

**APPLICATION FOR A
MINOR CHANGE
CONSTRUCTION PERMIT
TO A LICENSED FACILITY**

FCC FORM 301

(PROPOSING MX CHANNEL CHANGE)

Facility Identification Number 87926

KQEO

Idaho Falls, Idaho

CHANNEL 299C1 – 107.7 MHz

ERP: 100 kW (H&V)

HAAT: 201 meters (H&V)

APPLICANT: Sand Hill Media Corp.

January, 2003

Prepared by:



Engineering Statement
In Support of a Application
For a Construction Permit
KQEO, Idaho Falls, Idaho, Channel 299C1

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FOR ENGINEERING EXHIBITS F.C.C. FORM 301

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ENGINEERING STATEMENT

Of

Reynolds Technical Associates

In Support of an

Application for a

Construction Permit

KQEO-FM

Idaho Falls, Idaho

Channel 299C1 – 107.7 MHz

ERP: 100 kW(H&V)

HAAT: 201 m (H&V)

January, 2003

General

As broadcast technical consultants doing business as Reynolds Technical Associates (“RTA”), we have been authorized by Sand Hill Media Corp. (herein referred to as “Sand Hill” as well as “The Applicant”), permittee of KQEO-FM, Idaho Falls, Idaho, to conduct engineering studies and prepare the engineering portion of an application for a construction permit.

This instant application is seeking to change transmitter relocation, effective radiated power and all elevations of the transmitting antenna. It also seeks a change to the Table of Allotments by deleting channel 296C1 and substituting channel 299C1 at Idaho Falls.

Even though this facility requests the use of a directional antenna, Sand Hill respectfully requests that KQEO continue to be considered fully spaced under §73.207.

The Proposed Site
(Exhibits E, Figure 1-4)

Exhibit E, Figure 1 is a channel spacing study for the proposed change, showing the facilities considered.

Exhibit E, Figure 2 is the terrain averaging and contour study for the proposed facility.

Exhibit E, Figure 3 is the service contour map displaying the FCC F(50,50) 70 and 60 dBu contours of the proposed facility.

Exhibit E, Figure 4 is a vertical sketch of the proposed antenna supporting structure.

Because KQEO will be locating on an existing structure that is shorter than 200 feet AGL (60.7 meters), no FAA notification is required.

The distance to the blanketing contour is calculated to be 3.94 kilometers (2.45miles).

Human Exposure
(Exhibit E, Figure 5)

The proposed FM facility was evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with the RF Worksheet #1 [FCC 301 Worksheet 7 (Page 4 and 5)].

The panel antenna for The Applicant's proposed FM broadcast station is to be placed on an existing tower. The proposed center of radiation above ground level of 98 meters, with an ERP (both horizontally and vertically) of 100 kW. The controlled/occupational limit, as well as the uncontrolled/general public limit is in compliance. Power density two (2) meters above ground is 0.044 mW/cm^2 , well below the maximum allowable limit of 0.2 mW/cm^2 for uncontrolled/general public exposure limits as well as the 1.0 mW/cm^2 for controlled/occupational exposure limits.

Should anyone be required to climb the tower, KQEO will either reduce power or cease operation, so as to prevent hazardous exposure to radiofrequency radiation.

Environmental Impact
(No Exhibits)

A grant of the proposed construction would not constitute a major action as defined in the Commission's Rules and Regulations.

During operation, the facility will produce no chemical or significant thermal pollution, and no ionizing radiation will be generated. Areas of high intensity radiofrequency fields will be confined to the immediate area of the transmitting antenna, far above the ground and away from any human and wildlife population.

The area is not officially designated as a wilderness area or wildlife preserve and is not pending consideration. The area has no significant value in American history, architecture, archaeology, or culture, which is listed in the Register of Historic Places, and it is not eligible for listing. It is not recognized either nationally or locally for special scenic or recreational value.

Conclusion

This statement/application has been prepared for The Applicant by utilizing the latest available information, cross-checked with the Federal Communications Commission and other sources. Therefore, it is submitted that the proposed is in compliance with the Commission's Rules and Regulations and other sources. Therefore, it is submitted that the engineering data compiled and demonstrated herein for the proposed is in compliance with Commission's Rules and Regulations at the time of this application's filing date. We welcome the opportunity to discuss with the staff of the Federal Communications Commission the engineering data contained in this application. Should any questions arise concerning the information, please contact us.

The following pages are exhibits prepared and assembled in support of the proposed.

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Statement of the Consultants

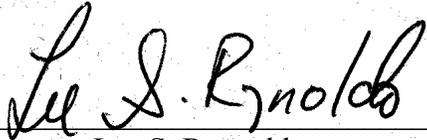
The instant engineering statement was prepared for Sand Hill Media Corp. (“The Applicant”) and supports an application for a construction permit of KQEO, Idaho Falls, Idaho. It was developed by RTA and may not be used for purposes other than submission to the Commission by The Applicant.

It may not be reproduced in its entirety, or in part, by anyone (other than from the Commission) without the written consent of RTA.

It is prepared for The Applicant under contractual agreement, and its certification by RTA is used accordingly. If The Applicant fails in its contractual obligation, RTA reserves the right to withdraw its certification.

The information in this application is compiled from the most recent Commission and outside data. RTA is not responsible for errors resulting from incorrect data or unpublished rule and procedure changes.

For RTA:



Lee S. Reynolds

January 16th, 2003

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**Engineering Statement
In Support of an
Application for a Construction Permit**

KQEO, Channel 299C1, Idaho Falls, ID

**Channel 299C1 at Idaho Falls, ID Allocation/Channel Spacing Study
(Using Licensed Site of KPLV and KFTZ as Reference)**

| | | | | | | |
|---|------------------|--------------------|------------------|---------------|--------------|----------------------|
| REFERENCE | | | | | | DISPLAY DATES |
| 43 21 06 N | | | CLASS = C1 | | | DATA 01-15-03 |
| 112 00 22 W | | | Current Spacings | | | SEARCH 01-15-03 |
| ----- Channel 299 - 107.7 MHz ----- | | | | | | |
| Call | Channel | Location | Dist | Azi | FCC | Margin |
| ----- | | | | | | |
| Community of Idaho Falls | | ID | 12.96 | 350.3 | | |
| Reference Coordinates: | | | | | | |
| North Latitude: 43-28-00 | | | | | | |
| West Longitude: 112-01-59 | | | | | | |
| RADD | ADD 299C1 | Iona | ID | 18.01 | 52.1 | 245.0 -226.99 |
| Of no concern: | | | | | | |
| The request for channel 299C1 at Iona was made by the permittee of KQEO (Sand Hill Media Corp). | | | | | | |
| RADD | ADD 300C1 | Idaho Falls | ID | 34.97 | 0.6 | 177.0 -142.03 |
| Of no concern: | | | | | | |
| The petitioner that sought the allotment of channel 300C1 at Idaho Falls in MM Docket 02-289 (Scott D. Parker) has since withdrawn his expression of interest in the channel. | | | | | | |
| KQEO.C CP | 296C1 | Idaho Falls | ID | 23.38 | 24.8 | 82.0 -58.62 |
| RDEL | DEL 296C1 | Idaho Falls | ID | 34.65 | 2.2 | 82.0 -47.35 |
| Of no concern: | | | | | | |
| CP facility for KQEO | | | | | | |
| ALLO | VAC 298C | Sun Valley | ID | 196.07 | 280.4 | 209.0 -12.93 |
| KYZK.A APP | 298C | Sun Valley | ID | 196.07 | 280.4 | 209.0 -12.93 |
| Of no concern: | | | | | | |
| The licensee of KYZK, Alpine Broadcasting, Ltd., has since amended its application. KYZK is now requesting channel 298C0 in lieu of channel 298C (see below). | | | | | | |
| ALLO | VAC 298C0 | Sun Valley | ID | 196.07 | 280.4 | 196.0 0.07 |
| KYZK.A APP | 298C0 | Sun Valley | ID | 196.07 | 280.4 | 196.0 0.07 |
| Of note: | | | | | | |
| The licensee of KYZK, Alpine Broadcasting, Ltd., amended its application (BPH-20020308ABI) to request channel 298C0 instead of channel 298C. | | | | | | |
| KUDD | LIC 300C | Roy | UT | 235.35 | 188.9 | 209.0 26.35 |
| ----- | | | | | | |

**Engineering Statement
In Support of an
Application for a Construction Permit**

KQEO, Channel 299C1, Idaho Falls, ID

KQEO Terrain-Contour Study

Reference Coordinates:

North Latitude: 43-21-06

West Longitude: 112-00-22

| Azimuth °T. | ERP = 100.0 kW | FM - 2-6 Tables | ERP (dBk) | F(50-50) | F(50-50) |
|----------------|--------------------------|-----------------------------|--------------|-------------------------------|-------------------------------|
| | Ave. Elev. 3 to 16 km | Effective Antenna Height | | Distance to 70 dBu Contour | Distance to 60 dBu Contour |
| | Meters AMSL | Meters AAT | | km | km |
| 0 | 1440.1 | 360.9 | 20.000 | 54.0 | 76.9 |
| 5 | 1442.9 | 358.1 | 20.000 | 53.8 | 76.7 |
| 10 | 1444.3 | 356.7 | 20.000 | 53.8 | 76.6 |
| 15 | 1447.7 | 353.3 | 20.000 | 53.6 | 76.3 |
| 20 | 1456.9 | 344.1 | 19.780 | 53.0 | 75.7 |
| 25 | 1464.6 | 336.4 | 19.554 | 52.5 | 75.1 |
| 30 | 1484.5 | 316.5 | 19.085 | 51.2 | 73.6 |
| 35 | 1534.7 | 266.3 | 18.588 | 47.3 | 69.1 |
| 40 | 1568.7 | 232.3 | 18.062 | 44.5 | 65.8 |
| 45 | 1618.1 | 182.9 | 17.501 | 39.9 | 60.2 |
| 50 | 1653.4 | 147.6 | 17.207 | 35.3 | 55.2 |
| 55 | 1692.9 | 108.1 | 16.902 | 29.8 | 48.3 |
| 60 | 1708.4 | 92.6 | 16.586 | 26.9 | 44.4 |
| 65 | 1720.7 | 80.3 | 16.258 | 24.8 | 41.4 |
| 70 | 1748.0 | 53.0 | 15.918 | 20.2 | 34.4 |
| 75 | 1777.4 | 23.6 | 15.563 | 14.7 | 26.0 |
| 80 | 1809.3 | -8.3 | 15.193 | 14.4 | 25.5 |
| 85 | 1812.1 | -11.1 | 13.979 | 14.1 | 25.1 |
| 90 | 1842.3 | -41.3 | 14.403 | 13.8 | 24.6 |
| 95 | 1851.1 | -50.1 | 13.979 | 13.5 | 24.2 |
| 100 | 1867.4 | -66.4 | 14.403 | 13.3 | 23.7 |
| 105 | 1889.9 | -88.9 | 14.807 | 13.0 | 23.2 |
| 110 | 1685.5 | 115.5 | 15.193 | 12.7 | 22.7 |
| 115 | 1626.4 | 174.6 | 15.563 | 13.0 | 23.2 |
| 120 | 1580.7 | 220.3 | 15.918 | 13.3 | 23.7 |
| 125 | 1600.3 | 200.7 | 16.258 | 13.5 | 24.2 |
| 130 | 1620.3 | 180.7 | 16.586 | 13.8 | 24.6 |
| 135 | 1627.7 | 173.3 | 16.902 | 14.1 | 25.1 |
| 140 | 1638.9 | 162.1 | 17.207 | 14.4 | 25.5 |
| 145 | 1673.3 | 127.7 | 20.000 | 14.7 | 26.0 |
| 150 | 1699.7 | 101.3 | 20.000 | 14.9 | 26.4 |
| 155 | 1874.2 | -73.2 | 20.000 | 15.2 | 26.8 |

Continued on the next page

Exhibit E, Figure 2

| ERP = 100.0 kW | | FM - 2-6 Tables | | F(50-50) | F(50-50) |
|----------------|-------------|-----------------|--------|----------------|----------------|
| Azimuth | Ave. Elev. | Effective | ERP | Distance to | Distance to |
| °T. | 3 to 16 km | Antenna Height | (dBk) | 70 dBu Contour | 60 dBu Contour |
| | Meters AMSL | Meters AAT | | km | km |
| 160 | 1824.0 | -23.0 | 17.501 | 15.5 | 27.2 |
| 165 | 1737.0 | 64.0 | 17.786 | 23.1 | 38.9 |
| 170 | 1685.1 | 115.9 | 18.062 | 30.7 | 49.6 |
| 175 | 1654.6 | 146.4 | 18.329 | 34.7 | 54.5 |
| 180 | 1632.9 | 168.1 | 18.588 | 37.6 | 57.7 |
| 185 | 1581.0 | 220.0 | 18.840 | 42.3 | 63.1 |
| 190 | 1584.8 | 216.2 | 19.085 | 42.5 | 63.3 |
| 195 | 1607.3 | 193.7 | 19.323 | 41.3 | 61.7 |
| 200 | 1575.0 | 226.0 | 19.554 | 44.1 | 65.2 |
| 205 | 1540.8 | 260.2 | 19.780 | 46.9 | 68.6 |
| 210 | 1514.5 | 286.5 | 20.000 | 49.2 | 71.3 |
| 215 | 1480.0 | 321.0 | 20.000 | 51.5 | 73.9 |
| 220 | 1464.5 | 336.5 | 20.000 | 52.5 | 75.1 |
| 225 | 1453.1 | 347.9 | 20.000 | 53.2 | 75.9 |
| 230 | 1443.3 | 357.7 | 20.000 | 53.8 | 76.6 |
| 235 | 1434.4 | 366.6 | 20.000 | 54.4 | 77.3 |
| 240 | 1427.1 | 373.9 | 20.000 | 54.8 | 77.8 |
| 245 | 1422.0 | 379.0 | 20.000 | 55.1 | 78.2 |
| 250 | 1419.4 | 381.6 | 20.000 | 55.2 | 78.4 |
| 255 | 1417.1 | 383.9 | 19.780 | 54.9 | 78.1 |
| 260 | 1415.3 | 385.7 | 19.554 | 54.5 | 77.6 |
| 265 | 1413.5 | 387.5 | 19.323 | 54.1 | 77.2 |
| 270 | 1412.7 | 388.3 | 19.085 | 53.6 | 76.7 |
| 275 | 1412.6 | 388.4 | 18.840 | 53.1 | 76.1 |
| 280 | 1412.9 | 388.1 | 18.588 | 52.5 | 75.5 |
| 285 | 1413.4 | 387.6 | 18.329 | 51.9 | 74.9 |
| 290 | 1414.8 | 386.2 | 18.062 | 51.3 | 74.1 |
| 295 | 1416.8 | 384.2 | 18.329 | 51.8 | 74.6 |
| 300 | 1418.1 | 382.9 | 18.588 | 52.2 | 75.1 |
| 305 | 1418.2 | 382.8 | 18.588 | 52.2 | 75.1 |
| 310 | 1419.6 | 381.4 | 18.588 | 52.2 | 75.0 |
| 315 | 1420.8 | 380.2 | 18.840 | 52.6 | 75.5 |
| 320 | 1421.8 | 379.2 | 19.085 | 53.1 | 76.1 |
| 325 | 1423.6 | 377.4 | 19.085 | 53.0 | 75.9 |
| 330 | 1425.4 | 375.6 | 19.085 | 52.9 | 75.8 |
| 335 | 1427.1 | 373.9 | 19.323 | 53.3 | 76.2 |
| 340 | 1428.7 | 372.3 | 19.554 | 53.7 | 76.7 |
| 345 | 1430.5 | 370.5 | 19.780 | 54.1 | 77.1 |
| 350 | 1433.2 | 367.8 | 20.000 | 54.4 | 77.4 |
| 355 | 1436.2 | 364.8 | 20.000 | 54.3 | 77.2 |

**KQEO, Channel 299C1
Idaho Falls, Idaho
FCC Contours Map**

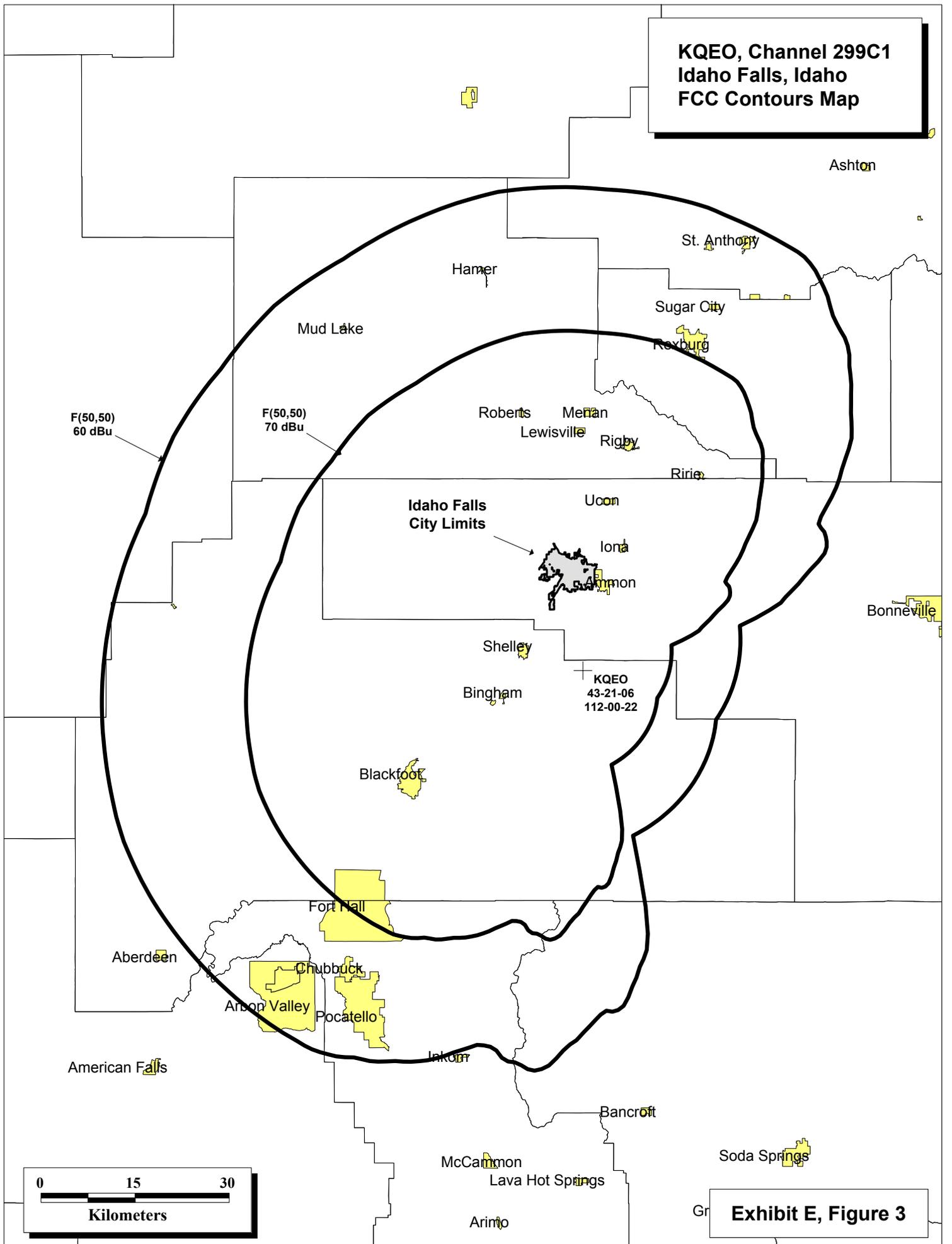
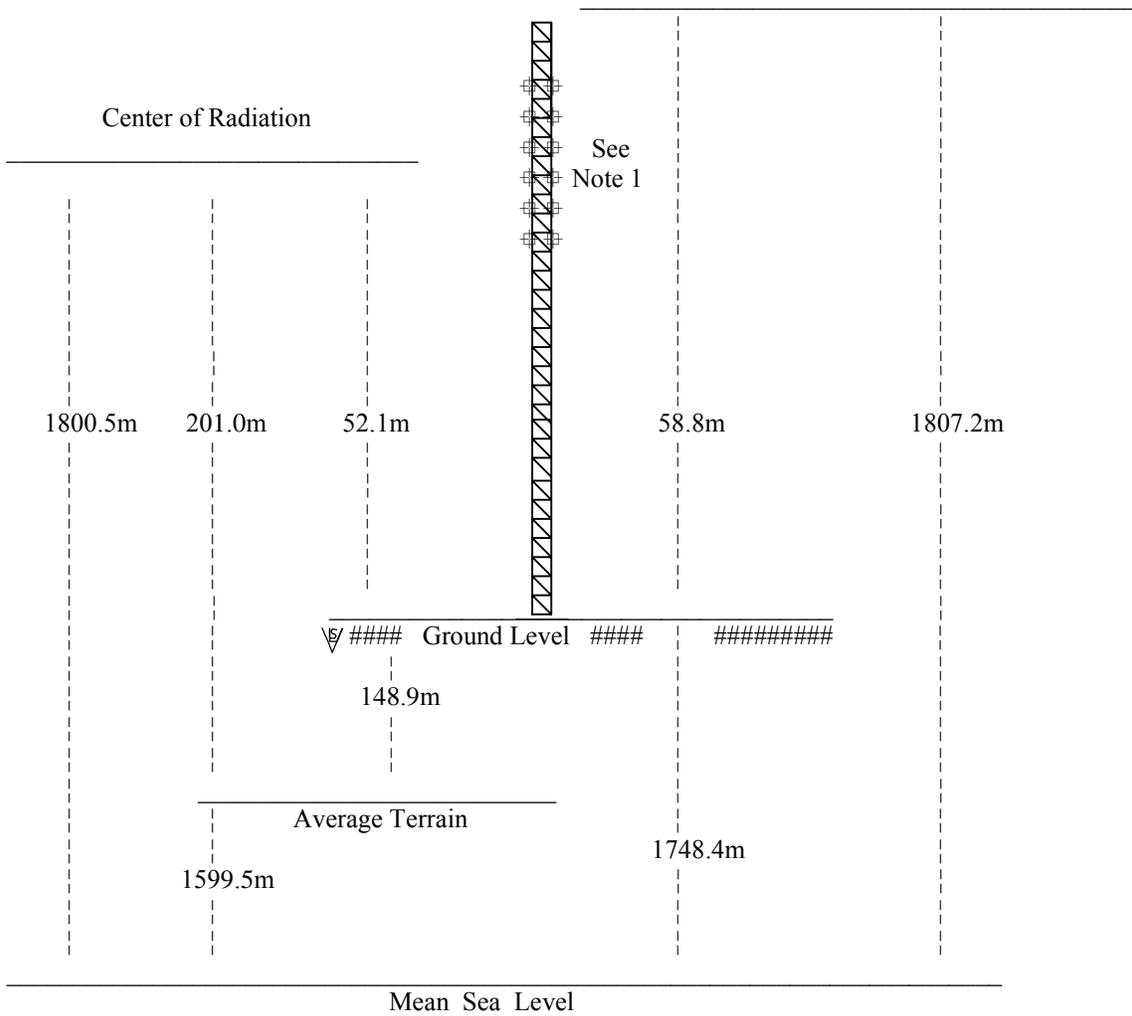


Exhibit E, Figure 3



Proposed Location - 43° 21' 06" N. Lat. 112° 00' 22" W. Long. [NAD 27]

NOT DRAWN TO SCALE

Proposed antenna - 6 element, Harris model TAC-6M-2/12.

Note 1: The proposed will use a common antenna. Also on the same antenna is: KFTZ, 103.3MHz. and KPLV, 105.5MHz.

| |
|---|
| <p>Exhibit E, Figure 4 Vertical Sketch of Supporting Structure</p> |
| <p>"Sand Hill" KQEO Idaho Falls, Idaho Channel 299C1 - 107.7 MHz. January, 2003</p> |

**Engineering Statement
In Support of an
Application for a Construction Permit
KQEO, Idaho Falls, Idaho**

Human Exposure To Radiofrequency Radiation Study

| <u>CALL</u> | <u>Service</u> | <u>Channel</u> | <u>Frequency</u> | <u>Polarization</u> | <u>Antenna Height* (AGL)</u> | <u>ERP (kW)</u> | <u>Vertical Relative Field Factor</u> | <u>Predicted Power Density (mWcm²)</u> | <u>FCC Uncontrolled Limit (mWcm²)</u> | <u>Percent of Uncontrolled Limit</u> |
|-------------|----------------|----------------|------------------|---------------------|------------------------------|-----------------|---------------------------------------|---|--|--------------------------------------|
| KFTZ | FM | 277 | 103.3 | H&V | 52.1 | 100.000 | 1.000 | 0.0465600 | 0.200 | 23.280% |
| KPLV | FM | 288 | 105.5 | H&V | 52.1 | 100.000 | 1.000 | 0.0465600 | 0.200 | 23.280% |
| KQEO | FM | 300 | 107.9 | H&V | 52.1 | 100.000 | 1.000 | 0.0465600 | 0.200 | 23.280% |

Total Percentage of ANSI value = 69.840%

* The antenna height indicated above is 2 meters less than the actual antenna height so that the predicted power density consider the 2 meter human height allowance.

The proposed change of KQEO will use the common antenna of KLTZ and KPLV. The common antenna is a Harris model TAC-6M-2/12, 6 section panel antenna. Exhibit E, Figure 8 displays the vertical elevation pattern of the Harris antenna (provided by Dielectric).

As demonstrated, the total percentage of the ANSI values at the proposed site, considering the radiation of proposed facilities and the existing facilities is 69.84% of the limit for “uncontrolled” environments when using an EPA dipole antenna for study purposes. The total percentage for “controlled” environments is only 13.968%.