

Comprehensive Technical Exhibit
Application for Modification of Construction Permit
KJWY-DT – Jackson, Wyoming
BPCDT-19991029AED
Two Ocean Broadcasting Company
June, 2008

General

The following engineering statement and attached exhibits have been prepared for **Two Ocean Broadcasting Company**, permittee of digital television station KJWY-DT at Jackson, Wyoming, and are in support of their application for modification of construction permit for post-transition KJWY-DT facilities.¹

KJWY(TV) currently operates as an analog facility on channel 2. In the post-transition environment, KJWY-DT will flash-cut to channel 2 for DTV operations. This application is to modify the existing construction permit for KJWY-DT by changing the channel of operation and other relevant parameters pursuant to the Appendix B table of allotments and relocating the transmitter site to a different location.²

Discussion of KJWY-DT Allotment and Proposed Facilities

The Appendix B table of allotments specifies that KJWY-DT would operate on channel 2 with a maximum effective radiated power of 1.0 kW at a center of radiation of 293 meters above average terrain using antenna ID 74378. The site specified in the table of allotments is the current KJWY(TV) site at the Snow King transmitter site with geographic coordinates of 43-27-42 North Latitude and 110-45-10 West Longitude. This application proposes that KJWY-DT operate on DT channel 2 pursuant to the Appendix B table of allotments, but with a change in location and other associated parameters.

It is proposed that KJWY-DT operate from the Teton Pass transmitter site on the opposite side of Jackson in the post-transition environment. This location has geographic coordinates of

¹ The Facility ID for KJWY(TV)/KJWY-DT is 1283.

² The existing construction permit for KJWY-DT is BPCDT-1991029AED, which specifies operation on DT channel 14.

43-29-25 North Latitude and 110-57-20 West Longitude. The center of radiation would be increased to 334.4 meters above average terrain, while the maximum effective radiated power would be reduced to 0.27 kW.³ Although a directional pattern is associated with the KJWY-DT allocation, the proposed facility would operate with an antenna that is considered non-directional.

The map in Exhibit E-1 depicts the proposed noise limited service contour and the allocated noise limited service contour. As this map illustrates, the noise limited contour for the proposed facility would extend more than five miles beyond the allocation noise limited contour along certain azimuths. The increase in the noise limited contour at certain azimuths would, however, be compliant with Commission Rules and policies currently in force.

Exhibits E-2 and E-3 provide the outgoing interference study for the proposed facility. As these two exhibits demonstrate, the proposed facility is not predicted to cause interference to any other proposed, existing, or authorized facility in the region. In the creation of this study, full-power NTSC facilities were included as the applicant may request from the Commission authority to flash-cut to channel 2 earlier than the sunset of NTSC operations in order to address winter weather related construction concerns at the proposed site.

Exhibit E-4 and E-5 depict and tabulate the DTV service area for the proposed facility. In the creation of this study, all NTSC full-power facilities in the region were included to accommodate for the potential of early flash-cut by KJWY-DT. As this study demonstrates, however, no population is predicted to receive interference from other facilities even though small areas would

³ Average terrain based on 360 radial sample of 3-second linearly interpolated database. A sample of 360 radials was utilized due to mountainous terrain in the vicinity of the proposed site.

be affected. The calculated DTV service area population is 43,743 persons which is an increase from the 31 thousand listed in Appendix B as residing within the KJWY-DT service area.

The proposed facility will comply with the principal community coverage requirements of Section 73.625 of the Commission's Rules. Exhibit E-6 illustrates the predicted 35 and 28 dBu F(50,90) service contours overlaid on the predicted Longley-Rice coverage. As this map demonstrates, the entire community of license, the boundaries of which are indicated in orange, would receive a signal level in excess of 35 dBu.

The antenna that would be utilized by the proposed facility is a Scala TVO-2. This antenna is considered a non-directional antenna, and employs 0.0 degrees of electrical beamtilt. No mechanical beamtilt is proposed. The proposed antenna would not be part of an AM radiation system and is not located in proximity to an AM radiator.

The proposed KJWY-DT facility would not constitute a substantial environmental impact. The absence of a significant environmental impact by the proposed facility is based on two considerations. The first of these considerations is the fact that the proposed facility would utilize an existing structure. Since an existing structure would be utilized, the addition of the proposed facility would not increase the existing environmental impact already present from the facility.

Secondly, the proposed facility would not constitute an RF exposure hazard to persons at the site. For the proposed KJWY-DT operation, a worst case scenario was assumed utilizing the equations contained in OET Bulletin 65. This worst case scenario assumes that all energy radiating from the KJWY-DT antenna would be directed at the ground. The predicted power density from the antenna is therefore given by the equation at the top of the next page.

:

$$S = \frac{33.4(E_{\text{rel}})^2(ERP)}{h^2}$$

Since all radiation is assumed to be directed at the ground, the relative field component is assumed to have 1.0 as a value. The effective radiated power is simply the maximum effective radiated power of the proposed facility, which is 0.27 kW or 270 Watts. The denominator term is the height of the center of radiation minus 2 meters to accommodate the average human height. This term therefore has 6.3 meters as a value since the center of radiation is 8.3 meters above ground level. The resulting worst case power density for KJWY-DT is 130.9 $\mu\text{W}/\text{cm}^2$. It is further assumed that this power density occurs at all points in the vicinity of the tower.

The uncontrolled environment condition of the applicable safety standard imposes an upper limit of 200 $\mu\text{W}/\text{cm}^2$ for frequencies between 100 and 300 MHz. The channel of operation for KJWY-DT, channel 2, falls within this range. Since the predicted worst case power density is less than the upper limit imposed by the uncontrolled environment condition, it is apparent that the proposed facility will not constitute an RF exposure hazard to persons in the vicinity of the site.

In order to protect workers having access to the site from being exposed to levels of non-ionizing radiation which may exceed the applicable safety standards, the applicant certifies that it will coordinate with other present and future users of the site. Such coordination will include, but is not necessarily limited to, a reduction in transmitter power or cessation of operation.

The provisions of Section 73.1030 of the Commission's Rules are not applicable. This section of the rules is not applicable due to the geographic location of the proposed facility relative

to radio astronomy installations, radio receiving installations, and FCC monitoring stations as well as the channel of operation.

Affidavit

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2009

Jeremy D. Ruck, PE
June 16, 2008

KJWY-DT.ALL
ALLOCATION
 Latitude: 43-27-42 N
 Longitude: 110-45-10 W
 ERP: 1.00 kW
 Channel: 2
 Frequency: 57.0 MHz
 AMSL Height: 2443.0 m
 Horiz. Pattern: Directional
 Vert. Pattern: Yes
 Elec Tilt: 0.0
 Prop Model: FCC Method

KJWY-DT.PRO
PROPOSED
 Latitude: 43-29-25 N
 Longitude: 110-57-20 W
 ERP: 0.27 kW
 Channel: 2
 Frequency: 57.0 MHz
 AMSL Height: 2654.0 m
 Horiz. Pattern: Omni
 Vert. Pattern: Yes
 Elec Tilt: 0.0
 Prop Model: FCC Method

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 KJWY-DT Appendix B Noise Limited Contour
 KJWY-DT Proposed Noise Limited Contour

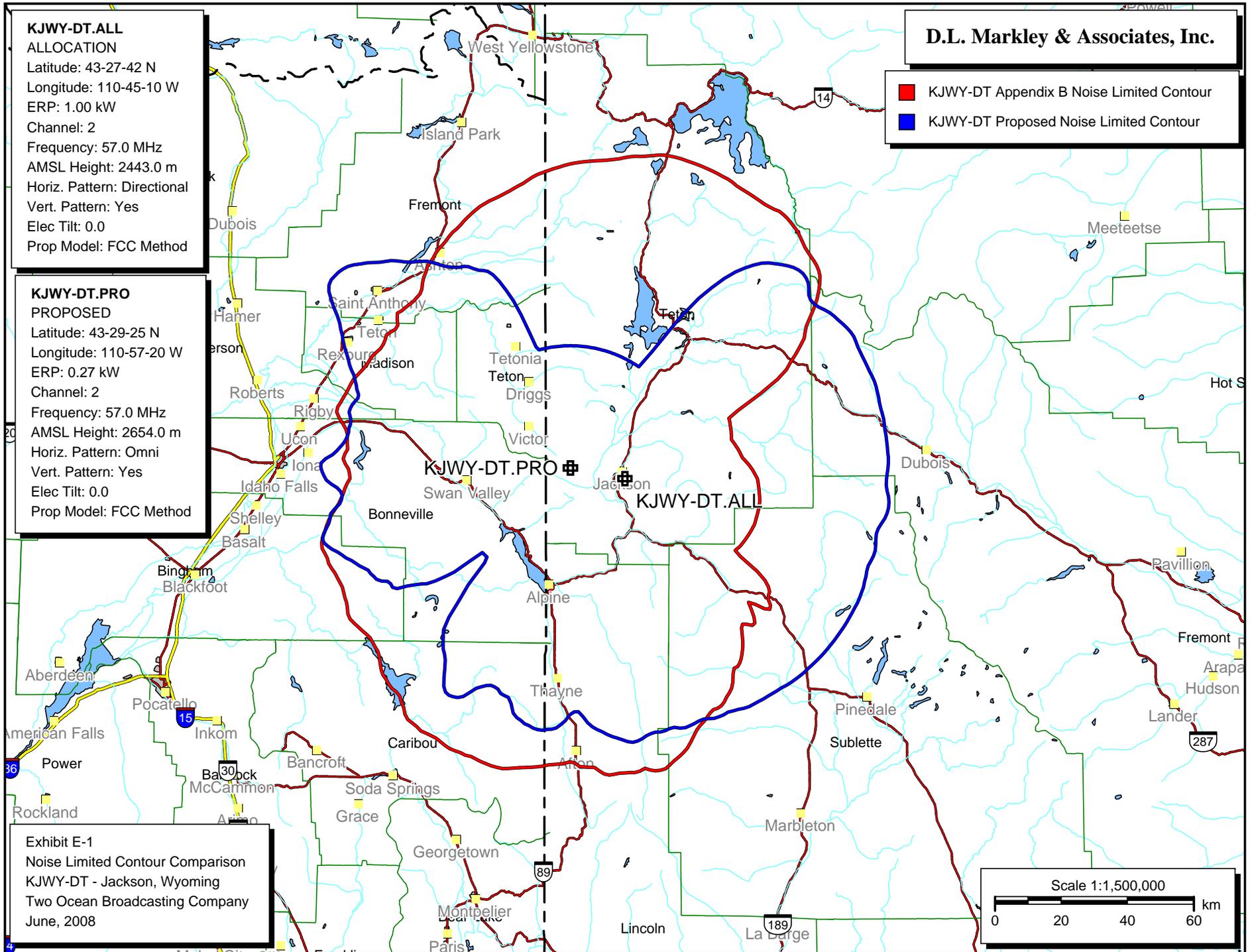
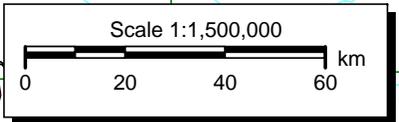


Exhibit E-1
 Noise Limited Contour Comparison
 KJWY-DT - Jackson, Wyoming
 Two Ocean Broadcasting Company
 June, 2008



KJWY-DT.PRO
 PROPOSED
 Latitude: 43-29-25 N
 Longitude: 110-57-20 W
 ERP: 0.27 kW
 Channel: 2
 Frequency: 57.0 MHz
 AMSL Height: 2654.0 m
 Horiz. Pattern: Omni
 Vert. Pattern: Yes
 Elec Tilt: 0.0
 Prop Model: Longley/Rice
 Climate: Cont temperate
 Conductivity: 0.0050
 Dielec Const: 15.0
 Refractivity: 301.0
 Receiver Ht AG: 10.0 m
 Receiver Gain: 0 dB
 Time Variability: 10.0%
 Sit. Variability: 50.0%
 ITM Mode: Broadcast

D.L. Markley & Associates, Inc.

- KJWY-DT.PRO
- NEW.A
- KUTV.C
- KUTV
- KTWOTV
- KTVQ
- KIDK
- KBCITV
- K02NO
- K02LH
- K02LG
- K02GE

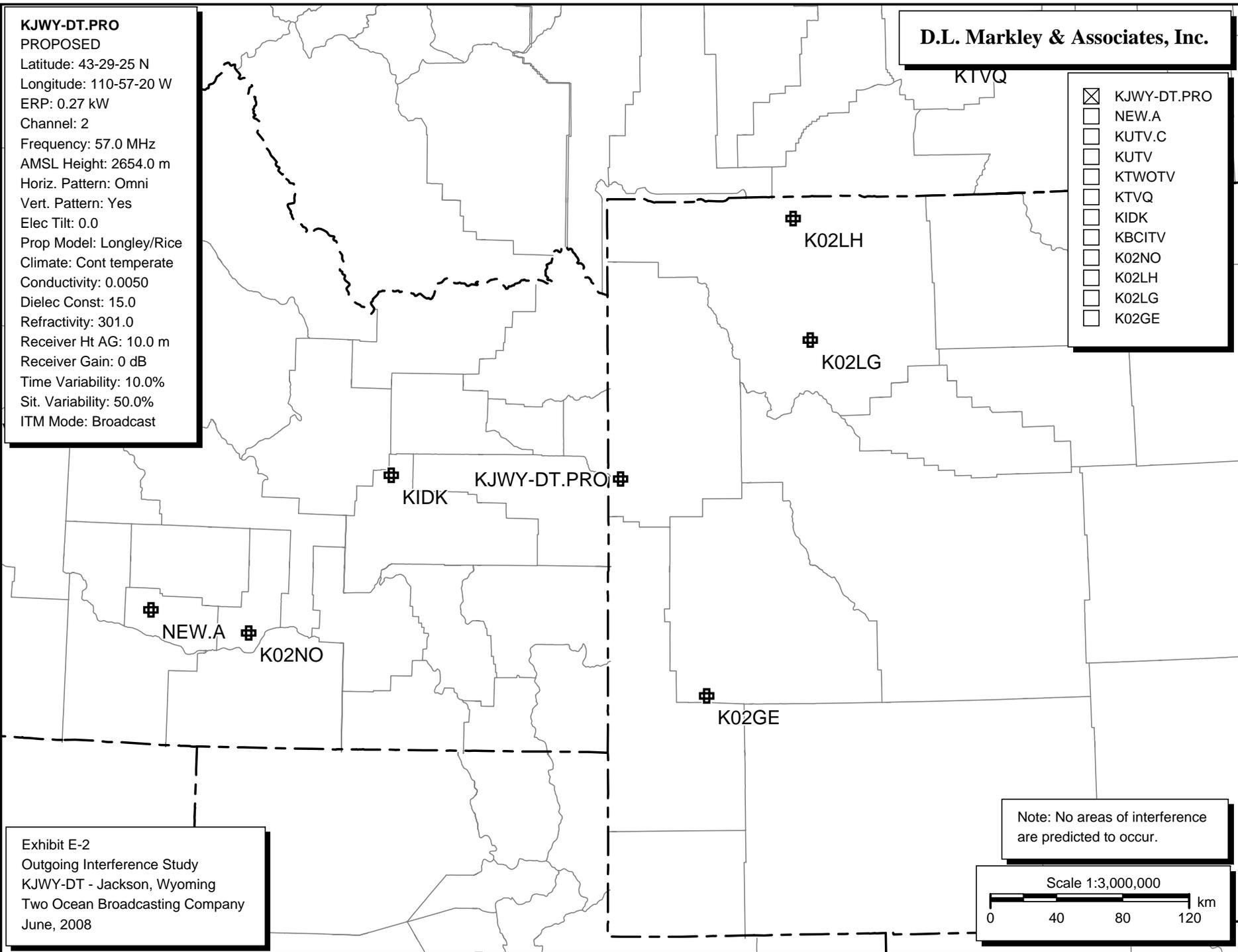


Exhibit E-2
 Outgoing Interference Study
 KJWY-DT - Jackson, Wyoming
 Two Ocean Broadcasting Company
 June, 2008

Note: No areas of interference are predicted to occur.

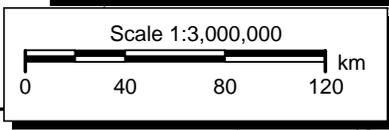


Exhibit E-3
 Outgoing Interference Population Report.
 Based on Proposed KJWY-DT Facilities.
 NTSC facilities included to accomodate potential early flash-cut.

KJWY-DT.PRO (2) Jackson, WY - PROPOSED
 Broadcast Type: Digital Service: V
 Lat: 43-29-25 N Lng: 110-57-20 W ERP: 0.27 kW AMSL: 2654.0 m
 TV Outgoing Interference Study
 Signal Resolution: 2.0 km
 Consider NTSC Taboo: Yes
 KWX error points are considered to
 be interference free coverage.
 Default # of radials computed for contours: 72
 Contours calculated using 8 radial HAAT.
 LR Profile Spacing Increment: 1.0 km
 Masked interference points are being
 counted as interference.
 Pop Centroid DB: 2000 US Census (SF1)

Study Date: 6/16/2008
 TV Database Date: 6/14/2008

Primary Terrain: V-Soft 3 Second US Terrain
 Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

 Stations Considered:

Call Letters	City	State	Dist	Bear
NEW.A (02-)	Twin Falls	ID	293.8	254.4
KUTV.C (02-)	Salt Lake City	UT	330.8	198.6
KUTV (02-)	Salt Lake City	UT	335.5	197.7
KTWOTV (02+)	Casper	WY	385.4	101.0
KTVQ (02-)	Billings	MT	321.3	37.2
KIDK (03Z)	Idaho Falls	ID	138.2	270.9
KBCITV (02Z)	Boise	ID	416.0	275.8
K02NO (02+)	Rupert	ID	242.5	247.5
K02LH (02N)	Clarks Fork, Etc.	WY	188.1	33.6
K02LG (02N)	South Fork, Etc.	WY	141.6	53.8
K02GE (02N)	La Barge	WY	140.6	158.3

Call	Area	HUnits	Contour	Masked Ix	Unmasked Ix	%
NEW.A (02-)	0.0	0	74,365	0	0	0.0
KUTV.C (02-)	0.0	0	1,935,494	0	0	0.0
KUTV (02-)	0.0	0	1,928,226	0	0	0.0
KTWOTV (02+)	0.0	0	93,018	0	0	0.0

KTVQ (02-)	0.0	0	159,281	0	0	0.0
KIDK (03Z)	0.0	0	271,397	0	0	0.0
KBCITV (02Z)	0.0	0	564,913	0	0	0.0
K02NO (02+)	0.0	0	6,387	0	0	0.0
K02LH (02N)	0.0	0	16	0	0	0.0
K02LG (02N)	0.0	0	17	0	0	0.0
K02GE (02N)	0.0	0	70	0	0	0.0

Housing Units Population

KJWY-DT.PRO
PROPOSED
 Latitude: 43-29-25 N
 Longitude: 110-57-20 W
 ERP: 0.27 kW
 Channel: 2
 Frequency: 57.0 MHz
 AMSL Height: 2654.0 m
 Horiz. Pattern: Omni
 Vert. Pattern: Yes
 Elec Tilt: 0.0
 Prop Model: Longley/Rice
 Climate: Cont temperate
 Conductivity: 0.0050
 Dielec Const: 15.0
 Refractivity: 301.0
 Receiver Ht AG: 10.0 m
 Receiver Gain: 0 dB
 Time Variability: 90.0%
 Sit. Variability: 50.0%
 ITM Mode: Broadcast

Service Area Population: 43,743

D.L. Markley & Associates, Inc.

- ☒ KJWY-DT.PRO
- K02GE
- K02LG
- K02LH
- K02NO
- KIDK
- KTVQ
- KTWOTV
- KUTV
- KUTV.C
- NEW.A
- NEW.A

■ > 28.0 dBu

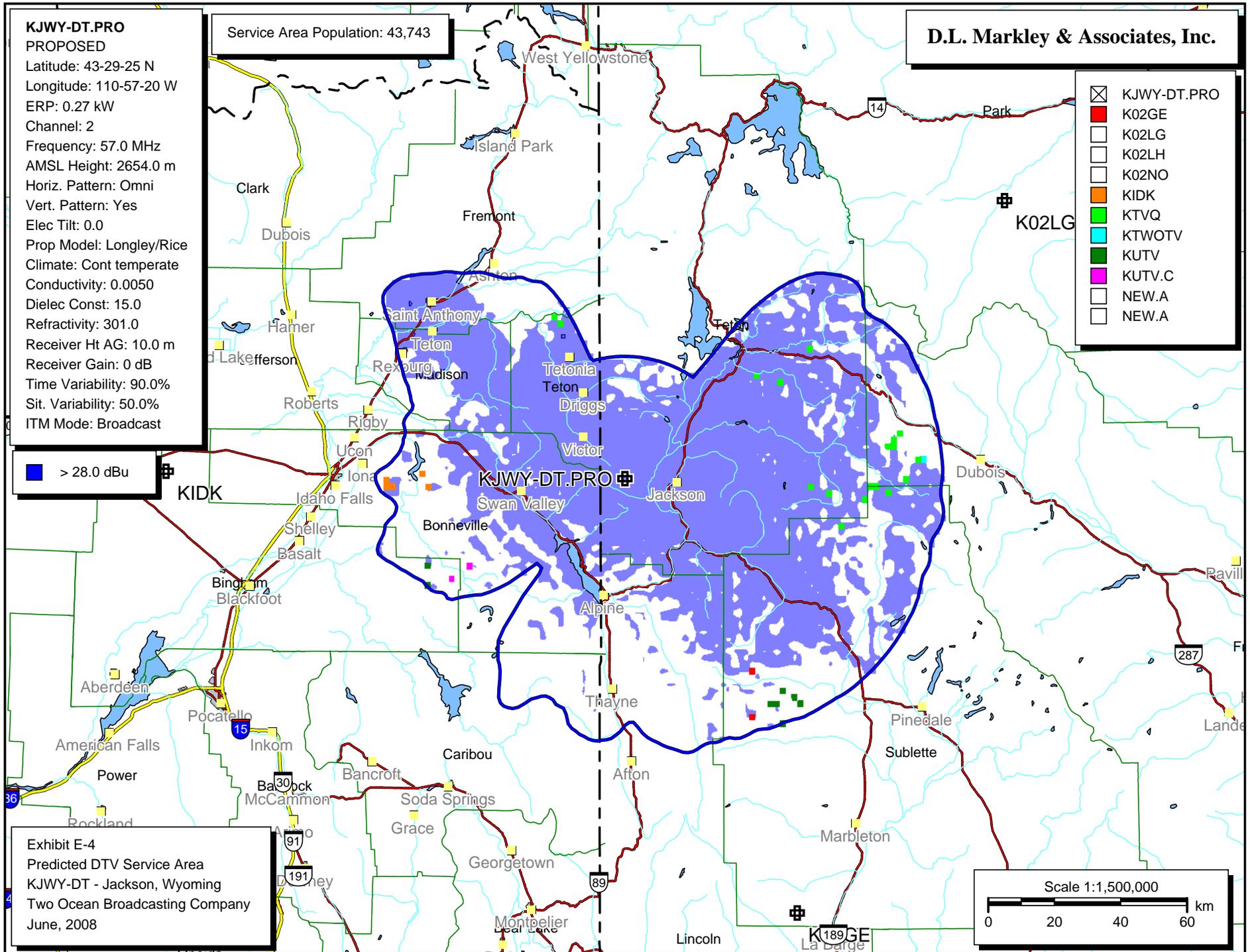


Exhibit E-4
 Predicted DTV Service Area
 KJWY-DT - Jackson, Wyoming
 Two Ocean Broadcasting Company
 June, 2008

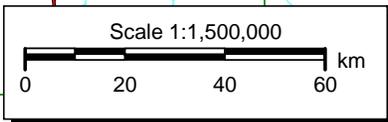


Exhibit E-5
 DTV Service Area Population Tabulation.
 Based on Proposed KJWY-DT Facilities.

KJWY-DT.PRO (2) Jackson, WY - PROPOSED
 Broadcast Type: Digital Service: V
 Lat: 43-29-25 N Lng: 110-57-20 W ERP: 0.27 kW AMSL: 2654.0 m
 TV Incoming Interference Study
 Interference Considered Within: FCC Contour: 28 dBu
 Signal Resolution: 2.0 km
 LR Profile Spacing Increment: 1.0 km
 Consider NTSC Taboo: Yes
 KWX error points are considered to
 be interference free coverage.
 # of radials computed for protected contour: 360
 Threshold for reception: 28.0
 Pop Centroid DB: 2000 US Census (SF1)

Study Date: 6/16/2008
 TV Database Date: 6/14/2008

Primary Terrain: V-Soft 3 Second US Terrain
 Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 43,743.

Stations which cause interference:

Call Letters	H Units	Population	%	Area (sq. km)
K02GE (02N)	0	0	0.000	7.17
KIDK (03Z)	0	0	0.000	17.76
KTVQ (02-)	0	0	0.000	67.35
KTWOTV (02+)	0	0	0.000	3.55
KUTV (02-)	0	0	0.000	35.78
KUTV.C (02-)	0	0	0.000	28.63

Masking Summary:

Call Letters	Total Interference		Unique Interference	
	Population	%	Population	%
K02GE (02N)	0	0.000	0	0.000
KIDK (03Z)	0	0.000	0	0.000
KTVQ (02-)	0	0.000	0	0.000
KTWOTV (02+)	0	0.000	0	0.000
KUTV (02-)	0	0.000	0	0.000
KUTV.C (02-)	0	0.000	0	0.000

Stations considered which do not cause interference:

K02GE (02N)
 K02LG (02N)

K02LH (02N)
 K02NO (02+)
 KIDK (03Z)
 KTVQ (02-)
 KTWOTV (02+)
 KUTV (02-)
 KUTV.C (02-)
 NEW.A (03-)
 NEW.A (02-)

Call Letters	City	State	Dist	Bear
K02GE (02N)	La Barge	WY	140.6	158.3
K02LG (02N)	South Fork, Etc.	WY	141.6	53.8
K02LH (02N)	Clarks Fork, Etc.	WY	188.1	33.6
K02NO (02+)	Rupert	ID	242.5	247.5
KIDK (03Z)	Idaho Falls	ID	138.2	270.9
KTVQ (02-)	Billings	MT	321.3	37.2
KTWOTV (02+)	Casper	WY	385.4	101.0
KUTV (02-)	Salt Lake City	UT	335.5	197.7
KUTV.C (02-)	Salt Lake City	UT	330.8	198.6
NEW.A (03-)	Preston	ID	166.4	204.3
NEW.A (02-)	Twin Falls	ID	293.8	254.4

Totals for KJWY-DT.PRO (2)

Calculation Area Population:	61,381	(	18168.4 sq. km)
Not Affected by Terrain Loss:	43,743	(	16069.6 sq. km)
Total NTSC Interference:	0	(	128.1 sq. km)
DTV Only Interference:	0	(	0.0 sq. km)
Total DTV Interference:	0	(	0.0 sq. km)
Interfered Population:	0	(	128.1 sq. km)
Interference Free:	43,743	(	15941.6 sq. km)
Percent Interference:	0.00		
Terrain Blocked Population:	17,638	(	2098.8 sq. km)
Contour Area Population:	61,593		

Interference Free Breakdown:

White:	39,677	(	90.7%)
Black:	59	(	0.1%)
Hispanic:	3,169	(	7.2%)
Native American:	192	(	0.4%)
Asian:	180	(	0.4%)
Pacific Islander:	19	(	0.0%)

Mixed Race:	426	(1.0%)
Other:	21	(0.0%)
Total:	43,743	

	Housing Units	Population	% of County

Idaho			
Bingham County			
County Pop	14,303	41,735	
KJWY-DT.PRO (2)	11	0	
KUTV (02-)	0	0	
KUTV.C (02-)	0	0	
Ix Free	11	0	
Bonneville County			
County Pop	30,484	82,522	
KJWY-DT.PRO (2)	647	1,034	
KIDK (03Z)	0	0	0.00
Ix Free	647	1,034	100.00
Caribou County			
County Pop	3,188	7,304	
KJWY-DT.PRO (2)	83	170	
Ix Free	83	170	100.00
Fremont County			
County Pop	6,890	11,819	
KJWY-DT.PRO (2)	2,930	8,515	
Ix Free	2,930	8,515	100.00
Jefferson County			
County Pop	6,287	19,155	
KJWY-DT.PRO (2)	0	0	
Ix Free	0	0	
Madison County			
County Pop	7,630	27,467	
KJWY-DT.PRO (2)	1,516	5,146	
Ix Free	1,516	5,146	100.00
Teton County			
County Pop	2,632	5,999	
KJWY-DT.PRO (2)	2,559	5,880	
KTVQ (02-)	0	0	0.00
Ix Free	2,559	5,880	100.00

	Housing Units	Population	% of County

Wyoming			
Fremont County			
County Pop	15,541	35,804	
KJWY-DT.PRO (2)	44	27	
KTVQ (02-)	0	0	0.00
KTWOTV (02+)	0	0	0.00

Ix Free	44	27	100.00
Lincoln County			
County Pop	6,831	14,573	
KJWY-DT.PRO (2)	2,579	4,657	
Ix Free	2,579	4,657	100.00
Sublette County			
County Pop	3,552	5,920	
KJWY-DT.PRO (2)	483	407	
KUTV (02-)	0	0	0.00
KUTV.C (02-)	0	0	0.00
Ix Free	483	407	100.00
Teton County			
County Pop	10,267	18,251	
KJWY-DT.PRO (2)	9,829	17,907	
KTVQ (02-)	0	0	0.00
Ix Free	9,829	17,907	100.00

KJWY-DT.PRO
PROPOSED
 Latitude: 43-29-25 N
 Longitude: 110-57-20 W
 ERP: 0.27 kW
 Channel: 2
 Frequency: 57.0 MHz
 AMSL Height: 2654.0 m
 Horiz. Pattern: Omni
 Vert. Pattern: Yes
 Elec Tilt: 0.0
 Prop Model: Longley/Rice
 Climate: Cont temperate
 Conductivity: 0.0050
 Dielec Const: 15.0
 Refractivity: 311.0
 Receiver Ht AG: 10.0 m
 Receiver Gain: 0 dB
 Time Variability: 90.0%
 Sit. Variability: 50.0%
 ITM Mode: Broadcast

D.L. Markley & Associates, Inc.

City Limits of Jackson, Wyoming

> 35.0 dBu
 28.0 - 35.0

City of License
 Jackson, Wyoming

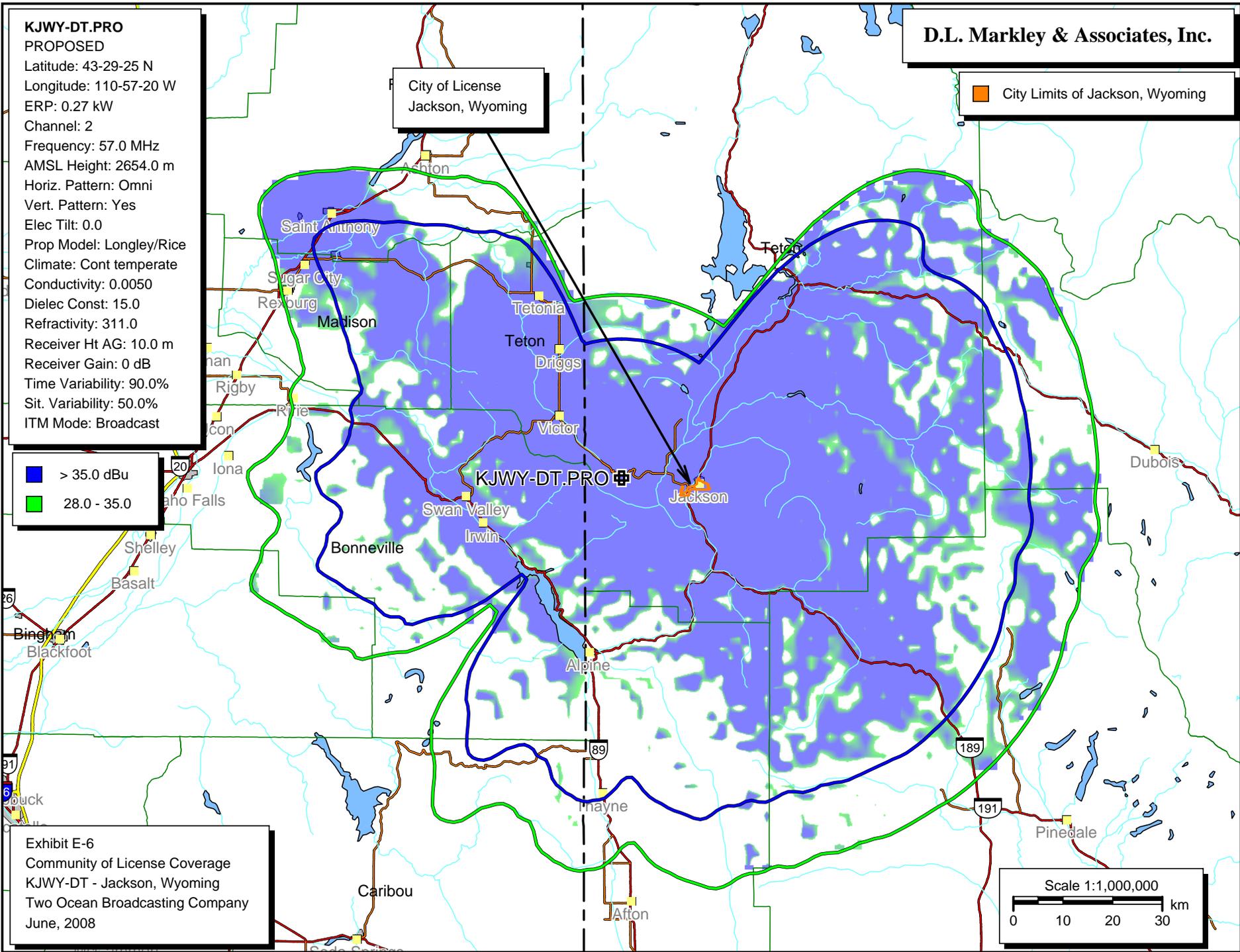


Exhibit E-6
 Community of License Coverage
 KJWY-DT - Jackson, Wyoming
 Two Ocean Broadcasting Company
 June, 2008

Scale 1:1,000,000
 0 10 20 30 km