THE YEAR 2010

TRS (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	100.00	708	0.0002	0.002	0	0
FEB	100.00	636	0.0001	0.001	0	0
MAR	99.73	707	0.0002	0.002	0	0
APR	99.03	679	0.0002	0.017	1	0
MAY	99.73	708	0.0001	0.001	0	0
JUN	87.08	593	0.0001	0.002	0	0
JUL	99.33	701	0.0002	0.001	0	0
AUG	98.52	697	0.0001	0.001	0	0
SEP	99.72	684	0.0001	0.002	0	0
OCT	100.00	710	0.0002	0.002	0	0
NOV	99.86	684	0.0002	0.001	0	0
DEC	99.87	707	0.0002	0.005	0	0
PERIOD	98.58	8214	0.0002	0.017	1	0

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	708	100.00	.	.	.	0.2
FEB	636	100.00	.	.	.	0.1
MAR	707	100.00	.	.	.	0.2
APR	679	99.85	.	0.15	.	0.2
MAY	708	100.00	.	.	.	0.1
JUN	593	100.00	.	.	.	0.1
JUL	701	100.00	.	.	.	0.2
AUG	697	100.00	.	.	.	0.1
SEP	684	100.00	.	.	.	0.1
OCT	710	100.00	.	.	.	0.2
NOV	684	100.00	.	.	.	0.2
DEC	707	99.43	0.57	.	.	0.2
TOTAL	8214				ANNUAL MEAN (ppb)	0.2

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CNRL HORIZON (AMS 15)

ANNUAL SUMMARY FOR THE YEAR 2010

TRS (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.73	707	0.0005	0.001	0	0
FEB	100.00	639	0.0007	0.002	0	0
MAR	99.87	708	0.0007	0.003	0	0
APR	97.64	669	0.0008	0.004	0	0
MAY	100.00	710	0.0005	0.002	0	0
JUN	100.00	685	0.0004	0.002	0	0
JUL	99.33	701	0.0002	0.002	0	0
AUG	99.73	706	0.0003	0.004	0	0
SEP	99.86	686	0.0002	0.003	0	0
OCT	99.73	707	0.0003	0.003	0	0
NOV	100.00	685	0.0002	0.003	0	0
DEC	99.87	708	0.0005	0.002	0	0
PERI OD	99.65	8311	0.0004	0.004	0	0

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppb) --				MONTHLY MEAN (ppb)
		<=3	>3-10	>10-50	>50	
JAN	707	100.00	.	.	.	0.5
FEB	639	100.00	.	.	.	0.7
MAR	708	100.00	.	.	.	0.7
APR	669	99.70	0.30	.	.	0.8
MAY	710	100.00	.	.	.	0.5
JUN	685	100.00	.	.	.	0.4
JUL	701	100.00	.	.	.	0.2
AUG	706	99.86	0.14	.	.	0.3
SEP	686	100.00	.	.	.	0.2
OCT	707	100.00	.	.	.	0.3
NOV	685	100.00	.	.	.	0.2
DEC	708	100.00	.	.	.	0.5
TOTAL	8311				ANNUAL MEAN (ppb)	0.5

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY (AMS 1)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.46	707	2.17	4.1	-	2.8
FEB	98.07	618	2.25	5.3	-	3.2
MAR	95.83	678	2.17	5.7	-	2.9
APR	99.72	683	2.03	5.9	-	2.5
MAY	99.73	707	1.96	2.7	-	2.2
JUN	100.00	686	2.10	3.1	-	2.3
JUL	95.70	673	1.98	2.8	-	2.2
AUG	79.44	552	2.03	3.6	-	2.4
SEP	99.31	681	2.09	3.3	-	2.4
OCT	97.31	690	2.12	3.8	-	2.8
NOV	99.86	685	2.18	4.2	-	2.7
DEC	99.73	706	2.20	3.2	-	2.6
PERI OD	96.97	8066	2.11	5.9	-	3.2

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILDRED LAKE (AMS 2)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	98.12	695	2.40	7.6	-	3.1
FEB	100.00	641	2.22	6.0	-	3.1
MAR	99.60	706	2.35	10.5	-	2.8
APR	99.72	683	2.21	3.5	-	2.5
MAY	99.60	703	2.24	5.6	-	2.7
JUN	99.86	685	2.24	5.4	-	2.7
JUL	99.60	704	2.28	5.3	-	3.0
AUG	99.33	700	2.39	6.6	-	3.0
SEP	98.75	675	2.39	5.9	-	3.1
OCT	97.98	694	2.40	4.7	-	2.9
NOV	99.58	684	2.46	5.9	-	3.1
DEC	99.87	706	2.39	4.0	-	2.7
PERI OD	99.33	8276	2.33	10.5	-	3.1

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BUFFALO VIEWPOINT (AMS 4)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	100.00	709	2.21	5.5	-	2.9
FEB	99.85	637	2.35	10.4	-	3.5
MAR	99.87	707	2.07	6.2	-	2.8
APR	99.86	685	2.07	5.5	-	2.7
MAY	99.87	707	1.98	3.7	-	2.2
JUN	99.86	685	1.98	3.6	-	2.4
JUL	100.00	705	2.14	4.7	-	2.7
AUG	91.80	647	2.26	4.9	-	3.0
SEP	100.00	685	2.22	4.8	-	2.6
OCT	100.00	709	2.14	3.3	-	2.5
NOV	100.00	687	2.21	3.5	-	2.4
DEC	100.00	709	2.30	4.2	-	2.6
PERI OD	99.25	8272	2.16	10.4	-	3.5

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MANNIX (AMS 5)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES
					EXCEEDING 1-HOUR GUI DELINE	EXCEEDING 24-HOUR GUI DELINE
JAN	98.66	699	2.19	4.9	-	3.0
FEB	99.85	638	2.19	7.1	-	3.2
MAR	99.73	707	1.97	4.7	-	2.5
APR	99.72	681	2.01	4.5	-	2.9
MAY	99.33	703	2.11	4.0	-	2.3
JUN	99.31	680	2.08	4.5	-	2.4
JUL	100.00	707	2.09	3.9	-	2.4
AUG	100.00	704	2.11	5.5	-	2.6
SEP	99.17	679	2.10	4.8	-	2.7
OCT	99.87	708	2.08	4.1	-	2.5
NOV	99.72	684	2.22	4.6	-	2.6
DEC	100.00	709	2.34	4.6	-	2.8
PERIOD	99.61	8299	2.12	7.1	-	3.2

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNES (AMS 6)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXI MUM 1-HOUR VALUE	EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	98.66	693	2.10	3.4	-	2.7	-
FEB	99.85	638	2.09	4.4	-	2.8	-
MAR	83.74	591	2.11	2.8	-	2.5	-
APR	72.08	486	2.11	2.6	-	2.3	-
MAY	99.73	705	2.13	2.6	-	2.3	-
JUN	99.58	680	2.06	2.8	-	2.3	-
JUL	99.60	702	2.00	2.6	-	2.2	-
AUG	97.04	684	2.00	3.1	-	2.2	-
SEP	99.58	680	2.04	2.7	-	2.3	-
OCT	94.89	669	2.02	2.5	-	2.4	-
NOV	95.83	643	2.12	2.8	-	2.3	-
DEC	99.46	703	2.22	3.5	-	2.4	-
PERI OD	95	7874	2.08	4.4	-	2.8	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS 7)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXI MUM 1-HOUR VALUE	EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	100.00	707	2.19	2.9	-	2.6	-
FEB	99.70	637	2.35	4.1	-	3.1	-
MAR	98.92	700	2.23	3.7	-	2.5	-
APR	99.86	677	2.11	2.7	-	2.3	-
MAY	97.58	689	2.06	2.5	-	2.2	-
JUN	99.58	682	2.04	2.8	-	2.1	-
JUL	100.00	705	2.04	2.6	-	2.2	-
AUG	98.66	694	2.07	5.6	-	2.5	-
SEP	100.00	682	2.21	2.6	-	2.5	-
OCT	100.00	706	2.20	3.1	-	2.7	-
NOV	96.94	662	2.27	2.7	-	2.5	-
DEC	100.00	708	2.28	4.4	-	2.5	-
PERI OD	99.27	8249	2.17	5.6	-	3.1	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BARGE LANDING (AMS 9)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXI MUM 1-HOUR VALUE	EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.73	707	2.26	3.5	-	2.8	-
FEB	99.40	636	2.35	3.3	-	2.9	-
MAR	99.73	707	2.46	4.2	-	2.8	-
APR	99.31	682	2.28	5.1	-	2.7	-
MAY	87.23	614	2.24	3.0	-	2.5	-
JUN	99.86	685	2.35	3.9	-	2.7	-
JUL	99.87	705	2.41	3.5	-	2.8	-
AUG	96.37	683	2.41	3.6	-	2.7	-
SEP	100.00	686	2.32	4.9	-	2.5	-
OCT	99.87	707	2.30	3.6	-	2.7	-
NOV	99.58	682	2.30	4.0	-	2.8	-
DEC	99.33	705	2.50	4.1	-	3.3	-
PERI OD	98.33	8199	2.35	5.1	-	3.3	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP - AIR QUALITY - (AMS 11)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXI MUM 1-HOUR VALUE	EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	100.00	709	2.23	4.2	-	2.7	-
FEB	97.47	623	2.28	3.9	-	3.0	-
MAR	99.87	708	2.15	4.5	-	2.5	-
APR	100.00	682	2.10	3.3	-	2.3	-
MAY	100.00	707	2.16	3.3	-	2.3	-
JUN	98.89	678	2.22	3.9	-	2.5	-
JUL	100.00	707	2.38	4.0	-	2.8	-
AUG	94.89	669	2.27	3.9	-	2.5	-
SEP	100.00	686	2.21	3.9	-	2.6	-
OCT	100.00	708	2.15	3.3	-	2.6	-
NOV	99.86	679	2.24	4.0	-	2.9	-
DEC	97.72	692	2.39	4.6	-	2.8	-
PERI OD	99.06	8248	2.23	4.6	-	3	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILLENNIUM MINE (AMS 12)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXIMUM 1-HOUR VALUE	EXCEEDING 1-HOUR GUI DELINE	MAXIMUM 24-HOUR VALUE	EXCEEDING 24-HOUR GUI DELINE
JAN	99.73	706	2.31	8.1	-	3.8	-
FEB	99.40	635	2.59	11.5	-	5.1	-
MAR	99.87	706	2.42	8.0	-	3.1	-
APR	95.56	647	2.31	8.3	-	3.1	-
MAY	100.00	706	2.43	7.1	-	3.0	-
JUN	99.03	673	2.27	5.7	-	2.8	-
JUL	100.00	703	2.76	9.7	-	3.7	-
AUG	99.60	703	2.70	8.1	-	3.4	-
SEP	100.00	684	2.72	9.6	-	3.5	-
OCT	89.25	626	2.80	9.1	-	4.1	-
NOV	99.58	680	2.74	9.1	-	4.6	-
DEC	99.87	706	2.59	7.6	-	3.8	-
PERIOD	98.48	8175	2.55	11.5	-	5.1	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SYNCRUDE UPGRADER EXPANSION 1 (AMS 13)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	98.92	696	2.40	6.8	-	3.6
FEB	99.70	634	2.61	7.4	-	3.8
MAR	99.73	703	2.48	9.6	-	4.0
APR	99.72	683	2.27	8.3	-	3.4
MAY	99.46	705	2.21	3.6	-	2.5
JUN	100.00	686	2.24	4.3	-	2.6
JUL	99.73	703	2.23	3.3	-	2.5
AUG	100.00	708	2.25	3.5	-	2.5
SEP	99.86	684	2.32	3.6	-	2.6
OCT	100.00	709	2.41	4.3	-	3.3
NOV	99.86	685	2.37	7.2	-	3.2
DEC	99.87	708	2.43	4.5	-	3.1
PERI OD	99.74	8304	2.35	9.6	-	4

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS 14)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES	
					EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.46	705	2.01	2.5	-	2.3	-
FEB	100.00	639	2.16	2.6	-	2.3	-
MAR	99.73	703	2.10	2.7	-	2.2	-
APR	99.03	674	2.06	2.4	-	2.1	-
MAY	99.73	704	2.00	2.3	-	2.1	-
JUN	90.14	615	2.00	2.4	-	2.2	-
JUL	99.33	699	2.02	2.4	-	2.1	-
AUG	97.31	687	1.94	2.9	-	2.2	-
SEP	99.86	684	2.10	3.8	-	2.2	-
OCT	100.00	706	2.17	2.7	-	2.5	-
NOV	99.86	684	2.15	2.7	-	2.3	-
DEC	99.73	699	2.21	2.7	-	2.4	-
PERI OD	98.69	8199	2.08	3.8	-	2.5	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CNRL HORIZON (AMS 15)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXI MUM 1-HOUR VALUE	EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.33	703	2.14	4.2	-	2.8	-
FEB	99.85	639	2.12	4.8	-	2.8	-
MAR	99.87	706	2.04	8.0	-	2.7	-
APR	100.00	685	2.03	4.8	-	2.4	-
MAY	100.00	708	2.07	5.3	-	2.4	-
JUN	100.00	685	2.13	4.4	-	2.3	-
JUL	99.60	703	2.08	3.6	-	2.3	-
AUG	99.46	705	2.14	5.2	-	2.5	-
SEP	99.86	685	2.10	6.1	-	2.4	-
OCT	99.73	706	2.14	6.5	-	3.1	-
NOV	99.86	682	2.15	3.7	-	2.5	-
DEC	97.31	687	2.33	8.4	-	3.7	-
PERI OD	99.57	8294	2.12	8.4	-	3.7	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ALBIAN MUSKEG RIVER (AMS 16)

ANNUAL SUMMARY FOR THE YEAR 2010

THC (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXI MUM 1-HOUR VALUE	EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.73	707	2.33	6.9	-	3.2	-
FEB	97.77	625	2.46	6.2	-	3.5	-
MAR	96.10	679	2.26	5.3	-	2.7	-
APR	99.44	680	2.20	7.3	-	2.8	-
MAY	98.79	699	2.22	3.6	-	2.5	-
JUN	100.00	686	2.19	3.4	-	2.6	-
JUL	99.87	704	2.25	3.9	-	2.7	-
AUG	98.79	698	2.24	4.4	-	2.5	-
SEP	100.00	685	2.21	4.0	-	2.5	-
OCT	99.73	706	2.23	7.1	-	2.8	-
NOV	99.58	683	2.25	3.4	-	2.7	-
DEC	99.33	703	2.31	6.7	-	3.2	-
PERI OD	99.1	8255	2.26	7.3	-	3.5	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY (AMS 1)

ANNUAL SUMMARY FOR THE YEAR 2010

O3 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.73	708	0.0128	0.035	0	0.030
FEB	99.70	638	0.0195	0.041	0	0.036
MAR	99.46	705	0.0284	0.050	0	0.041
APR	99.58	682	0.0307	0.066	0	0.048
MAY	100.00	709	0.0276	0.055	0	0.036
JUN	100.00	685	0.0256	0.061	0	0.036
JUL	100.00	706	0.0221	0.066	0	0.035
AUG	100.00	709	0.0163	0.050	0	0.029
SEP	99.31	679	0.0146	0.041	0	0.024
OCT	100.00	710	0.0190	0.043	0	0.032
NOV	100.00	684	0.0157	0.039	0	0.033
DEC	100.00	708	0.0120	0.035	0	0.033
PERI OD	99.82	8323	0.0203	0.066	0	0.048

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNES (AMS 6)

ANNUAL SUMMARY FOR THE YEAR 2010

O3 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.06	702	0.0151	0.036	0	0.029
FEB	99.85	638	0.0217	0.042	0	0.036
MAR	100.00	708	0.0311	0.054	0	0.045
APR	99.44	682	0.0324	0.063	0	0.049
MAY	99.19	702	0.0284	0.057	0	0.040
JUN	99.72	684	0.0279	0.062	0	0.039
JUL	100.00	706	0.0259	0.073	0	0.039
AUG	94.35	654	0.0207	0.045	0	0.030
SEP	100.00	686	0.0173	0.038	0	0.029
OCT	99.60	705	0.0211	0.043	0	0.033
NOV	98.89	677	0.0185	0.037	0	0.033
DEC	100.00	706	0.0157	0.034	0	0.032
PERI OD	99.17	8250	0.0230	0.073	0	0.049

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS 7)

ANNUAL SUMMARY FOR THE YEAR 2010

O3 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
					EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE	
JAN	100.00	709	0.0140	0.036	0	0.026	-	
FEB	99.70	632	0.0169	0.040	0	0.028	-	
MAR	98.79	700	0.0232	0.052	0	0.035	-	
APR	99.86	685	0.0305	0.065	0	0.047	-	
MAY	48.66	342	0.0317	0.058	0	0.039	-	
JUN	0.00	0	-	-	-	-	-	
JUL	52.42	370	0.0194	0.066	0	0.030	-	
AUG	83.60	585	0.0156	0.048	0	0.030	-	
SEP	99.72	680	0.0135	0.037	0	0.024	-	
OCT	100.00	706	0.0157	0.041	0	0.027	-	
NOV	100.00	686	0.0120	0.034	0	0.028	-	
DEC	97.58	691	0.0117	0.031	0	0.026	-	
PERI OD	88.93	6786	0.0179	0.066	0	0.047	-	

Length of monthly periods with data collection - 8040 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT CHIPEWYAN (AMS 8)

ANNUAL SUMMARY FOR THE YEAR 2010

O3 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF	
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE	
JAN	99.87	707	0.0232	0.034	0	0.029	-
FEB	99.26	633	0.0303	0.042	0	0.037	-
MAR	100.00	707	0.0356	0.047	0	0.043	-
APR	99.58	684	0.0355	0.055	0	0.046	-
MAY	99.33	704	0.0326	0.058	0	0.041	-
JUN	99.86	686	0.0317	0.054	0	0.041	-
JUL	100.00	710	0.0244	0.062	0	0.039	-
AUG	97.58	690	0.0236	0.055	0	0.040	-
SEP	98.47	675	0.0196	0.036	0	0.025	-
OCT	100.00	709	0.0237	0.040	0	0.032	-
NOV	100.00	686	0.0241	0.039	0	0.035	-
DEC	99.60	707	0.0252	0.036	0	0.034	-
PERI OD	99.46	8298	0.0274	0.062	0	0.046	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SYNCRUDE UPGRADER EXPANSION 1 (AMS 13)

ANNUAL SUMMARY FOR THE YEAR 2010

O3 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF	
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE	
JAN	98.12	690	0.0121	0.034	0	0.029	-
FEB	98.81	632	0.0182	0.040	0	0.034	-
MAR	99.06	702	0.0270	0.051	0	0.037	-
APR	98.75	676	0.0282	0.062	0	0.042	-
MAY	98.12	695	0.0249	0.054	0	0.034	-
JUN	96.11	658	0.0233	0.058	0	0.031	-
JUL	98.92	699	0.0200	0.057	0	0.030	-
AUG	98.92	697	0.0145	0.049	0	0.027	-
SEP	99.86	684	0.0140	0.042	0	0.026	-
OCT	100.00	709	0.0178	0.043	0	0.032	-
NOV	99.31	682	0.0131	0.038	0	0.032	-
DEC	98.52	698	0.0116	0.035	0	0.034	-
PERI OD	98.71	8222	0.0187	0.062	0	0.042	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS 14)

ANNUAL SUMMARY FOR THE YEAR 2010

O3 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES		
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE	
JAN	100.00	709	0.0214	0.038	0	0.034	-
FEB	100.00	640	0.0281	0.045	0	0.039	-
MAR	99.73	707	0.0356	0.054	0	0.048	-
APR	99.03	679	0.0365	0.066	0	0.057	-
MAY	99.60	704	0.0310	0.068	0	0.047	-
JUN	86.67	592	0.0262	0.060	0	0.038	-
JUL	99.33	702	0.0234	0.065	0	0.031	-
AUG	98.66	699	0.0186	0.057	0	0.035	-
SEP	99.86	685	0.0205	0.040	0	0.034	-
OCT	100.00	710	0.0251	0.044	0	0.036	-
NOV	99.86	686	0.0237	0.039	0	0.036	-
DEC	100.00	709	0.0211	0.035	0	0.033	-
PERIOD	98.57	8222	0.0259	0.068	0	0.057	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY (AMS 1)

ANNUAL SUMMARY FOR THE YEAR 2010

NO2 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					EXCEEDI NG 1-HOUR GUI DELI NE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.73	704	0.0140	0.039	0	0.028
FEB	99.70	628	0.0137	0.046	0	0.029
MAR	97.72	687	0.0088	0.039	0	0.023
APR	99.86	681	0.0052	0.034	0	0.015
MAY	99.33	697	0.0042	0.037	0	0.016
JUN	99.86	681	0.0031	0.020	0	0.006
JUL	99.33	691	0.0022	0.023	0	0.006
AUG	99.87	704	0.0030	0.021	0	0.008
SEP	99.31	676	0.0038	0.022	0	0.012
OCT	100.00	703	0.0059	0.028	0	0.014
NOV	100.00	683	0.0089	0.029	0	0.021
DEC	100.00	704	0.0120	0.038	0	0.025
PERI OD	99.55	8239	0.0070	0.046	0	0.029

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --				MONTHLY MEAN (ppm)
		<=0.05	>0.05-0.11	>0.11-0.21	>0.21	
JAN	704	100.00	.	.	.	0.0140
FEB	628	100.00	.	.	.	0.0137
MAR	687	100.00	.	.	.	0.0088
APR	681	100.00	.	.	.	0.0052
MAY	697	100.00	.	.	.	0.0042
JUN	681	100.00	.	.	.	0.0031
JUL	691	100.00	.	.	.	0.0022
AUG	704	100.00	.	.	.	0.0030
SEP	676	100.00	.	.	.	0.0038
OCT	703	100.00	.	.	.	0.0059
NOV	683	100.00	.	.	.	0.0089
DEC	704	100.00	.	.	.	0.0120
TOTAL	8239					ANNUAL MEAN (ppm) 0.0070

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNIS (AMS 6)

ANNUAL SUMMARY FOR THE YEAR 2010

NO2 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	99.19	698	0.0114	0.036	0	0.024
FEB	99.85	633	0.0104	0.037	0	0.026
MAR	100.00	704	0.0075	0.039	0	0.019
APR	99.31	677	0.0048	0.034	0	0.011
MAY	98.66	691	0.0042	0.029	0	0.007
JUN	99.31	678	0.0029	0.015	0	0.005
JUL	100.00	690	0.0023	0.017	0	0.006
AUG	97.98	686	0.0029	0.018	0	0.007
SEP	100.00	681	0.0036	0.020	0	0.008
OCT	99.33	700	0.0046	0.029	0	0.010
NOV	99.17	674	0.0076	0.029	0	0.018
DEC	100.00	705	0.0095	0.037	0	0.018
PERIOD	99.39	8217	0.0060	0.039	0	0.026

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --				MONTHLY MEAN (ppm)
		<=0.05	>0.05-0.11	>0.11-0.21	>0.21	
JAN	698	100.00	.	.	.	0.0114
FEB	633	100.00	.	.	.	0.0104
MAR	704	100.00	.	.	.	0.0075
APR	677	100.00	.	.	.	0.0048
MAY	691	100.00	.	.	.	0.0042
JUN	678	100.00	.	.	.	0.0029
JUL	690	100.00	.	.	.	0.0023
AUG	686	100.00	.	.	.	0.0029
SEP	681	100.00	.	.	.	0.0036
OCT	700	100.00	.	.	.	0.0046
NOV	674	100.00	.	.	.	0.0076
DEC	705	100.00	.	.	.	0.0095
TOTAL	8217					ANNUAL MEAN (ppm) 0.0060

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS 7)

ANNUAL SUMMARY FOR THE YEAR 2010

NO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDI NG 1-HOUR GUI DELI NE	NUMBER OF VALUES EXCEEDING 24-HOUR GUI DELI NE
JAN	100.00	706	0.0178	0.052	0	0.029
FEB	97.92	622	0.0190	0.056	0	0.031
MAR	98.66	695	0.0150	0.062	0	0.033
APR	99.44	678	0.0086	0.058	0	0.021
MAY	98.66	697	0.0072	0.032	0	0.013
JUN	99.58	678	0.0057	0.024	0	0.010
JUL	99.87	700	0.0053	0.024	0	0.010
AUG	98.92	696	0.0055	0.021	0	0.011
SEP	100.00	682	0.0076	0.033	0	0.013
OCT	100.00	706	0.0107	0.038	0	0.019
NOV	100.00	683	0.0152	0.071	0	0.028
DEC	100.00	707	0.0152	0.070	0	0.027
PERI OD	99.43	8250	0.0110	0.071	0	0.033

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --				MONTHLY MEAN (ppm)
		<=0.05	>0.05-0.11	>0.11-0.21	>0.21	
JAN	706	99.86	0.14	.	.	0.0178
FEB	622	99.84	0.16	.	.	0.0190
MAR	695	98.56	1.44	.	.	0.0150
APR	678	99.85	0.15	.	.	0.0086
MAY	697	100.00	.	.	.	0.0072
JUN	678	100.00	.	.	.	0.0057
JUL	700	100.00	.	.	.	0.0053
AUG	696	100.00	.	.	.	0.0055
SEP	682	100.00	.	.	.	0.0076
OCT	706	100.00	.	.	.	0.0107
NOV	683	99.56	0.44	.	.	0.0152
DEC	707	99.72	0.28	.	.	0.0152
TOTAL	8250			ANNUAL MEAN (ppm)		0.0110

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT CHIPEWYAN (AMS 8)
ANNUAL SUMMARY FOR THE YEAR 2010
NO2 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	99.87	703	0.0020	0.016	0	0.010
FEB	99.11	628	0.0019	0.018	0	0.005
MAR	97.31	688	0.0014	0.014	0	0.005
APR	99.58	679	0.0004	0.007	0	0.003
MAY	99.33	702	0.0003	0.007	0	0.001
JUN	99.58	680	0.0003	0.003	0	0.001
JUL	100.00	707	0.0005	0.007	0	0.002
AUG	99.87	704	0.0004	0.009	0	0.002
SEP	98.19	669	0.0006	0.009	0	0.004
OCT	99.87	704	0.0013	0.015	0	0.007
NOV	100.00	684	0.0017	0.022	0	0.008
DEC	99.73	702	0.0018	0.024	0	0.011
PERIOD	99.37	8250	0.0010	0.024	0	0.011

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --				MONTHLY MEAN (ppm)
		<=0.05	>0.05-0.11	>0.11-0.21	>0.21	
JAN	703	100.00	.	.	.	0.0020
FEB	628	100.00	.	.	.	0.0019
MAR	688	100.00	.	.	.	0.0014
APR	679	100.00	.	.	.	0.0004
MAY	702	100.00	.	.	.	0.0003
JUN	680	100.00	.	.	.	0.0003
JUL	707	100.00	.	.	.	0.0005
AUG	704	100.00	.	.	.	0.0004
SEP	669	100.00	.	.	.	0.0006
OCT	704	100.00	.	.	.	0.0013
NOV	684	100.00	.	.	.	0.0017
DEC	702	100.00	.	.	.	0.0018
TOTAL	8250					ANNUAL MEAN (ppm) 0.0011

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILLENNIUM MINE (AMS 12)

ANNUAL SUMMARY FOR THE YEAR 2010

NO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	99.73	704	0.0210	0.123	0	0.056
FEB	99.70	634	0.0262	0.112	0	0.052
MAR	99.87	706	0.0226	0.054	0	0.036
APR	97.22	662	0.0185	0.062	0	0.033
MAY	100.00	706	0.0150	0.051	0	0.025
JUN	99.86	679	0.0124	0.046	0	0.023
JUL	100.00	701	0.0107	0.035	0	0.018
AUG	99.60	702	0.0099	0.032	0	0.017
SEP	100.00	684	0.0116	0.036	0	0.020
OCT	95.56	670	0.0149	0.044	0	0.030
NOV	99.86	682	0.0183	0.059	0	0.043
DEC	100.00	707	0.0201	0.069	0	0.037
PERIOD	99.28	8237	0.0167	0.123	0	0.056

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --				MONTHLY MEAN (ppm)
		<=0.05	>0.05-0.11	>0.11-0.21	>0.21	
JAN	704	97.16	2.70	0.14	.	0.0210
FEB	634	95.11	4.73	0.16	.	0.0262
MAR	706	99.58	0.42	.	.	0.0226
APR	662	99.70	0.30	.	.	0.0185
MAY	706	99.86	0.14	.	.	0.0150
JUN	679	100.00	.	.	.	0.0124
JUL	701	100.00	.	.	.	0.0107
AUG	702	100.00	.	.	.	0.0099
SEP	684	100.00	.	.	.	0.0116
OCT	670	100.00	.	.	.	0.0149
NOV	682	99.12	0.88	.	.	0.0183
DEC	707	98.73	1.27	.	.	0.0201
TOTAL	8237				ANNUAL MEAN (ppm)	0.0167

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SYNCRUDE UPGRADER EXPANSION 1 (AMS 13)

ANNUAL SUMMARY FOR THE YEAR 2010

NO2 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES	
					EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.87	706	0.0129	0.035	0	0.026	0
FEB	100.00	635	0.0124	0.049	0	0.030	0
MAR	99.73	703	0.0069	0.038	0	0.016	0
APR	99.58	680	0.0049	0.034	0	0.011	0
MAY	99.33	702	0.0035	0.027	0	0.007	0
JUN	100.00	684	0.0029	0.027	0	0.007	0
JUL	99.73	700	0.0022	0.023	0	0.006	0
AUG	100.00	706	0.0026	0.021	0	0.007	0
SEP	100.00	683	0.0029	0.020	0	0.009	0
OCT	100.00	707	0.0048	0.022	0	0.010	0
NOV	99.86	682	0.0080	0.029	0	0.018	0
DEC	94.62	668	0.0113	0.036	0	0.024	0
PERI OD	99.38	8256	0.0062	0.049	0	0.03	0

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --				MONTHLY MEAN (ppm)
		<=0.05	>0.05-0.11	>0.11-0.21	>0.21	
JAN	706	100.00	.	.	.	0.0129
FEB	635	100.00	.	.	.	0.0124
MAR	703	100.00	.	.	.	0.0069
APR	680	100.00	.	.	.	0.0049
MAY	702	100.00	.	.	.	0.0035
JUN	684	100.00	.	.	.	0.0029
JUL	700	100.00	.	.	.	0.0022
AUG	706	100.00	.	.	.	0.0026
SEP	683	100.00	.	.	.	0.0029
OCT	707	100.00	.	.	.	0.0048
NOV	682	100.00	.	.	.	0.0080
DEC	668	100.00	.	.	.	0.0113
TOTAL	8256				ANNUAL MEAN (ppm)	0.0062

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS 14)

ANNUAL SUMMARY FOR THE YEAR 2010

NO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	100.00	707	0.0056	0.033	0	0.019
FEB	100.00	637	0.0049	0.044	0	0.014
MAR	99.73	703	0.0030	0.023	0	0.006
APR	99.03	674	0.0022	0.018	0	0.006
MAY	99.73	704	0.0020	0.016	0	0.004
JUN	90.28	615	0.0013	0.013	0	0.004
JUL	98.92	693	0.0013	0.012	0	0.003
AUG	98.66	697	0.0012	0.012	0	0.003
SEP	98.89	677	0.0014	0.011	0	0.003
OCT	100.00	706	0.0024	0.028	0	0.007
NOV	99.86	684	0.0033	0.054	0	0.011
DEC	100.00	701	0.0048	0.025	0	0.012
PERIOD	98.77	8198	0.0028	0.054	0	0.019

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --				MONTHLY MEAN (ppm)
		<=0.05	>0.05-0.11	>0.11-0.21	>0.21	
JAN	707	100.00	.	.	.	0.0056
FEB	637	100.00	.	.	.	0.0049
MAR	703	100.00	.	.	.	0.0030
APR	674	100.00	.	.	.	0.0022
MAY	704	100.00	.	.	.	0.0020
JUN	615	100.00	.	.	.	0.0013
JUL	693	100.00	.	.	.	0.0013
AUG	697	100.00	.	.	.	0.0012
SEP	677	100.00	.	.	.	0.0014
OCT	706	100.00	.	.	.	0.0024
NOV	684	99.85	0.15	.	.	0.0033
DEC	701	100.00	.	.	.	0.0048
TOTAL	8198					ANNUAL MEAN (ppm) 0.0028

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CNRL HORIZON (AMS 15)

ANNUAL SUMMARY FOR THE YEAR 2010

NO2 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF	NUMBER OF
					VALUES EXCEEDING 1-HOUR GUIDELINE	VALUES EXCEEDING 24-HOUR GUIDELINE
JAN	99.73	702	0.0120	0.049	0	0.034
FEB	100.00	638	0.0105	0.043	0	0.027
MAR	99.87	706	0.0051	0.040	0	0.016
APR	100.00	684	0.0048	0.047	0	0.020
MAY	100.00	705	0.0027	0.035	0	0.008
JUN	100.00	684	0.0028	0.024	0	0.007
JUL	99.60	701	0.0024	0.034	0	0.010
AUG	99.73	705	0.0030	0.027	0	0.006
SEP	99.86	683	0.0031	0.024	0	0.009
OCT	99.73	704	0.0044	0.045	0	0.016
NOV	100.00	683	0.0053	0.038	0	0.018
DEC	100.00	707	0.0100	0.044	0	0.023
PERIOD	99.87	8302	0.0055	0.049	0	0.034

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --				MONTHLY MEAN (ppm)
		<=0.05	>0.05-0.11	>0.11-0.21	>0.21	
JAN	702	100.00	.	.	.	0.0120
FEB	638	100.00	.	.	.	0.0105
MAR	706	100.00	.	.	.	0.0051
APR	684	100.00	.	.	.	0.0048
MAY	705	100.00	.	.	.	0.0027
JUN	684	100.00	.	.	.	0.0028
JUL	701	100.00	.	.	.	0.0024
AUG	705	100.00	.	.	.	0.0030
SEP	683	100.00	.	.	.	0.0031
OCT	704	100.00	.	.	.	0.0044
NOV	683	100.00	.	.	.	0.0053
DEC	707	100.00	.	.	.	0.0100
TOTAL	8302				ANNUAL MEAN (ppm)	0.0055

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ALBIAN MUSKEG RIVER (AMS 16)

ANNUAL SUMMARY FOR THE YEAR 2010

NO₂ (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE
JAN	100.00	706	0.0200	0.085	0	0.038
FEB	100.00	637	0.0187	0.064	0	0.037
MAR	99.33	700	0.0182	0.057	0	0.038
APR	99.72	680	0.0172	0.068	0	0.032
MAY	98.66	696	0.0102	0.044	0	0.019
JUN	100.00	684	0.0065	0.034	0	0.014
JUL	100.00	704	0.0072	0.036	0	0.018
AUG	99.33	701	0.0081	0.033	0	0.016
SEP	99.44	679	0.0084	0.034	0	0.016
OCT	99.73	704	0.0100	0.067	0	0.020
NOV	100.00	685	0.0147	0.039	0	0.024
DEC	99.87	705	0.0166	0.106	0	0.032
PERIOD	99.67	8281	0.0130	0.106	0	0.038

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --				MONTHLY MEAN (ppm)
		<=0.05	>0.05-0.11	>0.11-0.21	>0.21	
JAN	706	98.58	1.42	.	.	0.0200
FEB	637	98.12	1.88	.	.	0.0187
MAR	700	99.00	1.00	.	.	0.0182
APR	680	97.65	2.35	.	.	0.0172
MAY	696	100.00	.	.	.	0.0102
JUN	684	100.00	.	.	.	0.0065
JUL	704	100.00	.	.	.	0.0072
AUG	701	100.00	.	.	.	0.0081
SEP	679	100.00	.	.	.	0.0084
OCT	704	99.72	0.28	.	.	0.0100
NOV	685	100.00	.	.	.	0.0147
DEC	705	99.43	0.57	.	.	0.0166
TOTAL	8281			ANNUAL MEAN (ppm)		0.0130

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY (AMS 1)

ANNUAL SUMMARY FOR THE YEAR 2010

NH3 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES	
					EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE		EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.33	696	0.0000	0.000	0	0.000	-
FEB	99.11	622	0.0000	0.000	0	0.000	-
MAR	95.70	670	0.0000	0.000	0	0.000	-
APR	99.86	677	0.0000	0.000	0	0.000	-
MAY	100.00	700	0.0000	0.000	0	0.000	-
JUN	99.86	680	0.0000	0.000	0	0.000	-
JUL	99.33	684	0.0000	0.004	0	0.000	-
AUG	99.87	698	0.0000	0.000	0	0.000	-
SEP	99.31	674	0.0000	0.000	0	0.000	-
OCT	100.00	700	0.0000	0.000	0	0.000	-
NOV	100.00	681	0.0000	0.000	0	0.000	-
DEC	100.00	703	0.0000	0.000	0	0.000	-
PERI OD	99.36	8185	0.0000	0.004	0	0	-

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --			MONTHLY MEAN (ppm)
		<=1.0	>1.0-2.0	>2.0	
JAN	696	100.00	.	.	0.0
FEB	622	100.00	.	.	0.0
MAR	670	100.00	.	.	0.0
APR	677	100.00	.	.	0.0
MAY	700	100.00	.	.	0.0
JUN	680	100.00	.	.	0.0
JUL	684	100.00	.	.	0.0
AUG	698	100.00	.	.	0.0
SEP	674	100.00	.	.	0.0
OCT	700	100.00	.	.	0.0
NOV	681	100.00	.	.	0.0
DEC	703	100.00	.	.	0.0
TOTAL	8185				ANNUAL MEAN (ppm) 0.0

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNES (AMS 6)

ANNUAL SUMMARY FOR THE YEAR 2010

NH3 (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXI MUM 1-HOUR VALUE	NUMBER OF VALUES		
					EXCEEDI NG 1-HOUR GUI DELI NE	NUMBER OF VALUES EXCEEDI NG 24-HOUR GUI DELI NE	
JAN	99.06	691	0.0000	0.002	0	0.000	-
FEB	99.55	626	0.0000	0.002	0	0.000	-
MAR	100.00	699	0.0000	0.000	0	0.000	-
APR	99.58	678	0.0000	0.003	0	0.000	-
MAY	98.12	687	0.0000	0.002	0	0.000	-
JUN	98.75	673	0.0000	0.001	0	0.000	-
JUL	99.73	694	0.0000	0.010	0	0.001	-
AUG	97.98	686	0.0000	0.001	0	0.000	-
SEP	99.86	676	0.0000	0.002	0	0.000	-
OCT	99.33	695	0.0000	0.002	0	0.000	-
NOV	96.81	655	0.0000	0.004	0	0.000	-
DEC	100.00	702	0.0000	0.004	0	0.000	-
PERI OD	99.06	8162	0.0000	0.01	0	0.001	-

Length of monthly periods with data collection - 8760 hours

MONTHLY AVERAGES AND FREQUENCY DISTRIBUTIONS OF 1-HOUR DATA

MONTH	NUMBER OF DATA	-- % OF DATA IN EACH CONCENTRATION RANGE (ppm) --			MONTHLY MEAN (ppm)
		<=1.0	>1.0-2.0	>2.0	
JAN	691	100.00	.	.	0.0
FEB	626	100.00	.	.	0.0
MAR	699	100.00	.	.	0.0
APR	678	100.00	.	.	0.0
MAY	687	100.00	.	.	0.0
JUN	673	100.00	.	.	0.0
JUL	694	100.00	.	.	0.0
AUG	686	100.00	.	.	0.0
SEP	676	100.00	.	.	0.0
OCT	695	100.00	.	.	0.0
NOV	655	100.00	.	.	0.0
DEC	702	100.00	.	.	0.0
TOTAL	8162			ANNUAL MEAN (ppm)	0.0

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS 7)

ANNUAL SUMMARY FOR THE YEAR 2010

CO (ppm) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXI MUM 1-HOUR VALUE	EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	100.00	707	0.21	1.8	0	0.4	-
FEB	99.70	637	0.26	1.9	0	0.5	-
MAR	99.60	705	0.23	0.8	0	0.3	-
APR	85.28	582	0.19	0.6	0	0.3	-
MAY	98.66	697	0.18	0.5	0	0.2	-
JUN	99.58	682	0.17	0.4	0	0.2	-
JUL	100.00	702	0.20	0.6	0	0.5	-
AUG	98.92	696	0.21	0.6	0	0.3	-
SEP	100.00	682	0.19	0.5	0	0.3	-
OCT	100.00	706	0.19	0.7	0	0.4	-
NOV	100.00	683	0.22	1.0	0	0.4	-
DEC	100.00	707	0.21	1.3	0	0.4	-
PERI OD	98.49	8186	0.20	1.9	0	0.5	-

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY (AMS 1)

ANNUAL SUMMARY FOR THE YEAR 2010

PM2.5 (ug/m3) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXIMUM 1-HOUR VALUE	EXCEEDING 1-HOUR GUIDELINE	MAXIMUM 24-HOUR VALUE	EXCEEDING 24-HOUR GUIDELINE
JAN	97.58	726	5.04	26.6	-	16.7	0
FEB	99.11	666	6.57	38.9	-	13.3	0
MAR	97.98	729	4.01	27.6	-	9.0	0
APR	98.33	708	3.79	25.2	-	10.8	0
MAY	96.64	719	3.41	30.7	-	7.0	0
JUN	82.50	594	6.51	47.6	-	14.0	0
JUL	81.72	603	9.51	97.6	-	51.9	1 *
AUG	81.99	610	6.71	43.7	-	17.8	0
SEP	95.83	690	2.35	17.8	-	6.1	0
OCT	96.51	718	2.64	30.6	-	8.7	0
NOV	98.19	707	3.33	28.1	-	7.5	0
DEC	99.33	739	3.84	23.6	-	10.0	0
PERIOD	93.77	8209	4.69	97.6	-	51.9	1 *

* count excludes JULY 15 Station 1 PM2.5 24-hour value of 42.7 ug/m3 based on less than 75% of data present

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNES (AMS 6)

ANNUAL SUMMARY FOR THE YEAR 2010

PM2.5 (ug/m3) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXIMUM 1-HOUR VALUE	EXCEEDING 1-HOUR GUI DELINE	MAXIMUM 24-HOUR VALUE	EXCEEDING 24-HOUR GUI DELINE
JAN	94.49	703	3.37	19.7	-	7.1	0
FEB	93.90	631	4.69	27.1	-	12.2	0
MAR	97.18	723	3.15	21.5	-	6.7	0
APR	96.11	692	4.16	30.4	-	10.6	0
MAY	93.01	692	4.60	47.9	-	10.1	0
JUN	82.36	593	6.36	42.5	-	16.7	0
JUL	75.40	555	8.41	74.2	-	45.6	1
AUG	83.60	622	6.07	74.4	-	22.9	0
SEP	92.08	663	2.15	17.9	-	4.7	0
OCT	95.83	713	2.25	19.8	-	5.8	0
NOV	96.67	696	2.71	14.7	-	6.6	0
DEC	99.06	737	3.59	20.8	-	8.0	0
PERIOD	91.62	8020	4.17	74.4	-	45.6	1

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS 7)

ANNUAL SUMMARY FOR THE YEAR 2010

PM2.5 (ug/m3) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXI MUM 1-HOUR VALUE	EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	98.12	730	3.24	32.9	-	8.3	0
FEB	98.07	659	5.12	24.9	-	12.0	0
MAR	97.18	723	3.65	25.8	-	6.2	0
APR	94.17	678	4.40	28.3	-	11.6	0
MAY	87.77	653	4.09	23.6	-	10.3	0
JUN	72.50	522	8.03	54.8	-	19.0	0
JUL	69.76	512	9.51	86.6	-	44.4	1
AUG	84.81	631	5.70	71.3	-	19.1	0
SEP	89.03	641	3.19	22.5	-	7.0	0
OCT	94.62	704	2.68	20.6	-	7.2	0
NOV	97.08	699	2.98	17.1	-	6.1	0
DEC	95.43	710	5.87	26.8	-	10.8	0
PERI OD	89.83	7862	4.69	86.6	-	44.4	1

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT CHIPPEWYAN (AMS 8)

ANNUAL SUMMARY FOR THE YEAR 2010

PM2.5 (ug/m3) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES	
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE	
JAN	99.60	741	4.64	11.8	-	7.2	0
FEB	88.54	591	3.69	14.2	-	9.7	0
MAR	99.46	740	1.83	8.5	-	4.4	0
APR	98.89	712	1.97	11.8	-	6.4	0
MAY	90.05	670	1.68	9.4	-	3.6	0
JUN	80.97	583	9.85	169.2	-	68.2	4
JUL	81.99	610	10.62	144.7	-	63.9	3 *
AUG	79.97	595	5.48	268.8	-	61.6	1
SEP	94.31	679	1.16	7.7	-	3.4	0
OCT	96.10	715	1.31	8.6	-	5.6	0
NOV	98.75	711	2.31	16.7	-	8.3	0
DEC	99.06	737	2.29	12.7	-	7.1	0
PERIOD	92.33	8084	3.72	268.8	-	68.2	8 *

* count excludes JULY 15 Station 8 PM2.5 24-hour value of 43.9 ug/m3 based on less than 75% of data present

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILLENNIUM MINE (AMS 12)

ANNUAL SUMMARY FOR THE YEAR 2010

PM2.5 (ug/m3) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES		
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE	
JAN	97.98	729	9.26	83.2	-	24.8	0
FEB	96.73	650	13.90	81.1	-	41.9	1
MAR	93.95	699	10.14	74.1	-	19.7	0
APR	95.97	691	9.65	74.9	-	22.0	0
MAY	98.25	731	9.26	67.7	-	20.5	0
JUN	97.92	705	14.75	197.3	-	40.0	1
JUL	95.56	707	12.91	110.5	-	60.2	1
AUG	85.62	637	8.87	86.8	-	21.9	0
SEP	97.92	705	4.96	81.9	-	14.3	0
OCT	98.39	732	5.75	40.4	-	13.7	0
NOV	90.56	652	9.32	43.7	-	19.6	0
DEC	98.92	736	9.62	47.6	-	17.2	0
PERIOD	95.64	8374	9.83	197.3	-	60.2	3

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SYNCRUDE UPGRADER EXPANSION 1 (AMS 13)

ANNUAL SUMMARY FOR THE YEAR 2010

PM2.5 (ug/m3) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXIMUM 1-HOUR VALUE	EXCEEDING 1-HOUR GUIDELINE	MAXIMUM 24-HOUR VALUE	EXCEEDING 24-HOUR GUIDELINE
JAN	99.46	740	4.68	29.6	-	13.8	0
FEB	99.70	670	6.79	47.6	-	15.8	0
MAR	98.79	735	3.65	29.1	-	8.1	0
APR	98.75	711	4.18	22.1	-	10.7	0
MAY	93.55	696	3.66	28.4	-	7.3	0
JUN	75.14	541	7.17	53.5	-	18.8	0
JUL	88.31	654	8.72	85.5	-	47.7	2
AUG	84.68	630	6.44	44.0	-	15.0	0
SEP	93.33	672	2.80	24.8	-	6.8	0
OCT	98.52	733	2.67	20.8	-	7.1	0
NOV	98.89	712	3.49	24.8	-	7.0	0
DEC	94.09	700	4.00	18.9	-	8.7	0
PERIOD	93.57	8194	4.76	85.5	-	47.7	2

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS 14)

ANNUAL SUMMARY FOR THE YEAR 2010

PM2.5 (ug/m3) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXIMUM 1-HOUR VALUE	EXCEEDING 1-HOUR GUIDELINE	MAXIMUM 24-HOUR VALUE	EXCEEDING 24-HOUR GUIDELINE
JAN	97.58	726	3.12	16.9	-	7.2	0
FEB	97.92	657	4.05	36.4	-	8.2	0
MAR	96.91	721	2.47	18.9	-	6.2	0
APR	96.94	698	3.51	18.7	-	9.6	0
MAY	86.02	640	3.68	51.4	-	11.5	0
JUN	65.14	469	5.90	34.8	-	12.6	0
JUL	58.33	429	11.60	82.4	-	38.1	1 *
AUG	65.86	490	9.25	81.3	-	29.0	0
SEP	89.72	646	1.98	19.3	-	5.1	0
OCT	95.83	713	1.59	12.0	-	3.9	0
NOV	98.47	709	1.83	15.2	-	4.2	0
DEC	97.18	723	2.55	28.4	-	5.7	0
PERIOD	87.07	7621	3.85	82.4	-	38.1	1 *

* count excludes JULY 30 Station 14 PM2.5 24-hour value of 31.6 ug/m3 based on less than 75% of data present

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CNRL HORIZON (AMS 15)

ANNUAL SUMMARY FOR THE YEAR 2010

PM2.5 (ug/m3) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	NUMBER OF VALUES		NUMBER OF VALUES	
				MAXI MUM 1-HOUR VALUE	EXCEEDI NG 1-HOUR GUI DELI NE	MAXI MUM 24-HOUR VALUE	EXCEEDI NG 24-HOUR GUI DELI NE
JAN	99.73	742	6.68	29.2	-	13.5	0
FEB	99.26	667	7.88	36.5	-	14.9	0
MAR	99.46	740	6.00	33.9	-	13.0	0
APR	100.00	720	9.99	140.4	-	37.4	1
MAY	98.92	736	7.08	109.8	-	16.4	0
JUN	44.58	321	9.60	289.1	-	32.0	1
JUL	56.32	415	12.43	109.2	-	72.9	1 *
AUG	91.26	679	8.99	51.8	-	22.0	0
SEP	98.06	706	5.49	79.5	-	14.1	0
OCT	98.66	734	6.94	116.1	-	24.8	0
NOV	100.00	720	5.62	42.2	-	12.3	0
DEC	99.60	741	6.46	28.3	-	10.4	0
PERI OD	90.47	7921	7.47	289.1	-	72.9	3 *

* count excludes JULY 14 Station 15 PM2.5 24-hour value of 72.9 ug/m3 based on less than 75% of data present

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ALBIAN MUSKEG RIVER (AMS 16)

ANNUAL SUMMARY FOR THE YEAR 2010

PM2.5 (ug/m3) average

OPERATIONAL TIME, MONTHLY MEAN VALUES, NUMBER OF DATA AND HOURS WITH READINGS IN EXCESS OF REGULATION

MONTH	OPERATIONAL TIME (%)	NUMBER OF DATA	MEAN VALUE	MAXIMUM 1-HOUR VALUE	NUMBER OF VALUES	NUMBER OF VALUES	
					EXCEEDING 1-HOUR GUIDELINE	EXCEEDING 24-HOUR GUIDELINE	
JAN	96.10	715	9.37	59.0	-	19.4	0
FEB	98.21	660	13.34	133.2	-	34.5	1
MAR	97.45	725	8.96	42.1	-	17.7	0
APR	96.94	698	8.77	70.3	-	19.3	0
MAY	94.09	700	7.28	39.1	-	10.8	0
JUN	98.47	709	9.66	97.7	-	21.0	0
JUL	97.31	721	11.10	86.1	-	44.6	1
AUG	92.07	685	10.22	51.3	-	19.3	0
SEP	98.61	710	6.05	49.7	-	13.1	0
OCT	97.58	726	7.87	99.7	-	15.7	0
NOV	89.44	644	9.00	115.4	-	18.9	0
DEC	98.66	734	9.11	114.0	-	22.6	0
PERIOD	96.23	8427	9.20	133.2	-	44.6	2

Length of monthly periods with data collection - 8760 hours

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT MCKAY (AMS 1)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	8.37	11.40	2.88	.	.	.	22.65
NE	2.34	2.96	0.31	.	.	.	5.61
EAST	1.89	1.65	0.10	.	.	.	3.64
SE	3.15	3.88	0.99	0.02	.	.	8.04
SOUTH	9.22	12.50	4.32	0.07	.	.	26.11
SW	6.59	3.81	0.81	0.06	.	.	11.27
WEST	5.58	3.28	0.73	0.05	.	.	9.64
NW	8.09	3.88	1.01	0.03	.	.	13.01
TOTALS	45.23	43.36	11.15	0.23	.	.	99.97
PERCENT CALM		0.03					
NUMBER OF DATA VALUES		8679					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILDRED LAKE (AMS 2)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	3.90	11.63	7.97	0.90	0.01	.	24.41
NE	2.70	2.59	0.71	.	.	.	6.00
EAST	2.79	2.16	0.50	.	.	.	5.45
SE	3.10	8.21	6.72	0.70	.	.	18.73
SOUTH	4.12	12.13	3.56	0.23	.	.	20.04
SW	2.72	5.37	0.98	0.06	.	.	9.13
WEST	1.48	2.55	2.60	0.39	.	.	7.02
NW	1.59	4.55	2.71	0.35	.	.	9.20
TOTALS	22.40	49.19	25.75	2.63	0.01	.	99.98
PERCENT CALM		0.01					
NUMBER OF DATA VALUES		8741					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BUFFALO VIEWPOINT (AMS 4)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	1.50	4.72	8.44	5.22	1.33	0.07	21.28
NE	0.91	2.15	0.67	0.07	.	.	3.80
EAST	1.07	1.80	0.76	0.03	.	.	3.66
SE	2.85	18.35	11.79	0.52	.	.	33.51
SOUTH	2.65	6.02	2.27	0.23	.	.	11.17
SW	1.36	2.63	2.70	0.97	0.08	.	7.74
WEST	1.30	3.49	3.43	1.63	0.21	.	10.06
NW	1.00	3.31	2.80	1.43	0.20	0.01	8.75
TOTALS	12.64	42.47	32.86	10.10	1.82	0.08	99.97
PERCENT CALM		0.00					
NUMBER OF DATA VALUES		8598					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MANNIX (AMS 5)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 20 m and WIND SPEED 20 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	7.05	8.08	0.52	.	.	.	15.65
NE	3.18	0.32	.	.	.	.	3.50
EAST	6.01	2.12	0.01	.	.	.	8.14
SE	20.24	10.24	0.22	.	.	.	30.70
SOUTH	9.19	1.22	.	.	.	.	10.41
SW	5.67	2.88	0.15	0.01	.	.	8.71
WEST	7.24	4.92	0.79	.	.	.	12.95
NW	5.68	4.03	0.23	.	.	.	9.94
TOTALS	64.26	33.81	1.92	0.01	.	.	100.00
PERCENT CALM		0.00					
NUMBER OF DATA VALUES		8684					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - PATRICIA McINNES (AMS 6)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	1.78	6.23	8.18	2.17	0.07	.	18.43
NE	0.99	1.95	0.60	0.09	.	.	3.63
EAST	1.81	3.39	1.64	0.06	.	.	6.90
SE	3.27	9.12	6.02	0.37	.	.	18.78
SOUTH	4.10	7.25	2.15	0.28	.	.	13.78
SW	4.51	7.42	4.63	0.70	0.05	.	17.31
WEST	2.65	3.15	3.29	1.41	0.14	.	10.64
NW	2.59	4.72	2.77	0.43	0.01	.	10.52
TOTALS	21.70	43.23	29.28	5.51	0.27	.	99.99
PERCENT CALM		0.00					
NUMBER OF DATA VALUES		8603					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ATHABASCA VALLEY (AMS 7)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	4.32	6.10	6.26	1.92	0.08	.	18.68
NE	3.43	1.29	0.42	0.01	.	.	5.15
EAST	4.04	1.69	0.26	0.01	.	.	6.00
SE	6.81	11.97	4.06	0.03	.	.	22.87
SOUTH	6.51	7.67	2.86	0.17	.	.	17.21
SW	4.35	4.35	1.82	0.41	.	.	10.93
WEST	2.99	1.84	2.08	0.98	0.09	.	7.98
NW	3.77	3.37	3.13	0.80	0.05	.	11.12
TOTALS	36.22	38.28	20.89	4.33	0.22	.	99.94
PERCENT CALM		0.01					
NUMBER OF DATA VALUES		8735					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - FORT CHIPEWYAN (AMS 8)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	0.90	5.95	3.98	0.53	0.03	.	11.39
NE	0.65	1.93	2.17	0.86	0.45	0.01	6.07
EAST	1.01	5.19	9.56	8.50	2.51	0.38	27.15
SE	0.97	3.87	4.31	2.39	0.21	0.02	11.77
SOUTH	0.88	1.81	2.79	2.51	0.80	0.01	8.80
SW	1.07	3.09	2.29	0.82	0.21	.	7.48
WEST	0.83	4.03	4.68	1.99	0.31	.	11.84
NW	0.80	6.97	6.42	1.26	0.02	.	15.47
TOTALS	7.11	32.84	36.20	18.86	4.54	0.42	99.97
PERCENT CALM		0.00					
NUMBER OF DATA VALUES		8634					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - BARGE LANDING (AMS 9)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	6.44	9.63	1.09	.	.	.	17.16
NE	3.58	5.25	0.32	.	.	.	9.15
EAST	4.08	0.89	0.04	.	.	.	5.01
SE	5.30	4.95	0.82	.	.	.	11.07
SOUTH	9.19	14.36	1.56	.	.	.	25.11
SW	6.14	5.22	2.33	0.09	.	.	13.78
WEST	4.63	1.90	0.96	0.09	.	.	7.58
NW	7.81	3.12	0.21	.	.	.	11.14
TOTALS	47.17	45.32	7.33	0.18	.	.	100.00
PERCENT CALM		0.01					
NUMBER OF DATA VALUES		8568					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - LOWER CAMP - AIR QUALITY - (AMS 11)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	3.62	3.99	6.66	3.36	0.44	.	18.07
NE	2.89	1.08	0.63	0.14	0.06	0.01	4.81
EAST	4.18	1.89	1.57	0.48	0.03	.	8.15
SE	2.60	7.71	14.36	5.47	1.42	0.13	31.69
SOUTH	0.68	1.65	1.53	0.07	.	.	3.93
SW	0.70	1.22	1.73	0.70	0.19	.	4.54
WEST	1.94	2.26	2.39	2.56	1.01	0.21	10.37
NW	6.31	7.44	3.14	1.24	0.28	0.03	18.44
TOTALS	22.92	27.24	32.01	14.02	3.43	0.38	100.00
PERCENT CALM		0.00					
NUMBER OF DATA VALUES		8718					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - MILLENNIUM MINE (AMS 12)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	2.69	8.01	6.25	1.03	0.01	.	17.99
NE	1.49	3.24	2.28	0.37	.	.	7.38
EAST	1.79	1.17	0.07	.	.	.	3.03
SE	5.62	14.39	4.64	0.10	.	.	24.75
SOUTH	10.08	10.02	0.49	.	.	.	20.59
SW	5.31	4.48	0.65	0.07	.	.	10.51
WEST	2.73	3.13	1.55	0.01	.	.	7.42
NW	3.08	4.21	1.03	0.01	.	.	8.33
TOTALS	32.79	48.65	16.96	1.59	0.01	.	100.00
PERCENT CALM		0.00					
NUMBER OF DATA VALUES		8731					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - SYNCRUDE UPGRADER EXPANSION 1 (AMS 13)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	9.81	10.29	0.75	.	.	.	20.85
NE	4.60	2.74	0.05	.	.	.	7.39
EAST	2.28	0.30	.	.	.	.	2.58
SE	5.20	2.99	.	.	.	.	8.19
SOUTH	13.48	7.43	0.19	.	.	.	21.10
SW	13.30	3.93	0.45	.	.	.	17.68
WEST	9.76	4.13	0.65	.	.	.	14.54
NW	5.95	1.63	0.07	.	.	.	7.65
TOTALS	64.38	33.44	2.16	.	.	.	99.98
PERCENT CALM		0.02					
NUMBER OF DATA VALUES		8454					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ANZAC (AMS 14)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 20 m and WIND SPEED 20 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	2.98	5.15	0.50	.	.	.	8.63
NE	1.90	1.91	0.31	.	.	.	4.12
EAST	2.55	4.01	0.83	.	.	.	7.39
SE	3.80	11.51	3.97	0.02	.	.	19.30
SOUTH	4.74	8.05	1.85	0.03	.	.	14.67
SW	4.47	3.97	1.41	0.08	.	.	9.93
WEST	4.09	6.28	3.04	0.16	.	.	13.57
NW	4.87	13.59	3.89	.	.	.	22.35
TOTALS	29.40	54.47	15.80	0.29	.	.	99.96
PERCENT CALM		0.00					
NUMBER OF DATA VALUES		8582					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - CNRL HORIZON (AMS 15)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 10 m and WIND SPEED 10 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	4.65	8.14	5.14	0.54	.	.	18.47
NE	3.20	5.57	1.89	0.06	.	.	10.72
EAST	2.16	1.46	0.17	.	.	.	3.79
SE	2.89	3.36	0.61	.	.	.	6.86
SOUTH	5.53	13.20	3.34	0.07	.	.	22.14
SW	8.71	10.74	3.94	0.28	.	.	23.67
WEST	3.60	2.79	1.30	0.26	0.02	.	7.97
NW	2.97	1.91	1.38	0.15	.	.	6.41
TOTALS	33.71	47.17	17.77	1.36	0.02	.	100.03
PERCENT CALM		0.00					
NUMBER OF DATA VALUES		8723					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION - ALBIAN MUSKEG RIVER (AMS 16)
 ANNUAL SUMMARY FOR THE YEAR 2010
 WIND DIRECTION 20 m and WIND SPEED 20 m (km/hr)

PERCENTAGE FREQUENCY DISTRIBUTION OF WIND

WIND DI RECTION	WIND SPEED						TOTAL
	>0-5	>5-11	>11-19	>19-28	>28-38	>38	
NORTH	0.57	1.92	2.06	0.22	.	.	4.77
NE	0.61	2.72	7.28	3.60	0.07	.	14.28
EAST	1.21	2.68	3.90	0.43	.	.	8.22
SE	1.67	2.27	0.62	.	.	.	4.56
SOUTH	6.12	8.77	3.46	0.03	.	.	18.38
SW	9.68	20.65	4.23	0.23	.	.	34.79
WEST	1.78	4.45	3.04	0.88	0.01	.	10.16
NW	0.68	2.13	1.32	0.51	0.15	.	4.79
TOTALS	22.32	45.59	25.91	5.90	0.23	.	99.95
PERCENT CALM		0.02					
NUMBER OF DATA VALUES		8643					
HOURS IN TIME PERIOD		8760					

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 PASSIVE MONITORING RESULTS
 SUNCOR (formerly PETRO CANADA) - MCKAY RIVER SAGD
 2010

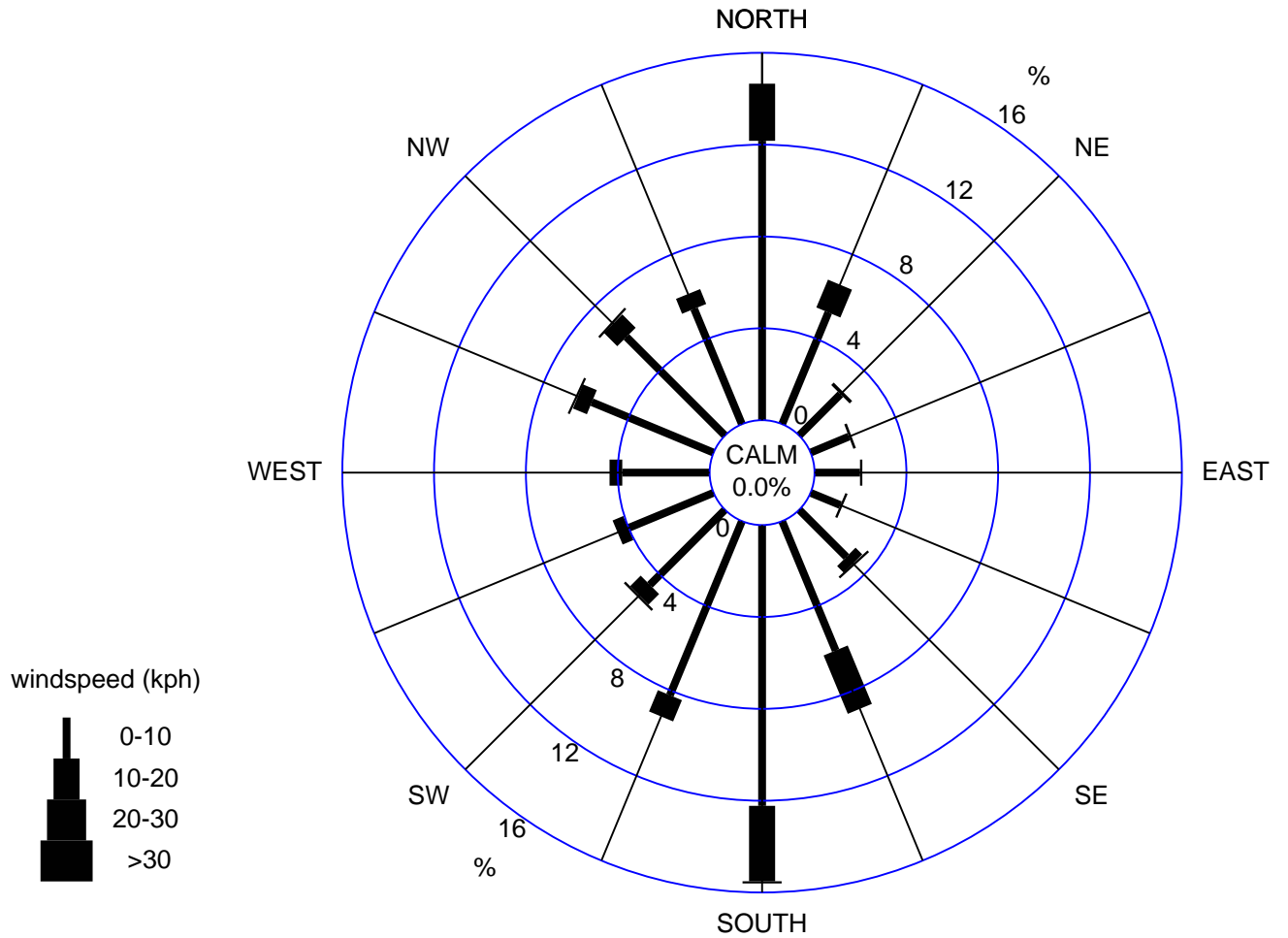
Reporting Period	Parameter	STATION			
		SW	NW	SE	NE
Jan-10	SO ₂ (ppb)	1.2	0.9	1.0	0.9
Feb-10	SO ₂ (ppb)	1.0	1.2	1.3	1.4
Mar-10	SO ₂ (ppb)	0.7	0.6	0.7	0.8
Apr-10	SO ₂ (ppb)	0.6	0.5	0.7	0.8
May-10	SO ₂ (ppb)	0.8	0.8	1.1	0.8
Jun-10	SO ₂ (ppb)	0.5	0.4	0.5	0.5
Jul-10	SO ₂ (ppb)	damaged	0.2	0.3	0.4
Aug-10	SO ₂ (ppb)	-	-	-	-
Sep-10	SO ₂ (ppb)	-	-	-	-
Oct-10	SO ₂ (ppb)	-	-	-	-
Nov-10	SO ₂ (ppb)	-	-	-	-
Dec-10	SO ₂ (ppb)	-	-	-	-
Jan-10	H ₂ S (ppb)	0.18	0.15	0.19	0.20
Feb-10	H ₂ S (ppb)	0.25	0.25	0.24	0.23
Mar-10	H ₂ S (ppb)	0.07	0.07	0.10	0.09
Apr-10	H ₂ S (ppb)	0.15	0.12	0.14	0.16
May-10	H ₂ S (ppb)	0.06	0.05	0.06	0.07
Jun-10	H ₂ S (ppb)	0.06	0.07	0.06	0.09
Jul-10	H ₂ S (ppb)	0.05	0.07	0.06	0.07
Aug-10	H ₂ S (ppb)	-	-	-	-
Sep-10	H ₂ S (ppb)	-	-	-	-
Oct-10	H ₂ S (ppb)	-	-	-	-
Nov-10	H ₂ S (ppb)	-	-	-	-
Dec-10	H ₂ S (ppb)	-	-	-	-
Jan-10	NO ₂ (ppb)	4.4	4.3	0.2	5.3
Feb-10	NO ₂ (ppb)	4.4	2.9	0.2	4.7
Mar-10	NO ₂ (ppb)	1.0	0.7	0.1	1.0
Apr-10	NO ₂ (ppb)	2.1	2.5	0.1	3.6
May-10	NO ₂ (ppb)	1.2	0.8	0.1	0.9
Jun-10	NO ₂ (ppb)	0.6	0.4	0.1	0.8
Jul-10	NO ₂ (ppb)	0.2	0.2	0.1	0.2
Aug-10	NO ₂ (ppb)	-	-	-	-
Sep-10	NO ₂ (ppb)	-	-	-	-
Oct-10	NO ₂ (ppb)	-	-	-	-
Nov-10	NO ₂ (ppb)	-	-	-	-
Dec-10	NO ₂ (ppb)	-	-	-	-
Jan-10	O ₃ (ppb)	17.5	16.1	18.5	17.8
Feb-10	O ₃ (ppb)	24.8	25.4	25.2	25.0
Mar-10	O ₃ (ppb)	31.1	29.0	33.5	31.3
Apr-10	O ₃ (ppb)	26.8	27.7	26.3	28.0
May-10	O ₃ (ppb)	25.1	24.5	23.3	26.0
Jun-10	O ₃ (ppb)	19.3	17.9	21.2	22.9
Jul-10	O ₃ (ppb)	damaged	14.4	16.9	19.5
Aug-10	O ₃ (ppb)	-	-	-	-
Sep-10	O ₃ (ppb)	-	-	-	-
Oct-10	O ₃ (ppb)	-	-	-	-
Nov-10	O ₃ (ppb)	-	-	-	-
Dec-10	O ₃ (ppb)	-	-	-	-

note as of August 2010, McKay River passives are collected and reported by Suncor

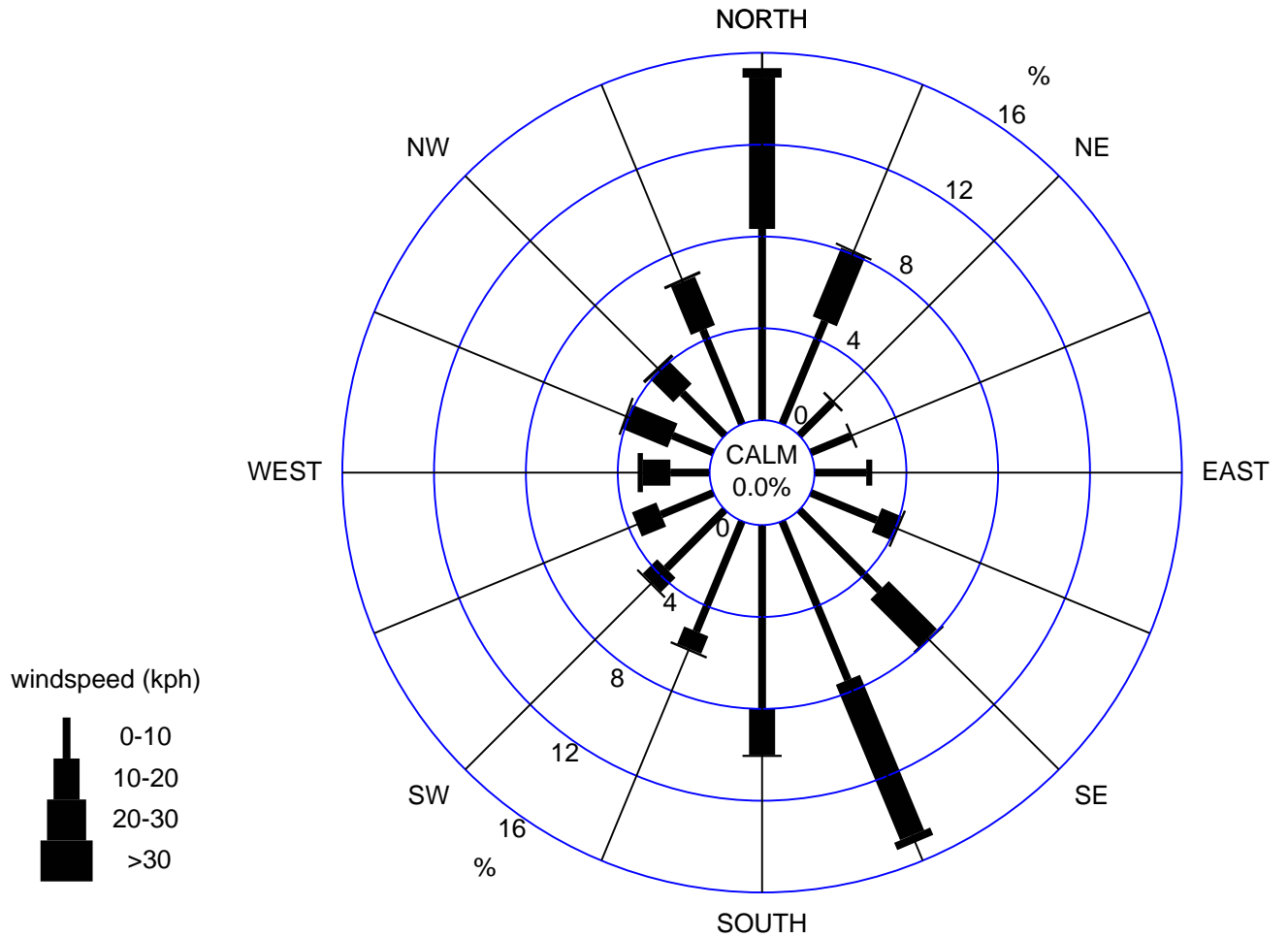
WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 PASSIVE MONITORING RESULTS
 WBEA STATIONS
 2010

Reporting Period	Parameter	STATION		
		AMS 1 Fort McKay	AMS 6 Patricia McInnes	AMS 14 Anzac
Jan-10	SO ₂ (ppb)	1.4	1.2	0.8
Feb-10	SO ₂ (ppb)	3.1	1.9	1.1
Mar-10	SO ₂ (ppb)	2.5	-	0.6
Apr-10	SO ₂ (ppb)	1.0	1.4	0.6
May-10	SO ₂ (ppb)	0.8	1.5	0.5
Jun-10	SO ₂ (ppb)	1.2	0.9	0.4
Jul-10	SO ₂ (ppb)	1.2	1.1	0.5
Aug-10	SO ₂ (ppb)	1.2	1.3	0.5
Sep-10	SO ₂ (ppb)	1.4	0.7	0.3
Oct-10	SO ₂ (ppb)	0.6	0.3	0.6
Nov-10	SO ₂ (ppb)	1.1	1.1	0.9
Dec-10	* SO ₂ (ppb)	-	-	-
Jan-10	NO ₂ (ppb)	10.6	8.6	2.7
Feb-10	NO ₂ (ppb)	9.7	9.4	2.5
Mar-10	NO ₂ (ppb)	3.6	-	0.9
Apr-10	NO ₂ (ppb)	2.0	2.0	0.6
May-10	NO ₂ (ppb)	1.4	1.9	0.5
Jun-10	NO ₂ (ppb)	2.9	2.5	1.2
Jul-10	NO ₂ (ppb)	0.8	0.9	0.5
Aug-10	NO ₂ (ppb)	1.6	1.2	0.7
Sep-10	NO ₂ (ppb)	2.2	2.2	0.6
Oct-10	NO ₂ (ppb)	1.4	2.8	3.5
Nov-10	NO ₂ (ppb)	8.1	7.9	2.8
Dec-10	* NO ₂ (ppb)	-	-	-
Jan-10	O ₃ (ppb)	11.2	14.4	17.9
Feb-10	O ₃ (ppb)	17.1	22.3	25.2
Mar-10	O ₃ (ppb)	28.2	-	32.7
Apr-10	O ₃ (ppb)	25.1	29.9	28.2
May-10	O ₃ (ppb)	23.0	27.3	24.9
Jun-10	O ₃ (ppb)	23.8	30.5	21.5
Jul-10	O ₃ (ppb)	21.1	23.3	18.4
Aug-10	O ₃ (ppb)	15.8	19.2	14.0
Sep-10	O ₃ (ppb)	13.1	17.1	15.1
Oct-10	O ₃ (ppb)	14.1	18.7	19.4
Nov-10	O ₃ (ppb)	12.8	17.0	19.2
Dec-10	* O ₃ (ppb)	-	-	-

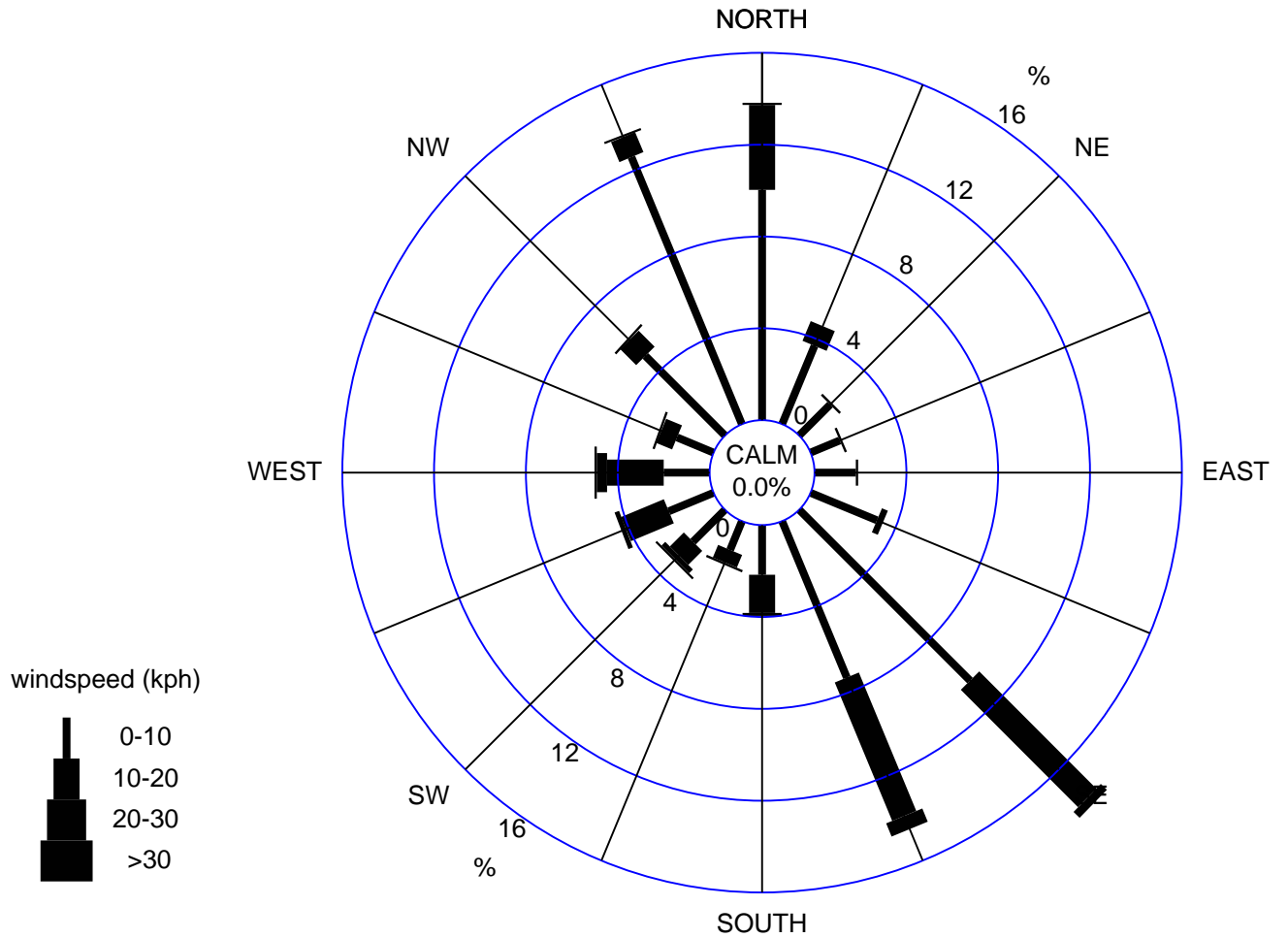
* winter sampling switched to 2 month exposure periods as of November 2010



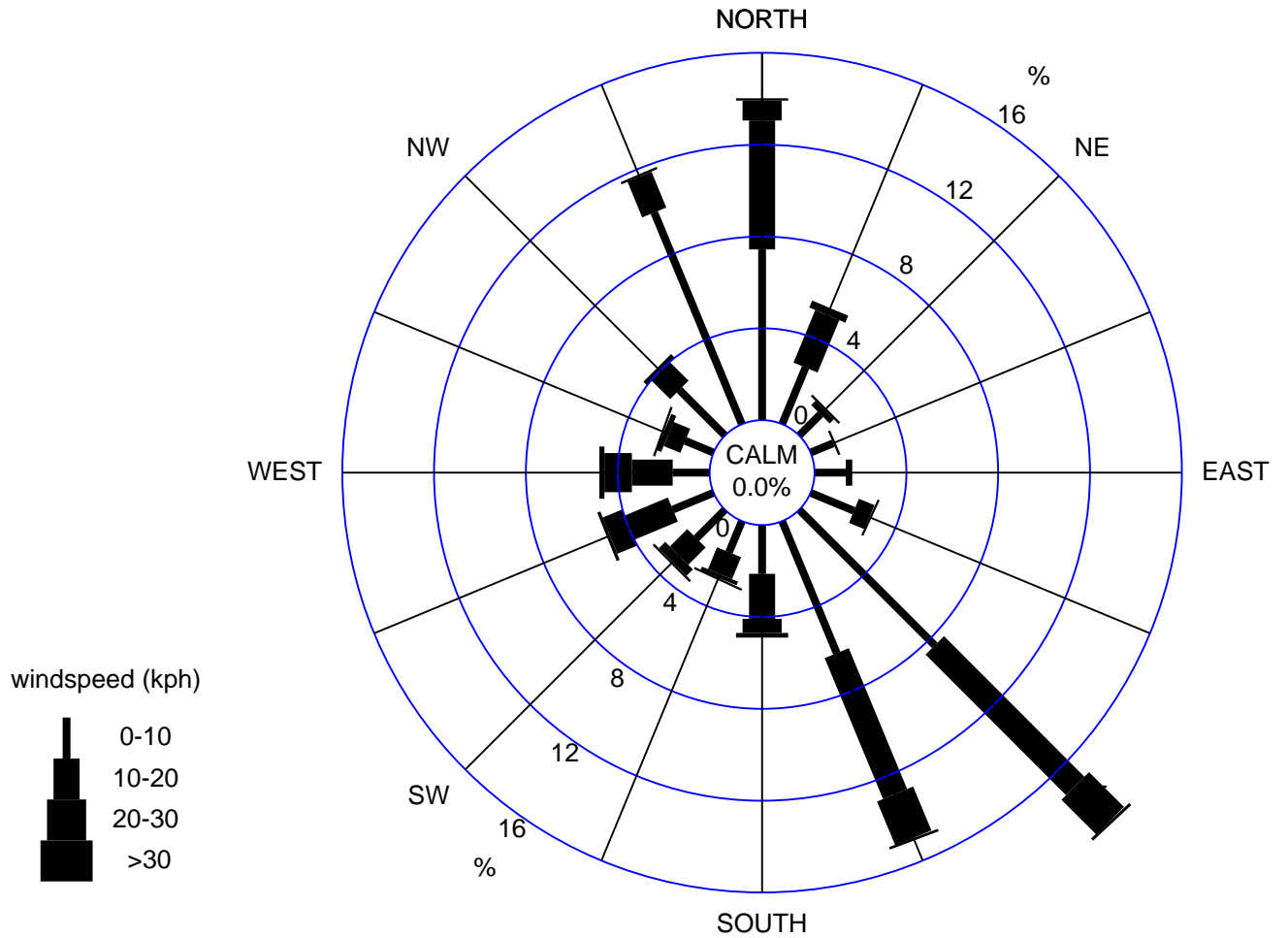
Joint frequency distribution of wind speed and wind direction
 at WBEA - FORT McKAY AMS 1 - 10 m - 2010
 for 8679 hours of data



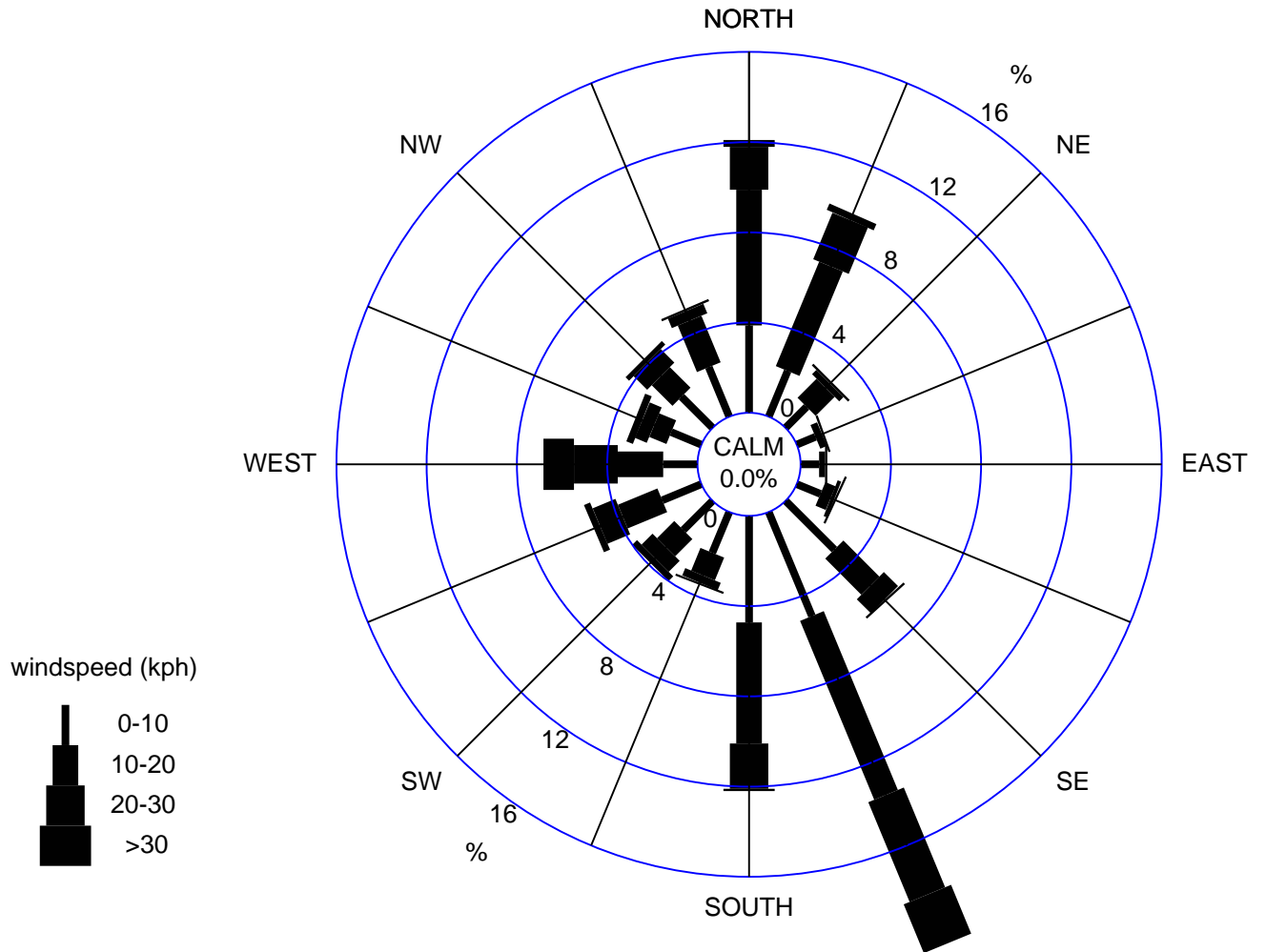
Joint frequency distribution of wind speed and wind direction
 at WBEA - MILDRED LAKE AMS 2 - 10 m - 2010
 for 8741 hours of data



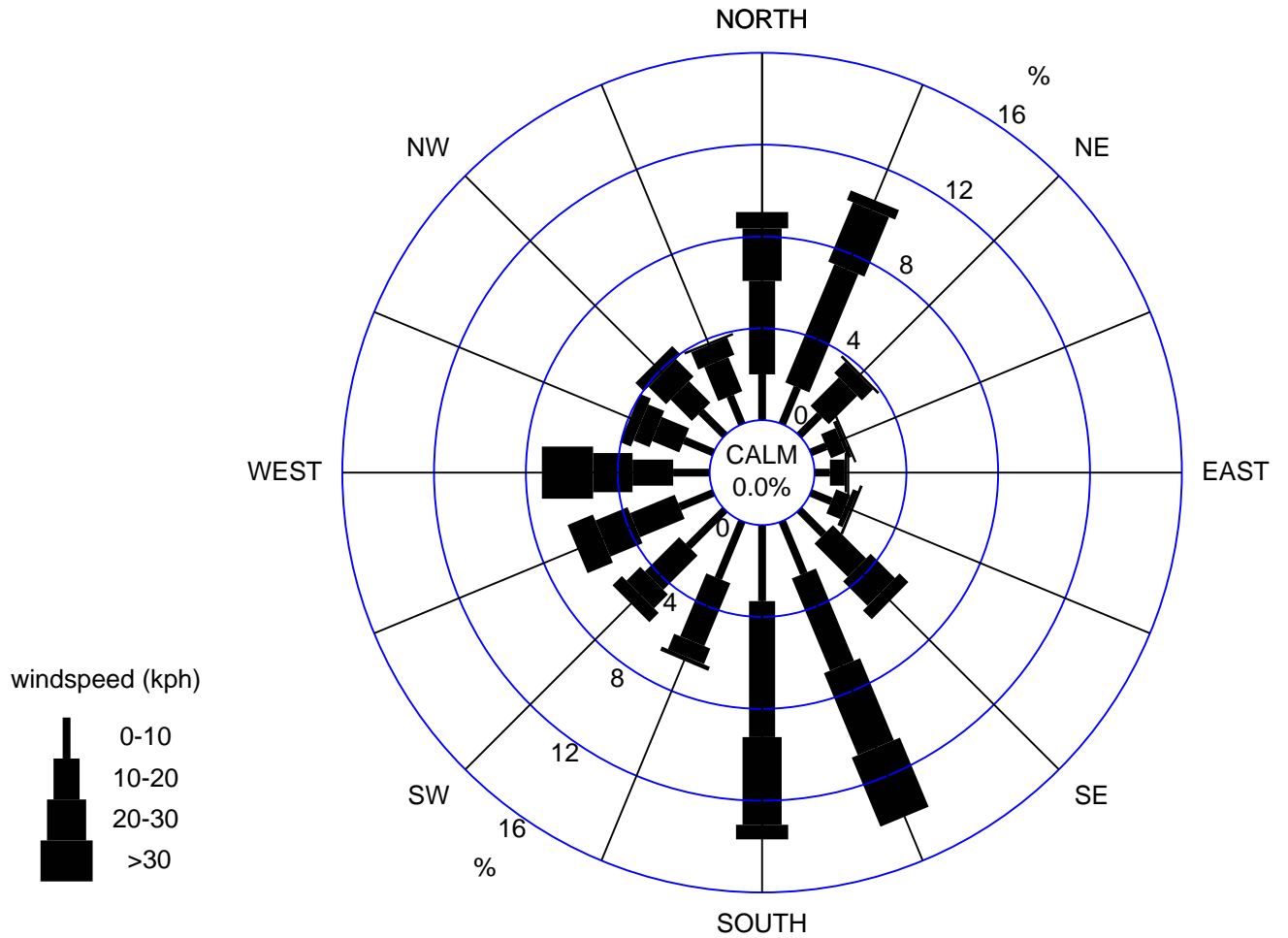
Joint frequency distribution of wind speed and wind direction
 at WBEA - LOWER CAMP - METEOROLOGICAL TOWER - AMS 3 - 20 m - 2010
 for 8712 hours of data



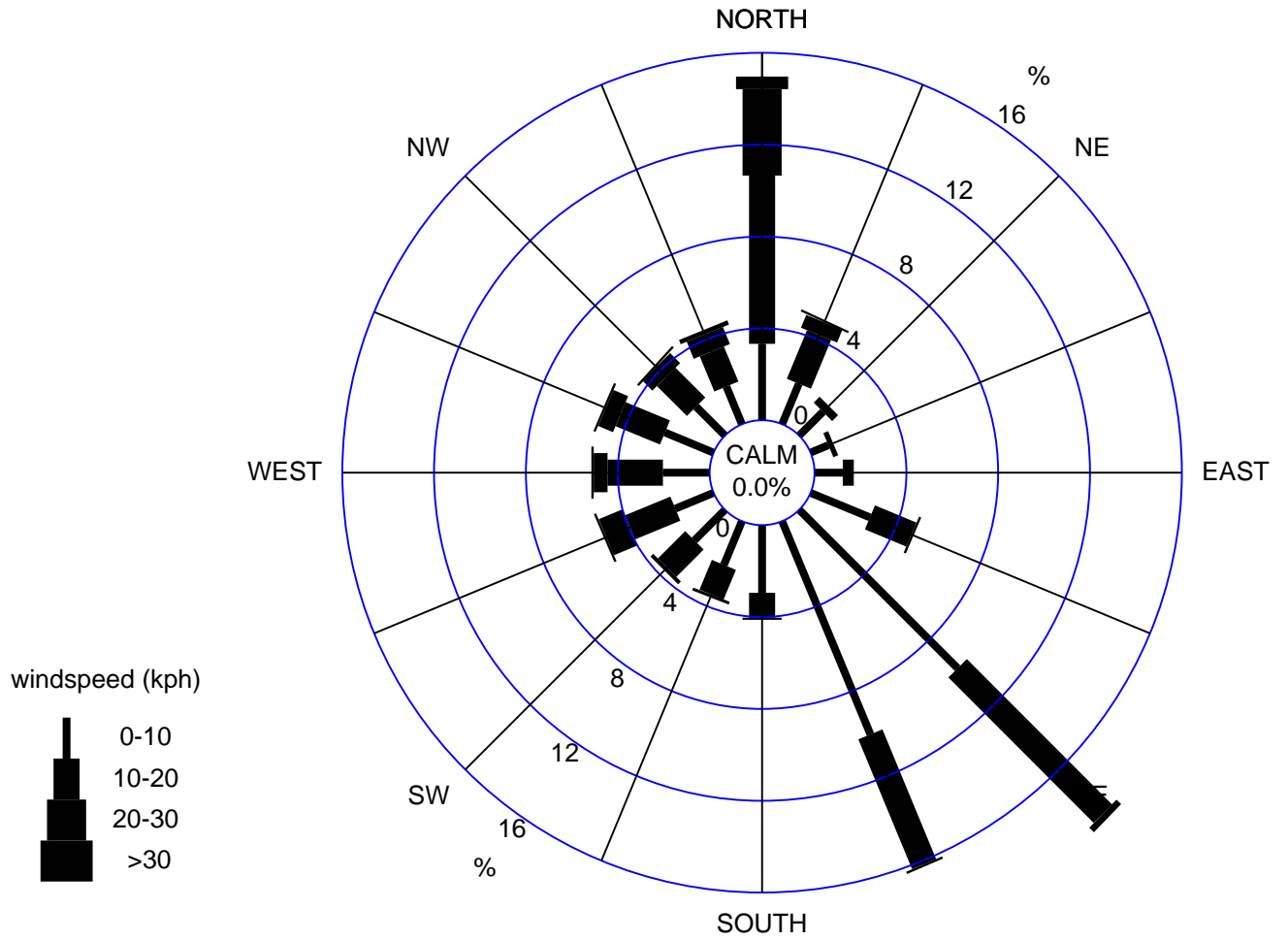
Joint frequency distribution of wind speed and wind direction
 at WBEA - LOWER CAMP - METEOROLOGICAL TOWER - AMS 3 - 45 m - 2010
 for 8535 hours of data



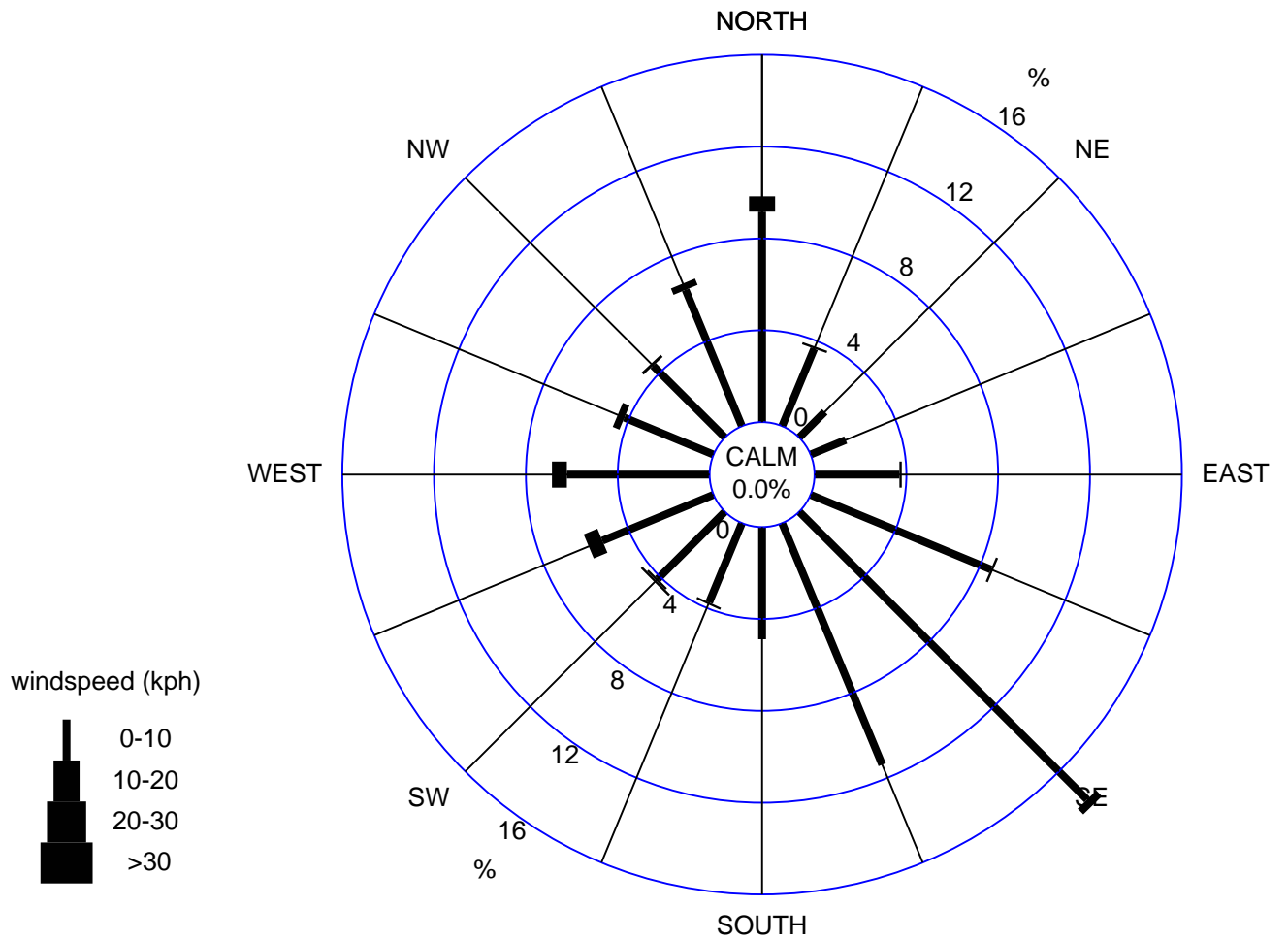
Joint frequency distribution of wind speed and wind direction
 at WBEA - LOWER CAMP - METEOROLOGICAL TOWER - AMS 3 - 100 m - 2010
 for 8573 hours of data



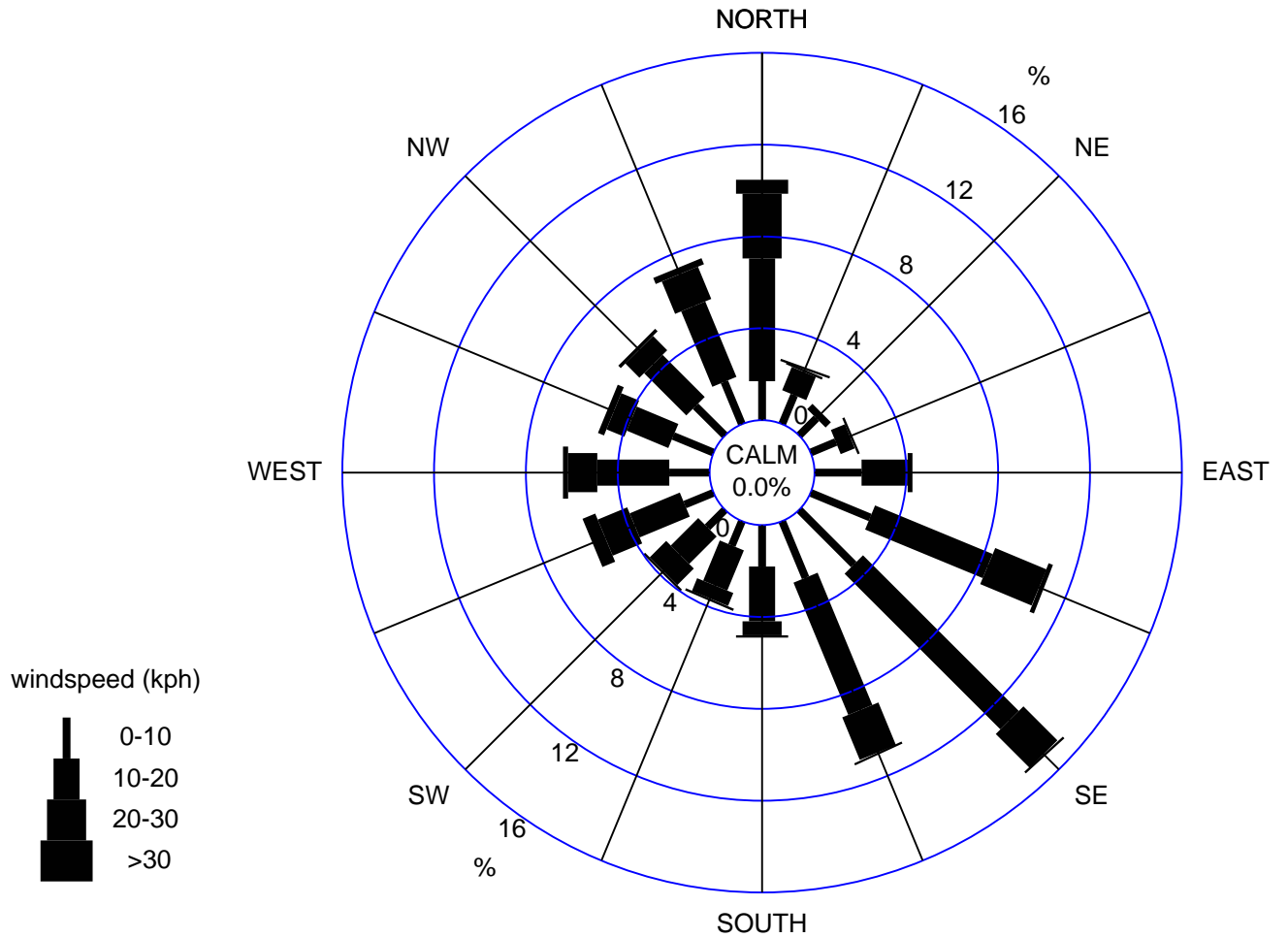
Joint frequency distribution of wind speed and wind direction
 at WBEA - LOWER CAMP - METEOROLOGICAL TOWER - AMS 3 - 167 m - 2010
 for 8375 hours of data



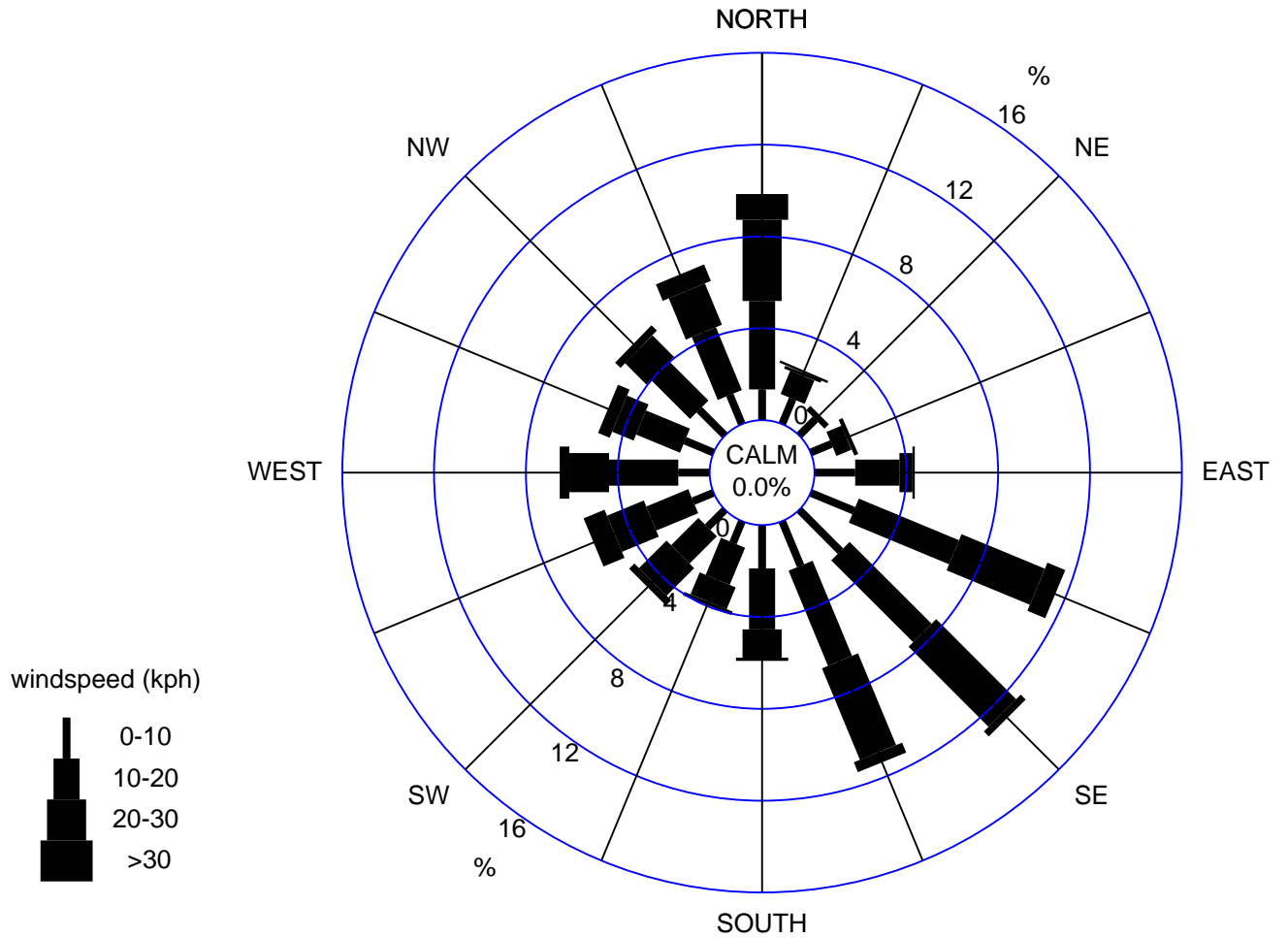
Joint frequency distribution of wind speed and wind direction
 at WBEA - BUFFALO VIEWPOINT AMS 4 - 10 m - 2010
 for 8598 hours of data



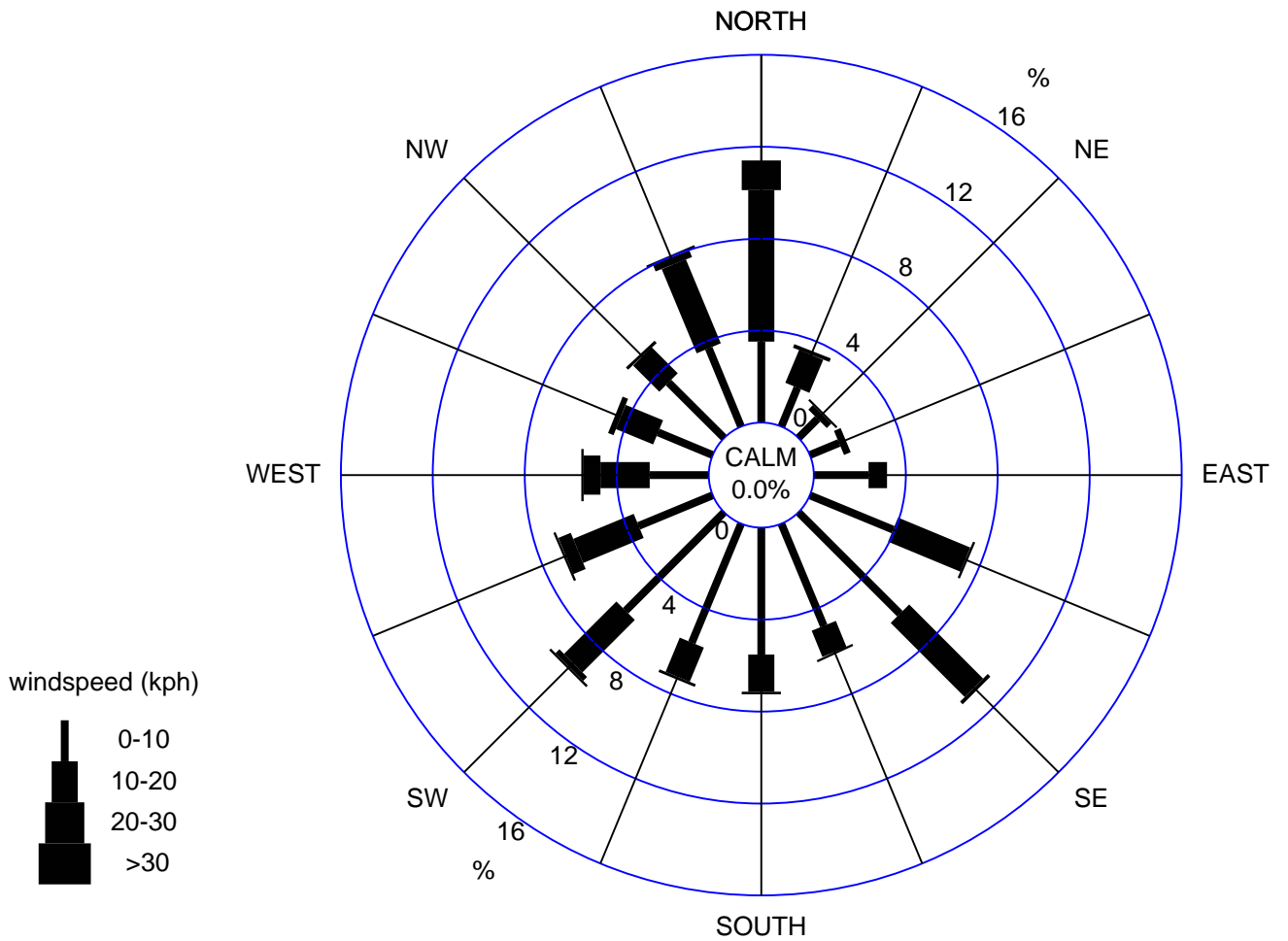
Joint frequency distribution of wind speed and wind direction
 at WBEA - MANNIX - AMS 5 - 20 m - 2010
 for 8684 hours of data



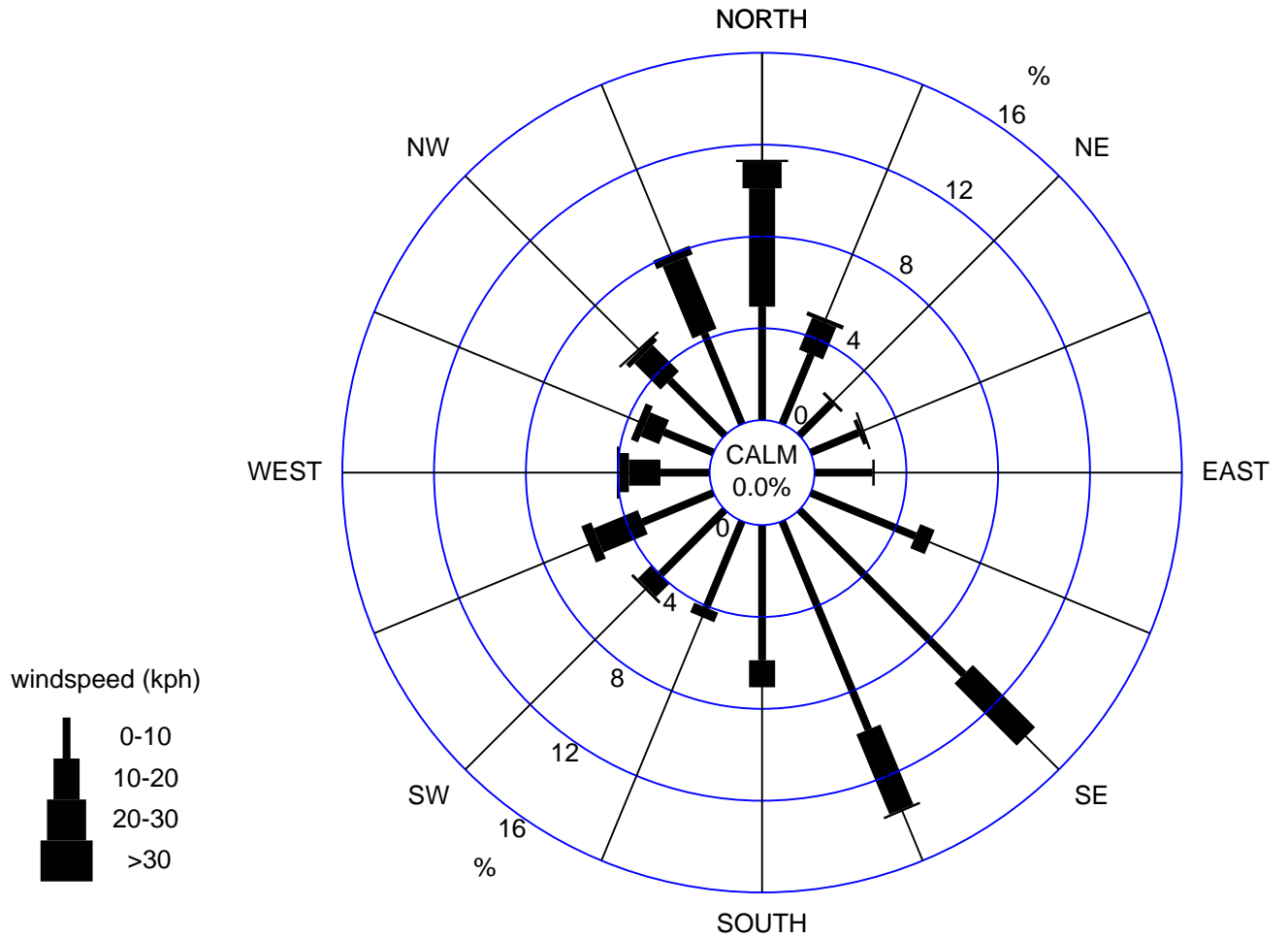
Joint frequency distribution of wind speed and wind direction
 at WBEA - MANNIX - AMS 5 - 45 m - 2010
 for 8549 hours of data



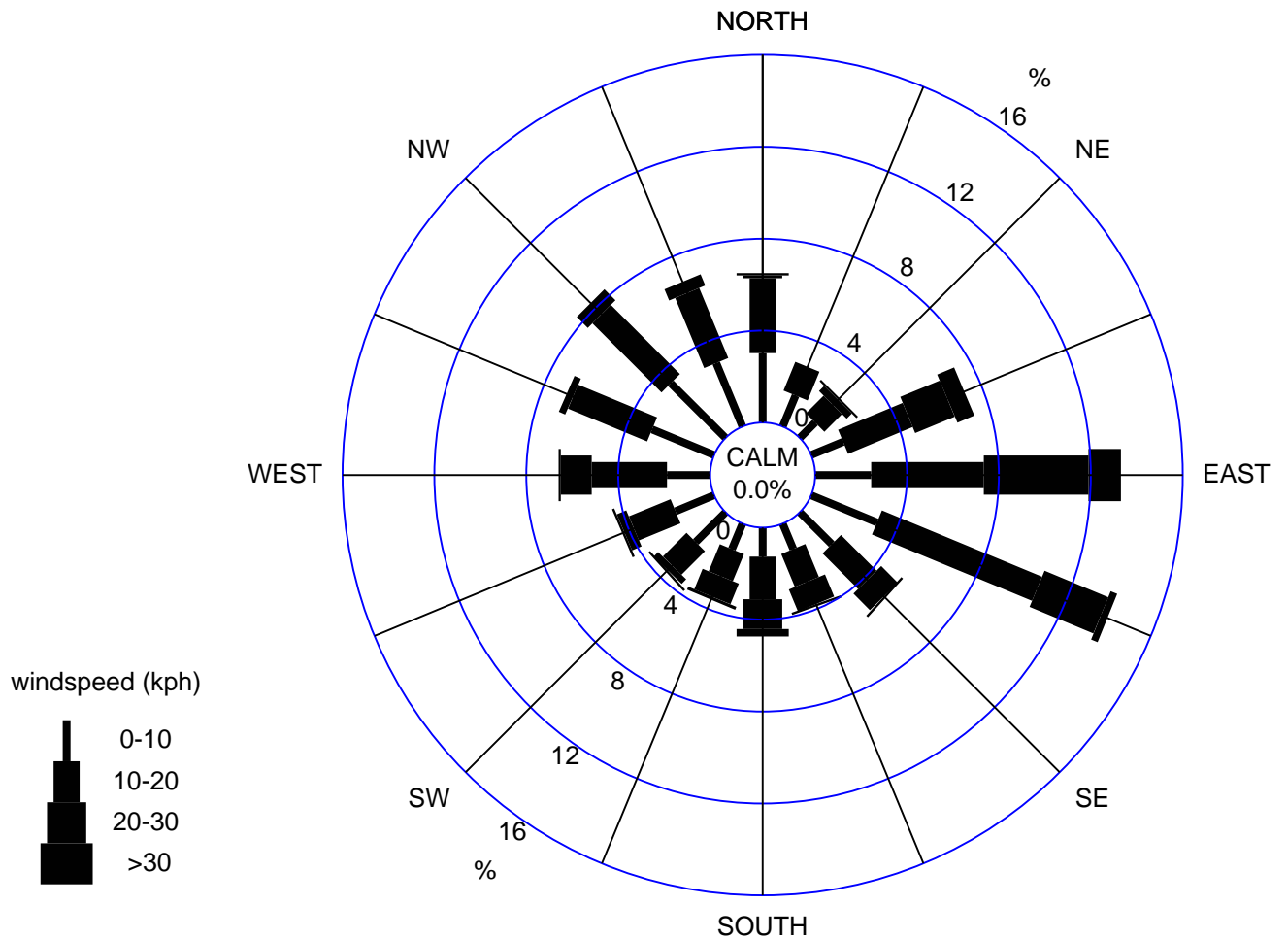
Joint frequency distribution of wind speed and wind direction
 at WBEA - MANNIX - AMS 5 - 75 m - 2010
 for 8132 hours of data



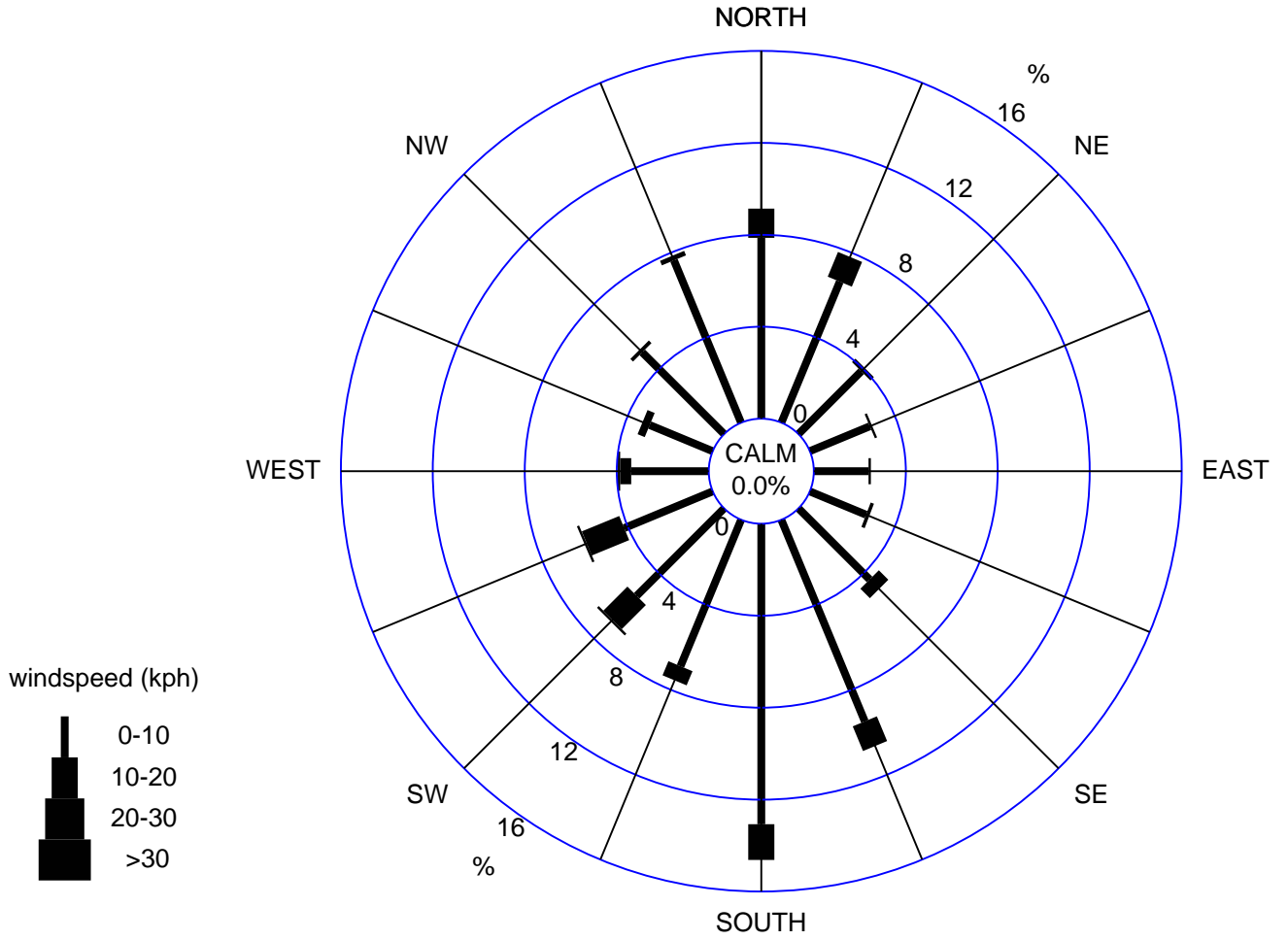
Joint frequency distribution of wind speed and wind direction
 at WBEA - PATRICIA McINNES AMS 6 - 10 m - 2010
 for 8603 hours of data



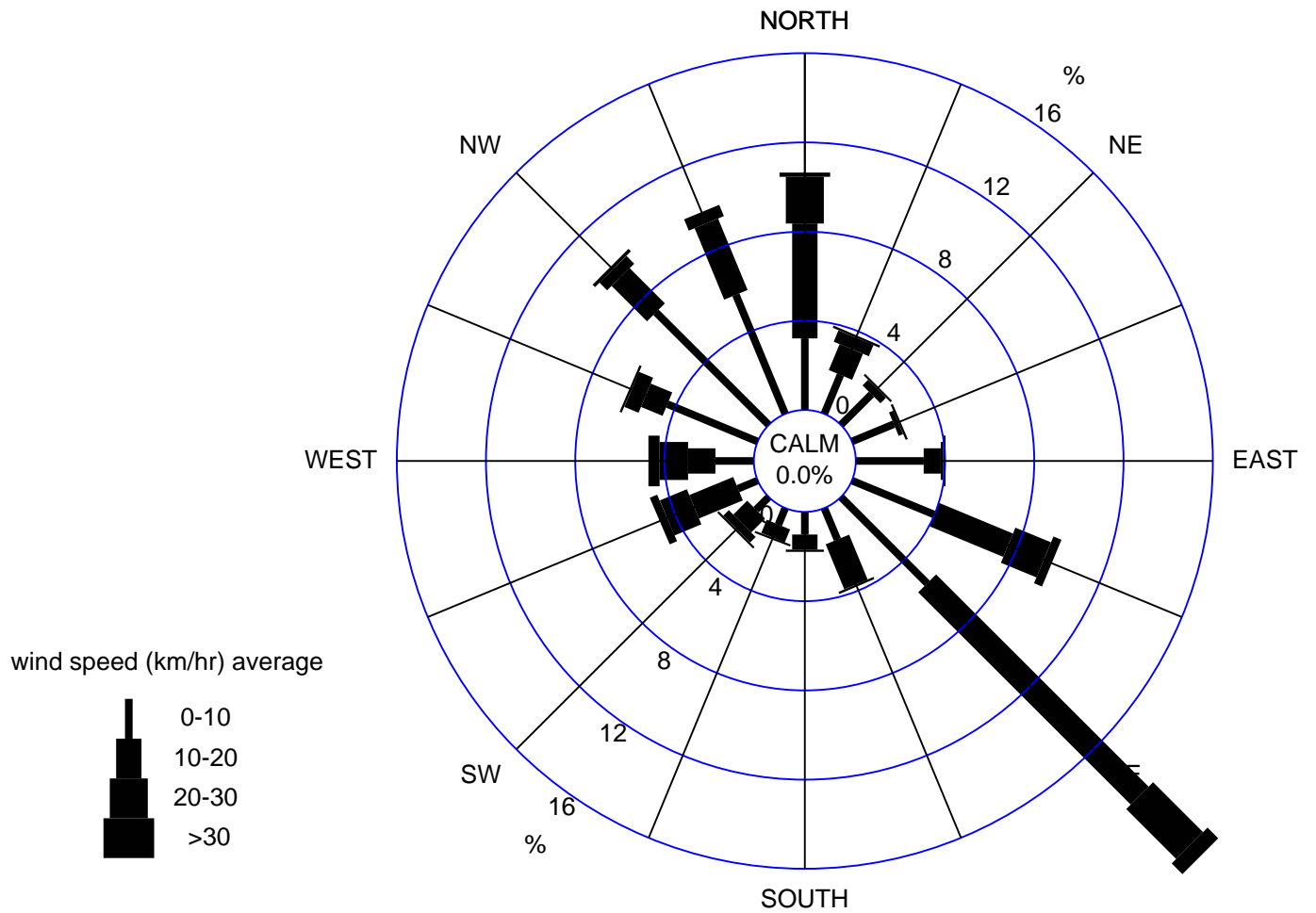
Joint frequency distribution of wind speed and wind direction
 at WBEA - ATHABASCA VALLEY AMS 7 - 10 m - 2010
 for 8735 hours of data



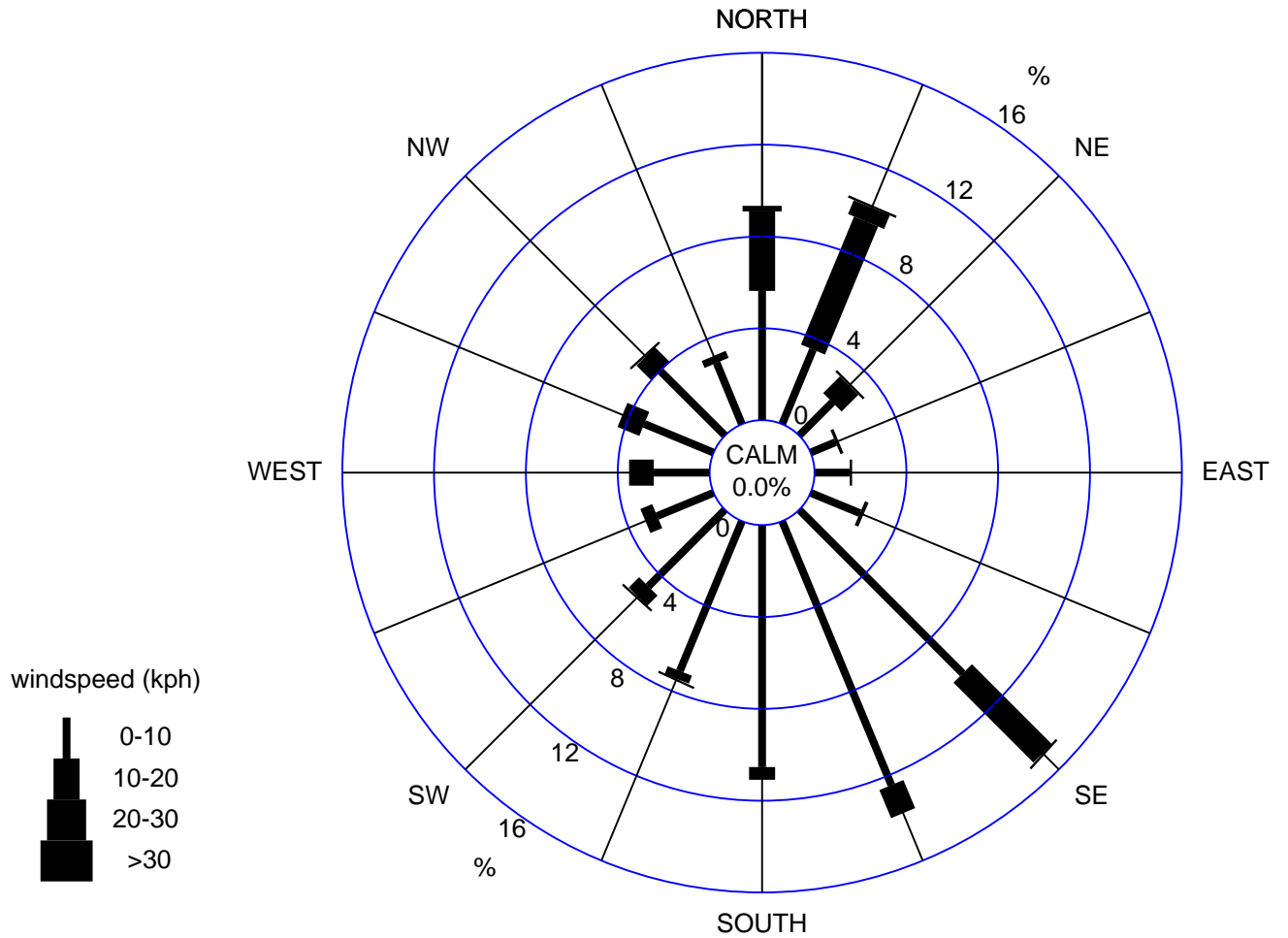
Joint frequency distribution of wind speed and wind direction
 at WBEA - FORT CHIPEWYAN AMS 8 - 10 m - 2010
 for 8634 hours of data



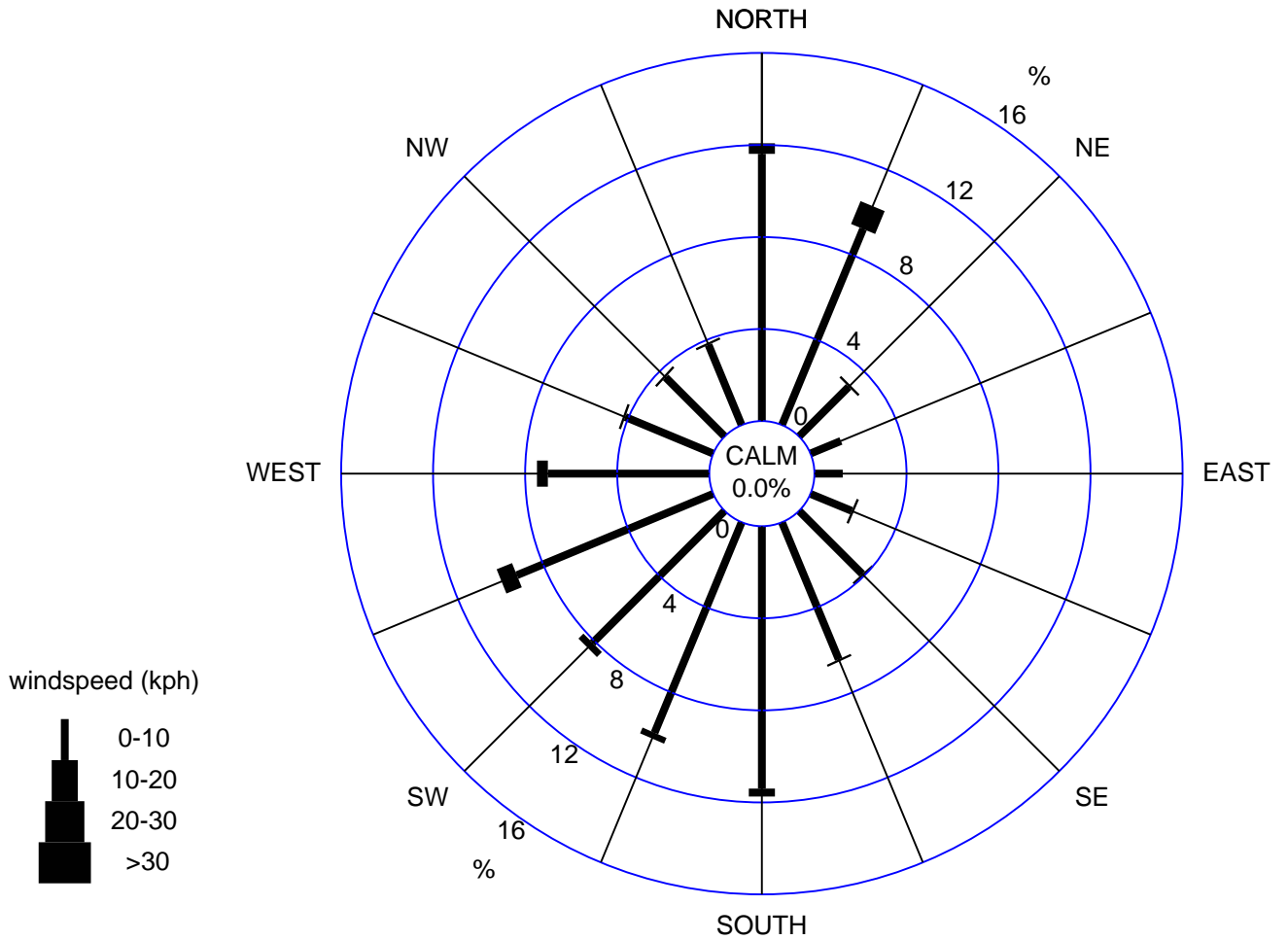
Joint frequency distribution of wind speed and wind direction
at WBEA - BARGE LANDING AMS 9 - 10 m - 2010
for 8568 hours of data



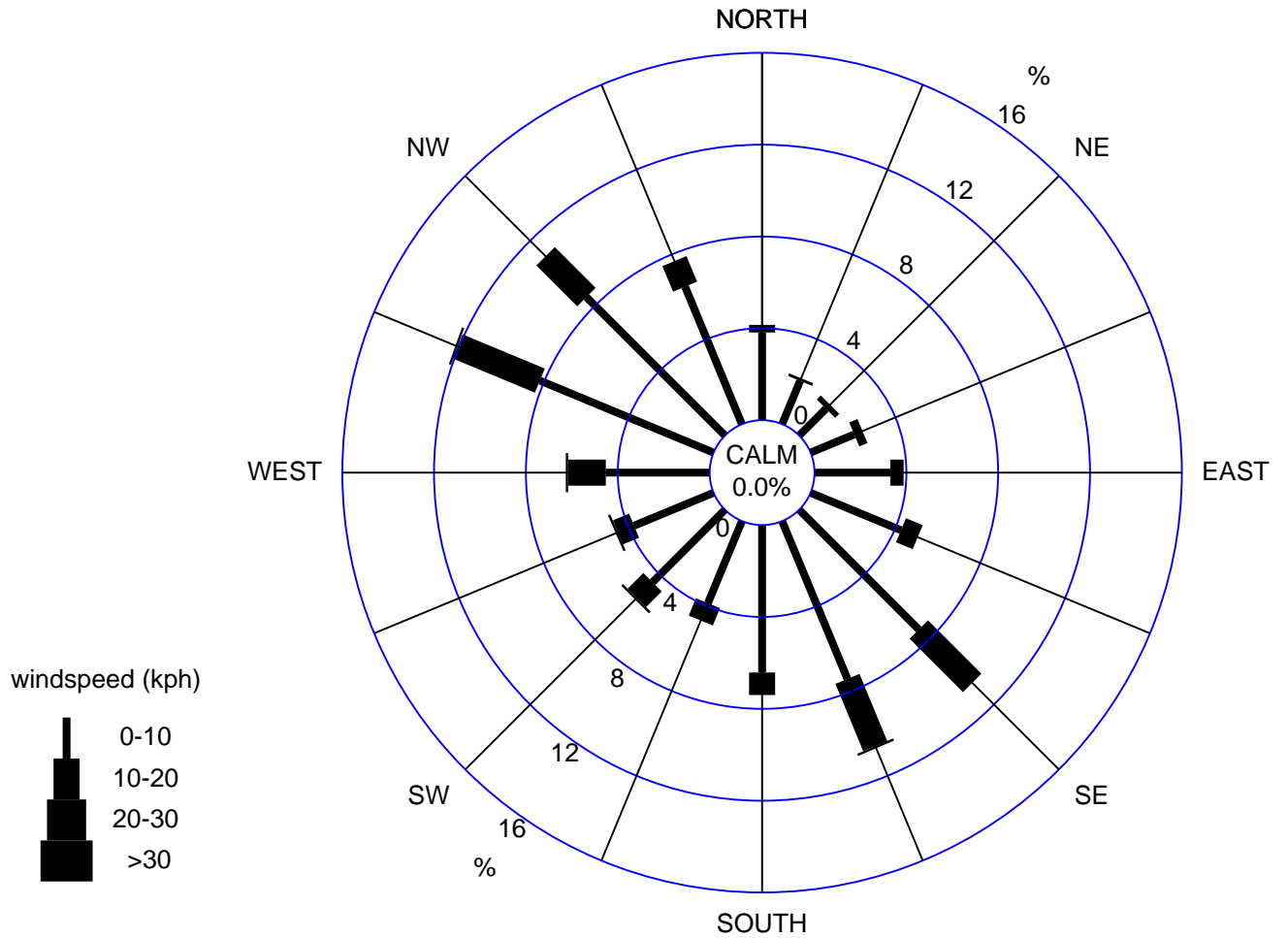
Joint frequency distribution of wind speed and wind direction
 at WBEA - LOWER CAMP - AIR QUALITY - AMS 11 - 10 m - 2010
 for 8718 hours of data



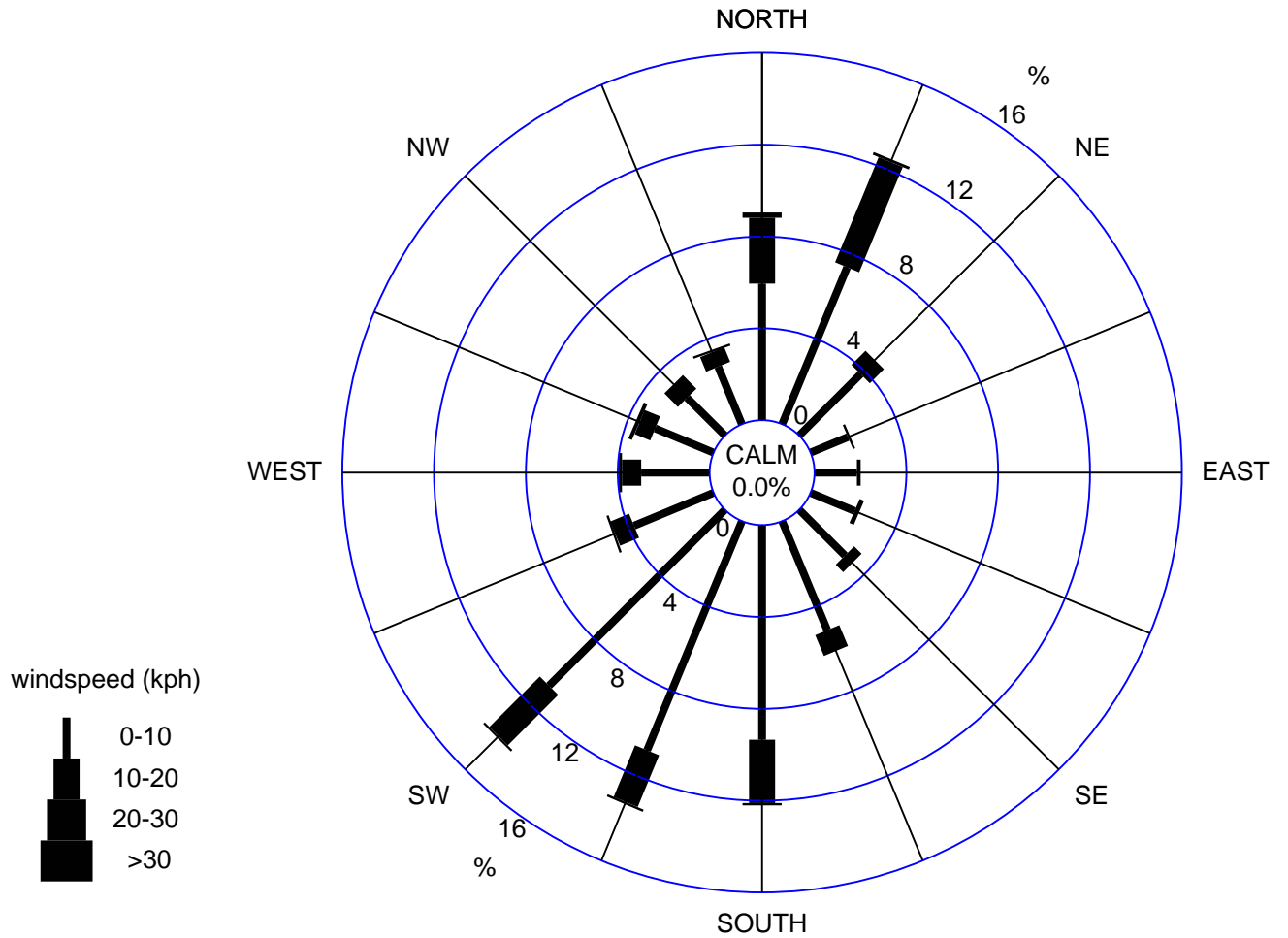
Joint frequency distribution of wind speed and wind direction
 at WBEA - MILLENNIUM MINE AMS 12 - 10 m - 2010
 for 8731 hours of data



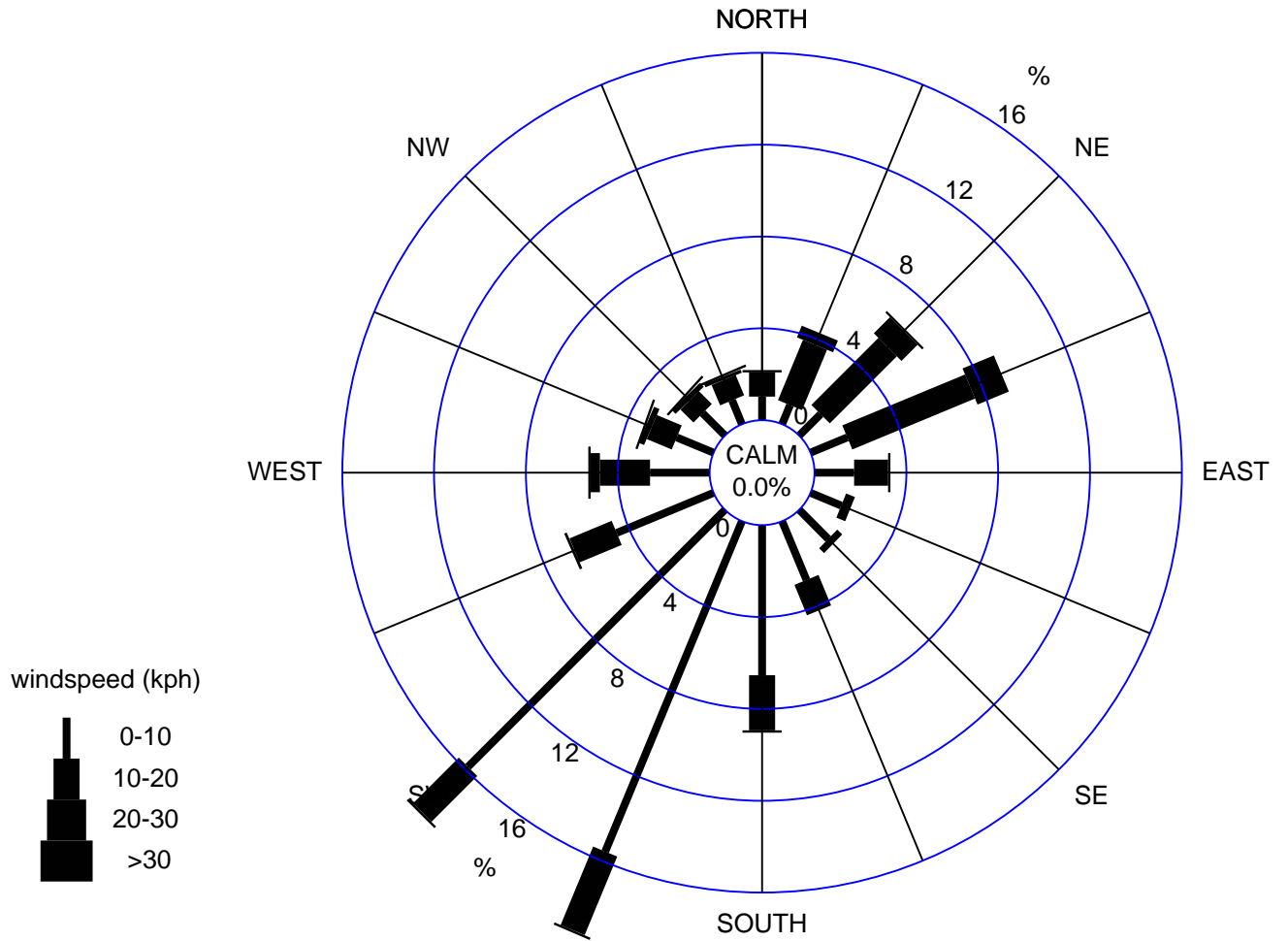
Joint frequency distribution of wind speed and wind direction
at WBEA - SYNCRUDE UPGRADER EXPANSION 1 AMS 13 - 10 m - 2010
for 8454 hours of data



Joint frequency distribution of wind speed and wind direction
 at WBEA - ANZAC AMS 14 - 20 m - 2010
 for 8582 hours of data



Joint frequency distribution of wind speed and wind direction
 at WBEA - CNRL HORIZON AMS 15 - 10 m - 2010
 for 8723 hours of data



Joint frequency distribution of wind speed and wind direction at WBEA - ALBIAN MUSKEG RIVER AMS 16 - 20 m - 2010 for 8643 hours of data