

October 2019

Engineering Exhibit - Minor Modification

**KBCC FM – Tracy, CA
Facility ID# 176022**

Coordinates

NAD 27: 37 42 35.7 N, 121 28 39.4 W

NAD 83: 37 42 35.45 N, 121 28 43.2 W

Site elevation: 43 meters

AGL: 13.5 meters

AMSL: 56.6 meters

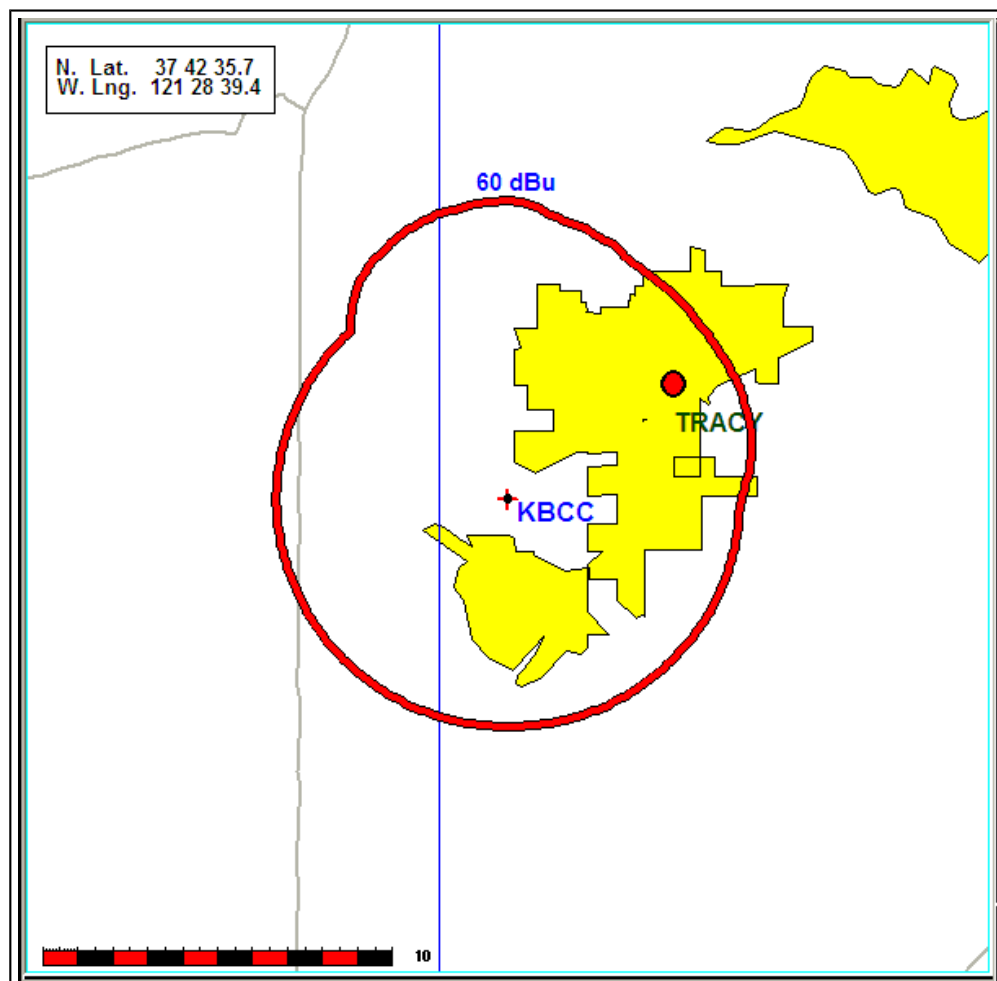
HAAT: -63 meters

Power: 190 watts ERP

Antenna: Non-directional single bay

Population within 60 dBu contour: 80,159 (2010 Census)

Note: 60 dBu contour covers greater than 50% of community of license.



Reserved Band Contour Overlap Protection

Per §73.509, proposed modification complies with contour overlap requirements with reserved-band facilities using methodology outlined in §73.313(c).

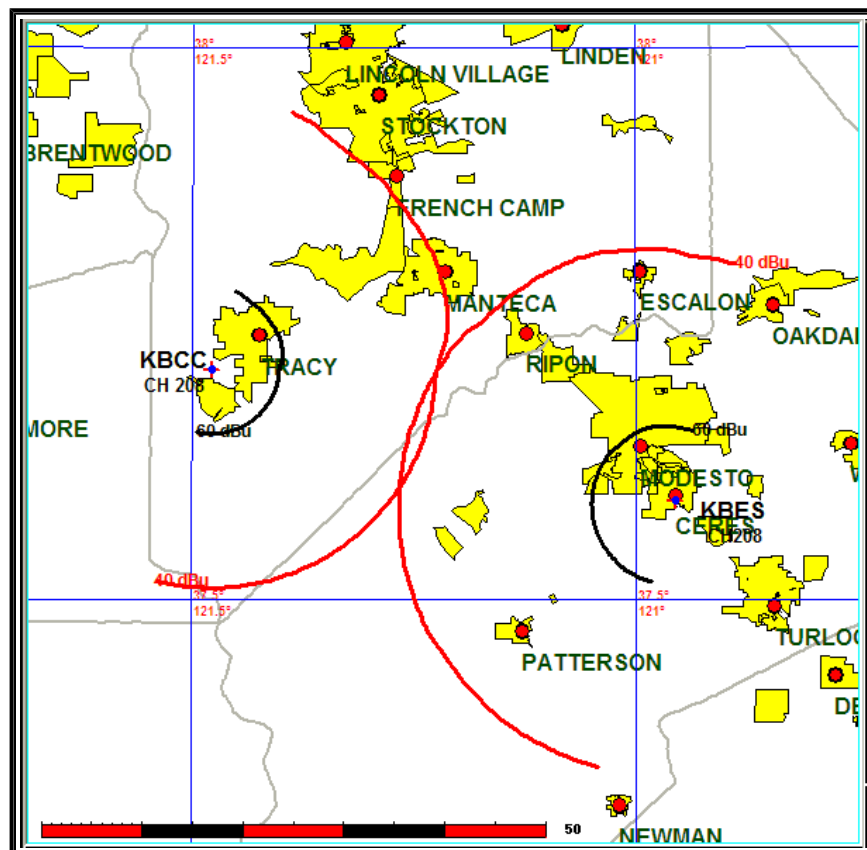
CHANNEL STUDY

KBCC FM CH# 208A - 89.5 MHz, Pwr= 0.19 kW, HAAT= -73.2 M, COR= 56.5 M Average Protected F(50-50)= 6.6 km Omni-directional											
REFERENCE 37 42 35.7 N. 121 28 39.4 W.											
DISPLAY DATES DATA 09-23-19 SEARCH 10-04-19											
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
208A Tracy	KBCC!	LIC	HX CA	188.5 8.5	4.00 BLED20130328AKC	37 40 27.6 121 29 03.7	0.100 -49	175	---	Reference---	
06---	KBKF-LP San Jose	APP	CN CA	236.0 55.8	41.85 BPTVL-20101014ACL	37 29 55.9 121 52 16.0	3.000 -999	4.3 831	39.7	44.0R	-2.1M
06---	KBKF-LP San Jose	APP	N CA	236.0 55.8	41.85 BPTVL-20101014ACL	37 29 55.9 121 52 16.0	3.000 -999	4.3 831	39.7	44.0R	-2.1M
211B Stockton	KYCC	LIC	DCX CA	31.8 211.9	32.52 BLED20080930ATZ	37 57 30.0 121 16 55.0	41.000 107	3.1 116	31.5 Your Christian Companion	21.8 N	0.0
209B Lodi	KLRS	LIC	DCX CA	357.8 177.8	62.50 BLED20081103AAE	38 16 18.0 121 30 18.0	2.500 487	53.3 489	34.4 Educational Media Foundati	0.6	16.0
205B Sacramento	KXPR	LIC	DCN CA	358.0 178.0	62.71 BLED19950926KB	38 16 25.0 121 30 11.0	50.000 150	5.7 152	50.6 California State Universit	48.4	11.2
207B1 Linden	KCAI	LIC	DVX CA	55.2 235.7	80.25 BLED20160318ABS	38 07 10.0 120 43 27.0	0.450 587	61.5 945	40.9 Educational Media Foundati	11.4	28.8
211D Livermore	K211EZ!	LIC	DC CA	231.8 51.7	20.63 BLFT20050718AAV	37 35 42.0 121 39 42.0	0.010 107	0.0 612	0.9 Your Christian Companion	14.0 N	18.7
208A Ceres	KBES	LIC	CX CA	106.2 286.5	47.80 BLED20100901ACT	37 35 21.0 120 57 23.0	0.150 40	27.2 72	8.2 Bet Nahrain, Inc.	14.0	17.5
KBKF-LP« San Jose		CP	D N CA	206.0 25.8	74.03 BDFCDVL-20140213AA	37 06 39.1 121 50 37.0	2.000 -999	4.3 1184	54.0	58.3R	15.7M
209B1 Los Altos	KFJC	LIC	C CA	233.7 53.3	72.80 BMLED19961105KB	37 19 14.0 122 08 29.0	0.110 562	46.4 820	29.8 Foothill-de Anza Community	19.8	33.5
207A Fremont	KOHL	LIC	DEN CA	243.0 62.8	42.16 BLED19930503KA	37 32 14.0 121 54 14.0	0.145 124	14.8 329	10.6 Fremont-newark Community C	20.7	22.1
261A Stockton	KQOD«	LIC	CX CA	36.9 217.0	39.88 BLH20110118ABO	37 59 47.8 121 12 15.9	6.000 100	0.0 115	0.0 Capstar Tx, Llc	9.5R	30.4M
208A San Francisco	KPOO	LIC	DHN CA	276.6 96.1	82.86 BLED19800304AC	37 47 33.0 122 24 52.0	0.270 165	45.5 188	13.8 Poor People's Radio, Inc.	30.8	46.9
208A Moraga	KSMC	LIC	DHN CA	284.8 104.4	57.43 BLED19840702CA	37 50 25.0 122 06 36.0	0.800 24	12.7 205	4.0 Associated Students of St.	38.1	31.4
206B1 Livingston	KCJH	LIC	DV CA	104.4 284.8	57.40 BLED20190628AAS	37 34 46.0 120 50 48.0	13.000 95	2.0 129	21.7 Your Christian Companion	48.8 N	34.8
KBKF-LP San Jose		LI	D N CA	206.0 25.8	74.03 BLTVL-20100818AAH	37 06 39.1 121 50 37.0	0.600 -999	4.3 1184	31.1	35.4R	38.7M
205B Sacramento	KXPR	APP	CX CA	12.6 192.7	89.16 BPED20180910AAG	38 29 32.6 121 15 15.0	50.000 97	5.1 131	46.3 California State Universit	75.9	41.9
207A San Jose	KMTG	LIC	DCX CA	211.1 30.8	65.89 BLED20040803ABX	37 12 06.0 121 51 42.0	0.300 -95	14.3 185	10.2 San Jose Unified School Di	45.0	46.2
207D Concord	K207EP!	LIC	DV CA	307.9 127.6	58.13 BLFT20091105ABZ	38 01 48.8 122 00 04.1	0.010 163	4.1 213	2.9 Your Christian Companion	47.4 N	45.8
210D Hayward	KCRH!	LIC	C CA	262.1 81.8	55.71 BMLED20030916AAP	37 38 23.0 122 06 16.0	0.018 -41	1.6 41	3.6 South County Community Col	47.5	51.1
06 -- Ceres	K06QL-D«	CP	DCN CA	83.5 264.1	84.77 0000022114	37 47 34.3 120 31 08.3	3.000 -999	4.5 417	24.3	28.8R	55.9M
06Z-- Sacramento	KEFM-LP«	CP	HN CA	20.7 201.0	120.08 0000021783	38 43 10.7 120 59 21.6	3.000 -999	5.2 673	40.0	45.2R	74.9M

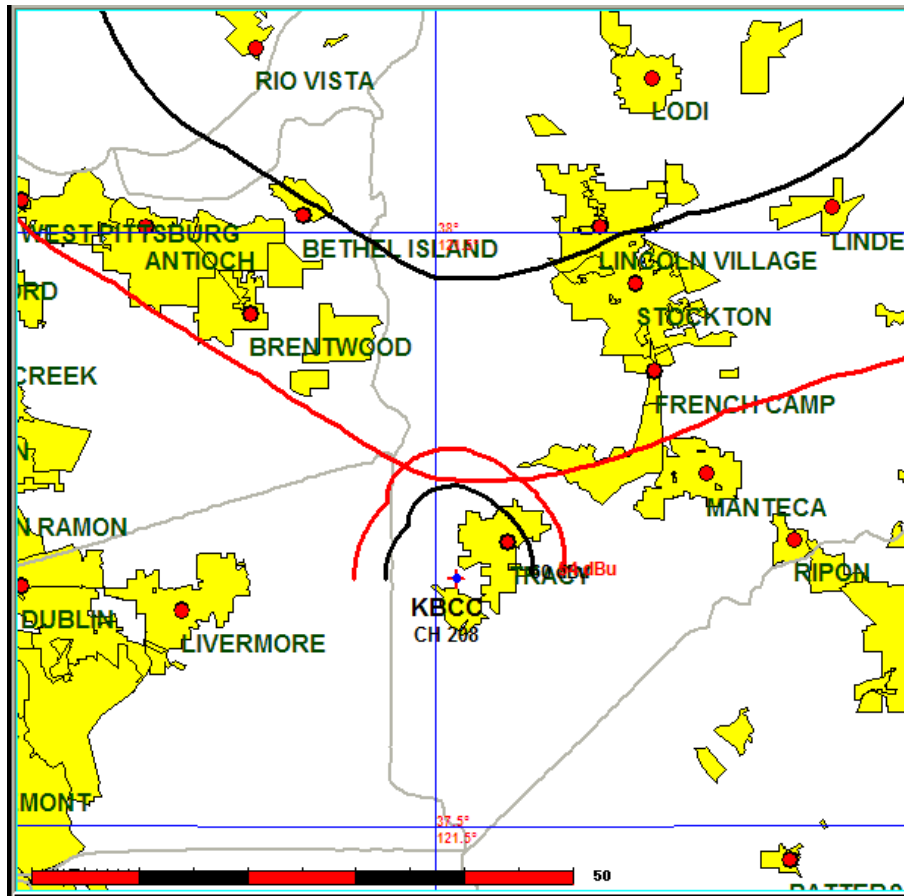
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap	*OUT* in km)
06Z--	KEFM-LP«										
Sacramento		APP	CN CA	0.1 180.1	110.95 0000075405	38 42 28.5 121 28 32.5	3.000 -999	5.6 132	24.0	29.5R	81.4M
06 --	KFMY-LD«										
Petaluma		CP	DHN CA	284.4 103.7	100.33 0000074716	37 55 45.0 122 35 09.0	2.000 -999	4.3 770	2.4	6.7R	93.6M
06 --	KEFM-LD«										
Sacramento		CP	D N CA	350.0 169.7	168.93 BDCCDVL-20110708AB	39 12 20.4 121 49 10.1	3.000 -999	5.6 694	51.3	56.9R	112.0M
06Z--	KEFM-LP«										
Sacramento		LI	D N CA	350.0 169.8	168.95 BLTVL-20120410AEA	39 12 21.1 121 49 09.7	3.000 -999	5.5 687	50.9	56.4R	112.6M
06 --	KFMY-LD«										
Petaluma		LI	DHN CA	305.6 124.9	119.81 0000011162	38 19 56.3 122 35 40.1	0.100 -999	4.3 589	0.7	5.0R	114.8M
06 --	KEFM-LD«										
Sacramento		CP	D N CA	350.0 169.7	168.93 BDCCDVL-20110708AB	39 12 20.4 121 49 10.1	3.000 -999	5.6 694	51.3	56.9R	112.0M
06Z--	KEFM-LP«										
Sacramento		LI	D N CA	350.0 169.8	168.95 BLTVL-20120410AEA	39 12 21.1 121 49 09.7	3.000 -999	5.5 687	50.9	56.4R	112.6M
06 --	KFMY-LD«										
Petaluma		LI	DHN CA	305.6 124.9	119.81 0000011162	38 19 56.3 122 35 40.1	0.100 -999	4.3 589	0.7	5.0R	114.8M

Terrain database is NGDC 30 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
Contour distances are on direct line to and from reference station. Reference Zone= - Zone 1A, Co to 3rd adjacent.
All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
« = Station meets FCC minimum distance spacing for its class.

KBCC to KBES - Cochannel



KBCC to KLRS – First Adjacent Channel



10-04-2019 Terrain Data: NGDC 30 SEC FMOVER Analysis

KBCC

KLRS BLED20081103AAE

Channel = 208A
Max ERP = 0.19 kw
RCMSL = 56.5 m
N. Lat. 37 42 35.7
W. Lng. 121 28 39.4
Protected
60 dBu

Channel = 209B
Max ERP = 2.5 kw
RCMSL = 489 m
N. Lat. 38 16 18.0
W. Lng. 121 30 18.0
Interfering
54 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
298.0	000.1900	-0031.5	006.6	183.3	000.4640	0489.0	059.4	51.22	
299.0	000.1900	-0026.1	006.6	183.3	000.4647	0489.0	059.3	51.26	
300.0	000.1900	-0020.6	006.6	183.2	000.4655	0489.0	059.2	51.31	
301.0	000.1900	-0015.1	006.6	183.2	000.4663	0489.0	059.1	51.35	
302.0	000.1900	-0010.1	006.6	183.1	000.4672	0489.0	059.0	51.39	
303.0	000.1900	-0006.3	006.6	183.1	000.4680	0489.0	058.9	51.44	
304.0	000.1900	-0003.4	006.6	183.0	000.4689	0489.0	058.8	51.48	
305.0	000.1900	-0001.2	006.6	182.9	000.4699	0489.0	058.7	51.53	
306.0	000.1900	0000.9	006.6	182.9	000.4708	0489.0	058.6	51.57	
307.0	000.1900	0003.4	006.6	182.8	000.4718	0489.0	058.5	51.61	
308.0	000.1900	0006.6	006.6	182.8	000.4728	0489.0	058.4	51.66	
309.0	000.1900	0010.1	006.6	182.7	000.4739	0489.0	058.4	51.70	
310.0	000.1900	0013.8	006.6	182.6	000.4750	0489.0	058.3	51.75	
311.0	000.1900	0017.1	006.6	182.5	000.4761	0489.0	058.2	51.79	
312.0	000.1900	0020.0	006.6	182.5	000.4772	0489.0	058.1	51.83	
313.0	000.1900	0022.6	006.6	182.4	000.4784	0489.0	058.0	51.87	
314.0	000.1900	0024.9	006.6	182.3	000.4796	0489.0	057.9	51.92	
315.0	000.1900	0026.9	006.6	182.3	000.4808	0489.0	057.8	51.96	
316.0	000.1900	0028.5	006.6	182.2	000.4821	0489.0	057.7	52.00	
317.0	000.1900	0030.0	006.6	182.1	000.4834	0489.0	057.7	52.04	
318.0	000.1900	0031.3	006.7	182.1	000.4833	0489.0	057.5	52.10	

319.0	000.1900	0032.5	006.9	182.1	000.4834	0489.0	057.3	52.16
320.0	000.1900	0033.8	007.0	182.1	000.4836	0489.0	057.2	52.23
321.0	000.1900	0035.0	007.1	182.1	000.4838	0489.0	057.0	52.29
322.0	000.1900	0036.2	007.2	182.0	000.4841	0489.0	056.8	52.35
323.0	000.1900	0037.4	007.3	182.0	000.4845	0489.0	056.6	52.42
324.0	000.1900	0038.4	007.4	182.0	000.4852	0489.0	056.5	52.48
325.0	000.1900	0039.3	007.5	181.9	000.4860	0489.0	056.3	52.54
326.0	000.1900	0040.0	007.6	181.9	000.4870	0489.0	056.2	52.60
327.0	000.1900	0040.7	007.7	181.8	000.4881	0489.0	056.1	52.66
328.0	000.1900	0041.4	007.7	181.7	000.4892	0489.0	055.9	52.72
329.0	000.1900	0042.1	007.8	181.7	000.4905	0489.0	055.8	52.78
330.0	000.1900	0042.7	007.9	181.6	000.4919	0489.0	055.7	52.84
331.0	000.1900	0043.1	007.9	181.5	000.4935	0489.0	055.6	52.89
332.0	000.1900	0043.5	007.9	181.4	000.4951	0489.0	055.5	52.95
333.0	000.1900	0043.9	008.0	181.3	000.4969	0489.0	055.4	53.00
334.0	000.1900	0044.4	008.0	181.2	000.4986	0489.0	055.2	53.05
335.0	000.1900	0044.9	008.1	181.0	000.5003	0489.0	055.1	53.11
336.0	000.1900	0045.4	008.1	180.9	000.5020	0489.0	055.0	53.17
337.0	000.1900	0045.9	008.2	180.8	000.5039	0489.0	054.9	53.22
338.0	000.1900	0046.4	008.2	180.7	000.5058	0489.0	054.8	53.28
339.0	000.1900	0046.7	008.3	180.6	000.5078	0489.0	054.7	53.33
340.0	000.1900	0047.0	008.3	180.5	000.5100	0489.0	054.6	53.37
341.0	000.1900	0047.2	008.3	180.3	000.5122	0489.0	054.6	53.42
342.0	000.1900	0047.5	008.4	180.2	000.5145	0489.0	054.5	53.46
343.0	000.1900	0047.8	008.4	180.0	000.5167	0489.0	054.4	53.51
344.0	000.1900	0048.1	008.4	179.9	000.5179	0489.0	054.4	53.55
345.0	000.1900	0048.3	008.5	179.8	000.5185	0489.0	054.3	53.58
346.0	000.1900	0048.6	008.5	179.6	000.5190	0489.0	054.2	53.60
347.0	000.1900	0048.7	008.5	179.5	000.5196	0489.0	054.2	53.62
348.0	000.1900	0048.8	008.5	179.3	000.5202	0489.0	054.1	53.64
349.0	000.1900	0048.9	008.5	179.2	000.5208	0489.0	054.1	53.66
350.0	000.1900	0049.1	008.5	179.0	000.5214	0489.0	054.1	53.68
351.0	000.1900	0049.2	008.5	178.9	000.5220	0489.0	054.0	53.70
352.0	000.1900	0049.4	008.6	178.7	000.5226	0489.0	054.0	53.72
353.0	000.1900	0049.5	008.6	178.6	000.5232	0489.0	054.0	53.73
354.0	000.1900	0049.6	008.6	178.4	000.5238	0489.0	053.9	53.75
355.0	000.1900	0049.7	008.6	178.2	000.5244	0489.0	053.9	53.76
356.0	000.1900	0049.8	008.6	178.1	000.5250	0489.0	053.9	53.77
357.0	000.1900	0049.8	008.6	177.9	000.5256	0489.0	053.9	53.78
358.0	000.1900	0049.8	008.6	177.8	000.5263	0489.0	053.9	53.78
359.0	000.1900	0049.8	008.6	177.6	000.5269	0489.0	053.9	53.79
000.0	000.1900	0049.8	008.6	177.4	000.5275	0489.0	053.9	53.79
001.0	000.1900	0049.8	008.6	177.3	000.5281	0489.0	053.9	53.79
002.0	000.1900	0049.7	008.6	177.1	000.5287	0489.0	053.9	53.79
003.0	000.1900	0049.5	008.6	177.0	000.5294	0489.0	054.0	53.78
004.0	000.1900	0049.3	008.5	176.8	000.5300	0489.0	054.0	53.77
005.0	000.1900	0049.0	008.5	176.7	000.5306	0489.0	054.1	53.76
006.0	000.1900	0048.4	008.5	176.5	000.5311	0489.0	054.1	53.73
007.0	000.1900	0047.8	008.4	176.4	000.5317	0489.0	054.2	53.71
008.0	000.1900	0047.2	008.3	176.2	000.5322	0489.0	054.3	53.68
009.0	000.1900	0046.7	008.3	176.1	000.5328	0489.0	054.4	53.65
010.0	000.1900	0046.4	008.2	176.0	000.5333	0489.0	054.5	53.63
011.0	000.1900	0046.1	008.2	175.8	000.5339	0489.0	054.5	53.62
012.0	000.1900	0045.9	008.2	175.7	000.5344	0489.0	054.6	53.60
013.0	000.1900	0045.7	008.2	175.5	000.5349	0489.0	054.7	53.58
014.0	000.1900	0045.5	008.2	175.4	000.5355	0489.0	054.7	53.56
015.0	000.1900	0045.4	008.1	175.3	000.5360	0489.0	054.8	53.54
016.0	000.1900	0045.2	008.1	175.1	000.5365	0489.0	054.8	53.52
017.0	000.1900	0044.9	008.1	175.0	000.5370	0489.0	054.9	53.49
018.0	000.1900	0044.4	008.0	174.9	000.5375	0489.0	055.0	53.46
019.0	000.1900	0044.1	008.0	174.8	000.5379	0489.0	055.1	53.43
020.0	000.1900	0044.0	008.0	174.7	000.5384	0489.0	055.2	53.41
021.0	000.1900	0043.9	008.0	174.5	000.5389	0489.0	055.3	53.39
022.0	000.1900	0043.6	008.0	174.4	000.5394	0489.0	055.3	53.36
023.0	000.1900	0043.2	007.9	174.3	000.5398	0489.0	055.4	53.33
024.0	000.1900	0042.7	007.9	174.2	000.5402	0489.0	055.6	53.29
025.0	000.1900	0042.1	007.8	174.1	000.5406	0489.0	055.7	53.25
026.0	000.1900	0041.7	007.8	174.0	000.5409	0489.0	055.8	53.21
027.0	000.1900	0041.4	007.7	173.9	000.5413	0489.0	055.9	53.18
028.0	000.1900	0041.1	007.7	173.8	000.5417	0489.0	056.0	53.15
029.0	000.1900	0040.9	007.7	173.7	000.5421	0489.0	056.1	53.11
030.0	000.1900	0040.8	007.7	173.6	000.5425	0489.0	056.2	53.09
031.0	000.1900	0040.7	007.7	173.5	000.5429	0489.0	056.3	53.06
032.0	000.1900	0040.5	007.6	173.4	000.5433	0489.0	056.4	53.02
033.0	000.1900	0040.2	007.6	173.3	000.5436	0489.0	056.5	52.99
034.0	000.1900	0040.1	007.6	173.2	000.5440	0489.0	056.5	52.96
035.0	000.1900	0040.1	007.6	173.1	000.5444	0489.0	056.6	52.93
036.0	000.1900	0040.1	007.6	173.0	000.5448	0489.0	056.7	52.90
037.0	000.1900	0040.0	007.6	173.0	000.5452	0489.0	056.8	52.86
038.0	000.1900	0039.9	007.6	172.9	000.5455	0489.0	056.9	52.83
039.0	000.1900	0039.9	007.6	172.8	000.5459	0489.0	057.0	52.80
040.0	000.1900	0039.8	007.6	172.7	000.5462	0489.0	057.1	52.76
041.0	000.1900	0039.7	007.5	172.6	000.5465	0489.0	057.2	52.73
042.0	000.1900	0039.6	007.5	172.5	000.5468	0489.0	057.3	52.69

043.0	000.1900	0039.4	007.5	172.5	000.5471	0489.0	057.4	52.65
044.0	000.1900	0039.2	007.5	172.4	000.5474	0489.0	057.6	52.61
045.0	000.1900	0039.0	007.5	172.3	000.5476	0489.0	057.7	52.57
046.0	000.1900	0038.8	007.5	172.3	000.5479	0489.0	057.8	52.53
047.0	000.1900	0038.7	007.4	172.2	000.5481	0489.0	057.9	52.50
048.0	000.1900	0038.7	007.4	172.1	000.5484	0489.0	058.0	52.46
049.0	000.1900	0038.6	007.4	172.1	000.5487	0489.0	058.1	52.42
050.0	000.1900	0038.5	007.4	172.0	000.5489	0489.0	058.2	52.38
051.0	000.1900	0038.3	007.4	172.0	000.5492	0489.0	058.4	52.34
052.0	000.1900	0038.2	007.4	171.9	000.5494	0489.0	058.5	52.30
053.0	000.1900	0038.1	007.4	171.8	000.5496	0489.0	058.6	52.26
054.0	000.1900	0038.0	007.4	171.8	000.5498	0489.0	058.7	52.22
055.0	000.1900	0038.0	007.4	171.7	000.5500	0489.0	058.8	52.18
056.0	000.1900	0038.0	007.4	171.7	000.5502	0489.0	058.9	52.14
057.0	000.1900	0038.0	007.4	171.6	000.5504	0489.0	059.1	52.10

10-04-2019 Terrain Data: NGDC 30 SEC FMOVer Analysis

KLRS BLED20081103AAE

KBCC

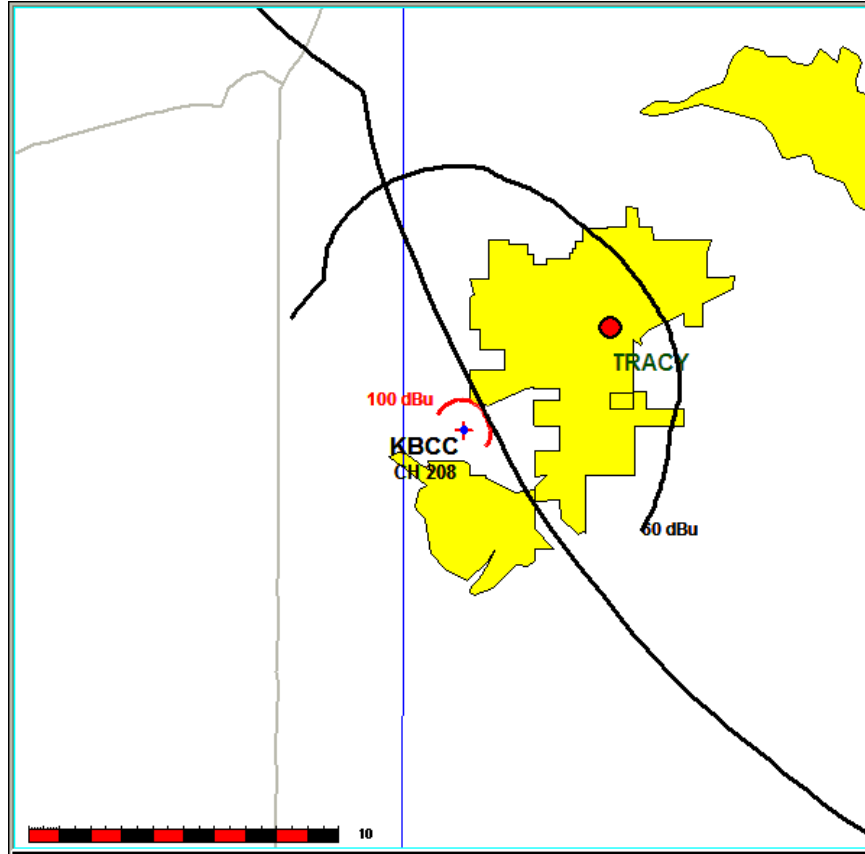
Channel = 209B
Max ERP = 2.5 kw
RCAMSL = 489 m
N. Lat. 38 16 18.0
W. Lng. 121 30 18.0
Protected
60 dBu

Channel = 208A
Max ERP = 0.19 kw
RCAMSL = 56.5 m
N. Lat. 37 42 35.7
W. Lng. 121 28 39.4
Interfering
54 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
118.0	001.9501	0484.3	045.4	042.5	000.1900	0039.5	055.8	28.84	
119.0	001.8862	0484.4	045.1	042.4	000.1900	0039.5	055.0	29.05	
120.0	001.8233	0484.5	044.8	042.3	000.1900	0039.5	054.1	29.27	
121.0	001.7493	0484.6	044.5	042.1	000.1900	0039.6	053.3	29.48	
122.0	001.6769	0484.8	044.1	041.9	000.1900	0039.6	052.5	29.70	
123.0	001.6060	0485.0	043.7	041.6	000.1900	0039.6	051.6	29.91	
124.0	001.5366	0485.2	043.3	041.3	000.1900	0039.7	050.8	30.13	
125.0	001.4688	0485.4	043.0	040.9	000.1900	0039.7	050.0	30.34	
126.0	001.4025	0485.6	042.6	040.6	000.1900	0039.8	049.3	30.54	
127.0	001.3377	0485.7	042.2	040.1	000.1900	0039.8	048.5	30.74	
128.0	001.2745	0485.8	041.7	039.7	000.1900	0039.9	047.8	30.94	
129.0	001.2128	0485.9	041.3	039.2	000.1900	0039.9	047.0	31.14	
130.0	001.1526	0486.0	040.9	038.6	000.1900	0039.9	046.3	31.34	
131.0	001.1056	0486.1	040.5	038.2	000.1900	0039.9	045.6	31.53	
132.0	001.0595	0486.1	040.2	037.7	000.1900	0039.9	044.9	31.73	
133.0	001.0144	0486.2	039.8	037.1	000.1900	0040.0	044.3	31.93	
134.0	000.9703	0486.3	039.4	036.5	000.1900	0040.0	043.6	32.14	
135.0	000.9272	0486.4	039.0	035.9	000.1900	0040.1	043.0	32.34	
136.0	000.8851	0486.5	038.7	035.2	000.1900	0040.1	042.4	32.54	
137.0	000.8439	0486.7	038.3	034.5	000.1900	0040.1	041.8	32.73	
138.0	000.8037	0487.0	037.9	033.8	000.1900	0040.2	041.3	32.91	
139.0	000.7645	0487.2	037.5	033.0	000.1900	0040.2	040.7	33.10	
140.0	000.7263	0487.3	037.0	032.1	000.1900	0040.4	040.2	33.30	
141.0	000.7094	0487.5	036.8	031.6	000.1900	0040.6	039.7	33.52	
142.0	000.6927	0487.6	036.6	031.0	000.1900	0040.7	039.2	33.72	
143.0	000.6763	0487.7	036.5	030.4	000.1900	0040.8	038.6	33.92	
144.0	000.6600	0487.9	036.3	029.7	000.1900	0040.8	038.1	34.12	
145.0	000.6439	0488.1	036.1	029.1	000.1900	0040.9	037.6	34.31	
146.0	000.6280	0488.3	035.9	028.4	000.1900	0041.0	037.2	34.51	
147.0	000.6123	0488.6	035.7	027.6	000.1900	0041.2	036.7	34.71	
148.0	000.5968	0488.9	035.5	026.9	000.1900	0041.4	036.3	34.91	
149.0	000.5815	0489.0	035.3	026.1	000.1900	0041.6	035.9	35.11	
150.0	000.5664	0489.0	035.0	025.2	000.1900	0042.0	035.5	35.33	
151.0	000.5655	0489.0	035.0	024.6	000.1900	0042.3	035.0	35.58	
152.0	000.5645	0489.0	035.0	024.0	000.1900	0042.7	034.5	35.84	
153.0	000.5636	0489.0	035.0	023.3	000.1900	0043.0	034.1	36.09	
154.0	000.5626	0489.0	035.0	022.6	000.1900	0043.4	033.6	36.34	
155.0	000.5617	0489.0	035.0	021.9	000.1900	0043.6	033.2	36.57	
156.0	000.5607	0489.0	035.0	021.2	000.1900	0043.8	032.7	36.79	
157.0	000.5598	0489.0	034.9	020.4	000.1900	0043.9	032.3	36.98	
158.0	000.5588	0489.0	034.9	019.6	000.1900	0044.0	031.9	37.16	
159.0	000.5579	0489.0	034.9	018.7	000.1900	0044.2	031.5	37.36	
160.0	000.5570	0489.0	034.9	017.8	000.1900	0044.5	031.2	37.59	
161.0	000.5570	0489.0	034.9	016.9	000.1900	0044.9	030.8	37.85	
162.0	000.5570	0489.0	034.9	016.0	000.1900	0045.2	030.4	38.08	
163.0	000.5570	0489.0	034.9	015.0	000.1900	0045.4	030.1	38.29	
164.0	000.5570	0489.0	034.9	014.0	000.1900	0045.5	029.8	38.47	
165.0	000.5570	0489.0	034.9	013.0	000.1900	0045.7	029.5	38.66	
166.0	000.5570	0489.0	034.9	011.9	000.1900	0045.9	029.2	38.85	

167.0	000.5570	0489.0	034.9	010.8	000.1900	0046.2	029.0	39.04
168.0	000.5570	0489.0	034.9	009.7	000.1900	0046.5	028.7	39.23
169.0	000.5570	0489.0	034.9	008.6	000.1900	0046.9	028.5	39.44
170.0	000.5570	0489.0	034.9	007.4	000.1900	0047.5	028.3	39.66
171.0	000.5530	0489.0	034.8	006.2	000.1900	0048.3	028.2	39.87
172.0	000.5490	0489.0	034.8	005.0	000.1900	0049.0	028.1	40.06
173.0	000.5450	0489.0	034.7	003.7	000.1900	0049.4	028.1	40.16
174.0	000.5410	0489.0	034.7	002.5	000.1900	0049.6	028.0	40.23
175.0	000.5371	0489.0	034.6	001.3	000.1900	0049.8	028.0	40.28
176.0	000.5331	0489.0	034.5	000.0	000.1900	0049.8	028.0	40.27
177.0	000.5292	0489.0	034.5	358.8	000.1900	0049.8	028.0	40.25
178.0	000.5253	0489.0	034.4	357.6	000.1900	0049.8	028.1	40.22
179.0	000.5214	0489.0	034.4	356.3	000.1900	0049.8	028.2	40.17
180.0	000.5176	0489.0	034.3	355.1	000.1900	0049.7	028.3	40.10
181.0	000.5011	0489.0	034.0	354.0	000.1900	0049.6	028.6	39.89
182.0	000.4849	0489.0	033.8	352.9	000.1900	0049.5	028.9	39.67
183.0	000.4689	0489.0	033.5	351.9	000.1900	0049.4	029.3	39.43
184.0	000.4533	0489.0	033.2	350.9	000.1900	0049.2	029.7	39.19
185.0	000.4379	0489.0	032.9	349.9	000.1900	0049.1	030.1	38.95
186.0	000.4227	0489.0	032.6	349.0	000.1900	0048.9	030.6	38.70
187.0	000.4078	0489.0	032.3	348.2	000.1900	0048.8	031.0	38.46
188.0	000.3932	0489.0	032.0	347.4	000.1900	0048.8	031.5	38.23
189.0	000.3789	0489.0	031.7	346.7	000.1900	0048.7	032.0	38.00
190.0	000.3648	0489.0	031.4	346.0	000.1900	0048.6	032.5	37.76
191.0	000.3570	0489.0	031.3	345.3	000.1900	0048.4	032.9	37.58
192.0	000.3493	0488.9	031.1	344.5	000.1900	0048.2	033.3	37.38
193.0	000.3417	0488.9	030.9	343.9	000.1900	0048.0	033.7	37.18
194.0	000.3342	0488.8	030.7	343.2	000.1900	0047.8	034.1	36.97
195.0	000.3267	0488.8	030.6	342.6	000.1900	0047.7	034.5	36.76
196.0	000.3193	0488.7	030.4	342.0	000.1900	0047.5	035.0	36.56
197.0	000.3121	0488.6	030.2	341.5	000.1900	0047.3	035.4	36.35
198.0	000.3049	0488.6	030.0	341.0	000.1900	0047.2	035.9	36.15
199.0	000.2977	0488.5	029.9	340.5	000.1900	0047.1	036.3	35.96
200.0	000.2907	0488.5	029.7	340.0	000.1900	0047.0	036.8	35.76
201.0	000.2883	0488.5	029.6	339.5	000.1900	0046.9	037.2	35.59
202.0	000.2859	0488.6	029.6	339.0	000.1900	0046.7	037.6	35.41
203.0	000.2836	0488.6	029.5	338.5	000.1900	0046.6	038.0	35.23
204.0	000.2812	0488.6	029.4	338.0	000.1900	0046.4	038.4	35.05
205.0	000.2789	0488.6	029.4	337.5	000.1900	0046.2	038.8	34.86
206.0	000.2766	0488.6	029.3	337.1	000.1900	0046.0	039.2	34.67
207.0	000.2742	0488.6	029.3	336.7	000.1900	0045.8	039.6	34.48
208.0	000.2719	0488.6	029.2	336.3	000.1900	0045.6	040.1	34.29
209.0	000.2696	0488.6	029.1	335.9	000.1900	0045.4	040.5	34.11
210.0	000.2673	0488.6	029.1	335.6	000.1900	0045.2	040.9	33.92
211.0	000.2676	0488.6	029.1	335.2	000.1900	0045.0	041.4	33.74
212.0	000.2680	0488.5	029.1	334.8	000.1900	0044.8	041.8	33.56
213.0	000.2683	0488.5	029.1	334.4	000.1900	0044.6	042.2	33.39
214.0	000.2686	0488.5	029.1	334.0	000.1900	0044.4	042.6	33.21
215.0	000.2690	0488.5	029.1	333.7	000.1900	0044.2	043.1	33.04
216.0	000.2693	0488.5	029.1	333.4	000.1900	0044.1	043.5	32.87
217.0	000.2696	0488.5	029.1	333.0	000.1900	0043.9	044.0	32.71
218.0	000.2699	0488.5	029.1	332.8	000.1900	0043.8	044.4	32.55
219.0	000.2703	0488.7	029.2	332.5	000.1900	0043.7	044.9	32.39
220.0	000.2706	0488.9	029.2	332.2	000.1900	0043.6	045.3	32.23
221.0	000.2757	0489.0	029.3	331.8	000.1900	0043.4	045.8	32.08
222.0	000.2809	0489.0	029.4	331.4	000.1900	0043.3	046.2	31.93
223.0	000.2861	0489.0	029.6	331.1	000.1900	0043.2	046.7	31.79
224.0	000.2914	0489.0	029.7	330.7	000.1900	0043.0	047.1	31.63
225.0	000.2967	0489.0	029.8	330.4	000.1900	0042.9	047.6	31.48
226.0	000.3021	0489.0	030.0	330.1	000.1900	0042.7	048.0	31.33
227.0	000.3075	0489.0	030.1	329.8	000.1900	0042.6	048.5	31.18
228.0	000.3129	0488.9	030.2	329.5	000.1900	0042.4	049.0	31.03
229.0	000.3184	0488.9	030.4	329.2	000.1900	0042.3	049.5	30.87
230.0	000.3240	0488.8	030.5	329.0	000.1900	0042.1	050.0	30.72
231.0	000.3269	0488.8	030.6	328.8	000.1900	0042.0	050.5	30.57
232.0	000.3298	0488.7	030.6	328.7	000.1900	0041.9	051.0	30.41
233.0	000.3327	0488.7	030.7	328.5	000.1900	0041.8	051.6	30.26
234.0	000.3356	0488.7	030.8	328.4	000.1900	0041.7	052.1	30.11
235.0	000.3386	0488.7	030.8	328.3	000.1900	0041.7	052.6	29.96
236.0	000.3415	0488.7	030.9	328.2	000.1900	0041.6	053.2	29.81
237.0	000.3445	0488.7	031.0	328.1	000.1900	0041.5	053.7	29.66

KBCC to KYCC – Third Adjacent Channel



10-04-2019 Terrain Data: NGDC 30 SEC FMOVer Analysis

KBCC

KYCC BLED20080930ATZ

Channel = 208A
Max ERP = 0.19 kw
RCAMSL = 56.5 m
N. Lat. 37 42 35.7
W. Lng. 121 28 39.4
Protected
60 dBu

Channel = 211B
Max ERP = 41 kw
RCAMSL = 116 m
N. Lat. 37 57 30.0
W. Lng. 121 16 55.0
Interfering
100 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
332.0	000.1900	0043.5	007.9	225.5	004.2602	0113.5	029.3	60.24	
333.0	000.1900	0043.9	008.0	225.5	004.2613	0113.5	029.2	60.32	
334.0	000.1900	0044.4	008.0	225.5	004.2603	0113.5	029.1	60.41	
335.0	000.1900	0044.9	008.1	225.5	004.2577	0113.5	028.9	60.50	
336.0	000.1900	0045.4	008.1	225.5	004.2557	0113.5	028.8	60.59	
337.0	000.1900	0045.9	008.2	225.5	004.2564	0113.5	028.6	60.68	
338.0	000.1900	0046.4	008.2	225.5	004.2601	0113.5	028.4	60.78	
339.0	000.1900	0046.7	008.3	225.4	004.2678	0113.5	028.3	60.87	
340.0	000.1900	0047.0	008.3	225.4	004.2807	0113.4	028.2	60.97	
341.0	000.1900	0047.2	008.3	225.3	004.2974	0113.4	028.0	61.08	
342.0	000.1900	0047.5	008.4	225.2	004.3138	0113.4	027.9	61.18	
343.0	000.1900	0047.8	008.4	225.1	004.3301	0113.3	027.7	61.28	
344.0	000.1900	0048.1	008.4	225.0	004.3475	0113.3	027.6	61.39	
345.0	000.1900	0048.3	008.5	224.9	004.3672	0113.3	027.4	61.50	
346.0	000.1900	0048.6	008.5	224.8	004.3907	0113.2	027.3	61.60	
347.0	000.1900	0048.7	008.5	224.7	004.4175	0113.2	027.2	61.71	
348.0	000.1900	0048.8	008.5	224.5	004.4472	0113.1	027.0	61.82	
349.0	000.1900	0048.9	008.5	224.4	004.4779	0113.1	026.9	61.93	
350.0	000.1900	0049.1	008.5	224.2	004.5091	0113.0	026.8	62.05	
351.0	000.1900	0049.2	008.5	224.0	004.5416	0113.0	026.7	62.16	
352.0	000.1900	0049.4	008.6	223.9	004.5758	0112.9	026.5	62.27	
353.0	000.1900	0049.5	008.6	223.7	004.6118	0112.9	026.4	62.38	
354.0	000.1900	0049.6	008.6	223.5	004.6500	0112.8	026.3	62.50	

355.0	000.1900	0049.7	008.6	223.3	004.6906	0112.7	026.2	62.61
356.0	000.1900	0049.8	008.6	223.1	004.7341	0112.7	026.0	62.72
357.0	000.1900	0049.8	008.6	222.9	004.7802	0112.6	025.9	62.83
358.0	000.1900	0049.8	008.6	222.6	004.8279	0112.5	025.8	62.94
359.0	000.1900	0049.8	008.6	222.4	004.8773	0112.5	025.7	63.05
000.0	000.1900	0049.8	008.6	222.1	004.9282	0112.4	025.6	63.16
001.0	000.1900	0049.8	008.6	221.9	004.9807	0112.3	025.5	63.27
002.0	000.1900	0049.7	008.6	221.6	005.0379	0112.2	025.4	63.37
003.0	000.1900	0049.5	008.6	221.3	005.0990	0112.1	025.4	63.47
004.0	000.1900	0049.3	008.5	221.0	005.1616	0112.0	025.3	63.56
005.0	000.1900	0049.0	008.5	220.7	005.2458	0111.8	025.2	63.67
006.0	000.1900	0048.4	008.5	220.4	005.3409	0111.7	025.2	63.76
007.0	000.1900	0047.8	008.4	220.0	005.4395	0111.6	025.2	63.85
008.0	000.1900	0047.2	008.3	219.6	005.5371	0111.4	025.1	63.93
009.0	000.1900	0046.7	008.3	219.3	005.6316	0111.3	025.1	64.02
010.0	000.1900	0046.4	008.2	219.0	005.7238	0111.2	025.1	64.11
011.0	000.1900	0046.1	008.2	218.7	005.8141	0111.1	025.0	64.20
012.0	000.1900	0045.9	008.2	218.3	005.9043	0110.9	025.0	64.29
013.0	000.1900	0045.7	008.2	218.0	005.9960	0110.8	024.9	64.37
014.0	000.1900	0045.5	008.2	217.7	006.0879	0110.7	024.9	64.46
015.0	000.1900	0045.4	008.1	217.4	006.1784	0110.6	024.8	64.54
016.0	000.1900	0045.2	008.1	217.1	006.2733	0110.4	024.8	64.62
017.0	000.1900	0044.9	008.1	216.7	006.3735	0110.3	024.8	64.69
018.0	000.1900	0044.4	008.0	216.4	006.4770	0110.2	024.8	64.75
019.0	000.1900	0044.1	008.0	216.1	006.5765	0110.2	024.8	64.82
020.0	000.1900	0044.0	008.0	215.7	006.6730	0110.1	024.8	64.90
021.0	000.1900	0043.9	008.0	215.4	006.7700	0110.1	024.7	64.97
022.0	000.1900	0043.6	008.0	215.1	006.8705	0110.0	024.7	65.04
023.0	000.1900	0043.2	007.9	214.8	006.9741	0110.0	024.7	65.10
024.0	000.1900	0042.7	007.9	214.4	007.0791	0110.0	024.8	65.14
025.0	000.1900	0042.1	007.8	214.1	007.1839	0110.0	024.8	65.18
026.0	000.1900	0041.7	007.8	213.8	007.2871	0110.0	024.8	65.23
027.0	000.1900	0041.4	007.7	213.4	007.3887	0110.0	024.8	65.27
028.0	000.1900	0041.1	007.7	213.1	007.4898	0110.0	024.9	65.33
029.0	000.1900	0040.9	007.7	212.8	007.5906	0110.0	024.9	65.38
030.0	000.1900	0040.8	007.7	212.5	007.6914	0110.0	024.9	65.43
031.0	000.1900	0040.7	007.7	212.2	007.7926	0110.0	024.9	65.48
032.0	000.1900	0040.5	007.6	211.9	007.8940	0110.0	024.9	65.52
033.0	000.1900	0040.2	007.6	211.6	007.9952	0110.0	024.9	65.56
034.0	000.1900	0040.1	007.6	211.3	008.0968	0110.0	024.9	65.60
035.0	000.1900	0040.1	007.6	211.0	008.2006	0110.0	024.9	65.65
036.0	000.1900	0040.1	007.6	210.7	008.3284	0110.0	025.0	65.71
037.0	000.1900	0040.0	007.6	210.4	008.4561	0110.0	025.0	65.76
038.0	000.1900	0039.9	007.6	210.1	008.5844	0110.0	025.0	65.81
039.0	000.1900	0039.9	007.6	209.8	008.7136	0110.0	025.0	65.86
040.0	000.1900	0039.8	007.6	209.5	008.8422	0110.0	025.1	65.90
041.0	000.1900	0039.7	007.5	209.2	008.9695	0110.0	025.1	65.93
042.0	000.1900	0039.6	007.5	208.9	009.0963	0110.0	025.1	65.97
043.0	000.1900	0039.4	007.5	208.6	009.2223	0110.0	025.2	65.99
044.0	000.1900	0039.2	007.5	208.4	009.3456	0110.0	025.2	66.01
045.0	000.1900	0039.0	007.5	208.1	009.4664	0110.0	025.3	66.03
046.0	000.1900	0038.8	007.5	207.8	009.5880	0110.0	025.4	66.04
047.0	000.1900	0038.7	007.4	207.5	009.7123	0110.0	025.4	66.06
048.0	000.1900	0038.7	007.4	207.3	009.8387	0110.0	025.5	66.09
049.0	000.1900	0038.6	007.4	207.0	009.9634	0110.0	025.5	66.11
050.0	000.1900	0038.5	007.4	206.7	010.0840	0110.0	025.6	66.12
051.0	000.1900	0038.3	007.4	206.5	010.2010	0110.0	025.6	66.12
052.0	000.1900	0038.2	007.4	206.3	010.3167	0110.0	025.7	66.12
053.0	000.1900	0038.1	007.4	206.0	010.4338	0110.0	025.8	66.12
054.0	000.1900	0038.0	007.4	205.8	010.5534	0110.0	025.8	66.13
055.0	000.1900	0038.0	007.4	205.5	010.6737	0110.0	025.9	66.14
056.0	000.1900	0038.0	007.4	205.3	010.7905	0110.0	026.0	66.14
057.0	000.1900	0038.0	007.4	205.0	010.9051	0110.0	026.0	66.14
058.0	000.1900	0037.9	007.4	204.8	011.0168	0110.0	026.1	66.13
059.0	000.1900	0037.8	007.4	204.6	011.1281	0110.0	026.2	66.12
060.0	000.1900	0037.8	007.4	204.3	011.2405	0110.0	026.3	66.12
061.0	000.1900	0037.8	007.4	204.1	011.3528	0110.0	026.3	66.11
062.0	000.1900	0037.8	007.4	203.9	011.4647	0110.0	026.4	66.10
063.0	000.1900	0037.8	007.4	203.7	011.5720	0110.0	026.5	66.09
064.0	000.1900	0037.7	007.4	203.5	011.6726	0110.0	026.6	66.07
065.0	000.1900	0037.6	007.3	203.3	011.7653	0110.0	026.7	66.04
066.0	000.1900	0037.3	007.3	203.1	011.8517	0110.0	026.8	66.00
067.0	000.1900	0037.1	007.3	203.0	011.9360	0110.0	026.9	65.96
068.0	000.1900	0037.0	007.3	202.8	012.0219	0110.0	027.0	65.93
069.0	000.1900	0036.9	007.3	202.6	012.1098	0110.0	027.1	65.90
070.0	000.1900	0036.7	007.3	202.4	012.1948	0110.0	027.2	65.86
071.0	000.1900	0036.6	007.2	202.3	012.2729	0110.0	027.3	65.82
072.0	000.1900	0036.4	007.2	202.1	012.3478	0110.0	027.4	65.78
073.0	000.1900	0036.2	007.2	202.0	012.4209	0110.0	027.5	65.74
074.0	000.1900	0036.1	007.2	201.9	012.4945	0110.0	027.6	65.69
075.0	000.1900	0035.9	007.2	201.7	012.5639	0110.0	027.7	65.65
076.0	000.1900	0035.7	007.2	201.6	012.6223	0110.0	027.8	65.60
077.0	000.1900	0035.4	007.1	201.5	012.6739	0110.0	028.0	65.54
078.0	000.1900	0035.1	007.1	201.4	012.7192	0110.0	028.1	65.48

079.0	000.1900	0034.8	007.1	201.4	012.7643	0110.0	028.2	65.42
080.0	000.1900	0034.6	007.0	201.3	012.8149	0110.0	028.3	65.37
081.0	000.1900	0034.3	007.0	201.2	012.8579	0110.0	028.4	65.31
082.0	000.1900	0034.0	007.0	201.1	012.8944	0110.0	028.6	65.25
083.0	000.1900	0033.5	007.0	201.1	012.9161	0110.0	028.7	65.18
084.0	000.1900	0033.0	006.9	201.0	012.9281	0110.0	028.8	65.10
085.0	000.1900	0032.5	006.9	201.0	012.9385	0110.0	028.9	65.03
086.0	000.1900	0031.9	006.8	201.0	012.9451	0110.0	029.1	64.95
087.0	000.1900	0031.5	006.8	201.0	012.9632	0110.0	029.2	64.89
088.0	000.1900	0031.2	006.7	200.9	012.9878	0110.0	029.3	64.82
089.0	000.1900	0030.9	006.7	200.9	013.0070	0110.0	029.4	64.76
090.0	000.1900	0030.5	006.7	200.9	013.0223	0110.0	029.6	64.70
091.0	000.1900	0030.2	006.6	200.9	013.0409	0110.0	029.7	64.63

10-04-2019 Terrain Data: NGDC 30 SEC FMOVer Analysis

KYCC BLED20080930ATZ

KBCC

Channel = 211B
 Max ERP = 41 kw
 RCAMSL = 116 m
 N. Lat. 37 57 30.0
 W. Lng. 121 16 55.0
 Protected
 60 dBu

Channel = 208A
 Max ERP = 0.19 kw
 RCAMSL = 56.5 m
 N. Lat. 37 42 35.7
 W. Lng. 121 28 39.4
 Interfering
 100 dBu

Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kw)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
152.0	041.0000	0107.1	044.3	106.7	000.1900	0023.7	039.7	31.42	
153.0	041.0000	0107.3	044.3	107.5	000.1900	0023.2	039.2	31.59	
154.0	041.0000	0107.4	044.3	108.4	000.1900	0022.7	038.6	31.76	
155.0	041.0000	0107.6	044.4	109.2	000.1900	0022.3	038.1	31.94	
156.0	041.0000	0107.7	044.4	110.0	000.1900	0021.9	037.6	32.12	
157.0	041.0000	0107.8	044.4	110.9	000.1900	0021.6	037.0	32.31	
158.0	041.0000	0107.8	044.4	111.7	000.1900	0021.3	036.5	32.50	
159.0	041.0000	0107.8	044.4	112.6	000.1900	0020.9	035.9	32.70	
160.0	041.0000	0107.8	044.4	113.4	000.1900	0020.5	035.3	32.90	
161.0	041.0000	0107.7	044.4	114.3	000.1900	0019.8	034.8	33.11	
162.0	041.0000	0107.7	044.4	115.2	000.1900	0019.0	034.2	33.32	
163.0	041.0000	0107.8	044.4	116.1	000.1900	0017.9	033.6	33.53	
164.0	041.0000	0107.9	044.4	117.0	000.1900	0016.6	033.1	33.74	
165.0	041.0000	0108.0	044.4	117.9	000.1900	0015.3	032.5	33.95	
166.0	041.0000	0108.0	044.4	118.9	000.1900	0014.0	032.0	34.17	
167.0	041.0000	0108.0	044.4	119.8	000.1900	0012.5	031.4	34.40	
168.0	041.0000	0108.2	044.4	120.8	000.1900	0011.0	030.8	34.64	
169.0	041.0000	0108.4	044.5	121.9	000.1900	0009.4	030.3	34.89	
170.0	041.0000	0108.7	044.5	123.0	000.1900	0007.7	029.8	35.15	
171.0	041.0000	0108.8	044.5	124.0	000.1900	0006.2	029.2	35.43	
172.0	040.1111	0108.9	044.4	124.8	000.1900	0005.1	028.5	35.80	
173.0	039.2319	0109.1	044.2	125.7	000.1900	0004.0	027.9	36.17	
174.0	038.3624	0109.4	044.1	126.5	000.1900	0002.7	027.2	36.56	
175.0	037.5027	0109.6	043.9	127.4	000.1900	0001.3	026.5	36.97	
176.0	036.6528	0109.7	043.7	128.2	000.1900	-0000.2	025.8	37.40	
177.0	035.8126	0109.8	043.6	129.1	000.1900	-0001.9	025.2	37.85	
178.0	034.9821	0109.9	043.4	130.0	000.1900	-0003.8	024.5	38.31	
179.0	034.1614	0110.0	043.2	130.8	000.1900	-0005.7	023.8	38.79	
180.0	033.3504	0110.0	043.0	131.7	000.1900	-0007.8	023.1	39.28	
181.0	032.5491	0110.0	042.8	132.6	000.1900	-0010.1	022.4	39.79	
182.0	031.2258	0110.0	042.5	133.2	000.1900	-0011.8	021.6	40.38	
183.0	029.9300	0110.0	042.1	133.8	000.1900	-0013.6	020.8	40.98	
184.0	028.6616	0110.0	041.8	134.4	000.1900	-0015.4	020.0	41.60	
185.0	027.4207	0110.0	041.4	135.0	000.1900	-0017.3	019.3	42.23	
186.0	026.2072	0110.0	041.0	135.5	000.1900	-0019.1	018.5	42.87	
187.0	025.0212	0110.0	040.7	136.0	000.1900	-0020.9	017.7	43.53	
188.0	023.8627	0110.0	040.3	136.5	000.1900	-0022.6	016.9	44.19	
189.0	022.7316	0110.0	039.9	136.9	000.1900	-0024.2	016.1	44.86	
190.0	021.6280	0110.0	039.5	137.3	000.1900	-0025.6	015.3	45.54	
191.0	020.5518	0110.0	039.1	137.7	000.1900	-0026.8	014.5	46.35	
192.0	019.7129	0110.0	038.7	138.2	000.1900	-0028.9	013.8	47.28	
193.0	018.8915	0110.0	038.4	138.8	000.1900	-0030.9	013.0	48.27	
194.0	018.0876	0110.0	038.1	139.2	000.1900	-0033.0	012.3	49.35	
195.0	017.3012	0110.0	037.7	139.7	000.1900	-0035.0	011.5	50.49	
196.0	016.5322	0110.0	037.3	140.1	000.1900	-0036.8	010.8	51.70	
197.0	015.7807	0110.0	037.0	140.4	000.1900	-0038.3	010.1	52.96	
198.0	015.0467	0110.0	036.6	140.6	000.1900	-0039.3	009.3	54.29	
199.0	014.3302	0110.0	036.2	140.7	000.1900	-0039.7	008.6	55.66	
200.0	013.6312	0110.0	035.8	140.6	000.1900	-0039.4	007.8	57.10	
201.0	012.9496	0110.0	035.4	140.3	000.1900	-0037.9	007.1	58.80	
202.0	012.4251	0110.0	035.1	140.4	000.1900	-0038.5	006.4	60.58	

203.0	011.9114	0110.0	034.8	140.3	000.1900	-0038.2	005.7	62.58
204.0	011.4085	0110.0	034.4	140.0	000.1900	-0036.6	005.0	64.77
205.0	010.9165	0110.0	034.1	139.3	000.1900	-0033.2	004.3	67.21
206.0	010.4353	0110.0	033.7	138.0	000.1900	-0027.8	003.6	70.25
207.0	009.9650	0110.0	033.4	135.6	000.1900	-0019.5	003.0	73.85
208.0	009.5055	0110.0	033.0	131.3	000.1900	-0006.8	002.3	78.60
209.0	009.0569	0110.0	032.6	122.9	000.1900	0007.8	001.7	84.04
210.0	008.6191	0110.0	032.2	104.8	000.1900	0024.8	001.1	98.54
211.0	008.1922	0110.0	031.8	068.1	000.1900	0036.9	000.9	100.74* 0.08
212.0	007.8584	0110.0	031.5	030.2	000.1900	0040.8	001.0	99.45
213.0	007.5316	0110.0	031.2	008.8	000.1900	0046.8	001.5	96.37
214.0	007.2118	0110.0	030.9	358.5	000.1900	0049.8	002.0	85.68
215.0	006.8988	0110.0	030.5	353.0	000.1900	0049.5	002.6	80.87
216.0	006.5928	0110.2	030.2	349.6	000.1900	0049.0	003.2	77.00
217.0	006.2938	0110.4	030.0	347.4	000.1900	0048.7	003.8	74.06
218.0	006.0017	0110.8	029.7	345.8	000.1900	0048.5	004.3	71.51
219.0	005.7165	0111.2	029.4	344.7	000.1900	0048.3	004.9	69.33
220.0	005.4383	0111.6	029.1	344.1	000.1900	0048.1	005.5	67.32
221.0	005.1670	0111.9	028.8	343.8	000.1900	0048.0	006.1	65.44
222.0	004.9567	0112.3	028.6	343.1	000.1900	0047.8	006.6	63.88
223.0	004.7508	0112.7	028.4	342.7	000.1900	0047.7	007.2	62.48
224.0	004.5492	0113.0	028.1	342.5	000.1900	0047.6	007.7	61.24
225.0	004.3520	0113.3	027.9	342.3	000.1900	0047.6	008.3	60.17
226.0	004.1591	0113.7	027.6	342.3	000.1900	0047.6	008.8	59.16
227.0	003.9707	0114.2	027.4	342.3	000.1900	0047.6	009.4	58.19
228.0	003.7866	0114.6	027.1	342.4	000.1900	0047.6	009.9	57.24
229.0	003.6068	0114.8	026.9	342.8	000.1900	0047.7	010.4	56.32
230.0	003.4315	0114.9	026.6	343.2	000.1900	0047.8	011.0	55.44
231.0	003.2605	0114.9	026.3	343.6	000.1900	0048.0	011.5	54.59
232.0	003.3396	0115.0	026.4	342.1	000.1900	0047.5	011.9	53.91
233.0	003.4196	0115.0	026.6	340.8	000.1900	0047.2	012.3	53.25
234.0	003.5006	0115.1	026.7	339.5	000.1900	0046.9	012.7	52.60
235.0	003.5826	0115.1	026.9	338.4	000.1900	0046.5	013.1	51.93
236.0	003.6654	0115.1	027.0	337.4	000.1900	0046.1	013.5	51.25
237.0	003.7493	0115.1	027.1	336.4	000.1900	0045.6	014.0	50.59
238.0	003.8341	0115.2	027.3	335.6	000.1900	0045.2	014.4	49.95
239.0	003.9198	0115.2	027.4	334.8	000.1900	0044.8	014.9	49.32
240.0	004.0065	0115.2	027.6	334.2	000.1900	0044.4	015.3	48.98
241.0	004.0941	0115.2	027.7	333.6	000.1900	0044.2	015.8	48.50
242.0	004.3093	0115.3	028.0	332.4	000.1900	0043.6	016.3	47.98
243.0	004.5301	0115.3	028.3	331.3	000.1900	0043.2	016.8	47.46
244.0	004.7563	0115.3	028.6	330.3	000.1900	0042.8	017.3	46.93
245.0	004.9881	0115.3	029.0	329.4	000.1900	0042.4	017.8	46.39
246.0	005.2254	0115.3	029.3	328.6	000.1900	0041.9	018.4	45.82
247.0	005.4682	0115.4	029.6	327.9	000.1900	0041.4	018.9	45.25
248.0	005.7165	0115.4	029.9	327.3	000.1900	0040.9	019.5	44.69
249.0	005.9704	0115.4	030.2	326.7	000.1900	0040.5	020.0	44.13
250.0	006.2297	0115.4	030.5	326.2	000.1900	0040.2	020.6	43.58
251.0	006.4946	0115.4	030.8	325.8	000.1900	0039.9	021.2	43.04
252.0	006.8351	0115.4	031.2	325.2	000.1900	0039.4	021.8	42.46
253.0	007.1843	0115.4	031.5	324.7	000.1900	0039.1	022.5	41.89
254.0	007.5422	0115.4	031.9	324.3	000.1900	0038.7	023.1	41.32
255.0	007.9088	0115.4	032.3	323.9	000.1900	0038.3	023.8	40.76
256.0	008.2841	0115.5	032.6	323.6	000.1900	0038.0	024.4	40.22
257.0	008.6681	0115.5	033.0	323.4	000.1900	0037.7	025.1	39.70
258.0	009.0608	0115.5	033.4	323.2	000.1900	0037.5	025.8	39.20
259.0	009.4622	0115.5	033.7	323.0	000.1900	0037.4	026.5	38.73
260.0	009.8722	0115.5	034.0	323.0	000.1900	0037.3	027.1	38.29
261.0	010.2910	0115.5	034.4	322.9	000.1900	0037.3	027.8	37.87
262.0	010.8320	0115.5	034.8	322.8	000.1900	0037.1	028.5	37.42
263.0	011.3869	0115.5	035.2	322.7	000.1900	0037.0	029.3	37.00
264.0	011.9556	0115.5	035.5	322.7	000.1900	0037.0	030.0	36.62
265.0	012.5382	0115.5	035.9	322.7	000.1900	0037.0	030.7	36.26
266.0	013.1346	0115.5	036.3	322.7	000.1900	0037.1	031.4	35.95
267.0	013.7449	0115.5	036.6	322.8	000.1900	0037.2	032.2	35.66
268.0	014.3690	0115.5	037.0	323.0	000.1900	0037.3	032.9	35.40
269.0	015.0070	0115.5	037.3	323.1	000.1900	0037.5	033.6	35.15
270.0	015.6589	0115.5	037.7	323.3	000.1900	0037.7	034.4	34.91
271.0	016.3246	0115.5	038.0	323.5	000.1900	0037.9	035.1	34.68

Environmental Protection Act / NIER Analysis

Modification of FM facility proposes a single-bay circular-polarized antenna at 13.5 meters above ground level operating at 190 watts ERP. Using the FM Model application with the "EPA Type 1" setting to approximate worst-case exposure, FM Model predicted a maximum peak of 57.7 $\mu\text{W}/\text{cm}^2$, at 3.3 meters below center of radiation. This represents 28.85 % of the FCC Maximum Permissible Exposure (MPE) of 200 $\mu\text{W}/\text{cm}^2$ for uncontrolled environments. At 13.3 meters this level falls to 32.2 $\mu\text{W}/\text{cm}^2$, or 16.1 % of MPE, and continues dissipating further from the tower.

The area is on an undeveloped portion of property near remote grazing land, and is not accessible to the public or other unauthorized persons. The antenna will be mounted on a pole and only accessible using a tall extension ladder.

In an abundance of caution, a sign will be posted indicating potential RF exposure hazards. Facility will be powered down before any work is performed.

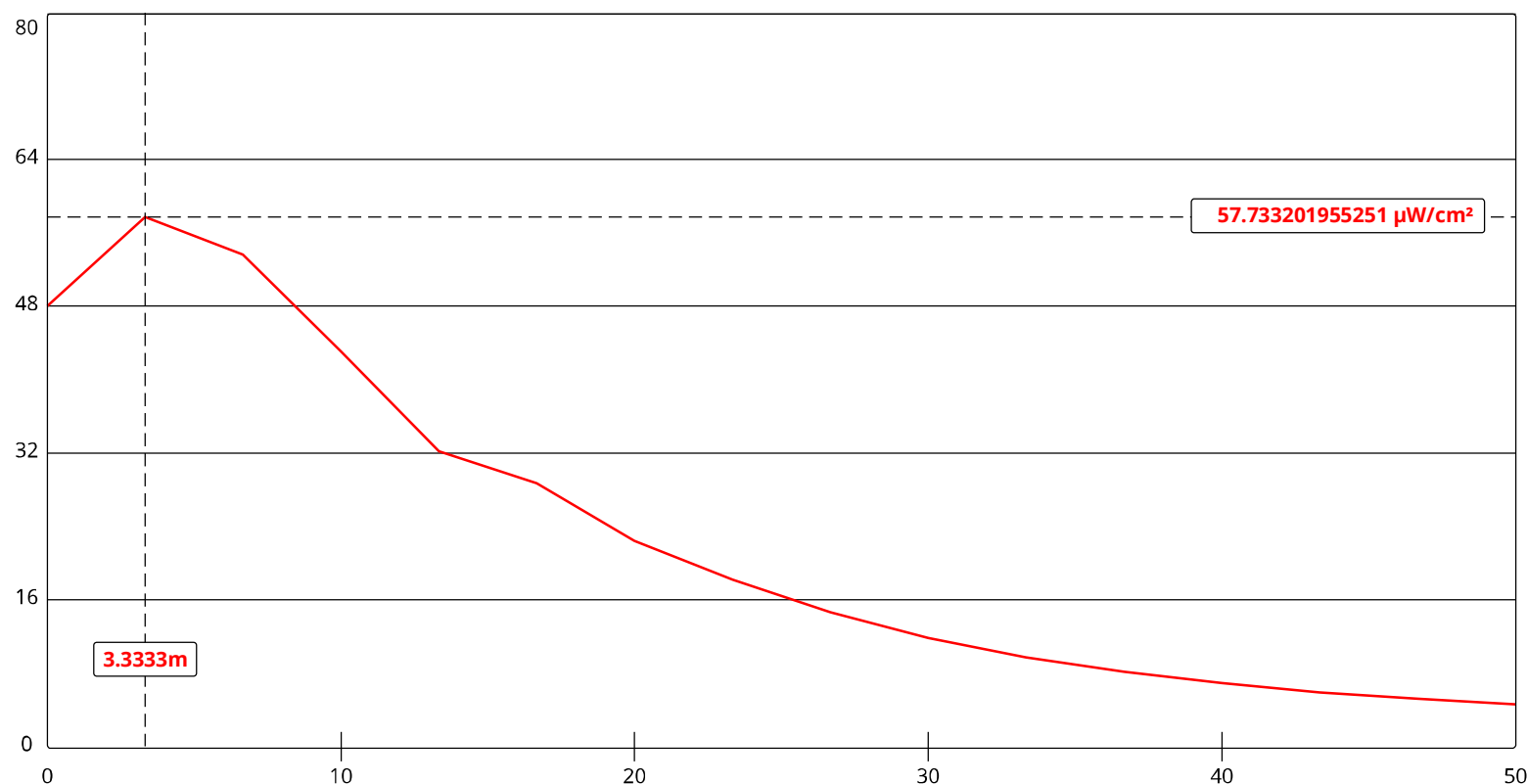
Exhibits:

- FM Model RF calculations
- NADCON NAD 27 -> NAD 83 conversion
- TOWAIR FAA clearance
- HAAT calculations

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FM Model

The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data [published in 1985 by the EPA](http://nepis.epa.gov/Exe/ZyNET.exe/2000ED2W.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1981+Thru+1985&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A\zyfiles\Index%20Data\81thru85\Txt\00000003\2000ED2W.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h|-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p|f&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL) (<http://nepis.epa.gov/Exe/ZyNET.exe/2000ED2W.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1981+Thru+1985&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A\zyfiles\Index%20Data\81thru85\Txt\00000003\2000ED2W.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h|-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p|f&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>). [▼ Show More....](#)



Channel Selection	Channel 208 (89.5 MHz)		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other"		
Height (m)	<input type="text" value="13.5"/>	Distance (m)	<input type="text" value="50"/>
ERP-H (W)	<input type="text" value="190"/>	ERP-V (W)	<input type="text" value="190"/>
Num of Elements	<input type="text" value="1"/>	Element Spacing (λ)	<input type="text" value="0"/>
Num of Points	<input type="text" value="15"/>	<input type="button" value="Apply"/>	

* To Print - On your browser, please select Shrink to Fit under the Scale tab from Print Preview

Hide Tabular Results -

Distance (m)	Power Density ($\mu\text{W}/\text{cm}^2$)
0	48.0
3.3333	57.7
6.6667	53.6
10	43.0
13.3333	32.2
16.6667	28.7
20	22.4
23.3333	18.2
26.6667	14.6
30	11.8
33.3333	9.7
36.6667	8.1
40	6.9
43.3333	5.9
46.6667	5.2
50	4.6

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Updated:

Friday, June 8, 2018

Antenna Structure Registration

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TOWAIR Determination Results

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A routine check of the coordinates, heights, and structure type you provided indicates that this structure does not require registration.

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

PASS SLOPE(100:1)NO FAA REQ - 3427.0 Meters (11243.2 Feet)away & below slope by 27.0 Meters (88.5799 Feet)

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	37-41-26.00N	121-26-54.00W	TRACY MUNI	SAN JOAQUIN TRACY, CA	52.6	1219.5

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PASS SLOPE(100:1)NO FAA REQ - 3545.0 Meters (11630.4 Feet)away & below slope by 29.0 Meters (95.1400 Feet)

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	37-41-28.00N	121-26-46.00W	TRACY MUNI	SAN JOAQUIN TRACY, CA	52.6	1219.5

PASS SLOPE(100:1)NO FAA REQ - 3545.0 Meters (11630.4 Feet)away & below slope by 29.0 Meters (95.1400 Feet)

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	37-41-28.00N	121-26-46.00W	TRACY MUNI	SAN JOAQUIN TRACY, CA	52.6	1219.5

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AIRP	R	37-41-28.00N	121-26-46.00W	TRACY MUNI	SAN JOAQUIN TRACY, CA	52.6	1219.5

Your Specifications

NAD83 Coordinates

Latitude	37-42-35.5 north
Longitude	121-28-43.2 west

Measurements (Meters)

Overall Structure Height (AGL)	16
Support Structure Height (AGL)	0
Site Elevation (AMSL)	43

Structure Type

POLE - Any type of Pole

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **37° 42' 35.7" North**

Longitude **121° 28' 39.4" West (NAD 27)**

These coordinates convert to NAD 83 coordinates of
37° 42' 35.45", North, 121° 28' 43.20" West (NAD 83).

Height of antenna radiation center above mean sea level: **56.5 meters** AMSL

Number of Evenly Spaced Radials = **8** 0° is referenced to True North

Results

Calculated HAAT = **-63 meters**

Antenna Height Above Average Terrain calculated
using 1 km **GLOBE terrain data**

Individual "Radial HAAT" Values, in meters

0°	59.8 m
45°	53.4 m
90°	37.3 m
135°	-6.3 m
180°	-214.9 m
225°	-320.9 m
270°	-144.8 m
315°	31.1 m