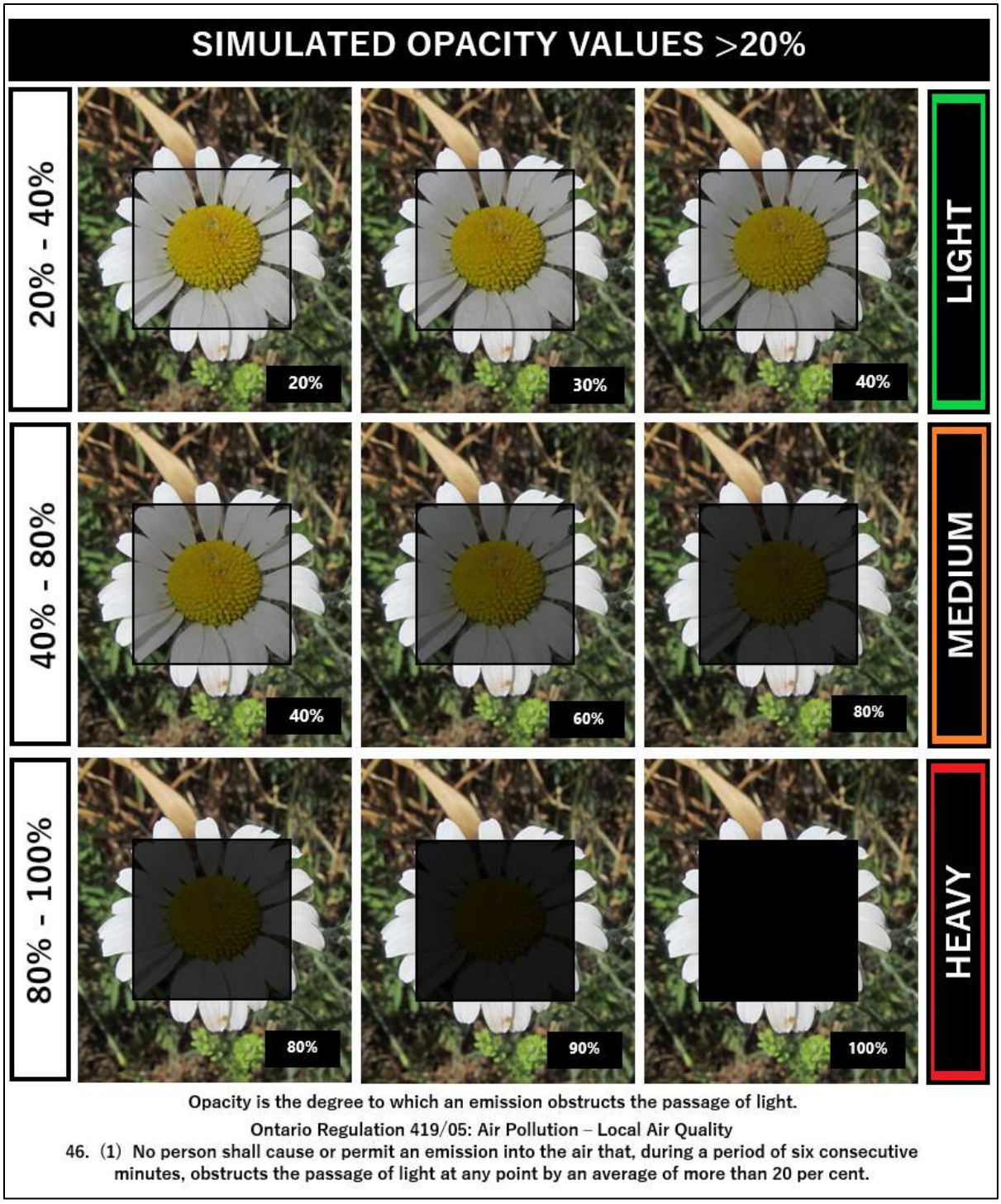
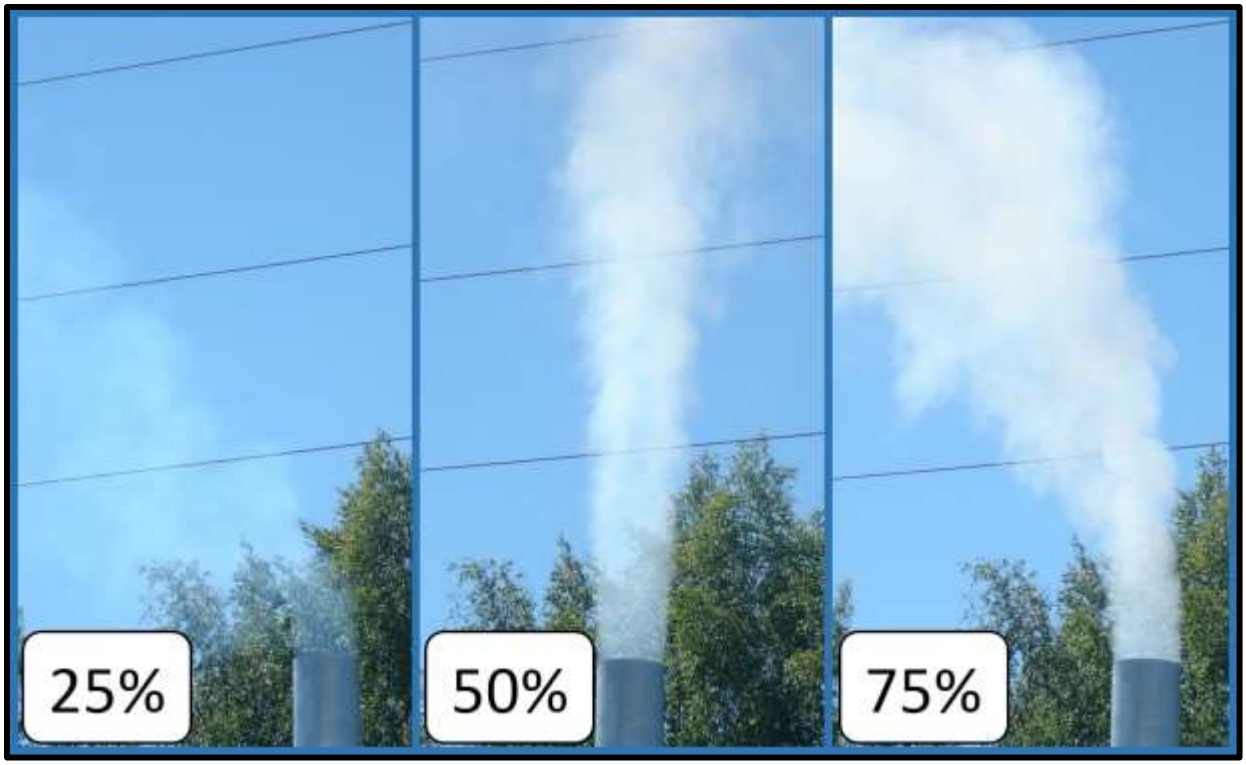


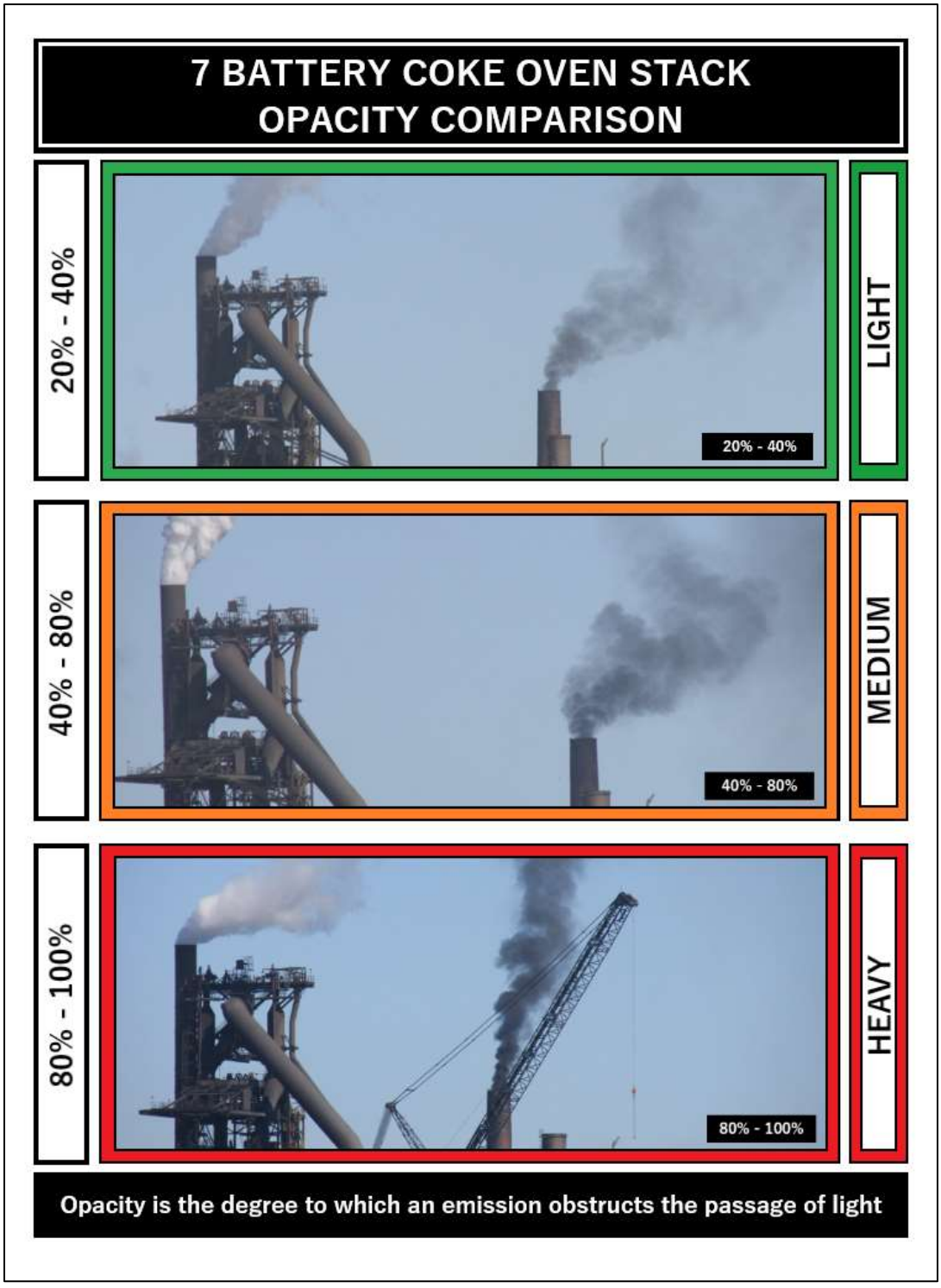
Note: The Ministry of the Environment, Conservation and Parks (MECP) classifies stack opacities in ranges of light (20-40%), medium (40-80%) and heavy (80-100%). A very dense emission (100% opacity) blocks all light and indicates a high level of particulate and/or contaminants in that emission.



White smoke opacities (Alaska Department of Environmental Conservation) – Method 9

Black smoke opacities (US EPA Environmental Appeals Board May 23, 2016) – Method 9

Note: Emissions auditors are certified using black and white smoke to visually observe opacity (US EPA Method 9). The colour of the smoke does not matter since it is evaluated based on how much the light is blocked (how much you can see the background through the smoke). Smoke (emissions) from coke oven battery stacks can have various colours including white/bluish, black, brown, orange and yellow.



Note: Photos of emissions estimated to be within the range of opacities of emissions emanating from ASI's 7 battery coke oven stack. Visual observations are compared relative to the background. Accurate visual observations depend on various factors including the observer's position and the angle of the sun. Stack opacities are measured by devices installed on coke oven battery (COB) stacks. The data is sent to the ministry daily.

ASI COKE OVEN BATTERY STACK EMISSIONS

Start Date/Time: Jan 25 2019 12:00AM End Date/Time: Jan 26 2019 12:00AM

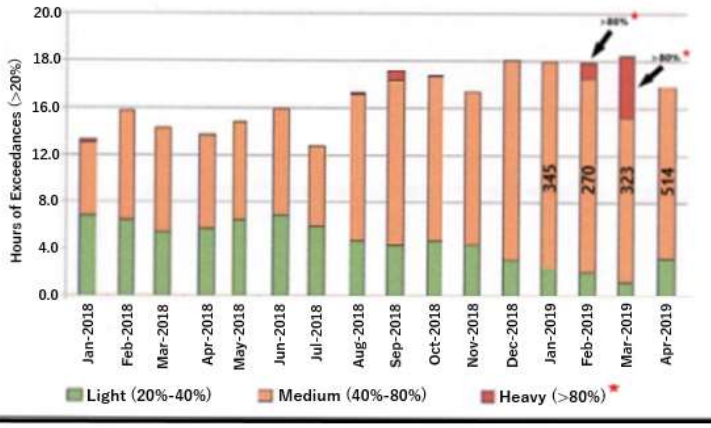
Battery	Count				Duration				Overall	
	Light	Medium	Heavy	Total	Light	Medium	Heavy	Total	Count	Duration
7	1	5	1	7	18	924	756	1698	56	3029
8	12	14	0	26	270	521	0	791		
9	19	4	0	23	420	120	0	540		

Start Date/Time: Feb 16 2019 12:00AM End Date/Time: Feb 17 2019 12:00AM

Battery	Count				Duration				Overall	
	Light	Medium	Heavy	Total	Light	Medium	Heavy	Total	Count	Duration
7	3	7	0	10	78	3743	0	3821	47	4955
8	19	7	0	26	552	180	0	732		
9	8	3	0	11	222	180	0	402		

Start Date/Time: Feb 21 2019 12:00AM End Date/Time: Feb 22 2019 12:00AM

Battery	Count				Duration				Overall	
	Light	Medium	Heavy	Total	Light	Medium	Heavy	Total	Count	Duration
7	4	11	1	16	66	923	432	1422	51	3512
8	17	8	0	25	383	378	0	761		
9	2	8	0	10	24	1403	0	1428		

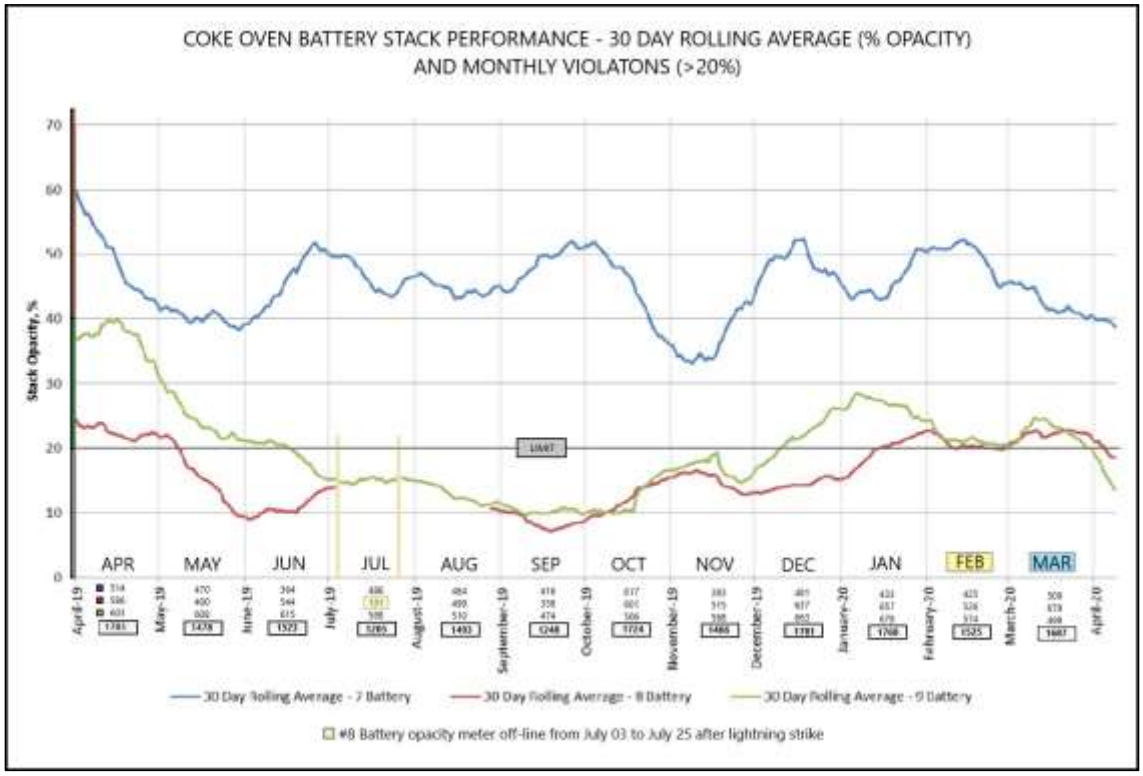


Modified from: (1) Stack emission data - MECP Daily Emissions Summary (FOI A-2019-03628)
(2) 7 Battery graph - ACLC Meeting #29 Presentation, June 04, 2019, slide 14
(3) Number of violations - ASI Process Upset Tables

ASI COKE OVEN BATTERY STACK
MONTHLY VIOLATIONS FOR 2019-2020

Total Year Violations 2019						Total Year Violations 2020				
Month	7 Battery	8 Battery	9 Battery			Month	7 Battery	8 Battery	9 Battery	
JAN	345	612	652	1609		JAN	433	657	678	1768
FEB	270	545	530	1345		FEB	425	526	574	1525
MAR	323	633	488	1444		MAR	509	679	499	1687
APR	514	586	603	1703		APR	437	610	618	1665
MAY	470	400	608	1478		MAY	341	443	638	1422
JUN	364	544	615	1523		JUN	506	484	562	1552
JUL	486	131	588	1205		JUL	479	462	444	1385
AUG	484	499	510	1493		AUG	324	536	349	1209
SEPT	416	358	474	1248		SEPT*	117	323	198	638
OCT	617	601	506	1724		OCT	*	*	*	*
NOV	383	515	568	1466		NOV				
DEC	481	637	663	1781		DEC				
TOTAL	5153	6061	6805	**18019**		TOTAL	3571	4720	4560	**12851**

Data compiled from ASI Process Upset Tables and MECP FOI (A-2019-03628)
*Data incomplete, data no longer posted on ASI Process Upset Table



Modified from: ACLC Meeting Presentation #33, June 09, 2020, slide 7 and ASI Process Upset Tables.

*Data compiled from ASI Process Upset Tables and MECP FOI (A-2019-03628)

JULY 31, 2019


9 BATTERY
7 BATTERY
8 BATTERY


INTERNATIONAL BRIDGE - USA


7 BATTERY
*6 BATTERY
8 BATTERY
9 BATTERY
*Not Active

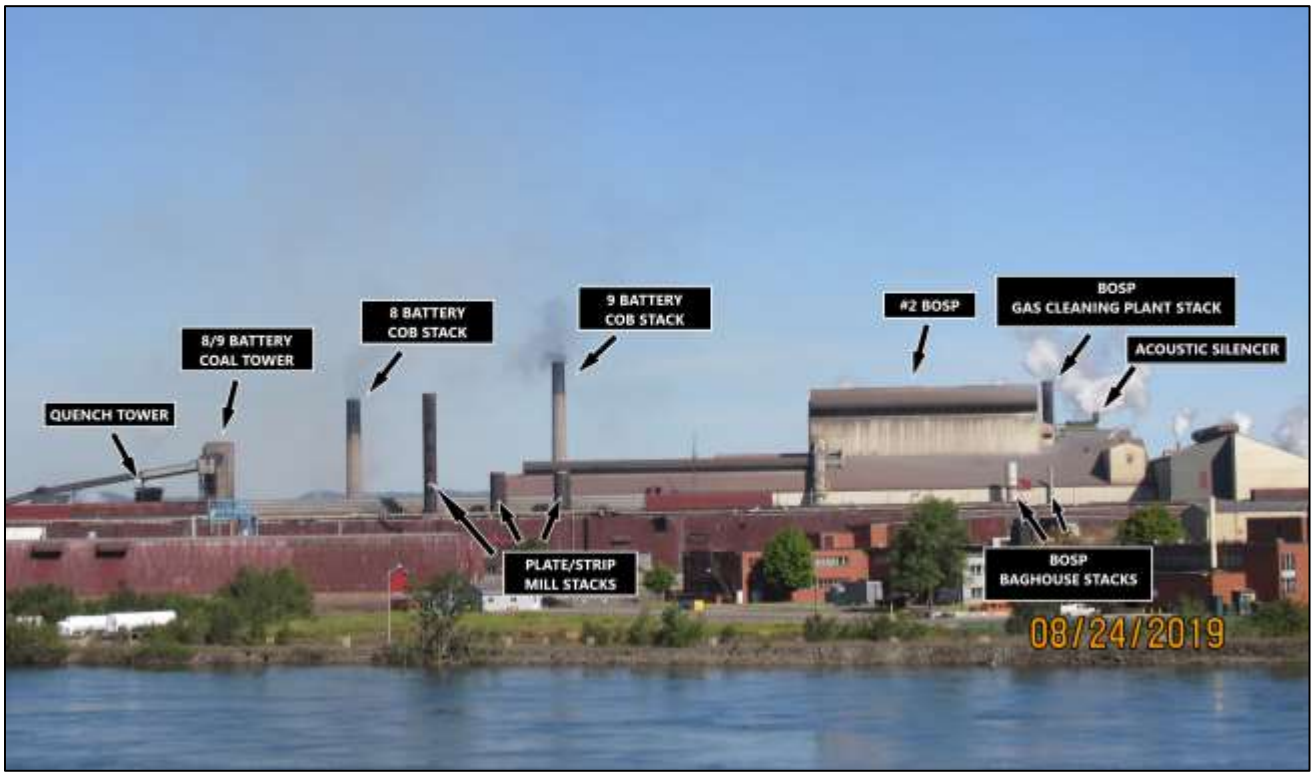
JULY 01, 2020


7 BATTERY
8 BATTERY
9 BATTERY


CARMENS WAY - SSM ON


9 BATTERY
7 BATTERY
*6 BATTERY
8 BATTERY
*Not Active


BF7 FLUE STACK
NO. 7 BLAST FURNACE
7 BATTERY COB STACK
BF7 PERMANENT BAGHOUSE STACK
BF7 STOVE STACK
BF7 FLARE STACK
6 BATTERY COB STACK
8/9 BATTERY COAL TOWER
8 BATTERY COB STACK
QUENCH TOWER
PLATE/STRIP MILL STACK
08/24/2019


8/9 BATTERY COAL TOWER
8 BATTERY COB STACK
9 BATTERY COB STACK
#2 BOSP
BOSP GAS CLEANING PLANT STACK
ACOUSTIC SILENCER
QUENCH TOWER
PLATE/STRIP MILL STACKS
BOSP BAGHOUSE STACKS
08/24/2019