

## Exhibit 18.1

### **COMPLIANCE WITH RADIOFREQUENCY RADIATION GUIDELINES**

This firm was retained to study the potential for human exposure to non-ionizing radiofrequency radiation at the common site of this proposed WGTO(AM) modification and LPFM station WLWZ-L both licensed to Cassopolis, MI. There are no other contributing services located within 315 meters of the common site.

WGTO(AM) operates on a frequency of 910 kHz with a proposed daytime directional power of 5.7 kW and nighttime directional power of 0.025 kW. Both modes of operation employ the same two tower array. Both vertical radiators for WGTO(AM) are  $90.0^\circ$  or  $0.250 \lambda$  (wavelengths) for operation on 910 kHz.

WLWZ-L operates on Channel 246L1 with 0.017 kW ERP. The station employs a one bay ERI 100-1 circularly polarized antenna mounted 81 meters AGL.

This site has been evaluated for compliance with the FCC guidelines concerning human exposure to radiofrequency radiation. The standards employed are detailed in OET Bulletin No. 65 (Edition 97-01).

Software packages were used to determine the individual contribution of each station. A software package designed for use with AM stations (under the previous OST Bulletin No. 65, October 1985) was used to determine the contribution of this facility to the non-ionizing radiofrequency radiation present at this site. This program bases its calculations on data found in Figures 1, 2, and 3 of Appendix D of OST Bulletin No. 65, October 1985. FM non-ionization radiation levels were predicted using both the array pattern, the calculations of which are based on the number of bays in the antenna and wavelength spacing between the bays, and the element pattern which is determined by using measured element data prepared by the E.P.A. and published in "An Engineering Assessment of the Potential Impact of Federal Radiation Protection Guidance on the AM, FM and TV Services," by Paul C. Gailey and Richard Tell - April 1985, U.S. Environmental Protection Agency, Las Vegas, NV.

The results of the evaluations for all stations are shown in both graphical and tabular forms at the end of this report. The tabular form lists the portion of the tabular output for each station, showing the region of maximum non-ionizing radiation. (The maximum values have been indicated by the use of **highlighted print**.) For the AM facility, the maximum contribution has been assumed using the higher daytime power of 5.7 kW at maximum field in each tower., however the present fencing is or will be built to a distance no less than 2.0 meters for either tower. The tabulation of AM data use the units of measurement,  $V^2/m^2$  and  $A^2/m^2$ , which were used in the previous standards as set forth in OST Bulletin No. 65, October 1985.

Inspection of the tabulations will show that the maximum contribution of WGTO(AM) at the AM tower is made by the magnetic field. At this point, the field has a predicted value of  $1.1111 A^2/m^2$ , or  $1.0541 A/m$ , which represents 64.67% of the more stringent  $1.63 A/m$  uncontrolled limit. The maximum exposure to non-ionizing radiation from the FM operation is predicted to occur at the base of the tower. At this point, the total power density for the LPFM station will be less than 5.0% of the more stringent  $200.0 \mu W/cm^2$  uncontrolled limit.

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To evaluate the total exposure to non-ionizing radiofrequency radiation it is necessary to sum the individual contributions as a decimal fraction of the maximum permissible limit. If the resulting sum is less than or equal to unity, the exposure is concluded to be within the guidelines of OET Bulletin No. 65 (Edition 97-01). The table that follows provides the same information with respect to those locations defined as an "uncontrolled environment." This includes locations where there could be exposure to the general public. The total decimal fraction is also shown.

<b><u>Contributing Station</u></b>	<b><u>Maximum Contribution</u></b>	<b><u>Uncontrolled Environment Limit</u></b>	<b><u>Decimal Fraction of Limit</u></b>
WGTO(AM)	1.0541 A/m	1.63 A/m	0.64678
WLWZ-L	0.0405 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	<u>0.00020</u>
<b>Total Decimal Fraction</b>			<b>0.64698</b>

Since the Total Decimal Fraction is less than unity for the uncontrolled environment, the operation of the combined transmitting plants is in compliance with the provisions of OET Bulletin No. 65 (Edition 97-01). Protection of the uncontrolled environment implies protection of the controlled environment. There are no other broadcast sources of radiofrequency non-ionizing radiation present at this site.

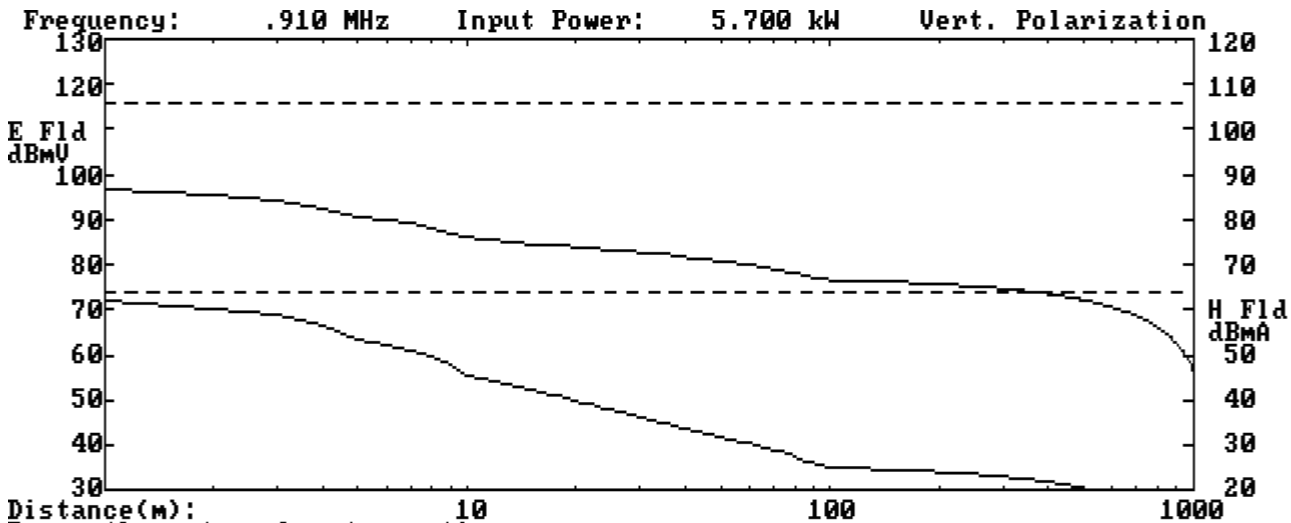
In addition to the protection afforded by the existing AM fencing and the FM antenna heights above ground, the facility is properly marked with signs, and entry to the facility is restricted by means of fencing with locked doors and/or gates. Any other means as may be required to protect employees and the general public will be employed.

In the event work would be required in proximity to the antenna such that the person or persons working in the area would be potentially exposed to fields in excess of FCC guidelines, an agreement, signed by all broadcast parties at the site, is in effect for the offending transmitter(s) to reduce power, or cease operation during the critical period.

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## WGTO(AM) – Cassopolis, MI



Summary of Input Data:	WGTO	Frequency:	.910 MHz
Horizontal Input Power :	.000 kW	Vertical Input Power :	5.700 kW
Antenna Type:	AM NON-D		
Horizontal Element Type Number:	0.	Vertical Element Type Number:	1.
Height of observer above reference plane:	2.0 Meters		

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Element Data:   Vertical:
Number of elements:      1
Distance from analysis reference point:      .0 meters
Azimuth from analysis reference point:  N      .0 E
Height of tower above reference plane:      90.0 Degrees

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Element Number	Distance From Center (wavelengths)	Relative Power	Relative Phase
1.	.00	1.000	.0

Calculated Results:

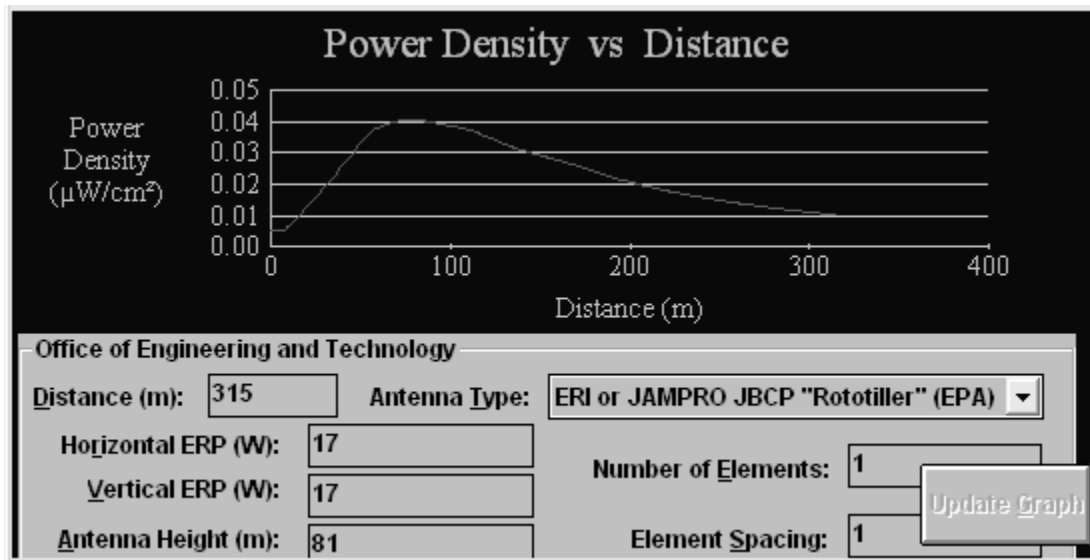
	Horizontal Polarization		Vertical Polarization		Total Power
Distance (meters)	E2 Field (V2/m2)	H2 Field (A2/m2)	E2 Field (V2/m2)	H2 Field (A2/m2)	Density (mW/cm2)
1.00	0.	.0000	4446.	1.5591	8.3262
2.00	0.	.0000	3411.	1.1111	6.1561
3.00	0.	.0000	2513.	.7387	4.3082
4.00	0.	.0000	1751.	.4421	2.7824
5.00	0.	.0000	1127.	.2212	1.5788
6.00	0.	.0000	951.	.1718	1.2785
7.00	0.	.0000	791.	.1286	1.0085
8.00	0.	.0000	645.	.0916	.7690
9.00	0.	.0000	514.	.0609	.5599
10.00	0.	.0000	398.	.0365	.3812
11.00	0.	.0000	375.	.0319	.3460
12.00	0.	.0000	353.	.0277	.3123
13.00	0.	.0000	331.	.0237	.2801
14.00	0.	.0000	309.	.0201	.2493
15.00	0.	.0000	289.	.0167	.2200
16.00	0.	.0000	282.	.0152	.2070
17.00	0.	.0000	275.	.0138	.1943
18.00	0.	.0000	267.	.0124	.1819
19.00	0.	.0000	260.	.0111	.1697
20.00	0.	.0000	254.	.0098	.1578
21.00	0.	.0000	244.	.0090	.1481
22.00	0.	.0000	235.	.0082	.1387
23.00	0.	.0000	226.	.0074	.1296
24.00	0.	.0000	217.	.0067	.1207
25.00	0.	.0000	209.	.0060	.1121

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# PLOT AND TAB OF TOTAL POWER DENSITY

WLWZ-L – Channel 246L1 – Cassopolis, MI



X(m)	Y(μW/cm <sup>2</sup> )	X(m)	Y(μW/cm <sup>2</sup> )	X(m)	Y(μW/cm <sup>2</sup> )	X(m)	Y(μW/cm <sup>2</sup> )	X(m)	Y(μW/cm <sup>2</sup> )	X(m)	Y(μW/cm <sup>2</sup> )	X(m)	Y(μW/cm <sup>2</sup> )
0	5.46000E-03	46	3.03328E-02	92	3.93823E-02	138	.03097	184	2.32512E-02	230	.016813	276	.012687
1	5.45910E-03	47	3.10848E-02	93	3.92549E-02	139	3.08197E-02	185	.023075	231	1.67044E-02	277	1.26082E-02
2	5.45658E-03	48	3.18205E-02	94	3.91225E-02	140	3.06575E-02	186	2.29045E-02	232	1.65962E-02	278	1.25367E-02
3	5.45218E-03	49	3.25381E-02	95	3.90338E-02	141	3.04961E-02	187	2.27333E-02	233	1.64904E-02	279	1.24644E-02
4	5.44604E-03	50	3.32371E-02	96	3.89463E-02	142	3.03356E-02	188	2.25644E-02	234	1.63847E-02	280	1.23928E-02
5	5.43821E-03	51	3.39192E-02	97	3.88542E-02	143	3.01738E-02	189	2.23965E-02	235	1.62798E-02	281	1.23218E-02
6	5.42872E-03	52	3.45826E-02	98	3.87567E-02	144	.030012	190	.022236	236	1.61769E-02	282	1.22513E-02
7	5.45765E-03	53	3.52264E-02	99	3.86547E-02	145	2.98502E-02	191	2.20667E-02	237	.016078	283	1.21824E-02
8	5.90791E-03	54	3.58513E-02	100	3.85468E-02	146	2.96893E-02	192	2.19033E-02	238	1.59719E-02	284	1.21136E-02
9	6.37174E-03	55	3.64563E-02	101	3.84347E-02	147	.029529	193	2.17422E-02	239	1.58702E-02	285	1.20448E-02
10	6.84812E-03	56	3.68803E-02	102	3.83188E-02	148	2.93664E-02	194	2.15825E-02	240	1.57702E-02	286	1.19761E-02
11	7.33635E-03	57	3.72121E-02	103	3.81971E-02	149	2.92057E-02	195	2.14251E-02	241	1.56707E-02	287	1.19098E-02
12	7.8353E-03	58	3.75286E-02	104	3.80722E-02	150	2.90444E-02	196	2.12681E-02	242	1.55721E-02	288	1.18425E-02
13	8.3443E-03	59	3.78265E-02	105	3.79441E-02	151	2.88846E-02	197	2.11134E-02	243	1.54749E-02	289	1.17758E-02
14	8.86879E-03	60	3.81099E-02	106	3.78124E-02	152	2.87247E-02	198	2.09603E-02	244	1.53771E-02	290	1.17108E-02
15	9.4908E-03	61	3.83755E-02	107	3.76768E-02	153	2.85644E-02	199	2.08083E-02	245	1.52816E-02	291	1.16446E-02
16	1.01271E-02	62	3.86251E-02	108	3.75379E-02	154	2.84046E-02	200	2.06581E-02	246	1.51864E-02	292	1.15809E-02
17	1.07751E-02	63	3.88599E-02	109	3.73956E-02	155	2.82459E-02	201	2.05095E-02	247	.015093	293	1.15152E-02
18	1.14361E-02	64	3.90788E-02	110	3.72494E-02	156	2.80869E-02	202	2.03625E-02	248	1.49992E-02	294	1.14527E-02
19	1.21062E-02	65	3.92824E-02	111	3.71011E-02	157	2.79282E-02	203	2.02166E-02	249	1.49067E-02	295	1.13889E-02
20	1.27846E-02	66	3.94707E-02	112	3.69513E-02	158	2.77701E-02	204	2.00714E-02	250	.014814	296	1.13208E-02
21	.013471	67	3.96295E-02	113	3.67814E-02	159	2.76123E-02	205	1.99285E-02	251	1.47231E-02	297	1.12542E-02
22	1.41229E-02	68	3.97692E-02	114	3.65355E-02	160	2.74553E-02	206	1.97871E-02	252	1.46337E-02	298	.011189
23	1.47686E-02	69	3.98959E-02	115	3.62909E-02	161	2.72995E-02	207	1.96466E-02	253	1.45437E-02	299	1.11232E-02
24	1.54157E-02	70	4.00089E-02	116	3.60469E-02	162	2.71435E-02	208	.019503	254	1.44555E-02	300	1.10582E-02
25	.01606	71	4.01086E-02	117	3.58025E-02	163	2.69882E-02	209	1.93707E-02	255	1.43679E-02	301	1.09948E-02
26	1.67129E-02	72	4.01973E-02	118	.035551	164	2.68339E-02	210	1.92341E-02	256	1.42794E-02	302	.010931
27	1.73584E-02	73	4.02736E-02	119	3.53165E-02	165	.026674	211	1.90994E-02	257	1.41938E-02	303	1.08673E-02
28	1.80017E-02	74	4.03378E-02	120	3.50747E-02	166	.026523	212	.018961	258	1.41077E-02	304	1.08041E-02
29	1.86564E-02	75	.040396	121	3.48338E-02	167	2.63727E-02	213	1.88334E-02	259	1.40226E-02	305	1.07421E-02
30	1.93515E-02	76	4.04338E-02	122	3.45932E-02	168	2.62203E-02	214	1.87017E-02	260	1.39388E-02	306	.010686
31	2.00414E-02	77	.040469	123	3.43542E-02	169	2.60692E-02	215	1.85728E-02	261	1.38542E-02	307	1.06191E-02
32	2.07255E-02	78	4.04862E-02	124	3.41164E-02	170	2.58888E-02	216	1.84436E-02	262	1.37716E-02	308	1.05597E-02
33	.021408	79	4.04975E-02	125	3.38803E-02	171	2.56877E-02	217	1.83165E-02	263	1.36893E-02	309	1.04995E-02
34	2.20715E-02	80	4.04544E-02	126	3.36443E-02	172	2.54887E-02	218	1.81936E-02	264	1.36082E-02	310	1.04393E-02
35	2.27329E-02	81	4.04024E-02	127	3.34099E-02	173	2.52919E-02	219	1.80731E-02	265	1.35278E-02	311	1.03801E-02
36	2.33837E-02	82	4.03435E-02	128	3.31755E-02	174	2.50965E-02	220	1.79534E-02	266	1.34479E-02	312	1.03213E-02
37	.024049	83	4.02775E-02	129	.032947	175	2.49037E-02	221	1.78345E-02	267	1.33677E-02	313	1.02635E-02
38	2.47858E-02	84	4.02039E-02	130	3.27123E-02	176	2.47128E-02	222	1.77166E-02	268	1.32895E-02	314	1.02065E-02
39	2.55186E-02	85	4.01227E-02	131	3.24824E-02	177	2.45234E-02	223	1.76007E-02	269	1.32108E-02	315	1.01489E-02
40	2.62405E-02	86	4.00341E-02	132	3.22537E-02	178	2.43361E-02	224	1.74843E-02	270	1.31339E-02		
41	2.69494E-02	87	3.99402E-02	133	3.20262E-02	179	2.41505E-02	225	1.73703E-02	271	1.30563E-02		
42	2.76447E-02	88	3.98409E-02	134	3.18002E-02	180	.023963	226	1.72565E-02	272	1.29805E-02		
43	2.83264E-02	89	3.97347E-02	135	3.15756E-02	181	2.37856E-02	227	1.71448E-02	273	.012901		
44	2.89934E-02	90	3.96221E-02	136	3.13525E-02	182	2.36062E-02	228	1.70324E-02	274	1.28294E-02		
45	.02964	91	.039506	137	3.11405E-02	183	2.34276E-02	229	1.69228E-02	275	1.27556E-02		

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