



**Mountain Valley Broadcast Service, Inc.**  
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## **WLTk RFR STUDY**

**June 14, 2012**

### **Evaluation of Environmental Effects** **WLTk Transmitter Site – with 2-bay ERI LPX-2E antenna**

WLTk's transmitting antenna is located on a tower in an antenna farm with one adjacent active tower. The layout of this site is shown in the attached photo-diagram. The tower labeled WSIG also supports an FM antenna. All nearby television translators, evaluated in 2003, are now dark.

A complicating factor in this study is the sloping terrain of the site; i.e., there are locations nearby the tower that are slightly higher than the ground level at the base of the tower. This causes little concern with a 2-bay rototiller type antenna, which places very little radiation on the ground.

Representative locations that might be potential hot spots were also evaluated. The locations are shown in the photo-diagram and on the spread sheet. Point "J" had the highest level of RFR energy on the ground. At this location, the total contribution of WLTk and WSIG is only 28.3% of the general/uncontrolled exposure limit.

Our evaluation shows that, based on computations consistent with OET Bulletin 65 (97-01), at no ground-level location is the general/uncontrolled exposure limit exceeded by stations currently at the site.

### On-Tower Computations

There are many factors which must be evaluated when computing RF levels on adjacent towers. However, using the OET 65 formula

$$S = 33.4 \text{ ERP} / R^2$$

We arrive at values of  $S = 141 \text{ uW/cm}^2$  for locations directly in the main beam (maximum level) of WLTk's antenna on WSIG's tower and  $S = 53.6$  for locations directly in the main beam of WLTk's antenna on the (dark) County Translator tower. Even with unanticipated reflections, the limits on those towers, with WLTk at full operating power, will be far below the controlled/occupation limit. Other licensees should take the effect of their own operations into consideration, but routine work on these towers should not require the cessation of WLTk operations.

Site policy

According to the lease with the landowner, no antennas aside from WLTk's will be mounted in the WLTk tower. Therefore, no coordination with other users on this tower will be required.

The WLTk tower will be posted as an RF hazard to warn tower climbers of the potential danger of climbing this tower while the transmitter is energized.

The use of personal monitors (set at 50% of the controlled limit) or *actual measurements* is an appropriate assurance procedure for all tower climbers at this site.

*The licensee certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.*

Mountain Valley Broadcast Service, Inc.

A handwritten signature in black ink, appearing to read 'W D Fawcett', with a long horizontal flourish extending to the right.

William D. Fawcett  
PG-4-10874

WLTk RFR Study  
Showing elevation up  
from base of tower  
by 3.3 Meters at  
15.8 Meters from  
tower.

COUNTY - 7 Meters

Ridgeline

WLTk 0 Meters

WSIG  
3 Meters

52' from tower  
3.3 Meters

Elevation +5.2 Meters  
Starting at 42 Meters

Ridge slope is gradual



GIS Application Developed by Terralogic, Inc.

0 93ft

POINT OF STUDY	GEN EXPOSE % of limit	Point	(meters)	(meters)	uW/cm2	contrib	Point	(meters)	(meters)	uW/cm2	contrib
		Elevation Rel. to WLTK	Effective C/R at Point	distance to point			Elevation Rel. to WSIG	Effective C/R at Point	distance to point		
<b>G</b>	2.5%	-9	30	89.7	4.9	2.5%	-12	44	120.0	0.0018	0.0%
<b>County</b>	1.5%	-7	28	50.2	0.5	0.3%	-10	42	79.1	2.52	1.3%
<b>WLTK</b>	7.3%	0	21	0	11.3	5.7%	-3	35	31.1	3.38	1.7%
<b>WSIG</b>	5.5%	3	18	31.1	1.49	0.7%	0	32	0.0	9.57	4.8%
<b>A</b>	4.3%	1	20	26.4	3.27	1.6%	-2	34	51.4	5.37	2.7%
<b>B</b>	20.5%	2	19	16.9	39.3	19.7%	-1	33	39.6	1.67	0.8%
<b>C</b>	27.0%	3.3	17.7	16.5	38.6	19.3%	0.3	31.7	23.6	15.35	7.7%
<b>D</b>	34.9%	2.5	18.5	16.9	38.1	19.1%	-0.5	32.5	13.7	31.76	15.9%
<b>H</b>	17.6%	4.2	16.8	23.6	1.11	0.6%	1.2	30.8	17.0	34.05	17.0%
<b>E</b>	27.6%	5.2	15.8	37.8	16.3	8.2%	2.2	29.8	14.2	38.96	19.5%
<b>F</b>	21.6%	5.2	15.8	50.7	21.3	10.7%	2.2	29.8	21.0	21.9	11.0%
<b>J</b>	28.3%	0	21	12.8	54.5	27.3%	-3	35	43.5	2.1	1.1%
		WLTK: 2050 Warrs ERP (H or V) antenna ERI LPX-2E C/R = 21 meters AGL					WSIG: 4300 Watts ERP (H or V) antenna LP3-E C/R = 32 meters AGL				