

ENGINEERING STATEMENT
IN SUPPORT OF A
PETITION FOR RULE MAKING
CHANGE IN ALLOTTED CHANNEL
DTV TABLE OF ALLOTMENTS
KTVH-DT
HELENA, MT

Background

Scripps Broadcasting Holdings LLC (Scripps), licensee of KTVH-DT, is petitioning for a Rule Making proceeding to amend the DTV Table of Allotments and change its presently allotted DTV Channel 12 at Helena, MT to Channel 31. Scripps is proposing to operate KTVH-DT on Channel 31 at the same location as its licensed VHF facility (LMS File No. 0000001181) with a HAAT of 671.2m and an ERP of 530 kW. The coordinates of the authorized Channel 12 and proposed Channel 31 facilities are as follows:

(NAD83)
46° 49' 29.4" N
111° 42' 15.6" W

Since the transition to digital, KTVH-DT has received numerous calls from viewers living in the Helena, MT DMA area complaining that they are unable to receive the KTVH-DT signal on Channel 12 (including viewers using indoor receiving equipment). The KTVH-DT technical staff has worked with many of these callers to resolve the problems but it has become apparent that the digital Channel 12 signal is not providing these viewers with the same quality service that other UHF stations in the market are able to provide. KTVH-DT wishes to change its allotted Channel 12 facility to a higher power UHF facility in order to provide better service (particularly indoor service) to its viewers. Reception issues for television stations operating on high-band

VHF channels are well documented, both before and after the transition to digital-only service on June 12, 2009^{1/}. Reception on high-band VHF channels is hindered by environmental noise, lower overall power levels compared to similar UHF facilities, and the inefficiencies of typical consumer receive antennas for reception at VHF frequencies (the antennas often have negative gains at VHF frequencies).

Channel Search

After a search of all “in-core” channels (from the reference coordinates listed above), Channel 31 appears to be the best available channel for KTVH-DT in the Helena area. As KTVH-DT is requesting a change in its allotted channel rather than a new allotment, it is not required to meet the Zone II minimum geographic spacing requirements specified in Section 73.623 of the FCC Rules.

Coverage of Proposed Channel 31 Facility

KTVH-DT is proposing the following parameters for its operation on Channel 31:

Coordinates:	46° 49' 29.4" N
	111° 42' 15.6" W
ERP:	530 kW
HAAT:	671.2m
RCAMSL:	2394.3m
Pattern:	Omni

Operation with these parameters will provide the required 48 dBu F(50,90) signal over the entire city of Helena, MT.

^{1/} MB Docket No. 09-146 (granting request by WLS-TV to substitute Channel 7 for Channel 44 in order to address VHF digital reception issues after DTV transition), CDBS File No. BPCDT-20120216ADO (requesting power increase pursuant to waiver of FCC's rules and a multi-party interference agreement in order for WABC-TV to resolve VHF digital coverage problems after DTV transition), along with many other Rule Makings to amend the DTV Table of Allotments to change from VHF to UHF channels after the completion of the DTV transition on June 12, 2009.

The proposed ERP and HAAT for KTVH-DT (530 kW at a HAAT of 671.2m) exceeds the maximum allowed under Part 73.622(f)(7) of the FCC Rules (282 kW); however, Part 73.622(f)(5) specifies that "Licensees and permittees...may request an increase in ERP in some azimuthal direction or antenna HAAT, or both, that exceed the initial technical facilities specified..., up to the maximum permissible limits on DTV power and antenna height set forth in paragraph (f)(6), (f)(7), or (f)(8) of this section, as appropriate, or up to that needed to provide the same geographic coverage area as the largest station within their market, whichever would allow the largest service area."

In this case, KTVH-DT is seeking to match the coverage area of its current VHF Ch. 12 facility, and the requested 530 kW ERP will allow for a close match. The coverage areas of the licensed Ch. 12 facility and the proposed Ch. 31 facility were calculated using the FCC TVStudy software (Version 2.2.5). A selected portion of the output of the tvstudy.txt file generated by TVStudy for each station is included below:

tvstudy v2.2.5 (4uoc83)
Database: localhost, Station Data: LMS TV 2021-09-13, Study: KTVH-0000001181-092221, Model: Longley-Rice
Start: 2021.09.22 10:26:06

Scenario						
Desired station		Service area		Terrain-limited		Interference-free
Coverage						
KTVH-DT D12 DT LIC HELENA, MT		43631.9	228,832	35749.9	184,264	35749.9 184,264

tvstudy v2.2.5 (4uoc83)
Database: localhost, Station Data: LMS TV 2021-09-29, Study: KTVH-C31-530kW, Model: Longley-Rice
Start: 2021.10.18 21:48:50

Scenario						
Desired station		Service area		Terrain-limited		Interference-free
Coverage						
KTVH-DT D31 DT LIC HELENA, MT		43511.1	226,826	33379.4	169,302	33379.4 169,302

As can be seen from the TVStudy data, the coverage area of the proposed Ch. 31 facility (43,511.1 km²) will not exceed the coverage area of the licensed Ch. 12 facility (43,631.9 km²).

Loss Areas

The proposed change for KTVH-DT, from a VHF channel to a UHF channel, is predicted to create areas where service from KTVH-DT is lost and gained. Figure 1, attached hereto, is a map of the noise-limited contour of the licensed KTVH-DT Ch. 12 facility (black), the noise-limited contour of the proposed Ch. 31 facility (red), and the predicted loss area (in green). The population contained within the loss area is predicted to be 2,168 persons (based on the 2010 census); however, as shown in Figure 2, attached hereto, the loss area is partially overlapped by the protected service contours of KTGF-LD and KDBZ-CD, both of which broadcast NBC programming like KTVH-DT.

Other Stations Broadcasting NBC Programming That Overlap Loss Area			
Call	Channel	Community of License	Licensee
KTGF-LD	19	Great Falls, MT	Scripps Broadcasting Holdings LLC
KDBZ-CD	13	Bozeman, MT	Sinclair Media Licensee, LLC

After accounting for the contour overlap from these stations, the population contained within the loss area is reduced from 2,168 persons to 226 persons which is *de minimis* (less than 500 persons).

Furthermore, as shown in Figure 3, attached hereto, the loss area is also partially overlapped by the noise-limited contours of KRTV, KFBB-TV, KUGF-TV, KJJC-TV, KUFM-TV, KECI-TV and KCFW-TV.

International Coordination

The proposed facility is located within the Canadian border zone and coordination with the Canadian government is requested to the extent necessary in light of the FCC's Memorandum of Understanding with the Canadian administration.

Interference Study Results

An interference check study was run using the FCC TVStudy software (Version 2.2.5) for the proposed KTVH-DT Channel 31 facility parameters. The summary results of the study show that the proposed facility is not predicted to cause more than 0.5% new interference to any other surrounding co-channel or adjacent channel facilities (see attached study results).

Environmental/RFR

This report addresses only the conditions specified in 47CFR1.1307 that deal with Radio Frequency Radiation. Any other non-RFR conditions that might require the preparation of an EA are beyond the scope of this report.

The location of the proposed facility is assumed to currently be “in compliance” with FCC guidelines for human exposure to RFR (as defined in OET-65). The worst-case ground level RFR contributed to the site by this proposal in public areas is calculated to be 0.142102 mW/cm², which is significantly less than the MPE limit for public exposure (0.383333 mW/cm²) at Channel 31 (572-578 MHz).

Scripps agrees to comply with the Commission’s requirements regarding power adjustments or cessation of operation as may be necessary to ensure a compliant environment for worker access. Workers will be trained on RFR issues and encouraged to wear personal RFR monitors when on the structure.

Conclusion

In conclusion, it is requested that Section 73.622 be amended as follows:

:		
:		
Montana	<u>Present</u>	<u>Proposed</u>
:		
:		
Helena	12, 29	29, 31

The proposed change can be made with the following specified parameters:

Channel 31 – Helena, MT

Max ERP:	530 kW, ND
HAAT:	671.2 m
Site:	46° 49' 29.4" N
	111° 42' 15.6" W

Certification

I hereby certify that the foregoing report or statement was prepared by me but may include work performed by others under my supervision or direction. The statements of fact contained therein are believed to be true and correct based on personal knowledge, information and belief unless otherwise stated; with respect to facts not known of my own personal knowledge, I believe them to be true and correct based on their origin from sources known to me to be generally reliable and accurate. I have prepared this document with due care and in accordance with applicable standards of professional practice.



Benjamin Pidek, P.E.
January 21, 2022

Attached:

KTVH-DT Proposed Channel 31 TVStudy Interference Results

Figure 1 – Map of Areas Predicted to Lose KTVH Service with Proposed Channel Change

Figure 2 – Map of Noise-Limited Contour of KTGF-LD and KDBZ-CD that Overlap Area Predicted to Lose KTVH Service

Figure 3 – Map of Noise-Limited Contours From Other Stations that Overlap Area Predicted to Lose KTVH-DT Service

Proposed KTVH-DT Channel 31 TVStudy Summary Results

Study created: 2021.10.18 22:22:23

Study build station data: LMS TV 2021-10-18

Proposal: KTVH-DT D31 DT LIC HELENA, MT
File number: KTVH-Ch31-530kW
Facility ID: 5290
Station data: User record
Record ID: 1917
Country: U.S.
Zone: II

Search options:
Non-U.S. records included

Stations potentially affected by proposal:					File Number	Distance
IX	Call	Chan	Svc	Status City, State		
No	KVUI	D31	DT	LIC POCATELLO, ID	BLANK0000068416	444.9 km

No non-directional AM stations found within 0.8 km
No directional AM stations found within 3.2 km

Record parameters as studied:
Channel: D31
Latitude: 46 49 29.40 N (NAD83)
Longitude: 111 42 15.60 W
Height AMSL: 2394.3 m
HAAT: 671.2 m
Peak ERP: 530 kW
Antenna: Omnidirectional
Elev Pattn: Generic
Elec Tilt: 1.00

40.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	530 kW	575.7 m	114.6 km
45.0	530	447.2	105.3
90.0	530	418.0	102.8
135.0	530	550.9	113.2
180.0	530	739.8	122.5
225.0	530	972.3	130.9
270.0	530	965.1	130.6
315.0	530	626.0	117.1

Database HAAT does not agree with computed HAAT
Database HAAT: 671 m Computed HAAT: 662 m

ERP exceeds maximum
ERP: 530 kW ERP maximum: 275 kW

**Proposal is within coordination distance of Canadian border
Distance to Canadian border: 241.5 km

Distance to Mexican border: 1588.6 km

Conditions at FCC monitoring station: Ferndale WA
Bearing: 290.3 degrees Distance: 841.8 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 142.7 degrees Distance: 905.2 km

Study cell size: 2.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

No IX check failures found.

Ben Pidek Consulting, LLC

Noise-Limited Contour of Licensed KTVH-DT Ch. 12 Facility (Black) vs.
Noise-Limited Contour of Proposed KTVH-DT Ch. 31 Facility (Red)

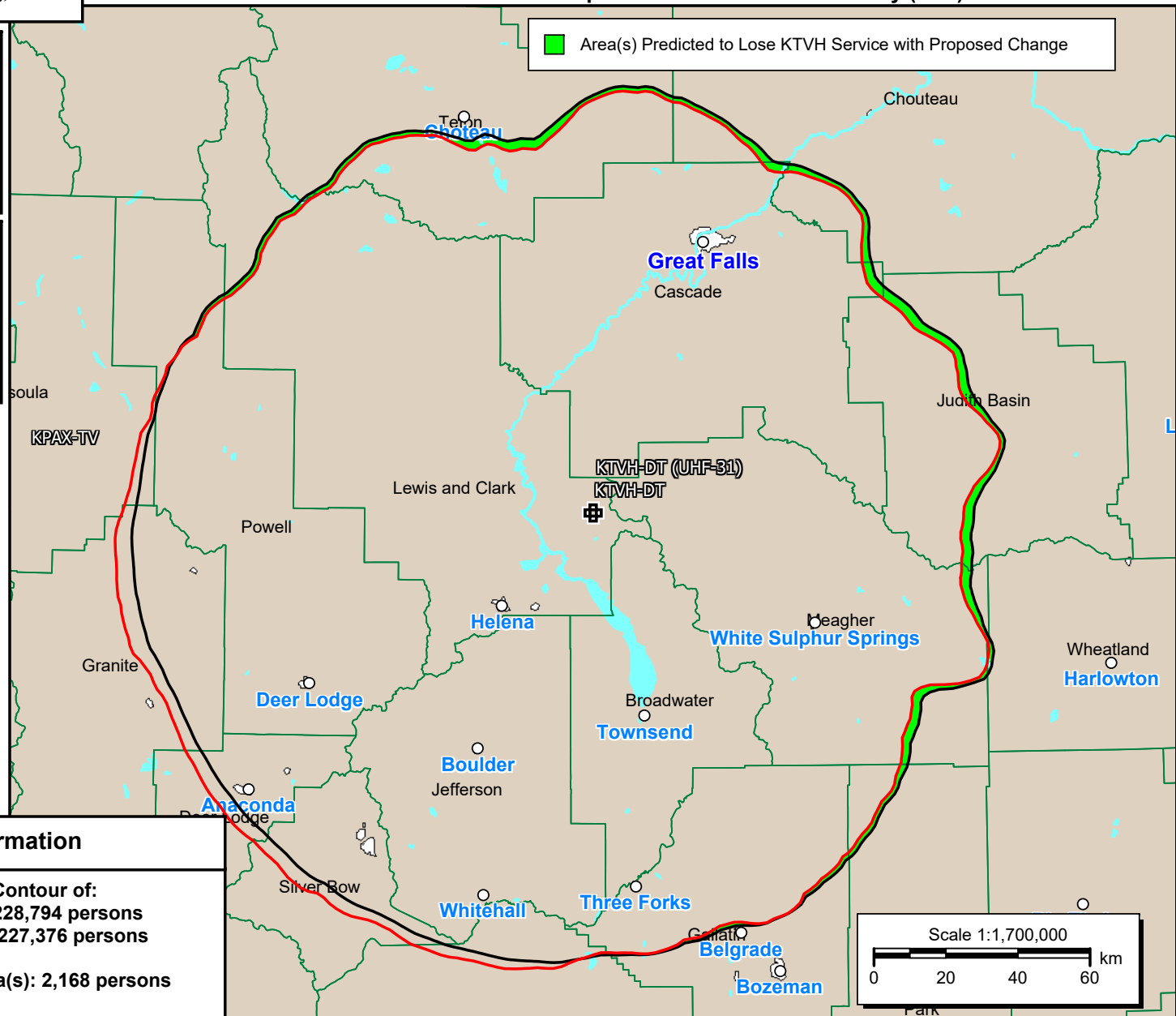
KTVH-DT

Latitude: 46-49-29.40 N
Longitude: 111-42-15.60 W
ERP: 17.50 kW
Channel: 12
Frequency: 207.0 MHz
AMSL Height: 2394.3 m

KTVH-DT (UHF-31)

Latitude: 46-49-29.40 N
Longitude: 111-42-15.60 W
ERP: 530.00 kW
Channel: 31
Frequency: 575.0 MHz
AMSL Height: 2394.3 m

Area(s) Predicted to Lose KTVH Service with Proposed Change



Population Information

Population Inside Noise-Limited Contour of:

- Licensed KTVH Ch. 12 Facility - 228,794 persons
- Proposed KTVH Ch. 31 Facility - 227,376 persons

Predicted Population in Loss Area(s): 2,168 persons

Figure 1

Ben Pidek Consulting, LLC

Noise-Limited Contours of Licensed KTVH-DT Ch. 12 Facility (Black), Proposed KTVH-DT Ch. 31 Facility (Red) and Surrounding Stations with NBC Programming, KTGF-KD and KDBZ-CD (Blue Dash)

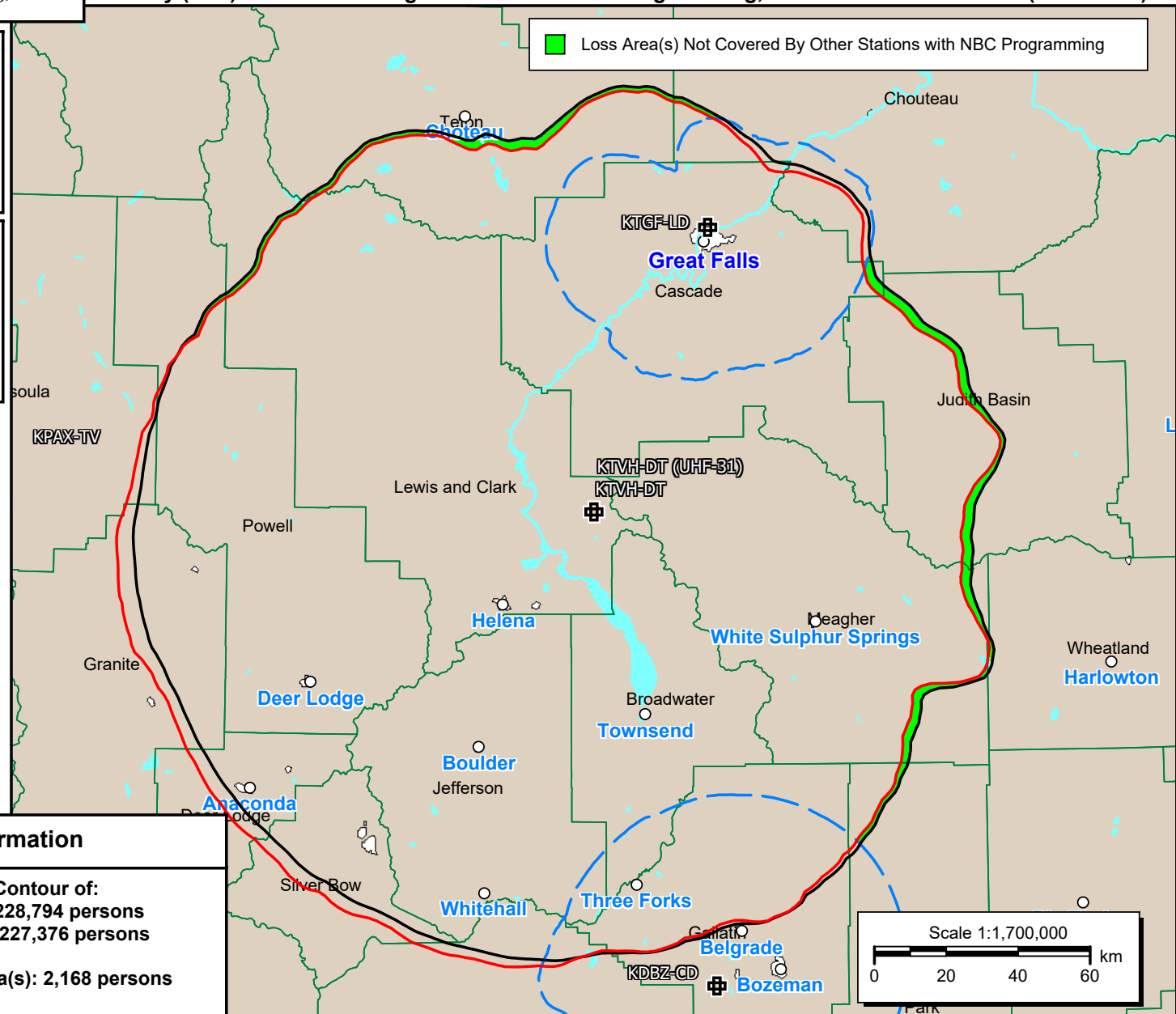
KTVH-DT

Latitude: 46-49-29.40 N
Longitude: 111-42-15.60 W
ERP: 17.50 kW
Channel: 12
Frequency: 207.0 MHz
AMSL Height: 2394.3 m

KTVH-DT (UHF-31)

Latitude: 46-49-29.40 N
Longitude: 111-42-15.60 W
ERP: 530.00 kW
Channel: 31
Frequency: 575.0 MHz
AMSL Height: 2394.3 m

Loss Area(s) Not Covered By Other Stations with NBC Programming



Population Information

Population Inside Noise-Limited Contour of:

- Licensed KTVH Ch. 12 Facility - 228,794 persons
- Proposed KTVH Ch. 31 Facility - 227,376 persons

Predicted Population in Loss Area(s): 2,168 persons

Population in Loss Area(s) Outside of KTGF-LD and KDBZ-CD : 226 persons

Figure 2

Ben Pidek Consulting, LLC

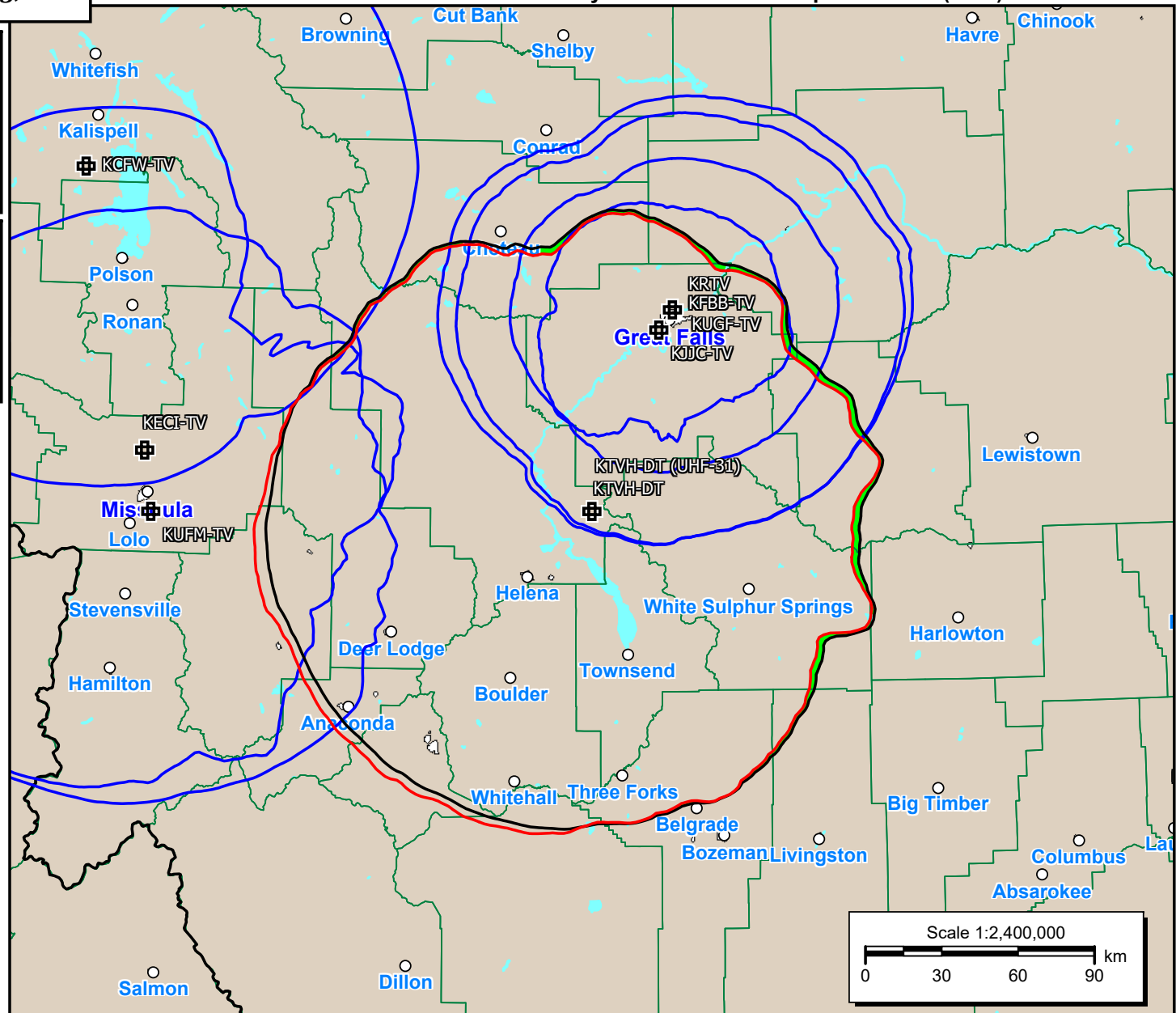
**Noise-Limited Contour of Licensed KTVH-DT Ch. 12 Facility (Black) vs.
Noise-Limited Contour of Proposed KTVH-DT Ch. 31 Facility (Red) and
Noise-Limited Contours of Nearby Stations that Overlap Loss Area (Blue)**

KTVH-DT

Latitude: 46-49-29.40 N
Longitude: 111-42-15.60 W
ERP: 17.50 kW
Channel: 12
Frequency: 207.0 MHz
AMSL Height: 2394.3 m

KTVH-DT (UHF-31)

Latitude: 46-49-29.40 N
Longitude: 111-42-15.60 W
ERP: 530.00 kW
Channel: 31
Frequency: 575.0 MHz
AMSL Height: 2394.3 m



Loss Area(s) Not Covered By Other Stations with NBC Programming

Figure 3