

KLEIN BROADCAST ENGINEERING, L.L.C.

dedicated to improving the science and technology of radio & television communications

**ENGINEERING EXHIBIT E-4
PREPARED IN SUPPORT
of FCC FORM 301 APPLICATION
MINOR CHANGE ONE-STEP UPGRADE
FM STATION KSRV(FM)
FCC FACILITY ID 35638
ONTARIO, OREGON**

Engineering Exhibit E-4, was prepared on behalf of FM Station KSRV(FM) at Ontario, Oregon, in support of its qualification to provide the Commission with an exhibit that shows compliance with 47 CFR Section 73.315 of the Commission's Rules, using an alternate method of contour prediction.

The purpose of this exhibit is to provide information demonstrating that a supplemental showing is warranted based on the FCC's guidelines for considering supplemental showings in the context of compliance with the coverage of the community of license (47 CFR Section 73.315). In addition this exhibit also demonstrates the instant One-Step Upgrade minor change application complies with the community of license coverage requirements of 47 CFR Section 73.315 based on this supplemental showing.

Station KSRV(FM) is presently licensed (FCC File No. BLH-19900730KC) to operate on FM Channel 241 C1 at Ontario, Oregon, with an effective radiated power (ERP) of 100kW and an antenna height above average terrain of 147 meters (HAAT). The instant One-Step Upgrade application, a minor change, seeks to specify operation on FM Channel 241 C at Ontario, Oregon.

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The purpose of the instant application is to seek the One-Step Upgrade to Class C and change transmitter location with facilities that will operate with 49kW ERP at 815 meters HAAT (full Class C facilities for 815 meters HAAT). The application proposes operation as a 47 CFR Section 73.215 station with respect of a short-spacing with KID(FM) at Idaho Falls, Idaho.

Demonstration that Consideration of a Supplemental Showing is Warranted

The predicted 70dBu contour, based on the FCC's standard prediction method will not provide coverage to at least 80% of the principal community, Ontario, Oregon, from the proposed 47 CFR Section 73.215 transmitter site. However using terrain sensitive propagation modeling, the 70dBu coverage contour is predicted to encompass at least 80% of Ontario, Oregon. (see Longley-Rice/Free Space Coverage) as required by the Commission's Rules. It is believed that a supplemental showing using an alternative contour prediction method is justified in this instance in accordance with 47 CFR Section 73.313(e) due to the "widely varying" terrain along the radials towards the community of license, Ontario, Oregon. In this regard, it is noted that the f(50,50) curves presume average terrain with a terrain roughness or delta h of 50 meters, whereas based on the methods of 47 CFR Section 73.313, delta h was determined to be between 602.2 and 666.2 meters along several radials through Ontario, Oregon, with the average being 631.2 meters.

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Specifically, delta h was determined at 293 degrees true, the direct radial bearing through the Ontario, Oregon reference point. This point was determined from the Geographic Names Information System. Delta H was determined along the radials of 291 degrees true, 293 degrees true and 295 degrees true from 3 kilometers distance to 83 kilometers distance from the proposed Section 73.215 transmitter site. The actual distance to the furthest community limit boundary of Ontario on each radial is: 291 degrees = 79.4 kilometers, 293 degrees = 78.76 kilometers and 295 degrees = 78.12 kilometers. This writer ran the radials out to 83 kilometers distance to insure a calculation of several kilometers past the most distant community of license boundary. All of the terrain data was derived from the Defense Mapping agency 3 Arc Second Terrain Datafile. (DMA 3 Arc Second Digitized Terrain Datafile) The specific delta h calculations are as follows:

291 degrees true = 602.2 meters delta h (3 to 83 kilometers)
293 degrees true = 625.2 meters delta h (3 to 83 kilometers)
295 degrees true = 666.2 meters delta h (3 to 83 kilometers)
Average = 631.2 meters delta h

In addition to the above radials, we have calculated the 3 to 16 kilometer delta h for the following radials:

290 degrees true = 458.3 meters delta h (3 to 16 kilometers)
291 degrees true = 475.2 meters delta h (3 to 16 kilometers)
292 degrees true = 498.6 meters delta h (3 to 16 kilometers)
293 degrees true = 501.3 meters delta h (3 to 16 kilometers)
294 degrees true = 507.9 meters delta h (3 to 16 kilometers)
295 degrees true = 537.7 meters delta h (3 to 16 kilometers)
296 degrees true = 544.0 meters delta h (3 to 16 kilometers)
Average 503.3 meters delta h

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The FCC considers terrain to “depart widely” from the 50 meter delta h standard where the delta h value is 20 meters or less or 100 meters or greater, as indicated above delta h was determined to be between 602.2 and 666.2 meters along the radials through Ontario, Oregon with the average delta h for those radials of 631.2 meters. Furthermore, the FCC has previously accepted the use of an alternate method to determine the location of the principal community contour for more than several proposals, specifically KRFR at Shafter, California and KALF at Red Bluff, California. The Commission has allowed the use of an alternate contour prediction method when the delta h was less than 20 meters or more than 100 meters on the radials toward the principal community from the proposed transmitter site as is the case herein.

Longley-Rice / Free Space Coverage

Both the Longley-Rice prediction method (Rice, P.L., A.G. Longley, K.A. Norton and A.P. Barsis, “Transmission Loss Predictions for Tropospheric Communications Circuits,” Technical Note 101 Issued May 7, 1965, Revised January 1, 1967, National Bureau of Standards, Boulder, Colorado.) see also (Longley, A.G. and P.L. Rice, “Prediction of Tropospheric Radio Transmission Loss Over Irregular Terrain; A Computer Method-1969” “ESSA Technical Report ERL-ITS 67, Institute for Telecommunications Sciences, Boulder, Colorado, July 1968.) and the Free Space Method are used for more precise alternatives to the Commission’s standard contour prediction method to determine the location of the proposed KSRV(FM) 70dBu contour.

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For the Longley Rice method, terrain profiles were prepared for the 293 degree T. radial along with the 291 degree T. radial and the 295 degree T. radial. Exhibits E-4A, E-4B, and E-4C depict the true terrain profiles for these radials. The terrain data was derived from the Defense Mapping Agency 3 Arc Second Terrain Database. Using these terrain elevations, calculations of field strength were made along each radial using the Longley-Rice prediction method. The following parameters were employed in the calculations:

Model:	Point to Point Irregular
Radio Climate:	Continental Temperate
Location Variability:	50%
Time Variability:	50%
Situation Variability:	50%
Frequency:	96.1 mHz.
Polarization:	Horizontal
Conductivity:	0.005 m/S
Dielectric Constant:	15.0
Transmitter Antenna Height AMSL:	2203 meters
Transmitting Antenna:	Omni-Directional
Maximum Effective Radiated Power:	49.0kW
Receive Antenna Height AGL:	9 meters
Clutter Factor:	5.0dB

As indicated a 5.0dB clutter factor was used to take into account field strength variations due to local clutter (e.g. trees, buildings and other structures) The use of a 5.0dB clutter factor appears conservative here. For instance, a 2 dB clutter factor was used by O.E.T. to establish that KALF-FM encompassed its main studio location with its principal community contour in the Engineering Memorandum issued by O.E.T. September 1992. In addition Bullington indicated that the average loss for surrounding trees for horizontal polarization may be 2 to 3 dB (see Kenneth Bullington, "Radio Propagation Above 30 Megacycles, Proc IRE, October 1947)

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The calculated field strength at 83 kilometers distance from the proposed Section 73.215 transmitter site using the Longley-Rice method is as follows for each radial calculated:

**293 degrees true = 79.91 dBu
291 degrees true = 79.91 dBu
295 degrees true = 79.91 dBu**

The calculated distance to the 70dBu field strength level using the Longley-Rice method is as follows for the radials of concern:

**293 degrees true distance to 70dBu contour 95.9 kM
291 degrees true distance to 70dBu contour 93.1 kM
295 degrees true distance to 70dBu contour 95.1 kM**

The distances for the 70dBu contour using the FCC Standard Prediction Method for the radials of concern are as follows:

**293 degrees true distance to 70dBu contour 68.735 kM
291 degrees true distance to 70dBu contour 69.101 kM
295 degrees true distance to 70dBu contour 68.180 kM**

The preceding tabulations for the distances to the 70dBu contour using the FCC Standard Prediction Method and above that using the Longley-Rice Method shows a greater than 10% difference in predicted distances to the 70dBu contour of concern.

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The following will provide a sample of the Longley-Rice method predicted field strength at the Ontario, Oregon, geographic reference location:

**NL: 44-01-29 / WL: 116-58-24
Distance is 76.45 kilometers from transmitter site
Free Space Field with (49.0kW / 16.9dBk) 86.132 dBu
Additional Estimated Transmission Loss 0.5 dB
Clutter Loss 5.0dB
Longley-Rice Predicted Net field strength of 80.632 dBu**

From the preceding it can be assumed that the entire principal community will receive 79.91dBu and greater signal strength over 100% of the community of license, Ontario, Oregon.

Conclusion

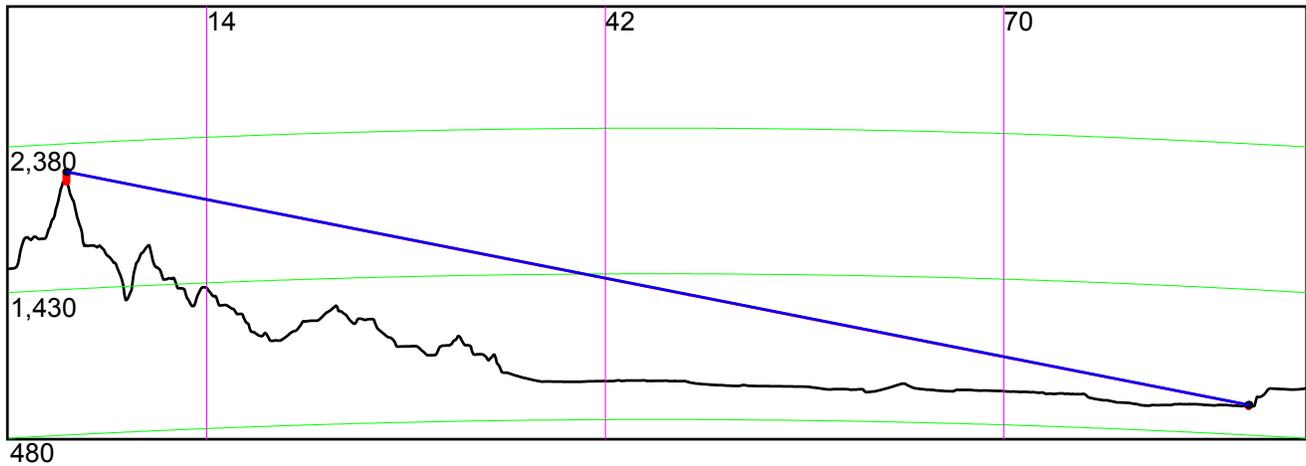
As demonstrated above, use of a supplemental showing is warranted based on the FCC's guidelines for considering supplemental showings in the context compliance with coverage of the of the community of license, principal community coverage requirements of 47 CFR Section 73.315 based on the allowable supplemental showing.

EXHIBIT E-4B Terrain Plot 291 Degrees True

Klein Broadcast Engineering, L.L.C.

Date: 7/7/2004

Terrain Profile from +043:45:18 / -116:05:51 to +044:01:38 / -117:03:35 NAD-27



Description: Terrain Path Plot from Proposed KSRV(FM) Deer Point Site toward Ontario, Oregon 291 degrees true

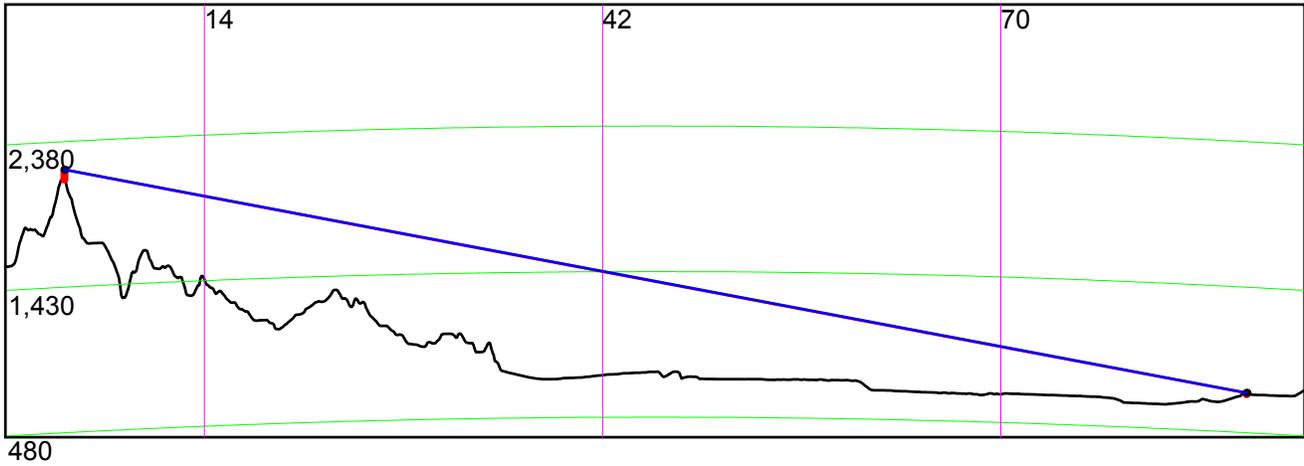
Start Point Latitude: +043:45:18	End Point Latitude: +044:01:38
Start Point Longitude: -116:05:51	End Point Longitude: -117:03:35
Start Point AMSL: 2,131.3 meters	End Point AMSL: 668.0 meters
Start Antenna AGL: 66 meters	End Antenna AGL: 9 meters
Range: 83.0 km	E-Curve: 1.330
Bearing: 291 degrees	% Fresnel: 1
Average Height: 901.4 meters	Frequency: 100 MHz
Minimum Height: 640.9 meters	Free Space Path Loss: 110.8 dB
Maximum Height: 2,131.3 meters	Modeled Path Loss: 111.3 dB

EXHIBIT E-4C Terrain Plot 295 Degrees True

Klein Broadcast Engineering, L.L.C.

Date: 7/7/2004

Terrain Profile from +043:45:18 / -116:05:51 to +044:04:19 / -117:02:07 NAD-27



Description: Terrain Path Plot from Proposed KSRV(FM) Deer Point Site toward Ontario, Oregon 295 degrees true

Start Point Latitude: +043:45:18	End Point Latitude: +044:04:19
Start Point Longitude: -116:05:51	End Point Longitude: -117:02:07
Start Point AMSL: 2,131.4 meters	End Point AMSL: 731.0 meters
Start Antenna AGL: 66 meters	End Antenna AGL: 9 meters
Range: 83.1 km	E-Curve: 1.330
Bearing: 295 degrees	% Fresnel: 1
Average Height: 918.5 meters	Frequency: 100 MHz
Minimum Height: 639.9 meters	Free Space Path Loss: 110.8 dB
Maximum Height: 2,131.4 meters	Modeled Path Loss: 111.3 dB

EXHIBIT E-4D 293 Degree Radial Sample Delta h Tabulation

Azimuth	START	END	Roughness	Max (meters)	Min	90th Pct	10th Pct	SDev	Var
293	3kM	83kM	625.23	1663.08	640	1288.63	663.4	269.18	72460.04

TestPoint	Latitude	Longitude	Height AMSL (meters)
1	43.7656	-116.1318	617.19
2	43.7665	-116.1348	590.82
3	43.7674	-116.1377	547.24
4	43.7683	-116.1407	490.55
5	43.7692	-116.1437	445.66
6	43.7701	-116.1467	426.13
7	43.7711	-116.1497	427.06
8	43.772	-116.1526	486.49
9	43.7729	-116.1556	554.98
10	43.7738	-116.1586	622.96
11	43.7747	-116.1616	652.49
12	43.7756	-116.1646	663.08
13	43.7766	-116.1675	649.55
14	43.7775	-116.1705	602.58
15	43.7784	-116.1735	562.77
16	43.7793	-116.1765	538.64
17	43.7802	-116.1795	525.69
18	43.7811	-116.1824	513.49
19	43.7821	-116.1854	481.34
20	43.783	-116.1884	442.31
21	43.7839	-116.1914	403.86
22	43.7848	-116.1944	367.86
23	43.7857	-116.1973	336.82
24	43.7866	-116.2003	316.46
25	43.7875	-116.2033	350.09
26	43.7885	-116.2063	386
27	43.7894	-116.2093	405.37
28	43.7903	-116.2122	381.45
29	43.7912	-116.2152	354.27
30	43.7921	-116.2182	330.22
31	43.793	-116.2212	310.23
32	43.794	-116.2242	288.63
33	43.7949	-116.2271	270.57
34	43.7958	-116.2301	253.01
35	43.7967	-116.2331	233.83
36	43.7976	-116.2361	208.83
37	43.7985	-116.2391	182.73
38	43.7995	-116.242	156.79
39	43.8004	-116.245	138.32
40	43.8013	-116.248	122.5
41	43.8022	-116.251	107.1
42	43.8031	-116.254	95.53
43	43.804	-116.2569	86.36
44	43.805	-116.2599	81.88
45	43.8059	-116.2629	77.04
46	43.8068	-116.2659	68.27
47	43.8077	-116.2689	67.94

48	43.8086	-116.2719	1	72.33
49	43.8095	-116.2748	1	78.72
50	43.8105	-116.2778	1	94.53
51	43.8114	-116.2808	1	110.19
52	43.8123	-116.2838	1	125.31
53	43.8132	-116.2868	1	141.54
54	43.8141	-116.2897	1	157.77
55	43.815	-116.2927	1	170.71
56	43.816	-116.2957	1	176.54
57	43.8169	-116.2987	1	181.89
58	43.8178	-116.3017	1	196.73
59	43.8187	-116.3046	1	216.26
60	43.8196	-116.3076	1	235.78
61	43.8205	-116.3106	1	247.32
62	43.8215	-116.3136	1	254.98
63	43.8224	-116.3166	1	261.1
64	43.8233	-116.3195	1	241.4
65	43.8242	-116.3225	1	219.28
66	43.8251	-116.3255	1	199.18
67	43.826	-116.3285	1	195.33
68	43.827	-116.3315	1	191.46
69	43.8279	-116.3345	1	181.72
70	43.8288	-116.3374	1	160.02
71	43.8297	-116.3404	1	135.18
72	43.8306	-116.3434	1	112.73
73	43.8315	-116.3464	1	89.84
74	43.8325	-116.3494	1	62.23
75	43.8334	-116.3524	1	47.3
76	43.8343	-116.3553	1	45.64
77	43.8352	-116.3583	1	40.05
78	43.8361	-116.3613	1	22.22
79	43.837	-116.3643	1	6.67
80	43.838	-116.3673	996.61	
81	43.8389	-116.3702	999.91	
82	43.8398	-116.3732	1	3.2
83	43.8407	-116.3762	1	1.79
84	43.8416	-116.3792	994.62	
85	43.8425	-116.3822	978.23	
86	43.8434	-116.3852	957.92	
87	43.8444	-116.3881	944.45	
88	43.8453	-116.3911	941.2	
89	43.8462	-116.3941	954.99	
90	43.8471	-116.3971	969.02	
91	43.848	-116.4001	980.5	
92	43.8489	-116.4031	982.65	
93	43.8499	-116.406	982.44	
94	43.8508	-116.409	989.97	
95	43.8517	-116.412	1	11.49
96	43.8526	-116.415	1	26.72
97	43.8535	-116.418	1	23.44
98	43.8544	-116.421	1	3.92

99	43.8554	-116.4239	985.98
100	43.8563	-116.4269	963.82
101	43.8572	-116.4299	938.77
102	43.8581	-116.4329	913.71
103	43.859	-116.4359	891.49
104	43.8599	-116.4389	875.94
105	43.8609	-116.4418	866.84
106	43.8618	-116.4448	850.45
107	43.8627	-116.4478	833.3
108	43.8636	-116.4508	817.43
109	43.8645	-116.4538	803.59
110	43.8654	-116.4568	784.19
111	43.8664	-116.4597	768.99
112	43.8673	-116.4627	764
113	43.8682	-116.4657	759.32
114	43.8691	-116.4687	752.92
115	43.87	-116.4717	746.36
116	43.8709	-116.4747	740.6
117	43.8719	-116.4776	736.83
118	43.8728	-116.4806	733.24
119	43.8737	-116.4836	730
120	43.8746	-116.4866	730
121	43.8755	-116.4896	730
122	43.8764	-116.4926	730
123	43.8774	-116.4956	730
124	43.8783	-116.4985	730
125	43.8792	-116.5015	730
126	43.8801	-116.5045	730
127	43.881	-116.5075	730
128	43.8819	-116.5105	730
129	43.8829	-116.5135	730
130	43.8838	-116.5164	730.52
131	43.8847	-116.5194	731.62
132	43.8856	-116.5224	732.72
133	43.8865	-116.5254	734.12
134	43.8874	-116.5284	736.99
135	43.8884	-116.5314	739.06
136	43.8893	-116.5344	739.65
137	43.8902	-116.5373	739.14
138	43.8911	-116.5403	739.43
139	43.892	-116.5433	740.75
140	43.8929	-116.5463	742.19
141	43.8938	-116.5493	742.84
142	43.8948	-116.5523	743.72
143	43.8957	-116.5553	744.82
144	43.8966	-116.5582	745.91
145	43.8975	-116.5612	747.01
146	43.8984	-116.5642	748.12
147	43.8994	-116.5672	748
148	43.9003	-116.5702	742.06
149	43.9012	-116.5732	736.12

150	43.9021	-116.5761	734.24
151	43.903	-116.5791	740.38
152	43.9039	-116.5821	747.29
153	43.9048	-116.5851	747.02
154	43.9058	-116.5881	740.2
155	43.9067	-116.5911	731.83
156	43.9076	-116.5941	730
157	43.9085	-116.5971	730
158	43.9094	-116.6	729.96
159	43.9103	-116.603	727.24
160	43.9113	-116.606	725.32
161	43.9122	-116.609	724.18
162	43.9131	-116.612	723.83
163	43.914	-116.615	724.26
164	43.9149	-116.618	724.59
165	43.9158	-116.6209	723.4
166	43.9168	-116.6239	721.38
167	43.9177	-116.6269	718.91
168	43.9186	-116.6299	716.43
169	43.9195	-116.6329	713.94
170	43.9204	-116.6359	714.51
171	43.9213	-116.6389	715.6
172	43.9223	-116.6418	716.56
173	43.9232	-116.6448	714.84
174	43.9241	-116.6478	712.33
175	43.925	-116.6508	710
176	43.9259	-116.6538	710.6
177	43.9268	-116.6568	710.41
178	43.9278	-116.6598	708.85
179	43.9287	-116.6628	707.03
180	43.9296	-116.6657	706
181	43.9305	-116.6687	706.6
182	43.9314	-116.6717	707.7
183	43.9323	-116.6747	708.8
184	43.9333	-116.6777	706.71
185	43.9342	-116.6807	703.87
186	43.9351	-116.6837	702.1
187	43.936	-116.6867	703.2
188	43.9369	-116.6896	704.3
189	43.9378	-116.6926	704.25
190	43.9388	-116.6956	701.76
191	43.9397	-116.6986	699.28
192	43.9406	-116.7016	697.04
193	43.9415	-116.7046	694.42
194	43.9424	-116.7076	691
195	43.9433	-116.7106	686.8
196	43.9443	-116.7135	681.82
197	43.9452	-116.7165	676.04
198	43.9461	-116.7195	676.51
199	43.947	-116.7225	678.08
200	43.9479	-116.7255	680

201	43.9488	-116.7285	680
202	43.9498	-116.7315	680
203	43.9507	-116.7345	677.96
204	43.9516	-116.7374	674.11
205	43.9525	-116.7404	671.04
206	43.9534	-116.7434	670
207	43.9543	-116.7464	670
208	43.9552	-116.7494	670
209	43.9562	-116.7524	672.87
210	43.9571	-116.7554	676.45
211	43.958	-116.7584	680.04
212	43.9589	-116.7614	682.68
213	43.9598	-116.7643	684.13
214	43.9607	-116.7673	685.01
215	43.9617	-116.7703	686.4
216	43.9626	-116.7733	687.79
217	43.9635	-116.7763	687.03
218	43.9644	-116.7793	684.03
219	43.9653	-116.7823	681.82
220	43.9662	-116.7853	680.51
221	43.9672	-116.7882	679.41
222	43.9681	-116.7912	678.31
223	43.969	-116.7942	678.07
224	43.9699	-116.7972	678.7
225	43.9708	-116.8002	680
226	43.9717	-116.8032	680
227	43.9727	-116.8062	680
228	43.9736	-116.8092	679.16
229	43.9745	-116.8122	675.69
230	43.9754	-116.8152	671.73
231	43.9763	-116.8181	671.49
232	43.9772	-116.8211	673.92
233	43.9782	-116.8241	675.56
234	43.9791	-116.8271	676.35
235	43.98	-116.8301	677.68
236	43.9809	-116.8331	679.79
237	43.9818	-116.8361	680.6
238	43.9827	-116.8391	680.49
239	43.9837	-116.8421	680.11
240	43.9846	-116.845	683.17
241	43.9855	-116.848	687.04
242	43.9864	-116.851	689.55
243	43.9873	-116.854	687.69
244	43.9882	-116.857	685.06
245	43.9892	-116.86	684.42
246	43.9901	-116.863	686.43
247	43.991	-116.866	689.24
248	43.9919	-116.869	689.92
249	43.9928	-116.872	689.12
250	43.9937	-116.8749	687.54
251	43.9947	-116.8779	688.69

252	43.9956	-116.8809	689.11
253	43.9965	-116.8839	688.45
254	43.9974	-116.8869	686.24
255	43.9983	-116.8899	684.05
256	43.9992	-116.8929	680.38
257	44.0001	-116.8959	674.86
258	44.0011	-116.8989	671.18
259	44.002	-116.9019	672.24
260	44.0029	-116.9049	675.82
261	44.0038	-116.9078	679.41
262	44.0047	-116.9108	680
263	44.0057	-116.9138	680
264	44.0066	-116.9168	679.86
265	44.0075	-116.9198	676.62
266	44.0084	-116.9228	672.62
267	44.0093	-116.9258	668.83
268	44.0102	-116.9288	663.4
269	44.0111	-116.9318	656.4
270	44.0121	-116.9348	649.17
271	44.013	-116.9378	644.16
272	44.0139	-116.9407	640.74
273	44.0148	-116.9437	640
274	44.0157	-116.9467	640
275	44.0166	-116.9497	640
276	44.0176	-116.9527	640
277	44.0185	-116.9557	640
278	44.0194	-116.9587	640.43
279	44.0203	-116.9617	644.02
280	44.0212	-116.9647	647.61
281	44.0221	-116.9677	648.8
282	44.0231	-116.9707	645.21
283	44.024	-116.9736	641.62
284	44.0249	-116.9766	641.98
285	44.0258	-116.9796	645.56
286	44.0267	-116.9826	649.15
287	44.0276	-116.9856	652.74
288	44.0286	-116.9886	656.33
289	44.0295	-116.9916	659.92
290	44.0304	-116.9946	657.73
291	44.0313	-116.9976	654.62
292	44.0322	-117.0006	651.34
293	44.0331	-117.0036	650.24
294	44.0341	-117.0066	650.68
295	44.035	-117.0096	653.15
296	44.0359	-117.0126	656.57
297	44.0368	-117.0155	659.21
298	44.0377	-117.0185	661.18
299	44.0386	-117.0215	663.71
300	44.0396	-117.0245	667.03
301	44.0405	-117.0275	668.56
302	44.0414	-117.0305	669.66

303	44.0423	-117.0335	671.73
304	44.0432	-117.0365	678.21
305	44.0441	-117.0395	685.48
306	44.0451	-117.0425	693.71
307	44.046	-117.0455	702.24
308	44.0469	-117.0485	709.98

Mean (Count
869.5 308

EXHIBIT E-4E

Alternate Prediction Method Contour Analysis

Klein Broadcast Engineering, L.L.C.

Job: KSRV(FM) Class C Upgrade DA Deer Pt20040614 FINALmod.fmj

Master Database: FCC CDBS 2004 JUL 07W.fmd

Date: 7/7/2004

Lat: N44:01:29 Lon: W116:58:24 NAD-27 (Map Center Coordinates for Ontario, OR)

Scale: 1:100000

Channel: 241 Class: C

Status: Application

Terrain Database: DMA 3 Arc Second Digitized Terrain Datafile

Contour Prediction Methods: Longley-Rice & FCC Standard f(50,50)

Comments: Longley-Rice Field Strength at Community center is 80.632 dBu

Description: EXHIBIT E-4E 79.91 dBu Longley-Rice Contour vs FCC Standard 70dBu

