

**MULTIPLE SERVICES STUDY**

for

**Northern Star Broadcasting, LLC**

Iron Mountain, MI Market

**September 2005**

COPYRIGHT 2005

**MUNN-REESE, INC.**  
Broadcast Engineering Consultants  
Coldwater, MI 49036

## **ENGINEERING STATEMENT**

---

This firm was retained to determine the minimum number of principal community radio contours available from stations authorized for commercial service by Northern Star Broadcasting, LLC in the Iron Mountain, MI market. The stations of concern do not reside in a listed Arbitron Metro Market as reported by BIA, therefore this study has been conducted under the *Interim Contour-overlap Methodology*. Northern Star Broadcasting, LLC currently owns three (3) radio stations in the area. One separate and distinct market is defined in this study. The market is comprised of WMIQ(AM) and WIMK(FM), Iron Mountain, MI; and WZNL(FM), Norway, MI.

The existing facilities of the stations included in this report were determined by the use of currently updated copies of the FCC computer databases of AM and FM stations. The listed facilities served as the basis for the computation of the respective principal community contours. The accuracy of the results of this study is understood to be limited to the accuracy of these databases. The FCC databases give no indication of licensed facilities that may be inoperative, construction permit facilities that may now be operating under program test authority (but have not yet been issued a license) or facilities which may have been licensed since the last update. Therefore, some stations may have been included or excluded erroneously. However, unless otherwise indicated, all licensed facilities known to be inoperative and all known applications and construction permit facilities, have been eliminated from consideration in this study.

For AM stations, Map M-3 soil conductivity values and the authorized licensed transmitting facilities served as the basis for the computation of the predicted 5.0 mV/m groundwave contour in accordance with §73.183 of the FCC Rules. The distance to the contour was computed for seventy-two (72) equally spaced azimuths beginning with 0° True. For FM stations, the authorized Center of Radiation and ERP values were utilized to compute the predicted 3.16 mV/m (70 dBu) contour as provided in §73.313 of the Rules. The predicted FM contours shown in this report are based on the use of 72 equally spaced terrain radials beginning with 0° True.

As stated before, there is one unique and distinct market associated with this study. The market has been defined, in accordance with §73.3555 of the FCC Rules, as the area within the total perimeter formed by the combined principal community contours of WMIQ(AM), WIMK(FM), and WZNL(FM). Actually, WIMK(FM) totally encompasses the contours of WMIQ(AM) and WZNL(FM).

**Exhibit 1.0** is a map showing all of the commonly owned Northern Star Broadcasting, LLC stations in the Upper Peninsula of the State of Michigan.

**Exhibit 2.0** shows the three (3) stations under common control which are relevant for this study in the area of Iron Mountain, MI. To aid in identifying the respective contours that define the market, AM contours have been shown with dashed red lines, and currently owned FM contours have been shown with solid red lines.

The market defining contours have been shown in **Exhibit 2.0** of this report along with all the principal community contours that enter the market. Contours entering the market have been denoted with green solid lines for FM stations and green dashed lines for AM stations. There are no other co-owned stations that enter the market.

## **ENGINEERING STATEMENT** (continued)

Under the current rules, the market falls at least within the minimum limitations set forth in §73.3555 (a)(1)(iv): ***In a radio market with 14 or fewer full-power, commercial and noncommercial radio stations, not more than 5 commercial radio stations in total and not more than 3 commercial stations in the same service (AM or FM); provided, however, that no person or single entity (or entities under common control) may have a cognizable interest in more than 50% of the full-power, commercial and noncommercial radio stations in such market unless the combination of stations comprises not more than one AM and one FM station.*** The principal community contours of at least twelve (12) other stations entering the market are shown in ***Exhibit 2.0***. Including the two (2) FM stations and one (1) AM station which define the market there are a total of fifteen (15) aural services in this market. This represents no more than 20.0% of the market as shown. ***Exhibit 2.1*** lists the facilities of the individual stations used in this report.

### **CERTIFICATION**

I hereby certify, subject to penalties for perjury, that the contents of this Engineering Statement are true and accurate to the best of my knowledge and belief.

September 29, 2005

***MUNN-REESE, INC.***

P.O. Box 220  
Coldwater, MI 49036  
Phone: 517-278-7339  
Fax: 517-278-6973

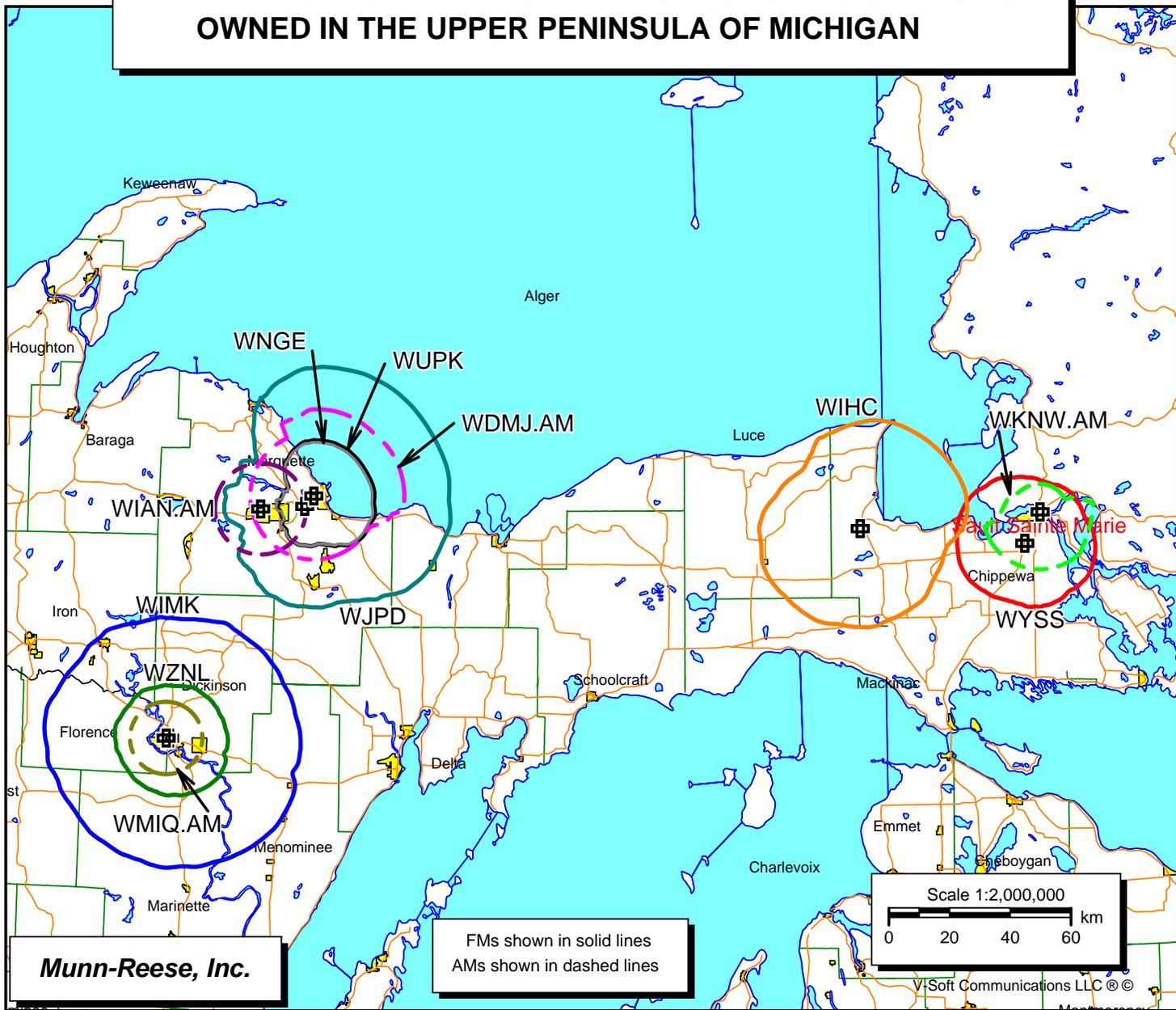
By \_\_\_\_\_

  
Wayne S. Reese, President

Email: [wayne@mun-reese.com](mailto:wayne@mun-reese.com)

# EXHIBIT 1.0 - NORTHERN STAR BROADCASTING STATIONS OWNED IN THE UPPER PENINSULA OF MICHIGAN

- WUPK
- WYSS
- WIMK
- WZNL
- WIHC
- WJPD
- WNGE
- WMIQ.AM
- WIAN.AM
- WKNW.AM
- WDMJ.AM

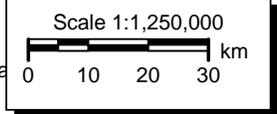
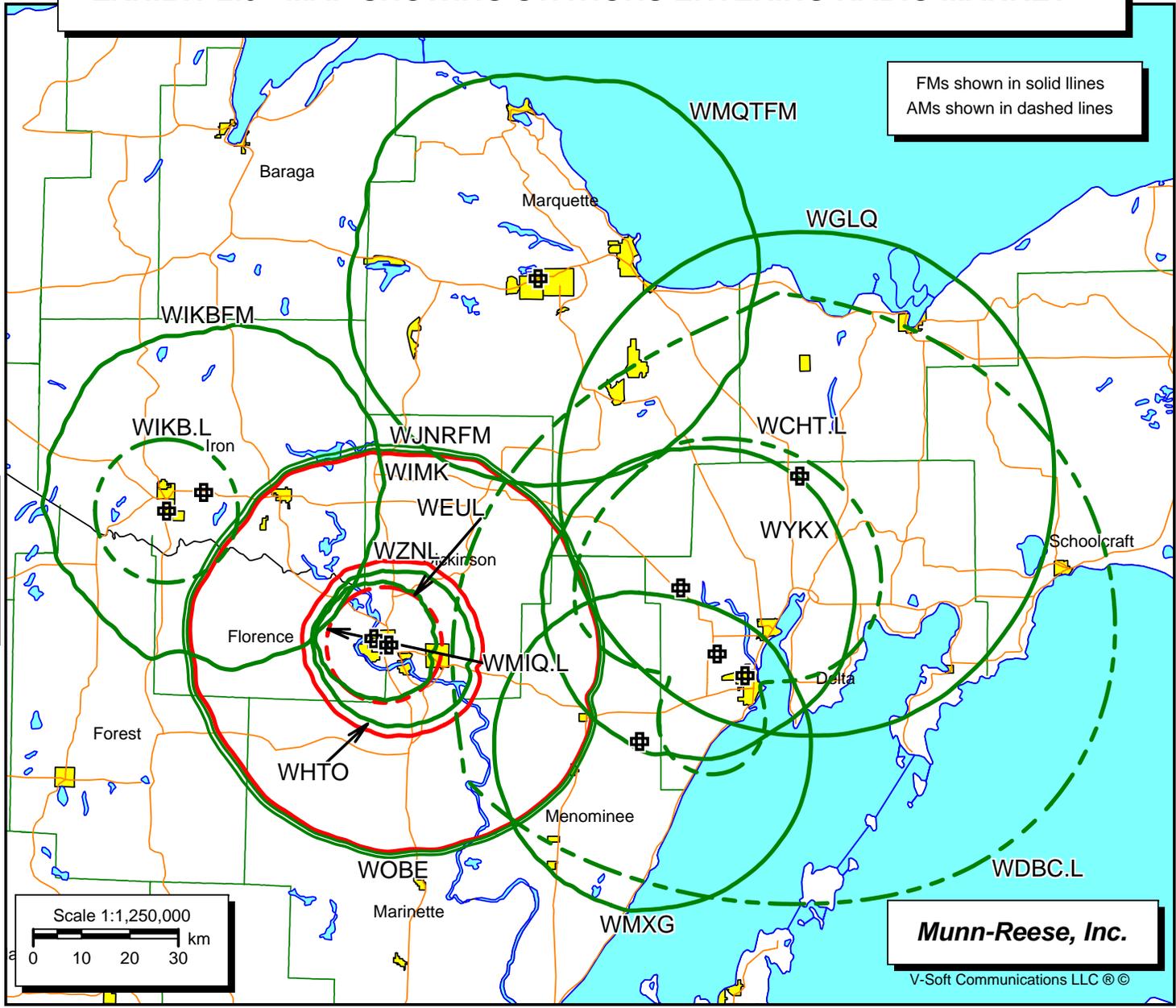


# EXHIBIT 2.0 - MAP SHOWING STATIONS ENTERING RADIO MARKET

- WIMK
- WMIQ.L
- WZNL
- WCHT.L
- WDBC.L
- WEUL
- WGLQ
- WHTO
- WIKB.L
- WIKBFM
- WJNRFM
- WMQTFM
- WMXG
- WOBE
- WYKX

FMs shown in solid lines  
AMs shown in dashed lines

Stations in red define the market.  
Stations in green are stations that enter the market



**Munn-Reese, Inc.**  
V-Soft Communications LLC ©

**EXHIBIT 2.1**

**TABULATION OF STATIONS DEFINING AND ENTERING RADIO MARKET**

<u>STATION</u>	<u>LOCATION</u>	<u>CHANNEL</u>	<u>FACILITIES</u> ERP/HAAT	<u>DISTANCE</u>	<u>BEARING</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>FILE</u> <u>NUMBER</u>
WIMK (FM)	Iron Mountain, MI	226C1	100 kW @ 180 m			45°49'16"	88°02'28"	BLH19820111AE
WMIQ (AM)	Iron Mountain, MI	1450 kHz	1 kW ND-U			45°49'16"	88°03'16"	
WZNL (FM)	Norway, MI	232C3	2.4 kW @ 198 m			45°49'15"	88°02'25"	BLH19950605KA
WCHT (AM)	Escanaba, MI	600 kHz	0.57 kW DA	67.7 km	91.0°	45°48'19"	87°10'13"	BL19890419AF
WDBC (AM)	Escanaba, MI	680 kHz	10 kW DA	73.7 km	94.0°	45°45'53"	87°05'48"	BL19821206AB
WEUL (FM)	Kingsford, MI	251A	1 kW @ 142 m	3.5 km	292.0°	45°49'58"	88°04'57"	BLD 20010628ABG
WGLQ (FM)	Escanaba, MI	246C	100 kW @ 326 m	91.6 km	67.0°	46°08'04"	86°56'52"	BLH19820713AB
WHTO (FM)	Iron Mountain, MI	294A	1.7 kW @ 190 m	0.1 km	115.0°	45°49'15"	88°02'25"	BLH 20030807ACW
WIKB-AM	Iron River, MI	1230 kHz	1 kW ND-U	53.7 km	300.0°	46°03'55"	88°38'17"	
WIKB-FM	Iron River, MI	256C1	60 kW @ 150 m	49.6 km	309.0°	46°06'03"	88°32'23"	BLH19960429KE
WJNR (FM)	Iron Mountain, MI	268C1	100 kW @ 187 m	0.1 km	270.0°	45°49'16"	88°02'34"	BLH 20040213ABR
WMQT (FM)	Ishpeming, MI	299C1	100 kW @ 195 m	81.6 km	21.0°	46°30'08"	87°38'52"	BLH 20040528ABO
WMXG (FM)	Stephenson, MI	292C2	50 kW @ 150 m	55.3 km	110.0°	45°38'36"	87°22'37"	BLH19990721KD
WOBE (FM)	Crystal Falls, MI	264C1	100 kW @ 199 m	0.1 km	270.0°	45°49'16"	88°02'34"	BLH 20040213ACA
WYKX (FM)	Escanaba, MI	284C1	100 kW @ 107 m	61.3 km	78.0°	45°55'41"	87°16'00"	BLH7625

Stations in red define the radio market.

Stations in green enter the radio market.