

## **Exhibit 12**

### **Engineering Statement**

### **KWSU-LD Minor Modification**

### **Washington State University**

Washington State University ("WSU") proposes to modify the antenna system for replacement translator KWSU-LD, channel 17, in order to better serve viewers that have not been able to receive KWSU's over-the-air signal since its conversion to digital. Following installation of KWSU-LD in its present configuration, it was noted that the highly directional CL-1469 log-periodic antenna did not provide coverage to areas north of the main lobe that had been able to receive the analog KWSU signal. Specifically, viewing areas in Airway Heights and Country Homes to the west and north of the translator's transmitter site no longer receive a viewable signal for KWSU, even after installation of KWSU-LD and digital maximization of KWSU-TV's main channel 10 signal.

To rectify this situation, WSU proposes to replace the antenna system of KWSU-LD with an antenna that is less directional, yet minimizes the extension of KWSU-LD's signal beyond areas formerly served by KWSU-TV's analog signal. WSU also proposes to reduce main lobe power from 1.2kW to 0.55kW ERP, which will have negligible impact on existing coverage while minimizing extension of the translator's signal, and to orient the main lobe to 218 degrees with reference to true north.

*Figure 1* is a map showing the protected contours of KWSU-TV (channel 10) and the present and proposed KWSU-LD (channel 17). With these changes, the entire proposed contour for KWSU-LD remains within the KWSU-TV contour.

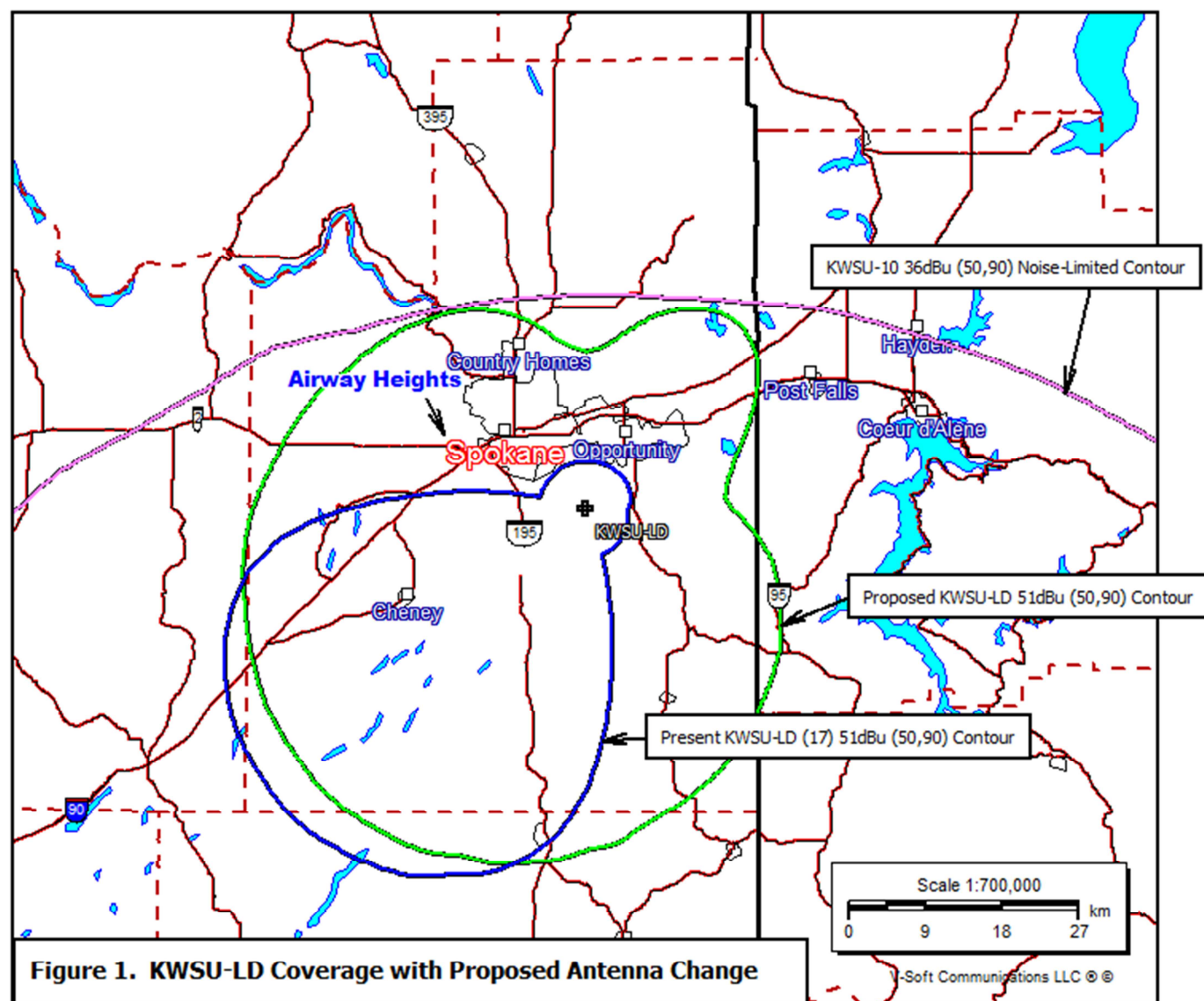
An interference study was conducted in accordance with OET-69<sup>1</sup> with the results tabulated in *Table 1*. This study demonstrates that the proposed modifications to KWSU-LD will operate in compliance with 47 CFR §74.705, §74.706, §74.707, §74.708 and §74.710. A recent upgrade to K18DT-D (facility ID 34536) placed the transmitter site for KWSU-LD within the protected contour of this first adjacent station, making this application non-compliant with §74.710(b). However, *Table 1* demonstrates that this proposed modification meets the alternate means of interference protection compliance with respect to K18DT-D as stated in §74.710(c). In addition, *Reference 1* cites a letter from the licensee of K18DT-D stating that they concur with the modification of KWSU-LD's antenna system.

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<sup>1</sup> Federal Communications Commission, Office of Engineering and Technology, *OET BULLETIN No. 69 Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004

**KWSU-LD**  
 BLEDT20111003ALM  
 Latitude: 47-34-34 N  
 Longitude: 117-17-58 W  
 ERP: 1.20 kW  
 Channel: 17  
 Frequency: 491.0 MHz  
 AMSL Height: 1206.0 m  
 Elevation: 1106.0 m  
 Horiz. Pattern: Directional  
 Vert. Pattern: Yes  
 Elec Tilt: 0.0

**KWSU-UPG**  
 Latitude: 47-34-34 N  
 Longitude: 117-17-58 W  
 ERP: 0.55 kW  
 Channel: 17  
 Frequency: 491.0 MHz  
 AMSL Height: 1206.0 m  
 Elevation: 1106.0 m  
 Horiz. Pattern: Directional  
 Vert. Pattern: Yes  
 Elec Tilt: 0.0



## Table 1. Outgoing Interference Population Report

KWSU-TV-D (17) Spokane, WA - BLEDT20111003ALM  
 Broadcast Type: Digital Service: G [Full Service Emission Mask]  
 Lat: 47-34-34 N Lng: 117-17-58 W ERP: 0.55 kW AMSL: 1206.0 m  
 TV Outgoing Interference Study Signal Resolution: 1.0 km  
 Using LPTV/translator D/U rules.  
 Pop Centroid DB: 2010 US Census (PL)  
 Study Date: 6/30/2014  
 TV Database Date: 6/30/2014  
 Primary Terrain: V-Soft 3 Second US Terrain  
 Population Database: 2010 US Census (PL)

### Stations Considered:

Call Letters	City	State	Dist	Azi
CBUCT-6-D (17)	New Denver	BC	268.0	358.8
CBUT-40-D (17)	Penticton	BC	277.5	322.4
VACANT-D (17)	Trail	BC	172.4	347.8
K30LS-D.A (16)	Sandpoint	ID	95.4	28.1
K17JR-D (17)	Lewiston	ID	126.5	171.2
K18DT-D (18)	Coeur D'alene	ID	46.2	67.8
K18HQ-D (18)	Sandpoint	ID	95.4	28.1
K18DT-D.C (18)	Coeur D'alene	ID	46.2	67.8
1636122-D.A (18)	Lewiston	ID	126.6	171.2
K18DT-D.A (18)	Coeur D'alene	ID	46.2	67.8
K17JG-D (17)	Ferndale, Etc	MT	250.3	76.2
K17GK-D (17)	Arlington	OR	302.2	229.3
K17IL-D (17)	Ellensburg, Etc.	WA	249.9	253.3
K17KI-D.C (17)	Yakima	WA	272.1	251.2
K17EV-D (17)	Omak	WA	178.9	303.8
K17KR-D (17)	Winthrop	WA	248.7	296.6
KELZ-LD-D.C (17)	Pasco	WA	218.7	222.0
KMMF-D (17)	MISSOULA	MT	266.4	107.6

Call	Area	HUnits	Contour	Masked	Ix	Unmasked	Ix	%
CBUCT-6-D (17)	0.0	0	0		0		0	0.00
CBUT-40-D (17)	0.0	0	0		0		0	0.00
VACANT-D (17)	0.0	0	5,349		0		0	0.00
K30LS-D.A (16)	0.0	0	76,709		0		0	0.00
K17JR-D (17)	21.2	5	61,333		11		3	0.00
K18DT-D (18)	0.0	0	346,420		0		0	0.00
K18HQ-D (18)	0.0	0	41,451		0		0	0.00
K18DT-D.C (18)	11.6	120	556,443	3,459			301	0.05
1636122-D.A (18)	0.0	0	60,723		0		0	0.00
K18DT-D.A (18)	11.6	120	556,443	3,459			301	0.05
K17JG-D (17)	0.0	0	10,767		0		0	0.00
K17GK-D (17)	0.0	0	1,137		0		0	0.00
K17IL-D (17)	0.0	0	31,030		0		0	0.00
K17KI-D.C (17)	0.0	0	186,010		0		0	0.00
K17EV-D (17)	0.0	0	14,529		0		0	0.00
K17KR-D (17)	0.0	0	181		0		0	0.00
KELZ-LD-D.C (17)	0.0	0	231,481		0		0	0.00
KMMF-D (17)	0.0	0	179,320		0		0	0.00

## Reference 1. Letter in Support of Modification to KWSU-LD KHQ, Incorporated



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Washington State University  
Pullman, WA 99164

RE: KWSU-LD

KHQ has reviewed WSU's requested increase in power for KWSU-LD. Because of the close proximity of the KWSU-LD transmitter to KHQ-TV's main transmitter on channel 15 in Spokane, WA, we believe any interference that might be created to KHQ's translator K18DT-D in Coeur d'Alene, ID will be mitigated by coverage from KHQ's main signal.

Therefore KHQ has no objection to the requested minor modification for KWSU-LD.

Paul I Caryl

A handwritten signature in cursive script, followed by the date '7/28/14' written in a simple, slanted font.

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