

## **ENGINEERING EXHIBIT**

### **Application for Television Translator Digital Flash-Cut Construction Permit**

prepared for

**Mountain Licenses, L.P.**  
K19BY Grangeville, Etc., ID  
Facility ID 58696  
Ch. 19 (digital) 1.26 kW

*Mountain Licenses, L.P.* (“*MLLP*”) is the licensee of television translator station K19BY, analog Channel 19, Grangeville, Etc., ID, Facility ID 58696 (BLTT-19890705IH). *MLLP* proposes herein to flash-cut K19BY to digital operation.

The proposed facility will operate on the current K19BY Channel 19 as digital at 1.26 kW effective radiated power using a “simple” out of channel emission mask. No change in transmitting location is proposed. Figure 1 depicts the coverage contour of the proposed facility as well as that of the K19BY licensed analog facility. The use of the same transmitter site and the service area overlap shown demonstrate compliance with §73.3572 for a minor change.

The proposed digital facility will employ the existing transmitting antenna (Scala model SL-8) associated with the licensed analog operation. The antenna supporting structure does not have an FCC Antenna Structure Registration number since its overall height is less than 60 meters and there are no known landing areas within 8 km of the site. No change to the overall structure height is proposed.

A detailed interference study per OET Bulletin 69<sup>1</sup> shows that the proposal complies with the Commission’s interference protection requirements toward all digital television, television

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<sup>1</sup>FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV*

translator, low power television, and Class A television stations. The results, summarized in Table 1, show that any new interference does not exceed the Commission's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations).

The proposed site is located 326 km from the U.S. – Canadian border. The worst-case 12.4 dB $\mu$  F(50,10) co-channel DTV-to-DTV interfering contour is depicted in Figure 2 and does not extend across the border. Thus, international coordination should not be necessary.

The nearest FCC monitoring station is 560 km distant at Ferndale, WA. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with “quiet” zones specified in §73.1030(a) and (b). There are no authorized AM stations within 3.2 kilometers of the site.

### **Human Exposure to Radiofrequency Electromagnetic Field**

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 25 percent antenna relative field in downward elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is 13.4  $\mu$ W/cm<sup>2</sup>, which is 4.0 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. The applicant will coordinate exposure procedures with any pertinent stations

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*Coverage and Interference*, February 6, 2004 (“OET-69”). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. A cell size of 1 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

This exhibit is limited to the evaluation of exposure to RF electromagnetic field. The K19BY transmitting antenna is mounted on an antenna support structure which was constructed prior to March 16, 2001. No tower work or change in structure height is proposed.

### **Certification**

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.



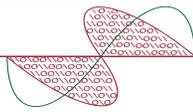
Joseph M. Davis, P.E.  
February 22, 2012

**Chesapeake RF Consultants, LLC**  
207 Old Dominion Road  
Yorktown, VA 23692  
703-650-9600

### List of Attachments

Figure 1	Coverage Contour Comparison
Figure 2	Interfering Contour Towards Canada
Table 1	Interference Analysis Results Summary
Form 346	Saved Version of Engineering Sections from FCC Form at Time of Upload

*This material was entered February 22, 2012 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's account number and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*



**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

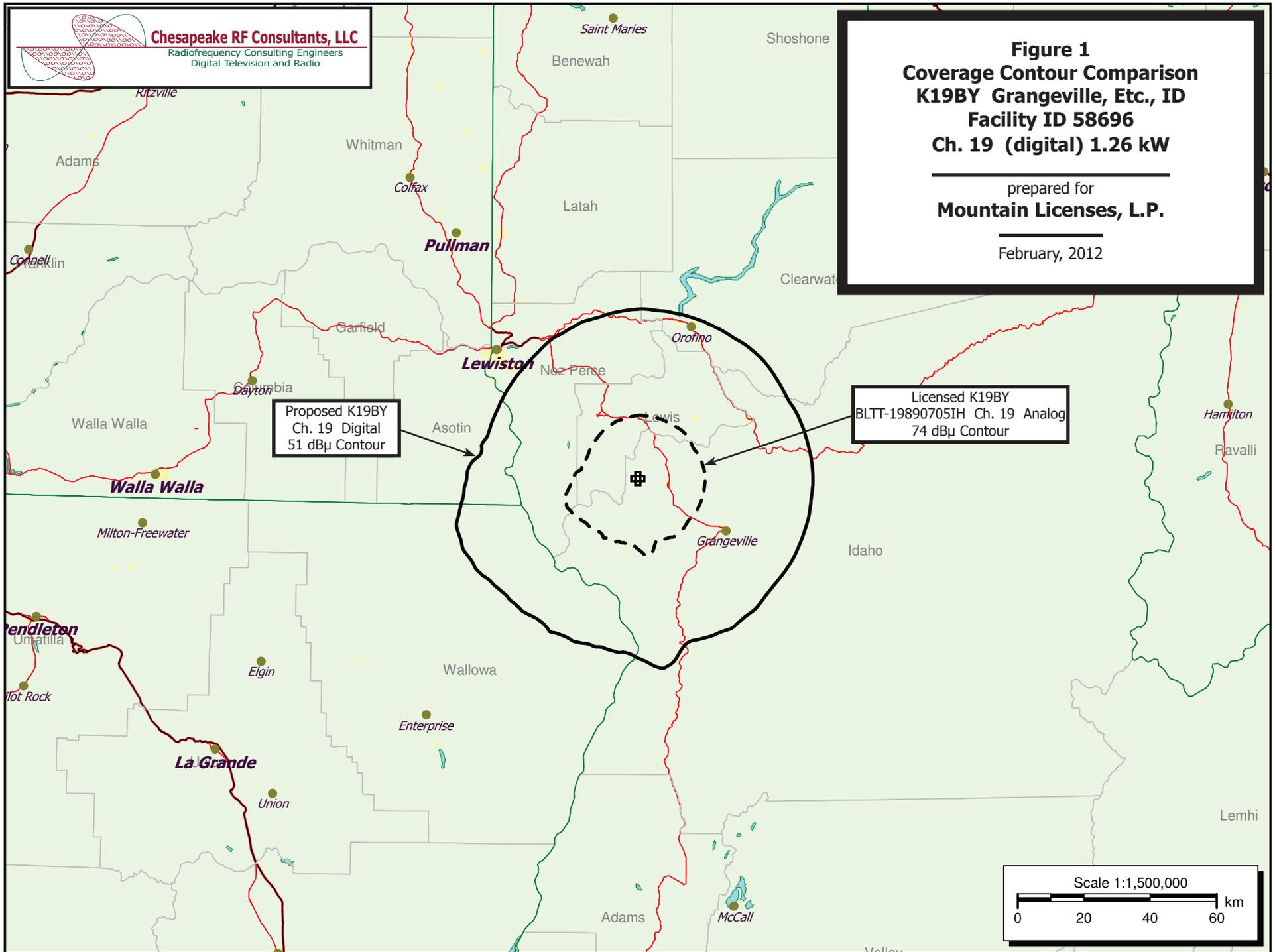
**Figure 1**  
**Coverage Contour Comparison**  
**K19BY Grangeville, Etc., ID**  
**Facility ID 58696**  
**Ch. 19 (digital) 1.26 kW**

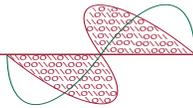
prepared for  
**Mountain Licenses, L.P.**

February, 2012

Proposed K19BY  
Ch. 19 Digital  
51 dBμ Contour

Licensed K19BY  
BLTT-19890705IH Ch. 19 Analog  
74 dBμ Contour



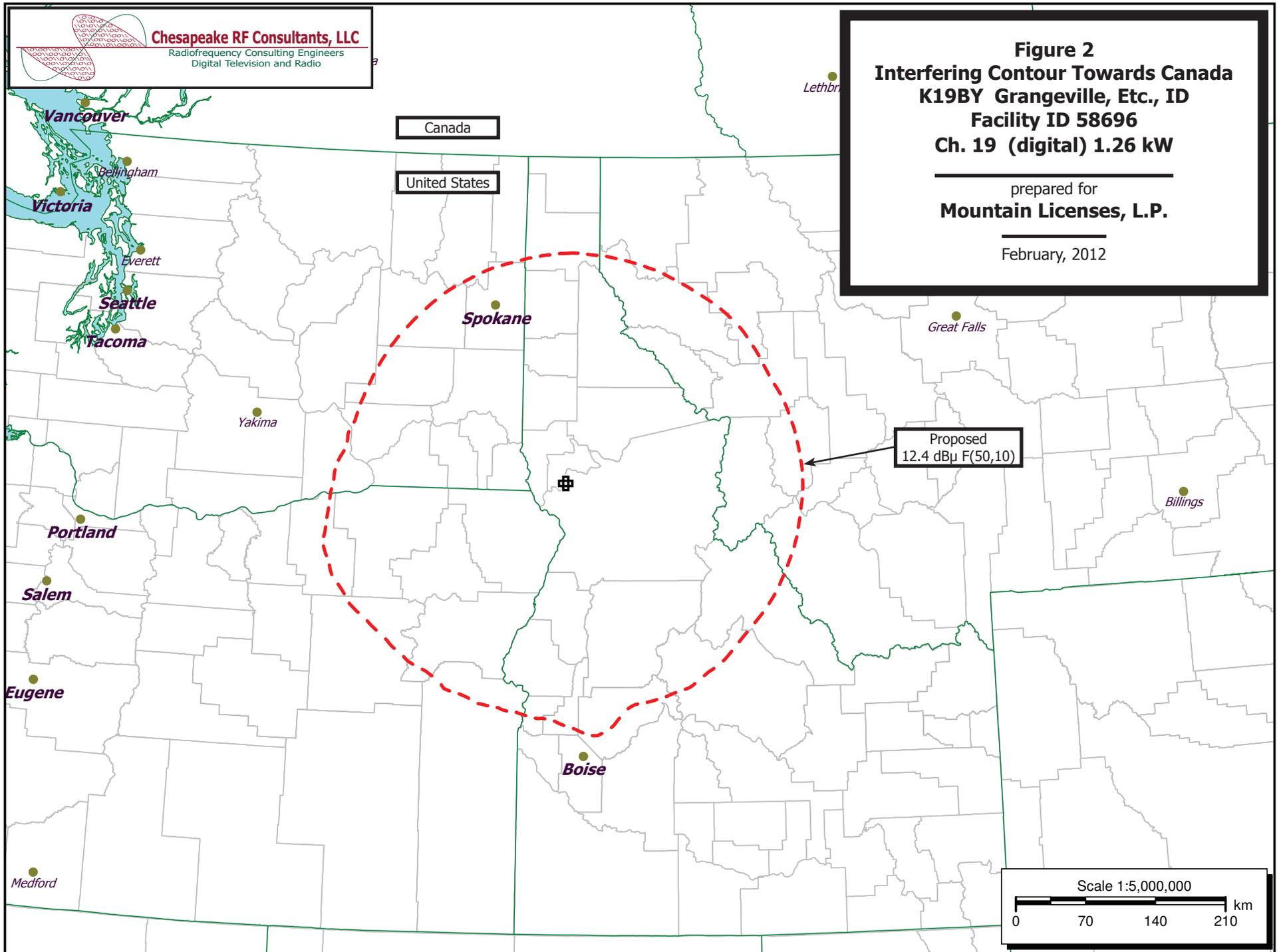


**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 2**  
**Interfering Contour Towards Canada**  
**K19BY Grangeville, Etc., ID**  
**Facility ID 58696**  
**Ch. 19 (digital) 1.26 kW**

prepared for  
**Mountain Licenses, L.P.**

February, 2012



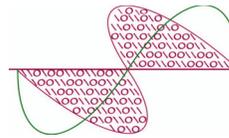
**Table 1**

**Interference Analysis Results Summary**

prepared for

**Mountain Licenses, L.P.**

**K19BY Grangeville, Etc., ID**



**Chesapeake RF Consultants, LLC**

Radiofrequency Consulting Engineers  
Digital Television and Radio

K19BY-D USERRECORD-01 GRANGEVILLE, ETC. ID US  
 Channel 19 ERP 1.26 kW HAAT 622. m RCAMSL 01762 m SIMPLE MASK  
 Latitude 046-04-09 Longitude 0116-27-54  
 Nondirectional antenna

Ch.	Call	City/State	Dist (km)	Status	Application Ref. No.	---Population (2000 Census)---	
						Baseline	New Interference
15	K15CH	LEWISTON ID	61.6	LIC	BLTT-19880912IL	---	none
16	KORX-CA	WALLA WALLA WA	131.8	LIC	BLTTA-20050202ADO	---	none
18	K18DT-D	COEUR D'ALENE ID	185.9	LIC	BLDTT-20100122ACK	---	none
18	K55JS	BAKER CITY OR	193.1	CP	BDISDTT-20110830AEB	---	none
19	NEW	BOISE ID	248.3	APP	BNPDTL-20090825BBI	---	none
19	K19IK-D	GLENN'S FERRY ID	360.4	CP	BNPDTL-20090825BMB	---	none
19	NEW	MONIDA ID	367.2	APP	BNPDTL-20100609AHY	---	none
19	NEW	NAMPA ID	271.1	APP	BNPDTL-20090825BEW	---	none
19	KWYB	BUTTE MT	310.5	LIC	BLCDDT-20080424ABB	---	none
19	K19GD-D	KALISPELL & LAKESIDE MT	268.2	LIC	BLDTT-20090811AAT	---	none
19	K19GD-D	KALISPELL & LAKESIDE MT	268.2	APP	BPDTT-20120117ABC	---	none
19	KQRE-LP	BEND OR	395.2	LIC	BLTTL-20090910ACB	---	none
19	KQRE-LP	HAMPTON OR	393.9	APP	BPTT-20030317LIW	---	none
19	K56CD	MAUPIN OR	369.8	CP	BDISDTT-20090824AAD	---	none
19	KQRE-LP	RILEY OR	395.2	APP	BSTA-20090901AHP	---	none
19	K19JJ-D	VALE OR	240.1	LIC	BLDTT-20120106AAV	---	none
19	K19JC-D	MAZAMA WA	399.2	CP	BDCCDTT-20101026ACD	---	none
19	K19AU-D	OMAK, OKANOGAN, ETC WA	340.7	LIC	BLDTT-20110727AHT	---	none
19	K19AU-D	OMAK/OKANOGAN WA	340.7	APP	BSTA-20101115DMR	---	none
19	NEW	YAKIMA WA	315.1	APP	BNPDTL-20101006ABK	---	none
20	K20IV-D	BAKER CITY, ETC. OR	193.1	CP	BPDTT-20100817AAI	---	none
20	K20IV-D	BAKER CITY, ETC. OR	193.1	LIC	BLDTT-20081202AGU	---	none
20	KREM	SPOKANE WA	181.0	LIC	BLCDDT-20050623ABG	663,602	407 (0.06%)
20	KREM	SPOKANE WA	181.0	CP	BPCDDT-20080617AEA	683,109	1,101 (0.16%)
21	K21CC	LEWISTON ID	61.6	LIC	BLTT-19880525IL	---	none
23	K23DB	LA GRANDE OR	129.8	LIC	BLTTL-19920123JH	---	none
26	K26CK	CRAIGMONT, ETC. ID	0.0	LIC	BLTT-19890921IH	---	none
26	K26FV	ELGIN OR	129.7	LIC	BLTT-20011212AAD	---	none
27	KIDQ-LP	LEWISTON ID	60.7	LIC	BLTTL-20071018BEB	---	none

**Section III - Engineering (Digital)**

**TECHNICAL SPECIFICATIONS**  
 Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

**TECH BOX**

1. Channel:  
19

2. Translator Input Channel No. : 28

3. Primary station proposed to be rebroadcast:

Facility Identifier	Call Sign	City	State	Channel
58684	KAYU-TV	SPOKANE	WA	28

4. Antenna Location Coordinates: (NAD 27)  
 Latitude:  
 Degrees 46 Minutes 4 Seconds 9  North  South  
 Longitude:  
 Degrees 116 Minutes 27 Seconds 54  West  East

5. Antenna Structure Registration Number:  
 Not Applicable [Exhibit 11]  Notification filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: 1746 meters

7. Overall Tower Height Above Ground Level: 22 meters

8. Height of Radiation Center Above Ground Level: 16 meters

9. Maximum Effective Radiated Power (ERP): 1.26 kW

10. Transmitter Output Power: 0.1 kW

11. a. Transmitting Antenna:  
 Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under [CDBS Public Access](http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm) (http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs\_pa.htm). Make sure that the Standard Pattern is marked Yes and that the relative field values shown match your values. Enter the Manufacturer (Make) and Model exactly as displayed in the Antenna Search.  
 Nondirectional  Directional Off-the Shelf  Directional composite  
 Manufacturer SCA Model SL-8

b. Electrical Beam Tilt: 1.75 degrees  Not Applicable

c. Mechanical Beam Tilt: degrees toward azimuth degrees True  Not Applicable

d. Directional Antenna Relative Field Values:  N/A (Nondirectional or Off-the-Shelf)  
 Rotation (Degrees):  No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0		10		20		30		40		50	
60		70		80		90		100		110	
120		130		140		150		160		170	
180		190		200		210		220		230	
240		250		260		270		280		290	
300		310		320		330		340		350	
Additional Azimuths											

e. Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?  Yes  No  
 [Exhibit 12]  
 If Yes, attach an Exhibit (see instructions for details).

[Relative Field Polar Plot](#)

**NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.**

12. **Out-of-channel Emission Mask:**  Simple  Stringent  Full Service

**CERTIFICATION**

13. **Interference :** The proposed facility complies with all of the following applicable rule sections. 47.C.F.R Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030.  Yes  No  
 See Explanation in [Exhibit 13]

14. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible  Yes  No

<p>radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance, an <b>Exhibit is required.</b></p> <p>By checking "Yes" above, the applicant also 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.</p>	<p>See Explanation in [Exhibit 14]</p>
<p>15. <b>Channels 52-59.</b> If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable:</p> <p><input type="checkbox"/> The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.</p> <p><input type="checkbox"/> Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licenses of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.</p>	
<p>16. <b>Channels 60-69.</b> If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:</p> <p><input type="checkbox"/> Pursuant to Section 74.786(e), the applicant has notified, within 30 days of filing this application, all commercial wireless licenses of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.</p> <p><input type="checkbox"/> Pursuant to Section 74.786(e), the applicant proposing operation on channel 63, 64, 68 and 69 ("public safety channels") has secured a coordinated spectrum use agreements(s) with 700 MHz public safety regional planning committee(s) and state administrator(s) of the region(s) and state(s) within which the antenna site of the digital LPTV or TV translator station is proposed to locate, and those adjoining regions and states with boundaries within 75 miles of the proposed station location.</p> <p><input type="checkbox"/> Pursuant to Section 74.786(e), the applicant for a channel adjacent to channel 63, 64, 68 or 69 has notified, within 30 days of filing this application, the 700 MHz public safety regional planning committee(s) and state administrator(s) of the region and state containing the proposed digital LPTV or TV translator antenna site and regions and states whose geographic boundaries lie within 50 miles of the proposed LPTV or TV translator antenna site.</p>	
<p><b>PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.</b></p>	

**SECTION III PREPARER'S CERTIFICATION**

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.		Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature		Date 2/22/2012	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 207 OLD DOMINION ROAD			
City YORKTOWN	State or Country (if foreign address) VA	Zip Code 23692 -	
Telephone Number (include area code) 7036509600		E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	