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*B. W. St. Clair*

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ENGINEERING STATEMENT IN SUPPORT OF AN  
APPLICATION TO MODIFY BPCDT-19991028ABB  
KTWO-DT, FI 18286, CHANNEL 17, CASPER, WY

Introduction

This application requests a change to a different tower, #1008931, a location change of 2.25 km at 288°. It also requests a change from a non-directional antenna to a directional pattern and an HAAT reduction of 28 m. With the proposed parameters the interference contours to both analog and digital full service and Class A stations are within the interference contours of the construction permit.

Environmental Assesment

The station will operate using an existing tower and the KGWC (analog) equipment building. There is no construction and consequently no associated environmental impact.

The worst case non-ionizing radiation in the vicinity of the tower occurs at 76.5° below horizontal. The power density at this angle and two meters above ground calculated in accordance with OET Bulletin 65 is 2.57  $\mu\text{watts/cm}^2$  which is 0.8% of the allowable public exposure. OET Bulletin exempts radiation sources producing less than 5% of the limit from calculations involving other sources, if any, in the same vicinity..

The applicant recognizes its responsibility to reduce the transmitter power to a safe limit when any work is done on the tower above ground.

Required Coverage of the Principal Community

The 48 dB $\mu$  F50/90 contour extends well beyond the principal community of Casper, WY. This is demonstrated in the contour plot titled Exhibit I.

### Covered Population

The population within the noise limited contour is 71,220 compared to 79,989 for construction permit BPCDT-19991028ABB and the parameters in appendix B<sup>1</sup>. However, given the small size of this market it is a matter of economic necessity that this digital station be colocated with and combined into the same antenna as KFNB-DT, channel 20, and KGWC-DT, channel 14.

Much of the short fall in population is around the City of Douglas, WY. There are two available translators, K09XL and K11RN, serving Douglas, WY. These translators will be flash cut to digital operation before KTWO analog ceases operation. One will carry the programming of KTWO as a second program stream on one of these translators, effectively adding about 5000 in additional population to the coverage of KTWO-DT. The population short fall from the construction permit and Appendix B with this additional population is predicted to be about 3700 or about 4.6%, meeting the 5% criterion in the Third Periodic Review Report and Order

### Allocation Considerations

The underlying CP is a “check list” facility. The cochannel and adjacent channel interference contours are totally contained within the corresponding contours of the CP. If there were interference to any other digital station it would be reduced. However, an outgoing interference analysis shows that there is no impact to any full service digital station or any Class A station, analog or digital.

### Protected Installations

The nearest FCC monitoring station is at Grand island, NE. The spacing is 688 km and protection based on this distance is automatic. The only radio astronomy facility that needs consideration is “Table Mountain” in Boulder, CO. The nearest edge of this facility is 302 km, substantially exceeding the culling distance for notification of 80 km.

### Consultants Declaration

This “Engineering Statement” is based on information supplied by the antenna manufacturer, the applicant and the FCC tower registration record. Interference determinations were made using the Techware supplied version of the FCC’s OET

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<sup>1</sup>The parameters in Appendix B are identical to the construction permit

Bulletin 69 interference analysis program. The contour plot was prepared using the V-Soft Probe III software. The results and statements presented herein are true and correct to the best of my knowledge and belief.

Respectfully submitted

A handwritten signature in black ink, appearing to read "B. W. St. Clair". The signature is written in a cursive, flowing style with a small flourish at the end.

B. W. St. Clair  
Engineering Consultant

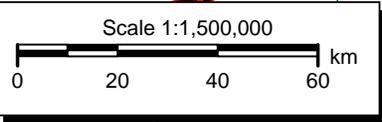
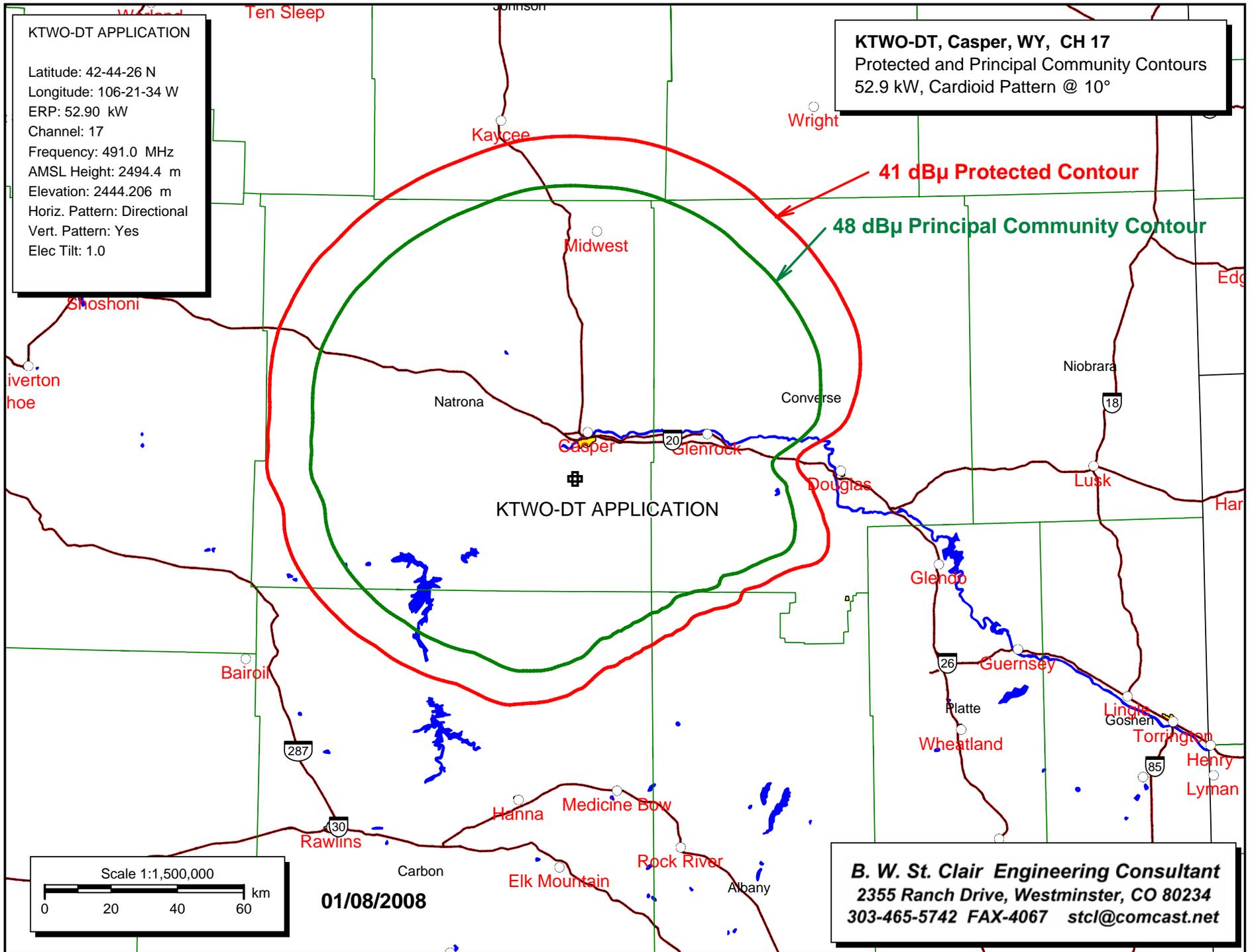
January 08, 2008

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**KTWO-DT APPLICATION**

Latitude: 42-44-26 N  
Longitude: 106-21-34 W  
ERP: 52.90 kW  
Channel: 17  
Frequency: 491.0 MHz  
AMSL Height: 2494.4 m  
Elevation: 2444.206 m  
Horiz. Pattern: Directional  
Vert. Pattern: Yes  
Elec Tilt: 1.0

**KTWO-DT, Casper, WY, CH 17**  
Protected and Principal Community Contours  
52.9 kW, Cardioid Pattern @ 10°



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**KTWO-DT, CASPER, WY, CH 17**

52.9 kW, Cardioid Pattern @ 10°  
41 dBμ Contours for  
Construction Permit & appendix B (Identical)  
Application

**Construction Permit  
& Appendix B**

**Application**

KTWO-DT APPLICATION

KTWO-DT(CP)

01/08/07

Scale 1:1,500,000



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