

**MINOR CHANGE APPLICATION**  
**BLUEBERRY BROADCASTING, LLC**  
**WABK (AM) RADIO STATION**  
**has: 910 kHz - 5.0 kW DAN**  
**req: 910 kHz - 0.21/5.0 kW NDU**  
**BANGOR, MAINE**  
**September 2018**

**EXHIBIT #3A**

**AM Broadcast Nighttime Allocation Study**

Night Radiation Limit Report for WABK

910 kHz                      North Latitude: 44° 46' 51"  
                                     West Longitude: 68° 44' 52"

Radiation limits above 200.0 mV/m@1km are not shown.

	Ct	St	City	Azimuth (Deg)	Min Theta (Deg)	Max Theta (Deg)	Limit (mV/m @ 1km)
WLAT	US	CT	NEW BRITAIN	225.4	15.8	25.7	150.3
910CKLY/	CA	ON	Lindsay	269.4	11.8	11.8	177.9
VAUDREUIL 40/	CA	QC	Vaudreuil	281.2	23.4	23.4	149.9
MONTREAL 42/	CA	QC	Montréal-Lasall	282.2	25.2	25.2	143.4
CANDIAC 40/	CA	QC	Candiac	281.7	25.9	25.9	144.2
KIRKLAND 40/	CA	QC	KIRKLAND	282.2	24.2	24.2	144.3
BROSSARD 40/	CA	QC	Brossard	283.0	26.2	26.2	138.9
ST LAURENT 40/	CA	QC	Montréal-Saint-	283.2	24.7	24.7	139.9
LONGUEUIL 40/	CA	QC	Longueuil	283.9	25.9	25.9	136.2
MONTREAL 40/	CA	QC	Montréal-Ahunts	283.9	25.1	25.1	136.5
ST JULIE 40/	CA	QC	Sainte-Julie	285.5	26.5	26.5	129.9
MONTREAL 41/	CA	QC	Montréal-Anjou	285.3	25.4	25.4	130.4
BOISBRIAN 40/	CA	QC	Boisbriand	284.9	24.2	24.2	131.1
LAVAL 40/	CA	QC	Laval	286.4	24.9	24.9	125.1
CHARLEMAG 40/	CA	QC	Charlemagne	287.5	25.5	25.5	121.3

#	Field Ratio	Phase (deg)	Spacing (deg)	Height (deg)	Ref Switch	TL Switch	A (deg)	B (deg)	C (deg)	D (deg)	
1	1.000	0.0	0.0	0.0	86.6	0	0	0.0	0.0	0.0	
Call Letters	Ct	St	City	Azi (deg)	Ang Low (deg)	Ang High (deg)	SWFF (100uV/m)	Req Prot (mV/m)	Permis (mV/m)	Cur Rad (mV/m)	Margin (mV/m)
CHARLEMAG 40/ 50% = 7.121,	CA	QC	Charlemagne	287.47	25.51	25.51	146.72	3.561	121.34	120.89	0.46
25% = 8.965; 910CKLY/ =5.40 WBZU=4.64 WABK=3.52 910CHRL/ =3.29 WRKL=2.54											
LAVAL 40/ 50% = 7.216,	CA	QC	Laval	286.40	24.88	24.88	144.19	3.608	125.12	121.70	3.43
25% = 8.965; 910CKLY/ =5.50 WBZU=4.67 WABK=3.35 910CHRL/ =3.26 WRKL=2.54											
BOISBRIAN 40/ 50% = 7.424,	CA	QC	Boisbriand	284.93	24.23	24.23	141.62	3.712	131.05	122.62	8.43
25% = 9.062; 910CKLY/ =5.73 WBZU=4.72 910CHRL/ =3.21 WABK=3.19 WRKL=2.54											
MONTREAL 41/ 50% = 7.628,	CA	QC	Montréal-Anjou	285.34	25.38	25.38	146.22	3.814	130.41	121.02	9.39
25% = 9.289; 910CKLY/ =6.01 WBZU=4.70 WABK=3.34 910CHRL/ =3.22 WRKL=2.56											
ST JULIE 40/ 50% = 7.828,	CA	QC	Sainte-Julie	285.46	26.50	26.50	150.61	3.914	129.93	119.50	10.43
25% = 9.51; 910CKLY/ =6.27 WBZU=4.68 WABK=3.47 910CHRL/ =3.23 WRKL=2.58											
MONTREAL 40/ 50% = 7.915,	CA	QC	Montréal-Ahunts	283.92	25.08	25.08	145.01	3.958	136.46	121.43	15.04
25% = 9.478; 910CKLY/ =6.34 WBZU=4.74 WABK=3.23 910CHRL/ =3.18 WRKL=2.57											
LONGUEUIL 40/ 50% = 8.075,	CA	QC	Longueuil	283.87	25.88	25.88	148.19	4.038	136.23	120.34	15.89
25% = 9.645; 910CKLY/ =6.54 WBZU=4.73 WABK=3.31 910CHRL/ =3.19 WRKL=2.59											
ST LAURENT40/ 50% = 8.04,	CA	QC	Montréal-Saint-	283.15	24.74	24.74	143.62	4.020	139.95	121.96	17.99
25% = 9.551; 910CKLY/ =6.48 WBZU=4.76 WABK=3.16 910CHRL/ =3.16 WRKL=2.57											
WLAT 50% = 11.62,	US	CT	NEW BRITAIN	225.40	15.84	25.71	107.36	3.226	150.25	132.00	18.25
25% = 12.906; WBZU=8.13 CHML/ =6.15 WSBA=5.58 900CKTS/ =4.00 WRNL=3.94											
BROSSARD 40/ 50% = 8.309,	CA	QC	Brossard	283.02	26.23	26.23	149.56	4.154	138.89	119.92	18.96
25% = 9.838; 910CKLY/ =6.82 WBZU=4.75 WABK=3.30 910CHRL/ =3.17 WRKL=2.60											
KIRKLAND 40/ 50% = 8.163,	CA	QC	KIRKLAND	282.23	24.19	24.19	141.48	4.082	144.25	122.62	21.63
25% = 9.622; 910CKLY/ =6.61 WBZU=4.80 910CHRL/ =3.14 WABK=3.08 WRKL=2.58											
MONTREAL 42/ 50% = 8.342,	CA	QC	Montréal-Lasall	282.24	25.20	25.20	145.47	4.171	143.37	121.29	22.07
25% = 9.811; 910CKLY/ =6.84 WBZU=4.78 WABK=3.17 910CHRL/ =3.15 WRKL=2.59											
CANDIAC 40/ 50% = 8.549,	CA	QC	Candiac	281.69	25.87	25.87	148.18	4.274	144.22	120.34	23.88
25% = 10.006; 910CKLY/ =7.08 WBZU=4.79 WABK=3.21 910CHRL/ =3.15 WRKL=2.61											
VAUDREUIL 40/ 50% = 8.304,	CA	QC	Vaudreuil	281.17	23.43	23.43	138.50	4.152	149.89	123.65	26.24
25% = 9.706; 910CKLY/ =6.75 WBZU=4.83 910CHRL/ =3.10 WABK=2.99 WRKL=2.58											
910CKLY/ 50% = 6.23,	CA	ON	Lindsay	269.45	11.84	11.84	87.56	3.115	177.87	135.22	42.64
25% = 6.657; WBZU=5.10 WSBA=3.58 WLAT=3.07 WFDF=3.06 WRKL=3.00 910CHRL/ =2.73 WJCW=2.69											
WABK=2.50 WSUI=2.40											

**MINOR CHANGE APPLICATION**  
**BLUEBERRY BROADCASTING, LLC**  
**WABK (AM) RADIO STATION**  
**has: 910 kHz - 5.0 kW DAN**  
**req: 910 kHz - 0.21/5.0 kW NDU**  
**BANGOR, MAINE**  
**September 2018**

**EXHIBIT #3C**

**AM Broadcast Nighttime Interference Free Contour Calculation**

WABK 910 kHz BANGOR, ME, US Hours: N Proposed  
 North Latitude: 44° 46' 51" West Longitude: 68° 44' 52"  
 Power: 0.21 kW Theo RMS: 304.17 mV/m @ 1km @ 1kW

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

Contributors:

Call	Freq (kHz)	City	St	Ct	Dist (km)	Theta			Max	SW	Limit (mV/m)	(%)	RSS
						Azi (deg)	Min (deg)	Max (deg)	V-Rad (mV/m)	Mult (uV/m)			Limit (mV/m)
910CKLY/0910	Lindsay	ON	CA	790.2	82.5	8.5	15.0	341.64	44.32	3.028	100.0	3.028	
900CKTS/0900	Sherbrooke	QC	CA	266.2	104.8	27.8	41.3	738.62	203.51	3.006	99.2	4.267	
WBZU	0910	SCRANTON	PA	US	674.9	54.0	10.5	18.0	200.76	62.84	2.523	59.1	4.957
50 %													
910CHRL/0910	Roberval	QC	CA	481.1	146.5	15.6	25.3	123.41	89.29	2.204	44.4	5.425	
WLAT	0910	NEW BRITAIN	CT	US	473.5	42.6	15.8	25.7	92.62	107.36	1.989	36.6	5.778
HJMY-A	0910	RAD INSULAR	CO		3786.8	16.5	0.0	0.0	1694.98	4.38	1.486	25.7	5.966
25 %													
WSRP	0910	JACKSONVILLE	NC	US	1336.2	31.2	3.1	7.1	336.58	22.05	1.484	24.8	6.148
WRNL	0910	RICHMOND	VA	US	1081.7	39.8	5.1	10.0	239.10	30.40	1.454	23.6	6.318
WRKL	0910	NEW CITY	NY	US	588.0	45.3	12.4	20.8	89.84	78.69	1.414	22.3	6.474
WHJJ	0920	PROVIDENCE	RI	US	393.6	31.2	19.2	30.4	369.68	137.74	1.018	15.7	6.553

WABK 910 kHz BANGOR, ME, US Hours: N Present  
 North Latitude: 44° 46' 51" West Longitude: 68° 44' 54"  
 Power: 5.0 kW Theo RMS: 683.97 mV/m @ 1km @ 5.0 kW  
 # of Augmentations: 6

Standard: FCC Rules (1992 Skywave Propagation Model) [ 10% ]

Contributors:

Call	Freq (kHz)	City	St	Ct	Dist (km)	Theta			Max	SW	Limit (mV/m)	(%)	RSS
						Azi (deg)	Min (deg)	Max (deg)	V-Rad (mV/m)	Mult (uV/m)			Limit (mV/m)
910CKLY/0910	Lindsay	ON	CA	790.2	82.5	8.5	15.0	341.64	44.33	3.029	100.0	3.029	
900CKTS/0900	Sherbrooke	QC	CA	266.2	104.8	27.8	41.3	738.66	203.54	3.007	99.2	4.268	
WBZU	0910	SCRANTON	PA	US	674.9	54.0	10.5	18.0	200.76	62.85	2.523	59.1	4.958
50 %													
910CHRL/0910	Roberval	QC	CA	481.1	146.5	15.6	25.3	123.40	89.29	2.204	44.4	5.426	
WLAT	0910	NEW BRITAIN	CT	US	473.5	42.6	15.8	25.7	92.58	107.37	1.988	36.6	5.779
HJMY-A	0910	RAD INSULAR	CO		3786.8	16.5	0.0	0.0	1694.98	4.38	1.486	25.7	5.967
25 %													
WSRP	0910	JACKSONVILLE	NC	US	1336.2	31.2	3.1	7.1	336.56	22.05	1.484	24.8	6.148
WRNL	0910	RICHMOND	VA	US	1081.7	39.8	5.1	10.0	239.08	30.41	1.454	23.6	6.318
WRKL	0910	NEW CITY	NY	US	588.0	45.3	12.4	20.8	89.85	78.70	1.414	22.3	6.474
WHJJ	0920	PROVIDENCE	RI	US	393.6	31.2	19.2	30.4	369.74	137.75	1.019	15.7	6.554

\* - Nighttime Interference Free Contour