

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION OF  
DTV CONSTRUCTION PERMIT  
DTV STATION KIMA-DT  
YAKIMA, WASHINGTON  
CH 33 12.5 KW 278 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application for modification of construction permit for DTV station KIMA-DT on channel 33 at Yakima, Washington. Station KIMA-DT is currently authorized (BMPCDT-20060706AFQ) to operate on channel 33 with a maximum directional effective radiated power (ERP) of 20 kilowatts and an antenna radiation center height above average terrain (HAAT) of 278 meters. It is proposed to modify the authorized facility by decreasing the maximum directional ERP to 12.5 kilowatts. No other changes are proposed.

Compliance with the current DTV Freeze

The proposed 41 dBu contour will not extend beyond the currently authorized 41 dBu contour in compliance with the FCC's *Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes*. Figure 1 is a map showing the 41 dBu contours for the authorized and proposed facilities. As shown on Figure 1, the proposed noise-limited contour is wholly encompassed by the authorized noise-limited contour.

Proposed Operation

It is proposed to operate on DTV channel 33 from the following site coordinates, N 46°31'58" W 120°30'33" using a Dielectric TLP-16M(C) directional antenna, and operating with a maximum directional ERP of 12.5 kW and an HAAT of 278 meters.

Notification to the FAA is not necessary, as there is no proposed change in the overall height of the existing structure. The antenna structure registration number (ASRN) for the existing tower is 1032433.

US-Canadian LOU Compliance

The proposed KIMA-DT transmitter site is located within the US-Canadian border area. However, as the proposal does not involve a change in the authorized transmitter site or extension of authorized coverage, it is not believed that Canadian coordination is necessary. It is also noted that the KIMA-DT transmitter site complies with the minimum distance separation requirements applicable to Canadian NTSC and DTV allotments contained in Appendix 2 of the Letter of Understanding between the FCC and Industry Canada related to use of DTV along the common border (September 2000).

Response to Paragraph 10 - Antenna Data

Figure 2 provides a graph of the vertical plane relative field pattern for the proposed Dielectric TLP-16M(C) directional antenna system.

Response to Paragraph 12 - City Coverage

Figure 2 is a map showing the FCC predicted DTV coverage contours. The map provides the FCC predicted 41 dBu f(50,90) noise-limited contour and 48 dBu f(50,90) city grade contour. The extent of the contours has been calculated using the normal FCC prediction method and a 30-second digitized terrain database. The Yakima city limits were derived from information contained in the 2000 U.S. Census for Washington. As shown, the 48 dBu contour encompasses the entire city limits of Yakima.

NTSC/DTV/Class A Allocation Considerations

Figure 3 is a DTV channel 33 separation study toward other NTSC and DTV allotments based on a 50 kilometer "buffer". Although the separation requirements are only applicable to new DTV allotments, they can be used as an indication of which stations have the potential of receiving interference from the proposed channel 33 DTV operation.

An interference analysis has been conducted using the procedures outlined in the FCC's OET-69 bulletin, which demonstrates that the proposal complies with the interference protection provisions

of Section 73.623(c)(2).<sup>1</sup> Interference calculations for the proposed operation are summarized below with respect to all authorized NTSC, DTV, and Class A facilities.

Station	Facility	Ch.	City	State	FCC Service Population	Proposed Interference Population	% of Baseline
KEPR-TV	LIC	19	PASCO	WA	--	--	--
KNDU	LIC	25	RICHLAND	WA	--	--	--
KIMA-TV	LIC	29	YAKIMA	WA	--	--	--
KTNW	LIC	31	RICHLAND	WA	--	--	--
KWPX	LIC	32	BELLEVUE	WA	--	--	--
KBGE-DT	PLN	32	BELLEVUE	WA	--	--	--
KRCW-TV	LIC	33	SALEM	OR	--	--	--
KWBP-DT	PLN	33	SALEM	OR	--	--	--
KWPX	LIC	33	BELLEVUE	WA	--	--	--
KWPX	CP	33	BELLEVUE	WA	--	--	--
K33EJ	LIC	33	WALLA WALLA	WA	--	--	--
KAPP	LIC	35	YAKIMA	WA	--	--	--

As shown above, the proposal on channel 33 complies with the FCC's interference standards towards all authorized NTSC, DTV and Class A stations.

Objectionable Interference

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the proposed transmitter site. Figure 4 provides a tabulation of the FM and TV stations within 16 kilometers of the proposed site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed DTV operation.

The proposed transmitter site is 274 kilometers from the Canadian border. It is also more than 1,581 kilometers from the

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<sup>1</sup> The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed. A Sun based processor computer system was employed.

US/Mexican border area. The closest FCC monitoring is at Ferndale, Washington, approximately 310 kilometers to the northwest. The proposed DTV site is outside the National Radio Quiet Zone (VA/WVA), the closest point being 3,367 kilometers to the east. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 1,426 kilometers to the west. The closest radio astronomy site operating on TV channel 37 is at Brewster, Washington located approximately 188 kilometers to the north-northeast. These separations are sufficient to not be a concern for coordination purposes.

Response to Paragraph 13 - Environmental Protection Act

The proposed facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields<sup>2</sup>. The power density at the base of the tower was calculated using the appropriate procedures contained in the Bulletin.

The radiation center for the proposed DTV antenna is located 29 meters above ground level. The maximum DTV ERP is 12.5 kW. A vertical plane relative field value of 0.18 (for angles below 60 degrees downward) is assumed for the antenna's downward radiation (Figure 2). The calculated power density at a point 2 meters above ground level is 0.0186 mW/cm<sup>2</sup>. This is 4.7% of the FCC's recommended limit of 0.39 mW/cm<sup>2</sup> for DTV channel 33 for an "uncontrolled" environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the FCC'S RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with RFR warning signs. Furthermore, in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure.

<sup>2</sup> OET Bulletin 65, Second Edition 97-01, August, 1997.

Finally, it is noted that this technical exhibit only addresses the potential for radio frequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already has been provided to the FCC by the tower owner as part of the tower registration process.

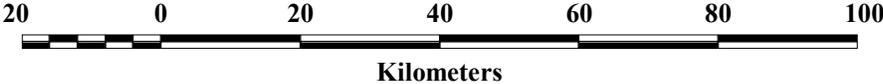
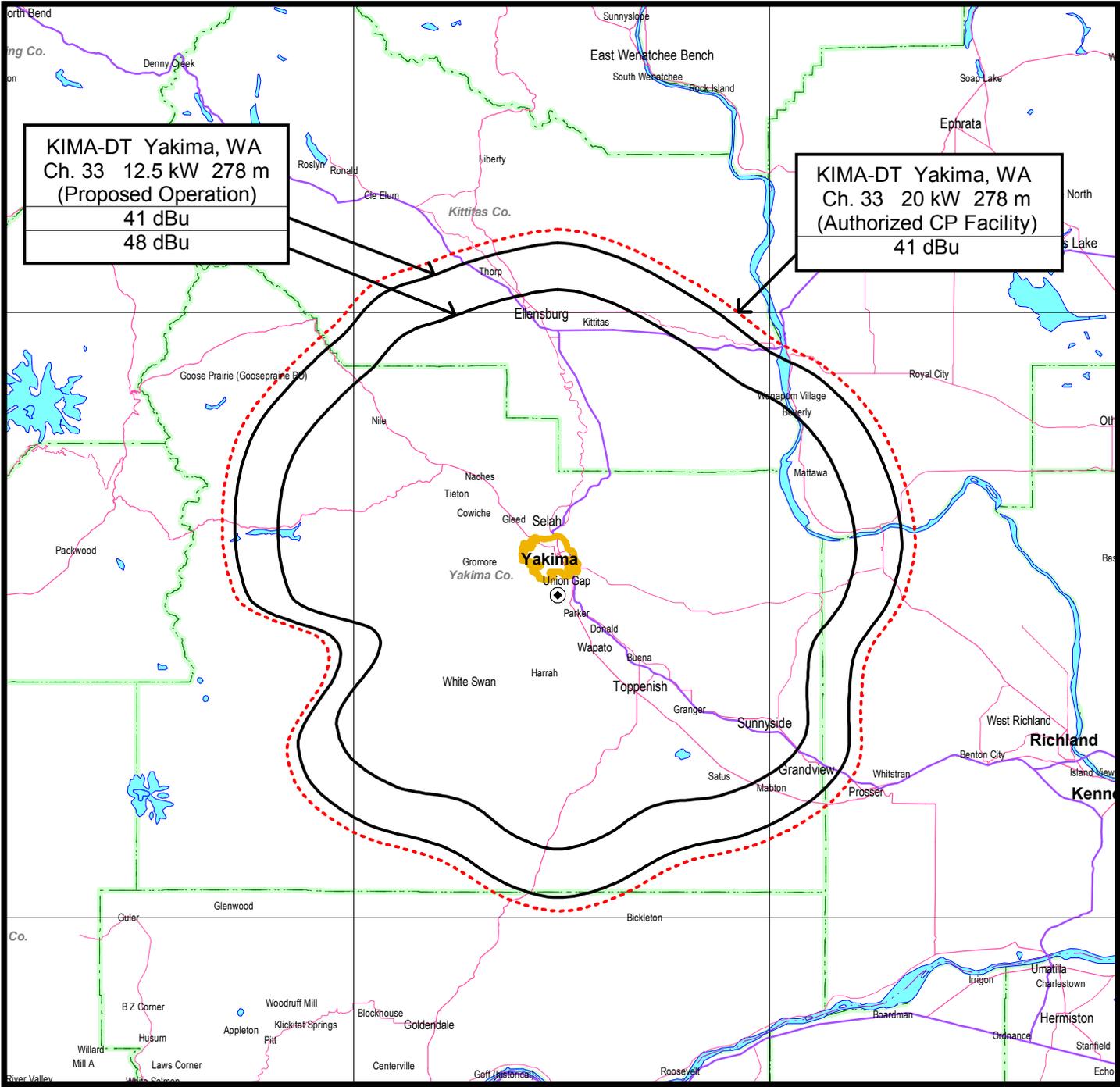
If there are questions concerning the technical portion of this application, please contact the office of the undersigned.



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Figure 1



**FCC PREDICTED COVERAGE CONTOURS**

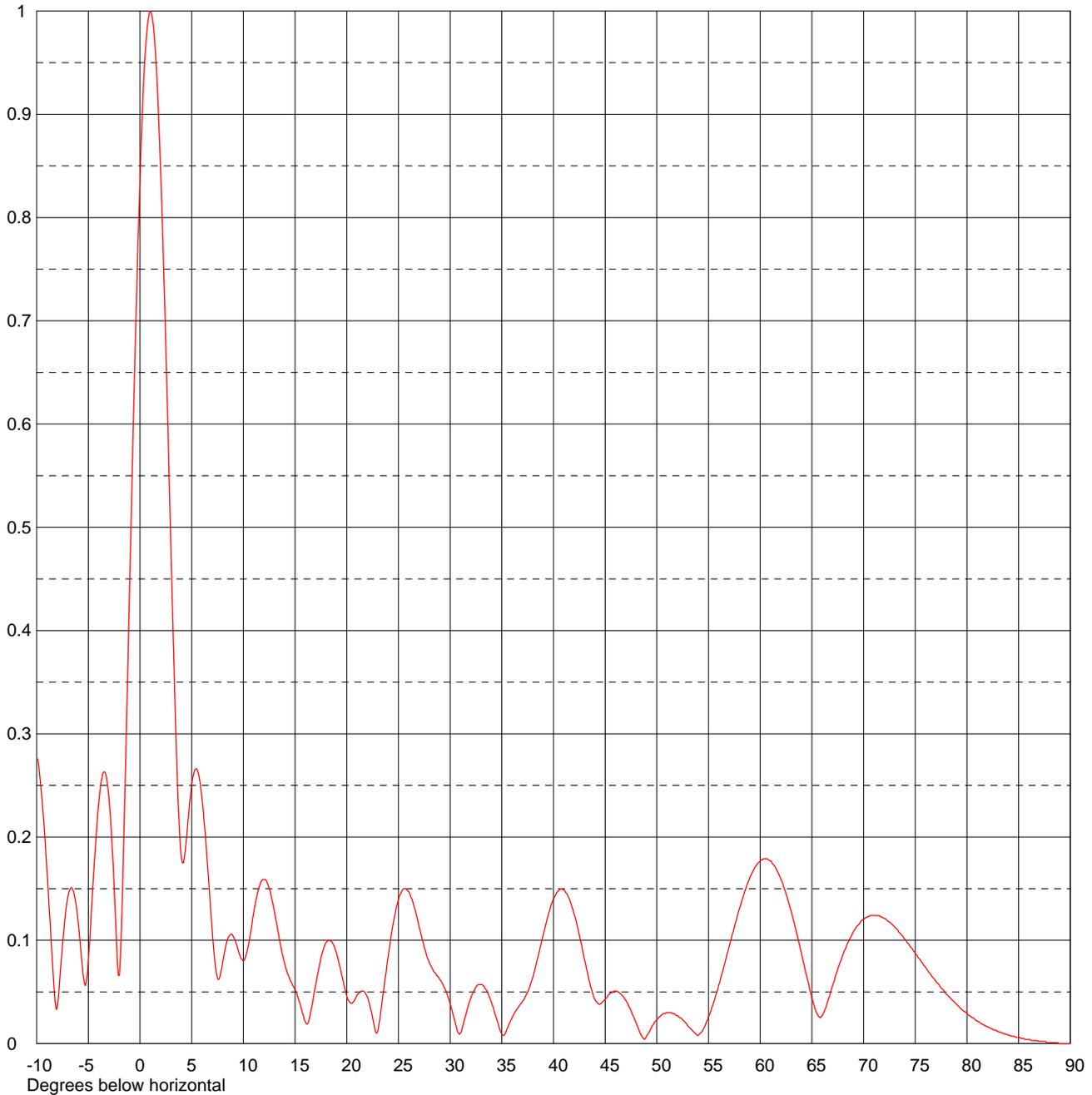
DTV STATION KIMA-DT  
YAKIMA, WASHINGTON  
CH 33 12.5 KW (MAX-DA) 278 M



Date **28 Jun 2006**  
Call Letters **KIMA-DT** Channel **33**  
Location  
Customer  
Antenna Type **TLP-16M**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>16.0 (12.04 dB)</b>	Beam Tilt	<b>1.00 Degrees</b>
RMS Gain at Horizontal	<b>11.3 (10.53 dB)</b>	Frequency	<b>587.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>16L160100-90</b>



Remarks:

# TV Study

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



<b>Station Type:</b> TV	<b>Station Coordinates:</b> 046-31-58 120-30-33 (NAD 27)
<b>Station Channel:</b> 33	<b>Station Zone:</b> II <b>Equivalent Canadian Class:</b> B
<b>Buffer Distance:</b> 32 km	<b>Comment:</b>

Callsign	Status	Channel	Service	Zone	City	State	Latitude	Dist. (km)	Min. (km)	Spacing (km)		
Facility ID	ARN	Class	DA	Ant ID	ERP (kW)	HAAT (m)	Rec Type	Longitude	Bear. (deg)	Max. (km)	Comment	
		18 +	TA	2	WENATCHEE	WA	047-25-22	100.05	119.9	-19.85		
97593					N	C	120-18-49	8.45	119.9	SHORT		
<b>KEPR-TV</b>	LIC	19 -	TV	2	PASCO	WA	046-05-51	112.44	95.7	16.74		
56029	BLCT	2582			N 78688	490	366	C	119-11-29	115.08	95.7	CLEAR
<b>KNDU</b>	CP	26	DT	2	RICHLAND	WA	046-06-12	116.44	24.1	19.84		
12427	BPCDT	19991027ACK			N 36716	200	411	C	119-07-49	113.77	96.6	CLEAR
<b>KNDU</b>	STA	26	DS		RICHLAND	WA	046-06-12	116.46	24.1	19.86		
12427	BDSTA	20021107ABM			D 45034	33	376.3	C	119-07-48	113.77	96.6	CLEAR
<b>DKNDU</b>	DTVALT	26	DT	2	RICHLAND	WA	46-06-11	116.49	24.1	19.89		
0						50	411	C	119-07-47	113.78	96.6	CLEAR
<b>KIMA-TV</b>	LIC	29 +	TV	2	YAKIMA	WA	046-31-58	0	31.4	-31.4		
56033	BLCT	2586				490	296	C	120-30-33	180	31.4	SHORT
<b>DKIMATV</b>	DTVALT	33	DT	2	YAKIMA	WA	46-31-58	0	244.6	-244.6		
0						50	296	C	120-30-33	275.54	244.6	
<b>KIMA-TV</b>	STA	33	DS		YAKIMA	WA	046-31-58	0	244.6	-244.6		
56033	BDSTA	20020208ABP			D 42533	12.5	278	C	120-30-33	180	244.6	
<b>KIMA-TV</b>	CP MOD	33	DT	2	YAKIMA	WA	046-31-58	0	244.6	-244.6		
56033	BMPCDT	20060706AFQ			D 74279	20	278	C	120-30-33	180	244.6	
<b>KWPX</b>	CP	33 +	TV	2	BELLEVUE	WA	047-30-17	154.82	280.8	-125.98		
56852	BPCT	20050428AAJ			D 69487	3720	716	C	121-58-03	314.88	280.8	SHORT
<b>KWPX</b>	LIC	33 +	TV	2	BELLEVUE	WA	047-30-17	154.87	280.8	-125.93		
56852	BLCT	19990312KE			D 18705	3720	717	C	121-58-06	314.87	280.8	SHORT
<b>K33EJ</b>	LIC	33 N	CA		WALLA WALLA	WA	045-59-04	190.46	280.8	-90.34		
17399	BLTTL	19980428JG			D 19681	1.7		C	118-10-08	107.87	280.8	SHORT
<b>KRCW-TV</b>	APP	33	DS	2	SALEM	OR	045-30-58	205.95	244.6	-38.65		
10192	BDSTA	20060929AKD			N 75755	750	523.3	C	122-43-58	237.44	244.6	SHORT

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<b>Station Channel:</b> 33	<b>Station Zone:</b> II <b>Equivalent Canadian Class:</b> B
<b>Buffer Distance:</b> 32 km	<b>Comment:</b>

Callsign	Status	Channel	Service	Zone	City			State	Latitude	Dist. (km)	Min. (km)	Spacing (km)	
Facility ID	ARN			Class	DA	Ant ID	ERP (kW)	HAAT (m)	Rec Type	Longitude	Bear. (deg)	Max. (km)	Comment
<b>KRCW-TV</b>	LIC	33	DT	2	SALEM			OR	045-30-58	205.95	244.6	-38.65	
10192	BLCDT	20030902ABR			N	43324	750	523.3	C	122-43-58	237.44	244.6	<b>SHORT</b>
<b>DKWBP</b>	DTVALT	33	DT	2	SALEM			OR	45-00-28	221.12	244.6	-23.48	
0						18329	256.8	544	C	122-20-05	220.52	244.6	<b>SHORT</b>
<b>KAPP</b>	LIC	35 Z	TV	2	YAKIMA			WA	046-31-57	0.09	31.4	-31.31	
2506	BLCT	2022			N		646	293	C	120-30-37	249.98	31.4	<b>SHORT</b>
<b>KYVE</b>	LIC	47 Z	TV	2	YAKIMA			WA	046-31-58	0	95.7	-95.7	
33752	BLET	20061213AHK			N	69733	110	280	C	120-30-33	180	95.7	<b>SHORT</b>

# FM Inquiry

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Listed stations are within 16 km of the point at 046-31-58 120-30-33.

Call sign	Status	Channel	Freq.	Service	City	State	Latitude	Longitude	Application ID	Distance (km)	
ARN	DA	Antenna ID	Rotation	ERP (kW)	HAAT (m)	RCAMSL (m)	Class	Record Type	Facility ID	Bearing (deg)	
<b>KNWY</b>	LIC	212	90.3	FM	YAKIMA	WA	046-31-57	120-30-37	682643	0.09	
BLED	20030909ACG	N			1.9	257	617.1	C3	C	71031	249.98
<b>KATS</b>	LIC	233	94.5	FM	YAKIMA	WA	046-31-59	120-30-14	70523	0.41	
BLH	19840625CS				100	277	631	C1	C	64397	85.63
<b>KDNA</b>	LIC	220	91.9	FM	YAKIMA	WA	046-31-42	120-31-03	1147415	0.81	
BMLD	20060906ABQ	N			18.5	280	641	C1	C	49729	232.21
<b>KSOH</b>	LIC	208	89.5	FM	WAPATO	WA	046-31-42	120-31-16	171700	1.04	
BLED	19920318KA	N			9.5	297	655	C2	C	10023	241.59
<b>KYVT</b>	LIC	203	88.5	FM	YAKIMA	WA	046-35-06	120-31-41	23262	5.98	
BLED	19800908AE				3	-78	341	A	C	74320	346.04
<b>KYPL</b>	LIC	216	91.1	FM	YAKIMA	WA	046-30-48	120-24-05	620990	8.55	
BLED	20021217ABO	N			26	243	627	C1	C	25466	104.65
<b>KXDD</b>	LIC	281	104.1	FM	YAKIMA	WA	046-30-48	120-24-05	594588	8.55	
BLH	20020305AAX	D	39691		100	245	629	C1	C	7919	104.65
<b>KDBL</b>	LIC	225	92.9	FM	TOPPENISH	WA	046-30-15	120-23-33	150072	9.5	
BLH	19900706KF				17	257	629	C2	C	64507	109.57
<b>KHHK</b>	LIC	259	99.7	FM	YAKIMA	WA	046-31-20	120-20-08	285320	13.37	
BLH	19990520KA	N			4.1	245	684	C3	C	36031	94.99
<b>KFFM</b>	LIC	297	107.3	FM	YAKIMA	WA	046-38-26	120-23-45	422011	14.8	
BLH	19990915AVQ	N	28358		100	461	994	C	C	49723	35.81

# TV Inquiry

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Listed stations are within 16 km of the point at 046-31-58 120-30-33.

<i>Callsign</i>	<i>Status</i>	<i>Channel</i>	<i>Offset</i>	<i>Service</i>	<i>City</i>	<i>State</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Application ID</i>	<i>Distance (km)</i>	
<i>ARN</i>	<i>DA</i>	<i>Antenna ID</i>	<i>Rotation</i>	<i>ERP (kW)</i>	<i>HAAT (m)</i>	<i>RCAMSL (m)</i>	<i>Zone</i>	<i>Record Type</i>	<i>Facility ID</i>	<i>Bearing (deg)</i>	
<b>KIMA-TV</b>	CP MOD	33		DT	YAKIMA	WA	046-31-58	120-30-33	1136376	0	
BMPCDT	20060706AFQ	D	74279	0	20	278	638.6	2	C	56033	180
<b>KYVE</b>	LIC	21		DT	YAKIMA	WA	046-31-58	120-30-33	685500	0	
BLEDT	20030910ACL	N	31356		50	280	637.8	1	C	33752	180
<b>KIMA-TV</b>	LIC	29	+	TV	YAKIMA	WA	046-31-58	120-30-33	303570	0	
BLCT	2586				490	296	654	2	C	56033	180
<b>KYVE</b>	LIC	47	Z	TV	YAKIMA	WA	046-31-58	120-30-33	1163188	0	
BLET	20061213AHK	N	69733		110	280	637.8	2	C	33752	180
<b>KAPP</b>	LIC	14		DT	YAKIMA	WA	046-31-57	120-30-37	1148728	0.09	
BLCDT	20061101ADI	N	68023		160	293	647	2	C	2506	249.98
<b>KAPP</b>	LIC	35	Z	TV	YAKIMA	WA	046-31-57	120-30-37	304041	0.09	
BLCT	2022	N			646	293	647	2	C	2506	249.98
<b>KNDO</b>	CP	16		DT	YAKIMA	WA	046-31-59	120-30-26	530756	0.15	
BPCDT	19991027ACH	N	36717		200	266	619.31	2	C	12395	78.3
<b>KNDO</b>	LIC	23	+	TV	YAKIMA	WA	046-31-59	120-30-26	303122	0.15	
BLCT	1836	D	19685	0	501	293	646	2	C	12395	78.3