

TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
NEW LOW POWER TV STATION  
FACILITY ID 125589  
PARK CITY, UTAH  
CH 23 1.0 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of a complete (long-form) FCC Form 346 for the proposed new Low Power TV (LPTV) station on channel 23 at Park City, Utah (FCC File No. BNPTTL-20000815ACB, Facility ID 125589). It is proposed to operate on channel 23 (524-530 MHz) with a "plus" carrier frequency offset using a Scala composite directional antenna pattern (Antenna ID 41825) oriented at 50° true. The maximum ERP will be 1.0 kW. The antenna radiation center height above mean sea level will be 2279 meters.

Waiver of Geographic Restriction Based on Terrain Shielding

The proposed transmitter site is located 32 km (19.9 miles) from the Salt Lake City, Utah reference point (N40°45'23", W111°53'26"), whereas the auction filing window specified a minimum distance of 121 km (75 miles). The FCC indicated that waivers will be granted where it can be demonstrated that the proposed facilities are completely shielded by terrain barriers from the applicable television market. The Wasatch Range is located between Salt Lake City and the proposed channel 23 operation at Park City. Therefore, a waiver of the geographic restriction is requested based on terrain shielding. A terrain study has been prepared based on the procedures outlined in Commission Policy Regarding Terrain Shielding, 3 FCC Rcd 7105 (1988).

Figure 1 is a map which depicts the 74 dBu coverage contour for the proposed channel 23 operation at Park City, Utah. The contour location is based on the FCC's standard prediction method. In addition, the map depicts the Salt Lake City, Utah reference point along with three radials from the

Salt Lake City reference point towards the proposed 74 dBu contour, namely, the direct radial through the proposed site at 104.5° true along with radials towards the tangent points on the 74 dBu contour at 79.0° and 112.6° true. Sheets 1 through 3 of Figure 2 are terrain profiles along the 79.0°, 104.5° and 112.6° true radials, respectively. The terrain was derived using the Defense Mapping Agency's 3-second digitized terrain database. Also shown are the locations of the 74 dBu contour along each radial and the "direct" line-of-sight path drawn from the Salt Lake City reference point and the closest point on the 74 dBu contour. It is apparent that the effect of "terrain shielding" caused by the intervening Wasatch Range would be significant. Therefore, it is believed that the proposed facilities would be completely shielded from the Salt Lake City television market by the Wasatch Range.

Response to Paragraph 6 - Antenna Registration

The antenna will be pole-mounted at the 18 meter level on an existing 19 meter tower. The tower registration number is 1059221.

Response to Paragraph 13(a) - TV Broadcast Analog Protection

A study has been conducted using the provisions of Section 74.705 which indicates that the proposed operation will not create prohibited interference to other existing, authorized or proposed NTSC full-power stations with the exceptions of KPNZ (formerly KAZG) on channel 24 at Ogden, UT (BPCT-20000522AAU) and KUWB on channel 30 at Ogden, UT (BLCT-2001019ABP). However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.705(e)], it is believed that the proposed operation complies with the FCC's interference criteria towards KPNZ and KUWB. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square kilometer grid. The results of the OET Bulletin No. 69 are tabulated on

Figure 3 and, as indicated, the proposal complies with the FCC's 0.5% interference threshold towards KPNZ and KUWB.<sup>1</sup>

Response to Paragraph 13(b) - DTV Station Protection

With respect to protection of digital television (DTV) assignments and allotments on channels 23, 24 and 25 as required by Section 74.706, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin. The results of the OET Bulletin No. 69 interference analyses are tabulated on Figure 3 and, as indicated, the proposed operation complies with a the FCC's 0.5% interference threshold towards all DTV stations and allotments.

Response to Paragraph 13(c) - LPTV/TV Translator Protection

A study has been conducted using the provisions of Section 74.707 which indicates that the proposal will not create prohibited interference to other existing, authorized or proposed LPTV stations except for the licensed operation of K23DS on channel 23 at Evanston, WY (BLTT-19940201JE), pending applications for channel 23 at Heber City, UT (BNPTT-20000831AWS) and Woodland & Kamas, UT (BNPTT-20000831CMI), and a pending application of K26DO on channel 23 at Duchesne, UT (BMPTT-20020403ABA). However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.707(e)], it is believed that the proposed operation complies with the FCC's interference criteria towards K23DS and the channel 23 applications at Heber City and Woodland & Kamas. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square kilometer grid. The results of the OET Bulletin No. 69 are tabulated on Figure 3 and, as indicated, the proposal complies with the FCC's 0.5% interference threshold towards K23DS and the channel 23 applications at Heber City and Woodland & Kamas.

<sup>1</sup> The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed. An Alpha based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

With respect to the pending application of channel K26DO at Duchesne, UT, the K26DO application was filed "after" the Park City channel 23 application. Therefore, the K26DO application is required to provide interference protection to the Park City channel 23 application.

Response to Paragraph 14 - Environmental Protection Act

The proposed LPTV facilities were evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation."<sup>2</sup> The calculated power density at 2 meters above ground at the base of the tower was calculated using the appropriate equation on Page 13 of the Bulletin.

Using a "conservative" vertical relative field value of 0.5 towards the tower base (see vertical plane relative field pattern attached as Figure 4), a peak visual effective radiated power of 1.0 kW, 10 percent aural power, and an antenna center of radiation height above ground level of 18 meters, the calculated power density at the at 2 meters above ground level at the base of the tower is 0.0163 milliwatt per square centimeter (mW/cm<sup>2</sup>), or 4.6 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas (0.35 W/cm<sup>2</sup> for TV channel 23). Therefore, based on the new responsibility threshold of 5%, the proposal will comply with the new RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement will be in place to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure.

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<sup>2</sup> See Report and Order in ET Docket 93-62, FCC 96-326, adopted August 1, 1996, 11 FCC Rcd 151.03 (1997). See also First Memorandum Opinion and Order, ET Docket 93-62, FCC 96-487, adopted December 23, 1996, 11 FCC Rcd 1751.0 (1997), and Second Memorandum Opinion and Order and Notice of Proposed Rulemaking, ET Docket 93-62, FCC 97-303, adopted August 25, 1997.

Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.

In addition, it appears that the proposal is otherwise excluded from environmental processing as it complies with all the criteria for such an exclusion in Section 1.1306.

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Sarasota, Florida 34237

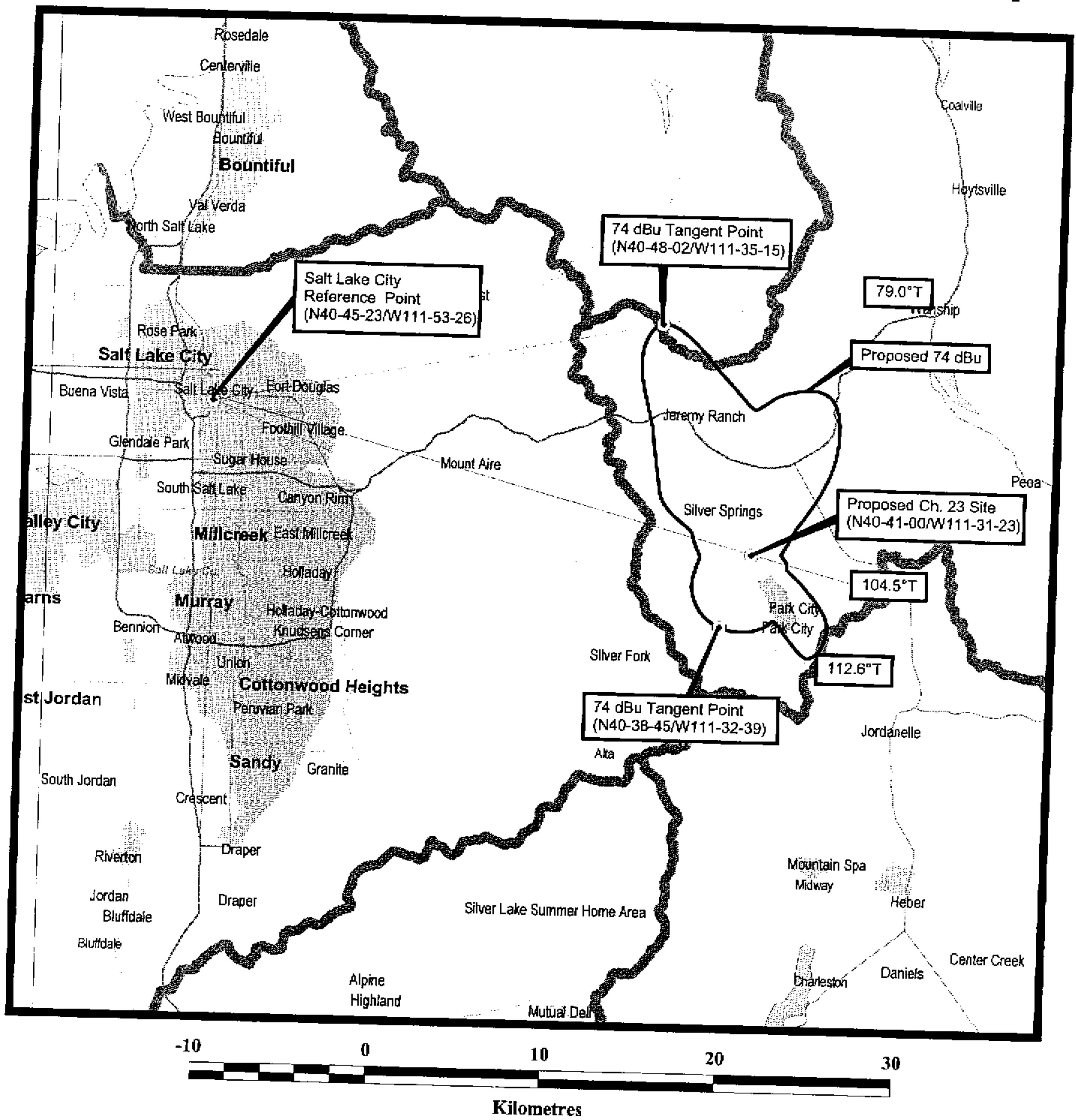
(941) 329-6000

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November 13, 2002



Figure 1



## TERRAIN SHIELDING WAIVER - SALT LAKE CITY REFERENCE POINT

NEW LPTV STATION  
PARK CITY, UTAH  
CH 23 1.0 KW (MAX-DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 2  
Sheet 1 of 3

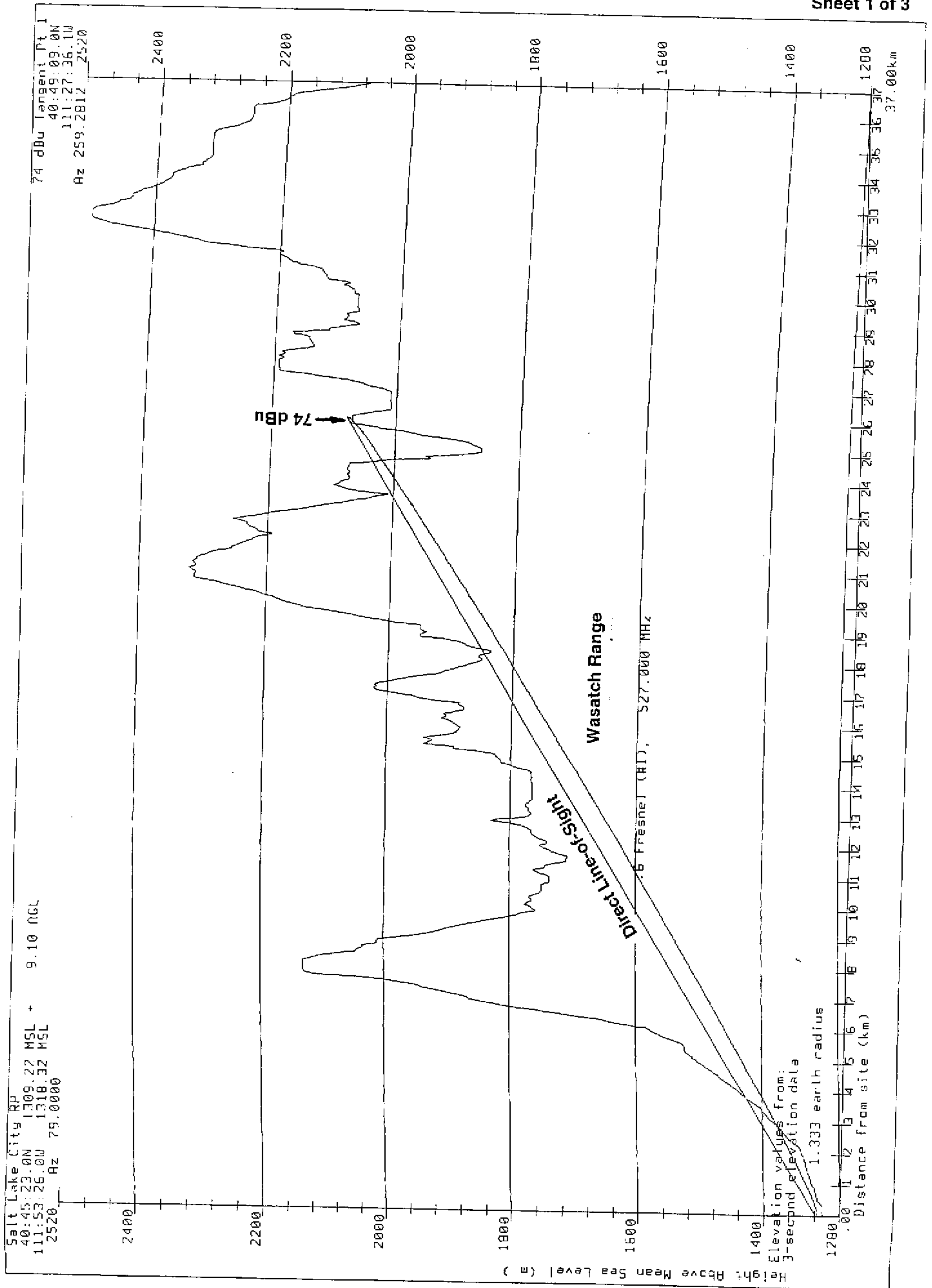
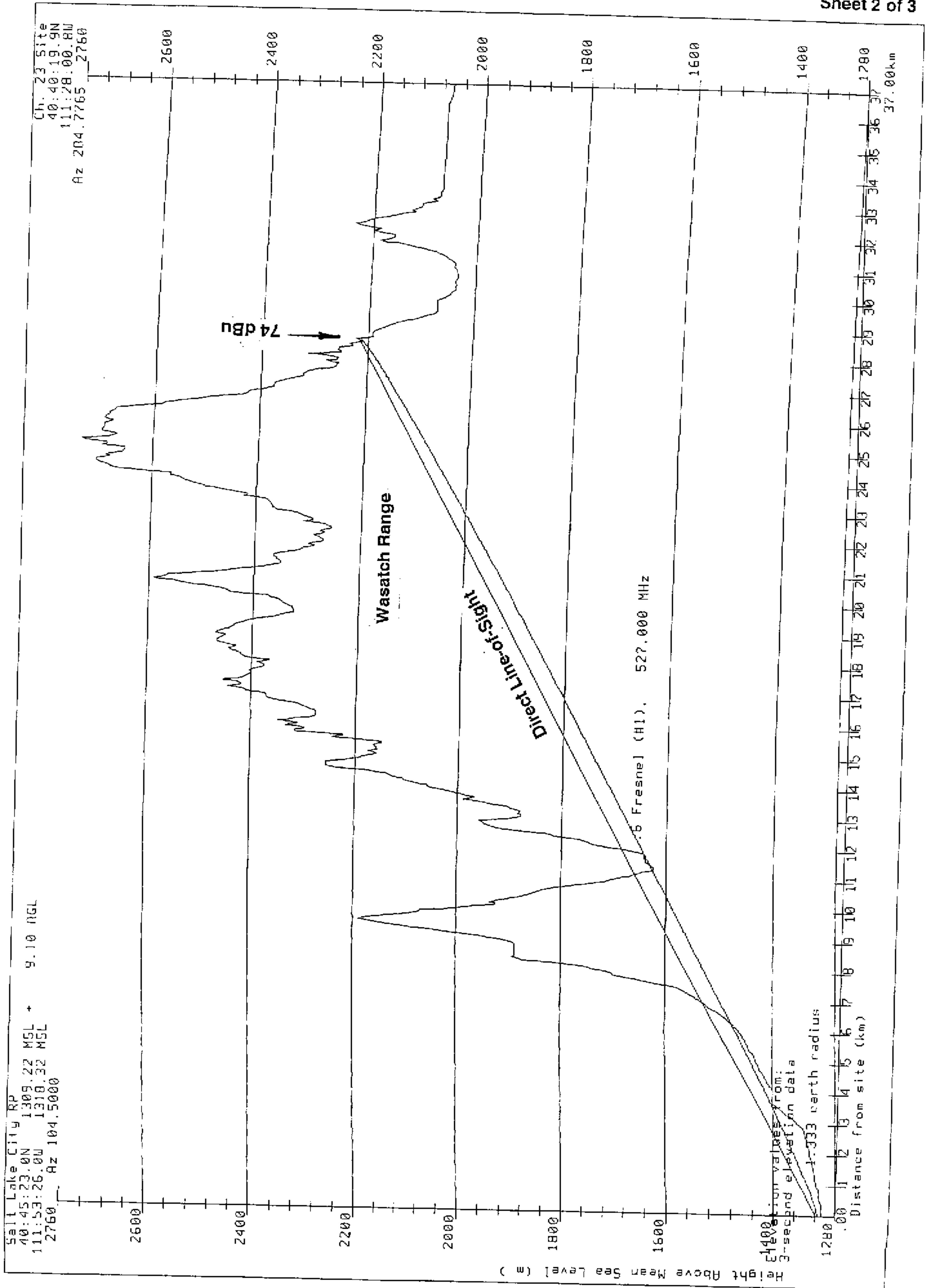
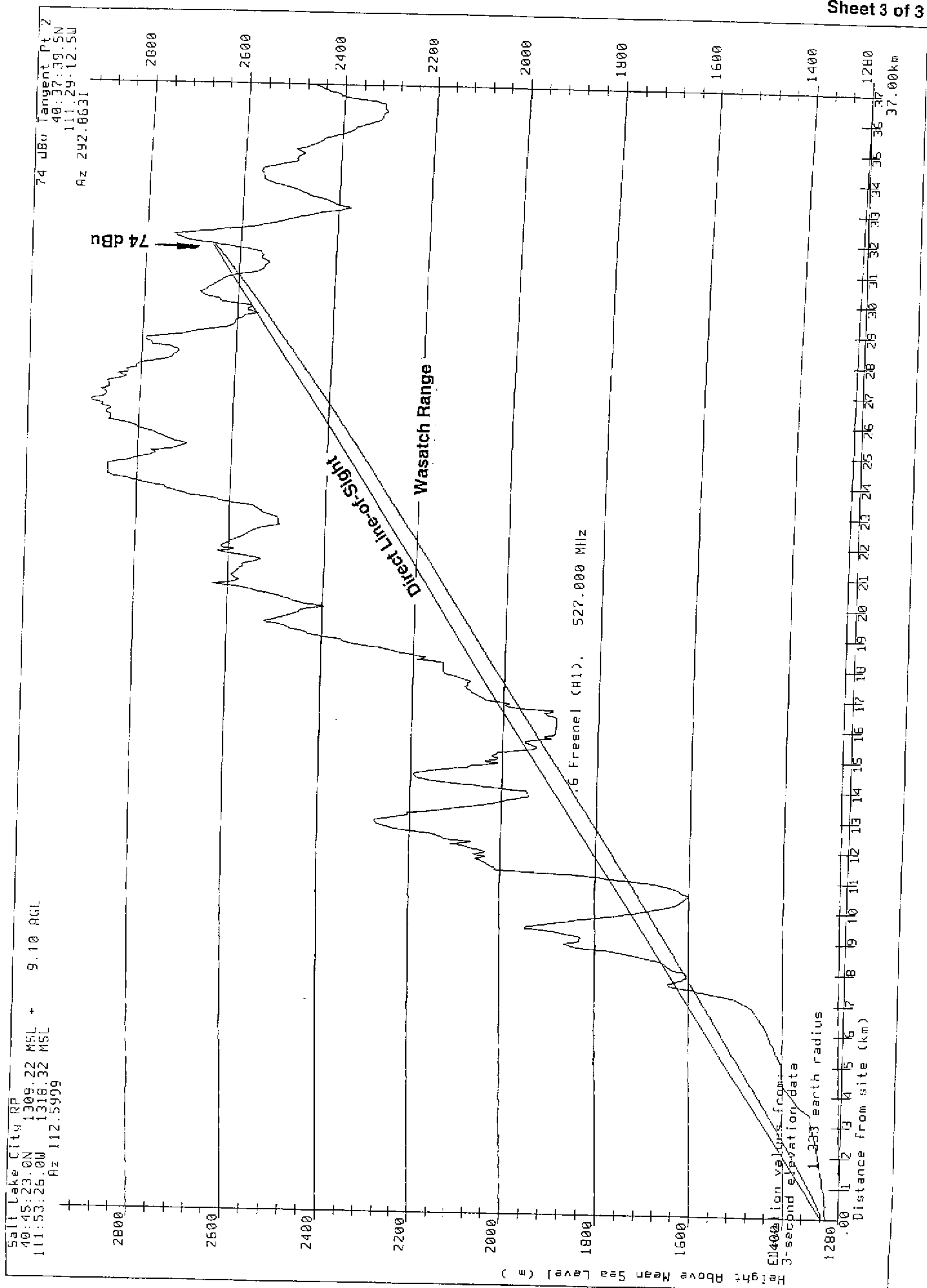


Figure 2  
Sheet 2 of 3





**Figure 2**  
**Sheet 3 of 3**



OET-69 TV, DTV and LPTV INTERFERENCE CAUSED STUDY

CELL SIZE : 2.00  
Using offset in determining thresholds  
Per 6th Report & Order and FCC OET-69 Bulletin

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KPNZ3 40-39-33 112-12-07 24(N) 450.000 kw 2874 m DA 90.0 % 39.7 dBu  
OGDEN UT

APP BPCDT20010221ABA

0.97	0.99	0.99	1.00	0.90	0.73	0.54	0.51	0.50	0.51	0.70	0.87
0.97	0.99	0.99	1.00	0.90	0.73	0.54	0.51	0.50	0.51	0.70	0.87
0.97	0.99	0.99	1.00	0.90	0.73	0.54	0.51	0.50	0.51	0.70	0.87

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	57621.98	1515880
not affected by terrain losses	39015.77	1402982

\*\*\*\*\*

PARK 40-41-00 111-31-23 23(+) 1.000 kw 2279 m DA 10.0 % 74.0  
PARK CITY UT

APP BNPTTL20000815ACB

0.15	0.08	0.06	0.05	0.05	0.06	0.06	0.11	0.21	0.42	0.61	0.77
0.88	0.94	0.98	1.00	0.98	0.92	0.83	0.71	0.57	0.46	0.42	0.51
0.64	0.77	0.88	0.95	0.99	0.99	0.96	0.91	0.83	0.69	0.53	0.32

Ref Az: 50.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -48.00

Interference	Area	Pop
0	0	0

\*\*\*\*\*

KPNZ2 40-39-33 112-12-07 24(Z) 1514.000 kw 2814 m DA 50.0 % 62.7 dBu  
OGDEN UT

CP BPCT20000522AAU

0.97	0.99	0.99	1.00	0.90	0.73	0.54	0.51	0.50	0.51	0.70	0.87
0.97	0.99	0.99	1.00	0.90	0.70	0.54	0.51	0.50	0.51	0.70	0.87
0.97	0.99	0.99	1.00	0.90	0.73	0.54	0.51	0.50	0.51	0.70	0.87

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	39327.26	1451754
not affected by terrain losses	23599.58	1377213

\*\*\*\*\*

PARK 40-41-00 111-31-23 23(+) 1.000 kw 2279 m DA 10.0 % 74.0  
PARK CITY UT

APP BNPTTL20000815ACB

0.15	0.08	0.06	0.05	0.05	0.06	0.06	0.11	0.21	0.42	0.61	0.77
0.88	0.94	0.98	1.00	0.98	0.92	0.83	0.71	0.57	0.46	0.42	0.51
0.64	0.77	0.88	0.95	0.99	0.99	0.96	0.91	0.83	0.69	0.53	0.32

Ref Az: 50.0

Using DEFAULT vertical antenna pattern

Interference	Area	Pop
0	0	0

\*\*\*\*\*

NEW2 40-33-45 111-28-30 23(Z) 3.000 kw 2568 m DA 50.0 % 74.0 dBu  
HEBER CITY UT

APP BNPTT20000831AWS

1.00	0.98	0.92	0.81	0.68	0.53	0.35	0.14	0.06	0.03	0.03	0.02
0.02	0.02	0.03	0.04	0.07	0.10	0.11	0.10	0.06	0.03	0.02	0.02
0.03	0.04	0.05	0.07	0.12	0.21	0.35	0.51	0.68	0.81	0.92	0.98

Ref Az: 150.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	689.3204	9810
not affected by terrain losses	621.1899	9337

\*\*\*\*\*

PARK 40-41-00 111-31-23 23(+) 1.000 kw 2279 m DA 10.0 % 74.0  
PARK CITY UT

APP BNPTTL20000815ACB

0.15	0.08	0.06	0.05	0.05	0.06	0.06	0.11	0.21	0.42	0.61	0.77
0.88	0.94	0.98	1.00	0.98	0.92	0.83	0.71	0.57	0.46	0.42	0.51
0.64	0.77	0.88	0.95	0.99	0.99	0.96	0.91	0.83	0.69	0.53	0.32

Ref Az: 50.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 28.00

Interference	Area	Pop
	20.04	17 ( 0.17%)

\*\*\*\*\*

NEW 40-33-59 111-14-31 23(Z) 0.450 kw 2309.8 m DA 50.0 % 74.0 dBu  
WOODLAND & KAMAS UT

APP BNPTT20000831CMI

1.00	0.96	0.76	0.74	0.88	0.90	0.79	0.79	0.89	0.96	0.97	0.87
0.67	0.49	0.34	0.28	0.21	0.08	0.06	0.08	0.21	0.28	0.34	0.49
0.67	0.87	0.97	0.96	0.89	0.79	0.79	0.90	0.88	0.74	0.76	0.96

Ref Az: 12.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	96.00209	663
not affected by terrain losses	92.00201	663

\*\*\*\*\*

PARK 40-41-00 111-31-23 23(+) 1.000 kw 2279 m DA 10.0 % 74.0  
PARK CITY UT

APP BNPTTL20000815ACB

0.15	0.08	0.06	0.05	0.05	0.06	0.06	0.11	0.21	0.42	0.61	0.77
0.88	0.94	0.98	1.00	0.98	0.92	0.83	0.71	0.57	0.46	0.42	0.51
0.64	0.77	0.88	0.95	0.99	0.99	0.96	0.91	0.83	0.69	0.53	0.32

Ref Az: 50.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 28.00

Interference	Area	Pop
	4.00	0 ( 0.0)

\*\*\*\*\*

K23DS 41-21-06 110-54-20 23(N) 2.150 kw 2594 m DA 50.0 % 74.0 dBu  
EVANSTON WY

LIC BLTT19940201JE

1.00	0.98	0.92	0.81	0.68	0.53	0.35	0.14	0.06	0.03	0.03	0.02
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0.02 0.02 0.03 0.04 0.07 0.10 0.11 0.01 0.06 0.03 0.02 0.02  
0.03 0.04 0.05 0.07 0.12 0.21 0.35 0.51 0.68 0.81 0.92 0.98

Ref Az: 190.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	392.4535	11461
not affected by terrain losses	380.4396	11461

\*\*\*\*\*

PARK 40-41-00 111-31-23 23(+) 1.000 kw 2279 m DA 10.0 % 74.0

PARK CITY UT

APP BNPTTL20000815ACB

0.15 0.08 0.06 0.05 0.05 0.06 0.06 0.11 0.21 0.42 0.61 0.77  
0.88 0.94 0.98 1.00 0.98 0.92 0.83 0.71 0.57 0.46 0.42 0.51  
0.64 0.77 0.88 0.95 0.99 0.99 0.96 0.91 0.83 0.69 0.53 0.32

Ref Az: 50.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

Interference	Area	Pop
	4.00	0( 0.0)

\*\*\*\*\*

KPVI 42-55-15 112-20-44 23(N) 505.000 kw 2063 m DA 90.0 % 39.6 dBu  
POCATELLO ID 33212 267 DTVSERVICE: 267000 NTSCSERVICE: 265000  
CP BPCDT19991029AAY

1.00 0.98 0.93 0.88 0.92 0.95 0.90 0.77 0.63 0.49 0.32 0.18  
0.19 0.19 0.18 0.18 0.20 0.18 0.19 0.31 0.49 0.63 0.77 0.90  
0.96 0.92 0.89 0.92 0.98 1.00 0.99 0.92 0.86 0.87 0.87 0.98

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	30780.52	220258
not affected by terrain losses	24516.38	213662

\*\*\*\*\*

PARK 40-41-00 111-31-23 23(+) 1.000 kw 2279 m DA 10.0 % 74.0

PARK CITY UT

APP BNPTTL20000815ACB

0.15 0.08 0.06 0.05 0.05 0.06 0.06 0.11 0.21 0.42 0.61 0.77  
0.88 0.94 0.98 1.00 0.98 0.92 0.83 0.71 0.57 0.46 0.42 0.51  
0.64 0.77 0.88 0.95 0.99 0.99 0.96 0.91 0.83 0.69 0.53 0.32

Ref Az: 50.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

Interference	Area	Pop
	0	0

\*\*\*\*\*

DKPVI 42-55-15 112-20-44 23(0) 1000.000 kw 2078 m DA 90.0 % 39.6 dBu  
POCATELLO ID 33212 267 DTVSERVICE: 267000 NTSCSERVICE: 265000  
DTVALT DTV ALLOTMENT

0.75 0.74 0.73 0.72 0.71 0.69 0.71 0.80 0.90 0.99 0.94 0.85  
0.78 0.72 0.70 0.70 0.70 0.71 0.71 0.69 0.69 0.71 0.75 0.77  
0.77 0.77 0.77 0.77 0.77 0.77 0.77 0.77 0.77 0.77 0.77 0.77

( 89.0 1.00) ( 93.0 1.00) ( 94.0 1.00)

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA



	Area	Pop
within Noise Limited Contour	42967.36	282748
not affected by terrain losses	33276.51	265842

\*\*\*\*\*

PARK 40-41-00 111-31-23 23(+) 1.000 kw 2279 m DA 10.0 % 74.0

PARK CITY UT

APP BNPTTL20000815ACB

0.15	0.08	0.06	0.05	0.05	0.06	0.06	0.11	0.21	0.42	0.61	0.77
0.88	0.94	0.98	1.00	0.98	0.92	0.83	0.71	0.57	0.46	0.42	0.51
0.64	0.77	0.88	0.95	0.99	0.99	0.96	0.91	0.83	0.69	0.53	0.32

Ref Az: 50.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

Interference	Area	Pop
	0	0

\*\*\*\*\*

KREG-T 39-25-07 107-22-06 23(N) 399.700 kw 3240.6 m DA 90.0 % 39.6 dBu  
GLENWOOD SPRING CO 26314 77 DTVSERVICE: 77000 NTSCSERVICE: 85000

CP BPCDT19991029AFR

0.24	0.23	0.21	0.22	0.31	0.45	0.60	0.75	0.86	0.95	0.99	1.00
0.99	0.96	0.93	0.92	0.90	0.90	0.90	0.90	0.91	0.92	0.94	0.96
0.99	1.00	0.98	0.93	0.84	0.72	0.57	0.42	0.29	0.21	0.21	0.23

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	39726.14	205493
not affected by terrain losses	24512.13	70689

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PARK 40-41-00 111-31-23 23(+) 1.000 kw 2279 m DA 10.0 % 74.0

PARK CITY UT

APP BNPTTL20000815ACB

0.15	0.08	0.06	0.05	0.05	0.06	0.06	0.11	0.21	0.42	0.61	0.77
0.88	0.94	0.98	1.00	0.98	0.92	0.83	0.71	0.57	0.46	0.42	0.51
0.64	0.77	0.88	0.95	0.99	0.99	0.96	0.91	0.83	0.69	0.53	0.32

Ref Az: 50.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

Interference	Area	Pop
	0	0

\*\*\*\*\*

DKREGT 39-25-05 107-22-01 23(0) 879.200 kw 3231 m DA 90.0 % 39.6 dBu  
GLENWOOD SPRING CO 26314 77 DTVSERVICE: 77000 NTSCSERVICE: 85000

DTVALT DTV ALLOTMENT

0.27	0.28	0.26	0.27	0.32	0.39	0.46	0.52	0.59	0.64	0.74	0.86
0.96	1.00	0.95	0.91	0.83	0.82	0.94	0.85	0.76	0.75	0.80	0.88
0.94	0.91	0.80	0.69	0.59	0.49	0.43	0.36	0.29	0.25	0.22	0.24

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	43396.43	215479
not affected by terrain losses	26675.50	80257

\*\*\*\*\*

PARK 40-41-00 111-31-23 23(+) 1.000 kw 2279 m DA 10.0 % 74.0

PARK CITY UT

APP BNPTTL20000815ACB  
 0.15 0.08 0.06 0.05 0.05 0.06 0.06 0.11 0.21 0.42 0.61 0.77  
 0.88 0.94 0.98 1.00 0.98 0.92 0.83 0.71 0.57 0.46 0.42 0.51  
 0.64 0.77 0.88 0.95 0.99 0.99 0.96 0.91 0.83 0.69 0.53 0.32  
 Ref Az: 50.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

Interference                      Area                      Pop  
    0                                      0

Summary of Calculations

Facility	Channel	Type	Baseline	Permissible	IX	%Base
KPNZ3, OGDEN, UT	24	DTV	0	0.5	0	0.00
KPNZ2, OGDEN, UT	24	TV	1451754	0.5	157	0.01
KPNZ, OGDEN, UT	24	TV	1054878	0.5	0	0.00
KUWB, OGDEN, UT	30	TV	1423356	0.5	0	0.00
NEW2, HEBER CITY, UT	23	TV	9810	0.5	17	0.17
NEW, WOODLAND & KAMAS,	23	TV	678	0.5	0	0.00
K23DS, EVANSTON, WY	23	TV	11461	0.5	0	0.00
KPVI, POCA TELLO, ID	23	DTV	267000	0.5	0	0.00
DKPVI, POCA TELLO, ID	23	DTV	267000	0.5	0	0.00
KREG-T, GLENWOOD SPRING	23	DTV	85000	0.5	0	0.00
DKREGT, GLENWOOD SPRING	23	DTV	85000	0.5	0	0.00

Figure 4

